Lifting Global Trade℠

APM TERMINALS

# CONTRACTORS SAFETY GUIDELINES

# PORT PIPAVAV

Oct-2017

## ACKNOWLEDGEMENT BY CONTRACTOR

Contractors name :……

Job/task to be carried out :……

Address :……

:……

I hereby acknowledge the receipt of the contractors Safety guideline and confirm that contents of the guideline have been understood by me.

I agree to abide by the guidelines and will undertake assigned job in a safe manner.

Recipient's sign Stamp:

Date:

*Note: Copy of the page duly signed by the contractor should be forwarded to HSSE Department for record.*

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# HSSE POLICY

PORT PIPAVAV is committed to providing a safe and pollution free working environment to its employees and visitors.

SAFETY is a part of each employee's job, active participation to the safety program is a condition of each employee's employment.

Everyone within Port Pipavav is responsible for managing Health, Safety, Security and Environment matters and acceptance of their individual responsibility and their respective accountability is critical to the successful implementation of safety management system at Port.

Our goal is to ensure that all activities carried out at port are managed in the most possible secure manner so as to avoid, reduce and control all risks pertaining to health, safety, security and environment.

PORT PIPAVAV will,
Adopt and annually review its Health, Safety, Security and Environment policy.
Comply with all relevant legal requirements and where legislation does not exist set its own standards in line with APMT guideline.
Develop and deliver appropriate Health, Safety, Security and Environment training for staff to ensure risk are managed in the most efficient manner so as to avoid any occupational illness, injury or fatality at work place.
Ensure Health, Safety, Security and Environment implications of new project are identified and measures are in place to minimize the impact and where possible such risks are eliminated.
Report and investigate incidents in accordance with legislative requirements and APMT guidelines ensuring that appropriate remedial steps are taken to prevent recurrence.
Establish appropriate safety objective and targets to measure and drive for its continual improvement.
Encourage partners, contractors and suppliers to achieve comparable Safety, Health, Security and Environment standards.

**Keld Pedersen**
(Managing Director)
Date: 13th Oct 2015

## 1 FATAL 5

*A review of the most serious incidents and fatalities occurring in APMT in recent years has highlighted a number of recurring fatality-potential risks that we are concentrating our efforts on and calling these "The Fatal 5".*

The top 5 risks represented by the "Fatal 5" are Transportation, Suspended loads & Lifting, Working at Height, Stored Energy and Control of Contractors

To reach our target of a providing a safe work place, minimum controls for the management of these top 5 safety risks have been defined within the relevant standards. (See Appendix A)

In emphasizing the top 5 risks, it should also be acknowledged that other fatality potential risks in our operations exist beyond this initial list.

**Transportation**
We have lots of heavy equipment and vehicles moving around our operations continuously.

**Suspended Loads & Lifting**
Loading, unloading and moving containers, materials and goods are daily activities.

**Working at Heights**
By default a lot of our work takes place at height.

**Stored Energy**
Hazards with potential to release stored energy are in a number of tasks we do.

**Control of Contractors**
We employ contractors to carry out most of our highest risk tasks.

## 2. PERSONAL PROTECTIVE EQUIPMENT

PPE is a second line of defense for personal protection. The first line of defense is to eliminate or control the accident-causing situations at the work place by effective engineering measures.

PPE does not and cannot eliminate hazards at work. As a barrier between the hazard and the worker, PPE can help eliminate an injury or reduce its severity.

PPE is resorted to only if absolute removal of the hazard in the work environment is impossible or impracticable.

**PPE's principal requirements are: -**

- To safeguard the wearer from identified hazard to which he is exposed.
- To afford reasonable comfort.
- To permit essential movements of limbs required for efficient job performance.
- To be possible for easy cleaning and maintenance.

### 2.1 SAFETY HELMET

Head injuries at work may result from but not limited to falling object, fall of person, persons hitting their head on fixed objects, flying hard particles etc.

Safety helmet to be worn in all areas posing risk of injury to the head.

**Standard:** IS 2925 and DGMS Approved

**Recommended Brand:** Joseph Leslie & Co LLP, Karam, MSA

**HOW A SAFETY HELMET PROTECTS YOUR HEAD**

The hard shell of the helmet is designed to protect the head against the impact. It deflects objects and distributes the force of the impact over the whole head, diffusing the gravity of the blow.

The peak, a permanent extension of the shell over the eyes, protects the face, and especially the eyes from the injury. The brim is a narrow rim surrounding the shell that also helps deflect objects away from the head.

The chinstrap and the ratchet hold the helmet securely in place. It is to adjust so as to fit correctly and comfortably. Straps should be snugly but not too tightly in place.

**SAFETY HELMET USE & CARE: -**

Wear the helmet straight, not tilted, on your head. The helmet is the protector of your head and not a storage bin. Do not stash away cigarette packs, cards, letters etc, in the clearance inside your hard hat and never wear an ordinary cap under it.

The following care to be taken for the safety helmets: -

- Helmets to be inspected prior to use for defects.
- Once damaged helmet to be discarded and a new helmet to be used.
- Helmet outer and inner to be kept clean always to avoid infection.
- Check the suspension for any crack/defects.
- If the ratchets are not working properly get the headband replaced.
- No changes to be done to the original parts of the helmet.

**Safety helmets are compulsory in area with risk of injury to head due to falling objects, flying materials, striking hazard etc**

## 2.2 EAR MUFF/EARPLUGS

Too much noise can damage hearing temporarily or even permanently, create stress that can and does sometimes affect one's physical and mental health and cause accidents in the work place. Earmuffs can protect your ears (hearing) from potentially damaging levels of sound by fit over the whole ear to seal out the noise.

A set of earmuffs consists of 3 components: -

- Cups made of moulded plastic and filled with foam or other material. They vary in size and can be adjusted up or down.
- Cushions covered with plastic and filled with foam, liquid or air to ensure comfort and protection, seal out noise;
- The spring-loaded headband holds the cups in place.

Wear your protection on the job. Even a short period exposure to high level noise may damage your hearing. Remember that noise pollution is a very real hazard. It needs everybody's co-operation to keep it under control and conserve hearing.

**Standard**: EN 352-1-1993, EN 352-2-2002

**Recommended Brand**: 3M, MSA, Karam

**USE & CARE**

The earmuff to be cleaned with soft cloth, no chemicals should be used for cleaning.

Earplugs are to be cleaned before and after use to avoid ear infection.

**PERMISSIBLE EXPOSURE LEVELS OF CONTINUOUS NOISE**

| TOTAL TIME OF EXPOSURE (CONTINUOS SHORT TERM EXPOSURE) | MAXIMUM ALLOWABLE SOUND LEVEL IN Db(A) |
|---|---|
| 8 Hrs | 85 |
| 6 Hrs | 87 |
| 4 Hrs | 90 |
| 3 Hrs | 92 |
| 2 Hrs | 95 |
| 1.5 Hrs | 97 |
| 1 Hrs | 100 |
| 45 Minute | 102 |
| 30 Minute | 105 |
| 15 Minute | 110 |

**PERMISSIBLE EXPOSURE LEVELS OF IMPULSIVE OR IMPACT NOISE**

| PEAK SOUND PRESSURE LEVEL IN dB | PERMITTED NUMBER OF IMPULSES OR IMPACT PER DAY |
|---|---|
| 140 | 100 |
| 135 | 315 |
| 130 | 1000 |
| 125 | 3160 |
| 120 | 10000 |

Ear plugs are compulsory in area generating high noise posing risk to ear drum Viz; DG Set, Compressor area/room, machinery room, grinding, chipping, vibrating equipment etc.

## 2.3 SAFETY GOGGLES

Eyes are precious, vital parts of our body; we cannot and must not neglect them. Carelessness, in many cases, causes irreparable damages. Eye protectors are must to avoid injury to the eye resulting from flying objects, splashing liquids, dust particles etc.

Safety eye wear must be right fit for you, should not be too tight or too loose, fitting snugly close to the eyes without touching the eye lashes and without hampering the body movement. Never use somebody else's safety goggles.

**Standard** : EN-166.2001

**Recommended Brand** : 3M, Udyogi, Venus

**CLEANING AND DISINFECTING**

Clean with soap and warm water to remove oil or grease.

Rinse in cold water and dry it with a clean cloth.

**PRECAUTIONS**

Petrol, thinner, spirit etc should not be used for cleaning.

Safety goggles are compulsory in area having risk of injury to eye Viz; Grinding, chipping, batching plant, blocking making area, spray painting, pressurized pipe/hose maintenance, welding/cutting etc.

**Safety goggles should be selected according to job risk and wearing it is compulsory in carrying out task which can cause eye injury.**

## 2.4 RESPIRATORY MASK

The respiratory system, consisting of some vital organs of the body, is the very core of a human body. If this breaks down, life itself is extinguished. Therefore one must give the best possible protection against the hazards of the workplace that threatens it.

**HARMFUL CONTAMINANTS**

| | |
|---|---|
| Dust | : Coal, iron ore, cement, soda ash, fine sand etc |
| Smoke | : Exhaust from vehicle G set etc |
| Chemical fumes | : Chemical fumes can lead to asphyxiation. |

Respiratory mask selected should be suitable for eliminating/reducing risk of the job. Wrong mask selection will not provide protection and continue to harm people.

**Standard**: As per the requirement of the area.

**Recommended Brand**: 3M, Venus, Promax

Respiratory mask is compulsory in areas posing risk to respiratory system.

## 2.5 HAND GLOVES

Hands are the two busiest, most important, indispensable and invaluable at the same time vulnerable tools the human body has at its disposal.

**Standard:** As per the area of use.

**Recommended Brand:** Joseph Leslico

**Types of gloves**:

Electrical safety gloves (Correct rating of electrical potential necessary)

Chemical Safety gloves

Low temperature gloves : For handling of cargo/liquid having risk of cold burn.

Leather gloves : For preventing injury from sharp object.

Cotton gloves : For preventing contact of hand with dust, oil etc.

Hygiene gloves : For handling edible materials.

Correct selection of gloves is important for eliminating/reducing injury to hand.

For handling material with sharp edge leather glove with vein guard should be selected.

Wearing suitable hand gloves is compulsory in all task/job with risk of hand injury.

## 2.6 SAFETY SHOE/ BOOT

Our feet are prone to hazards such as striking/falling objects, contact with acids/ alkali, exposure to hot surfaces, wet slippery surfaces etc. These impact of the hazards can be minimized/eliminated by use of suitable safety footwear

**Standard:** IS-15298 Part 2-2011

**Recommended Brand**: Liberty Warrior, Karam, ACME

**HAZARDS TO FEET**

- Falling, rolling objects and materials
- Sharp cutting edges, wood chips, glass pieces, nails etc.
- Oily/greasy floors
- Skids and slips.
- Sanitation hazards.

**USE & CARE**

- Safety footwear to be kept clean and dry.
- Safety footwear to be comfortable to the wearer.
- Periodically dry the boots/shoes under sunlight.

- Wearing wet shoe can cause foot mycosis.

Torn, damaged Safety footwear should be replaced with new safety footwear.

Safety footwear are compulsory in areas of working viz; quay side, yard, CFS, workshop, construction site, warehouses, fabrication and repair site etc.

## 2.7 HIGH VISIBILITY VEST

High visibility vest provides visibility of people and working in the area and helps in preventing incidents.

**Recommended Brand:** Jackets should have Two reflective strips of 50 mm minimum.

Wearing high visibility vest is compulsory in all working areas excluding offices.

## 2.8 SAFETY HARNESS

Safety harness is the second level of protection during working at height. Only Full Body safety harness is allowed to use in the Port area.

Safety harness is compulsory for working on heights; it should be anchored to a fixed/rigid object which could take load of the person performing the task in the event of accidental fall.

**Standard:** IS-3521-1999

**Recommended Brand:** Karam, Udyogi

## 2.9 LIFE VEST

Life vest: Life vest is compulsory for all personnel carrying out any work within 1 meter of jetty edge or work being carried out above water (pile work, jetty edge repairing etc.) to ensure floatation of person in case of accidental fall.

Life vest is compulsory for all personnel working on marine craft when working in deck area.

**Standard:** MMD, IRS and SOLAS Approved

**Recommended Brand:** Lalizas, Galvanisers

## 3. TRAFFIC GUIDELINES

Any Vehicle can be used in Port only after getting it inspected by HSSE department of its roadworthiness. Security issue vehicle Port entry pass only after the Safety Department inspect the vehicle and if mark it SAFE.

- Drivers/operator of vehicle/equipment should be in possession of valid driving license applicable for driving/operating vehicle/equipment.
- Vehicle /equipment should be in road worthy condition and in possession of fitness certificate from RTO.
- Vehicle/equipment should always be in possession of all valid documents as per prevailing RTO regulation/s.
- Vehicle carrying capacity should not exceed the capacity as specified in the RC book or as stipulated by RTO.
- All lights, indicators and horn to be in working condition.
- Seat belts are compulsory for all drivers and operators.
- Personnel carrying capacity should not be exceeded beyond the capacity as endorsed in the RC book or prevailing RTO regulation/s.
- Vehicle/equipment should be in possession of First aid box and fire extinguisher.
- Vehicle/equipment to be parked in designated parking areas only.
- Drivers/operators of equipment are not allowed to get down at yard or at quay side. For any breakdown/inspection contact concerned department or HSSE on emergency contact No (9924 333 333).
- Usage of high beam light at night is not allowed inside port premises.
- Overtaking of vehicle is prohibited.
- Usage of cell phone while operating/driving is prohibited.
- Vehicle/equipment should not be parked below hanging load.
- Operators/drivers are not allowed to drive/operate more than 12 hours with break every 6 hours.
- Traffic signs/boards messages are to be followed while driving inside port premises.
- Speed limit of the vehicle/equipment should not exceed Port Speed limits.

**Speed Limits**

| | |
|---|---|
| Port Area outside the Customs Zone | 40 km/hr |
| Port Area inside the Customs Zone | 30 km/hr |
| Yards, Quayside and sheds | 20 km/hr |

All vehicle/equipment and their driver/operator should be in possession of valid port security passes.

## 4. LIFTING GEARS/EQUIPMENT

Lifting gears in operation should have valid test certificates on the day of operation.

Lifting gears should have stamp of SWL and year of inspection on it.

All lifting appliances should be examined by a competent person as per Dock Safety once in 12 months and certificate of inspection to be made available to port Safety on demand.

All lifting appliances should be inspected at least once every month and logged into the gear register which should be available for inspection by port Safety.

**Safe operating practices:** Whenever any sling is used, the following practices shall be observed:

- Slings that are Damaged, disfigured or cracked should be discontinued from operation.
- Slings shall not be shortened with knots or bolts or other makeshift devices.
- Sling legs shall not be kinked.
- Slings shall not be loaded in excess of their rated capacities.
- Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- Slings shall be securely attached to their loads.
- Slings shall be padded or protected from the sharp edges of their loads.
- Suspended loads shall be kept clear of all obstructions.
- All employees shall be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- Worn or damaged alloy steel chain slings or attachments shall not be used until repaired, examined and certified. When welding or heat testing is performed, slings shall not be used unless repaired, reconditioned and proof tested by the sling manufacturer or an equivalent entity.
- A sling shall not be pulled from under a load when the load is resting on the sling.

**Inspections:** Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

### 4.1 WIRE ROPE

A wire rope is a piece of flexible, multiwired, stranded machinery made of many precision parts.

Usually a wire rope consists of a core member, around which a number of multi wired strands are laid or helically bent. There are two general types of cores for wire ropes-fiber cores and wire cores.

## 4.2 LAYS OF WIRE ROPE

'Lay" of a wire rope is simply a description of the way and strands are placed during construction. Right lay and left lay refer to the direction of strands

# 5. FIREFIGHTING ARRANGEMENTS

Firefighting arrangements needs to be in place for all equipment/vehicles being mobilized /used at the port.

## 5.1 FIRE FIGHTING MEDIA

Place adequate numbers of Portable Fire Extinguishers at the working site. All the fire extinguisher shall be of BIS Approved type only. All the fire extinguisher shall bear the last test and refill dates.

## 5.2 FIRE EXTINGUISHER SUITABILITY CHART

| CLASS OF FIRE | WATER | FOAM | CO 2 | DCP | ABC |
|---|---|---|---|---|---|
| A | ✓ | × | × | ✓ | ✓ |
| B | × | ✓ | × | ✓ | ✓ |
| C | × | × | × | ✓ | ✓ |
| D | × | × | × | ✓(Spl. Pwdr) | - |
| ELECTRICAL | × | × | ✓ | ✓ | ✓ |

## 6. ELECTRICAL SYSTEM

All electrical system installed should be as per standards specified by BIS or international regulations and found safe for working by Port electrical department.

**Basic electrical Safety:**

- Electrical wiring and colour code of wires should be as per BIS code.
- Supply and distribution board must have adequate circuit breaker (ELCB/RCCB).
- Correct rating of wires should be selected for wiring.
- All electrical components should be grounded properly.
- Switch boards/panels to be in weather proof enclosures.
- Prior to laying any cable work permit needs to be taken from Port Safety.
- No modification/repair/replacement to be done in any Port electrical system/component without approval from Ports electrical department.
- No part of any electrical circuit should be exposed.
- Do not overload an electrical circuit beyond its rating.
- Tools without required insulation should not be used.
- Electrical work can be hazardous if worker, location or equipment is wet.
- Always use the correct PPE for performing the job.
- Use right tool for performing the job.
- Do not use metal ladder for doing electrical job.
- De energize all circuits prior commencement of work.
- Do not run electrical wires/cables through area of vehicle/equipment/personnel movement.

**Power tool Safety**

Use of power tool can make a job go faster and easier. The misuse of portable tools can cause electric shock, burns, cuts, puncture wounds, severed finger and limbs etc.

**Safety note:**

- Do not attempt to adjust, clean or service tools without disconnecting power supply.
- Do not use tool with broken bits and blades.
- Do not use tool with defective wiring.
- Do not work near flammable gas.
- Do not work without proper PPE
- Do not operate if not familiar with operation of tool.
- Do not point tool on any person.
- Do not use worn out/defective tools.
- Do not carry power tool with finger on the ‘trigger’.
- Always store power tool in its designated Safe place.
- Do not use power tool with broken cable.
- Do not work with power tool in area with poor lighting.

## 7. HOUSEKEEPING

Good housekeeping helps in eliminating most of the workplace hazards.

Some basic elements of good housekeeping.

- Incompatible materials should be stored separately with sufficient safety distance/barrier.
- Proper lighting in working area.
- Floor to be dry and free from slip, trip and fall hazard.
- Emergency exit marked and free from obstruction.
- Firefighting arrangements in place.

Working area should always be kept clean and free of any hazard which may result into an accident.

It will be contractor's responsibility to keep his working area clean.

### 7.1 GARBAGE MANAGEMENT

Waste generated from the work place should be disposed as per port garbage management system given below;

Wastes generated have been classified in three categories

| | | |
|---|---|---|
| **Organic solid waste** | **GREEN** | Leftover food material, vegetable slicing & decayed material etc. |
| **Recyclable waste** | **BLUE** | Paper, cardboard, plastic bottles, glass bottles etc. |
| **Household garbage** | **BLACK** | Used fuel oil & lube oil, paints, thinner, tube lights, wires etc. |

## 8. ILLUMINATION

Illumination level at work place should be arranged so as to assist workforce in carrying out the assigned job in a safe manner.

Illumination level at **work place should not be less than 50 lux.**

All means of illumination (portable or fixed) should meet the electrical system standards.

Glare from illumination should not pose risk to other operation, personnel and equipment working in the vicinity.

Any form of fire created for illumination at work place is strictly prohibited.

## 9. OIL SPILL

Any form of oil spill at work place is to be restricted /controlled.

- Oil spill if any at work place has to be contained and collected.
- In the event of any large spill beyond control Port Safety has to be contacted for assistance.
- For disposal of any form of waste Oil, procedures mandated by State Pollution control board should be followed.
- Disposal of oil or any hazardous material into drain or in open area is strictly prohibited and will lead to strict disciplinary action.
- Contractors will have to maintain minimum quantity of saw dust or other suitable containment media for containment of oil spill at work place.

## 10. WORK PERMIT

Work permit system is an effective way of controlling work place hazard and preventing any work place accident. All the non-routine activity shall be performed only under Work Permit system.

Work Permit issued only after submission of agreed Work methodology, Risk Assessment, HSSE Plan, Rescue plan and Traffic plan depending upon the nature of work.

10.1 EXCAVATION WORK PERMIT: Prior to start of any excavation work permit is to be obtained from Port Safety.

10.2 HOT WORK PERMIT: Any work which may generate sufficient heat to cause ignition is termed as hot work e.g., welding, cutting, chipping etc. Hot work permit is to be obtained for the job which will be issued and monitored on regular basis.

10.3 WORKING AT HEIGHT: Any work requiring person to climb up above 1.8 meters to carry out a task will require work permit.

10.4 FUEL LOADING/ BUNKERING PERMIT: Fuel loading from fuel tanker/bowser will require fuel loading work permit.

10.5 DIVING WORK PERMIT: Any diving operation requiring person/s to go beneath a vessel at berth for carrying out inspection/repair will require work permit.

10.6 ENTRY INTO CONFINED SPACE PERMIT: A confined space also has limited or restricted means for entry or exit and is not designed for continuous occupancy. Confined spaces include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, pipelines, etc.

If at any time after release of work permit it is observed that Safety guidelines are not followed for the work being carried out Port Safety will stop the work and restart work if satisfied that adequate measures are in place for personnel and material Safety.

## 11. SITE INSPECTION

Work site of the contractors will be inspected and if it is found that Safety measures are not in place work at the site will be stopped.

All Safety inspection will be documented and non-compliance will be brought to the notice of the contractor/s and applicable consequences management shall be applied.

Contractors will be responsible for maintaining Safety standards at their work site and implementation of corrective actions recommended in inspection report.

## 12. SAFETY MEETING

Contractors have to participate in the monthly contractors Safety meeting organized by Port.

Records of internal Safety meetings of contractors should always be available to port Safety on demand.

Person of the level of supervisor and above should be nominated for the Safety meeting.

Non-participation in Contractors Safety meeting is not acceptable and will lead to disciplinary action.

## 13. SIGNS AND BOARDS

Adequate signages and boards should be displayed at work site for caution to all.

Area posing a risk of fall hazard into trench/manhole will need barricading and board displayed in bilingual (English and Gujarati) for caution to all persons and vehicle / equipment movement.

Caution boards and signages should be of reflective/high visibility type for visibility at night. Port Emergency No (9924 333 333) should be displayed prominently at work location.

## 14. SAFETY PERFORMANCE

Contractors have to submit man-hours of all persons working at site to port Safety on **2nd of every month**.

**Any accident/incident/near miss at site to be reported to Port Safety immediately.**

Prior to start of any project work related to construction and fabrication a job risk assessment study needs to be carried out and submitted to port safety for approval. Risk assessment should cover hazards associated with job/task and control measures in place to mitigate risk.

Contractors have to undergo Safety induction training prior to start of any work at the Port. Such induction training will be organized for the contractors on regular basis and contractors have to participate in the training sessions.

# 15. GENERAL SAFETY

## 15.1 LADDER SAFETY:

A split, cracked, badly worn or loose rung is very dangerous and shall not be used.

Wooden/bamboo ladders are not allowed to use.

Wrong size ladders cause accidents. Two ladders **shall not be lashed together** to reach the distance.

The safe length of a ladder is only 15 feet. Ladders should be placed at an angle of 75º (1 horizontal to 4 vertical) and should be secured at the top to prevent slippage.

Damaged ladders should never be used for climbing.

## 15.2 HAND TOOL SAFETY

Most accidents are caused when:

- The wrong tool is used for the job.
- The tool has not been properly maintained.
- The correct tool is used in the wrong way
- Tools are not stored in a safe place.
- The person is not familiar with or trained in the correct use of the tool

**Wrong Tools**

There are many examples, for instance using a carpenter's hammer to strike another hammer; a file as a lever; a wrench as a hammer, pliers instead of a proper wrench, etc.

**Defective tools**

Badly maintained tools, wrenches with cracked or worn jaws, screw drivers with sharp points or broken handles, hammers with loose heads are the few examples of badly maintained tools.

Good fit of the handle is essential for all hand tools. Do not try to patch them.

**Misused tools**

Injury from misuse of common hand tools is very frequent.

All cutting tools should be used away from the body. If this is not possible, adequate protective clothing should be worn.

**Bad Storage of tools**

Tools falling from overhead have caused many accidents. Knives, chisels, and other sharp objects should not be carried in pocket or loosely laid in tool boxes or on benches.

When not in use pointed tools should be sheathed.

Do not leave tools on the ground.

## 15.3 PNEUMATIC TOOL

Review the manufacturer's instruction before using a tool.

Wear safety glasses or goggles, or a face shield (with safety glasses or goggles), and where necessary hearing protection.

Post warning signs where pneumatic tools are used. Set up screens or shields in areas where nearby workers may be exposed to flying fragments, chips, dust, and excessive noise.

**Dangers are:**

- leaving the airline where it may cause a tripping hazard.
- leaving the tool with the air supply switched on,
- disconnecting the hose from the tool and using it to clean machines or clothing
- non-safety protected air couplings (no safety Pin)

## 15.4 SCAFFOLDS

When scaffolding is used, the following shall apply:

- Scaffolds are designed, erected and tagged by a competent person;
- Scaffold are dimensioned and built to support safely the workloads it will receive
- Scaffolds shall be checked at predefined interval by competent person and records shall be kept at site.
- Scaffolds are secured and used on even surface
- Only use scaffolding materials which is designed for scaffolding (wood or bamboo not allowed) and ensure that these materials are inspected and maintained as per the manufacturer's recommendation.
- Scaffolds that are higher than four times the smallest width of its base are to be anchored to the building or to a strong enough structure, or should be cable-stayed
- Scaffolds have a guard-rail system and toe-board
- Mobile scaffolds can only be used on flat surfaces and with their casters locked
- Mobile scaffolds are to be wedged and anchored while in use to avoid their displacement and collapse
- Mobile scaffolds are not allowed to be moved while there are persons or materials on the work platform

- The scaffolds have their access ladder coupled to its structure
- Scaffolds have all access points leading to the platform from inside.
- Full body Safety harness with double lanyard is worn when assembling, disassembling and working on the scaffolds.
- Scaffolds should be in perfect use condition and without corrosion and a cracked or distorted structure
- Scaffolds are assembled far from electrical installations and away from where they can be reached by machines or equipment
- The use of ladders or other means on the scaffold work platform to reach higher points is strictly forbidden
- Materials should not be stored on scaffolding to a height above that of the toe boards. Care must be taken to ensure that the scaffolding is not over loaded by the storage of materials.
- Scaffolding shall be securely supported and where necessary shall be braced to ensure stability. Unless constructed as an independent scaffold it shall be rigidly connected to the structure.
- All equipment used in construction of scaffolding should be checked before use to ensure that it is free from defects / corrosion. All fittings should be lubricated.
- Use scaffold tags (red, green, and yellow) to communicate the safe use of the scaffold.
- Scaffolding equipment shall never be repaired by welding.

## 15.5 CRANE SAFETY

The following are safe operating requirements which apply to the use of cranes:

- Crane must be certified by the authorities for its safe working limits and fitness;
- Ensure the load does not exceed the Safe Working Load (SWL) of the equipment being used
- When operating the crane, avoid sudden movements that could cause jerking or stress-loading of the crane
- Do not allow anyone to ride on a load that is being lifted
- Centre the boom point directly over the load before making the lift. Do not pull the crane hook to either side in order to attach it to the load
- Keep loads as low to the deck (or ground) as feasible at all times
- Operate on a solid, level surface
- Do not leave loads hanging – secure at the earliest (safe) opportunity and remove the hook and line
- Only one signalman should be providing the signals, either using standard hand signals or via two-way communication. However, a stop signal is to be obeyed no matter who gives it
- If the load does not ride properly when lifted, lower it and have it readjusted
- Use tag lines whenever possible to maintain control over the load without positioning yourself near (or under!) the load
- Never move loads over people. Where necessary, have a person on the ground alert other personnel to move out of the way before the load is moved
- Ensure that all personnel stand clear when the lift is being made and when the slings are being drawn from under the load.

## 15.6 OVERHEAD LOAD SAFETY

On all jobs, only one person, generally the lead person should give signals to the crane operator. If you are assigned the job of directing the crane, follow these basic rules:

- Loads shall not be carried or lifted over personnel or vehicles, **<u>and personnel shall never walk under a suspended load.</u>**
- Always use standard hand signals to direct the crane operator.
- Stand clear and place yourself where the operator can plainly see you and you can see the operator.
- If you can't see the load and another person is signaling to you, be sure every-one is in the clear before you give the signal to the operator. Remember, it takes time to relay signals.
- Never permit a load to be lowered, raised, or swung over a worker's head. If the operator can see the load, it's the operator's responsibility -without exception -to see that this rule is followed

**Remember if you are not visible you are in danger.**

**HAND SIGNAL CHART**

## 15.7 WELDING SAFETY

Welding operations can be found in almost every type of industry. Welders must be qualified to do the work, and part of their education includes welding safety.

If you are a welder, or work near a welding operation, you may encounter any of these hazards:

- Excessive Noise
- Fire or Excessive Heat
- Electrical Shock
- Ultraviolet Radiation

All of these hazards can cause an injury. Knowing how to protect your self is important. To protect yourself from excessive noise, you must wear hearing protection if the noise level exceeds regulatory standards

Fire and excessive heat are hazards with great potential for injury and damage. If welding is done in an area where a fire hazard exists, a welding permit should be used in accordance with established procedures. A spark or a piece of hot slag could easily ignite these materials and cause a tragic fire. To protect yourself from burns from these sparks and pieces of slag, wear appropriate Personal Protective Equipment (PPE) such as aprons, gloves, leggings, and footwear.

Ultraviolet (UV) radiation can cause burns to the skin and eyes. Welding hoods and special welding goggles with UV filter lenses and side shields are designed to protect your eyes and face from UV exposure. Appropriate gloves and aprons must be used to protect exposed skin. Welding curtains may be used for the same purpose to protect others in the vicinity of the welding area.

You can protect yourself from the physical hazards of welding.

## 15.8 GAS CYLINDER SAFETY

All pressurized gas cylinders should be stored away from source of ignition and oxidizing materials.

Gas cylinders (LPG and acetylene) should always be used upright, fitted with regulators, pressure gauge and flashback arrestors.

Cylinders should never be dropped on ground and rolled. It should be carried on trolleys.

Never apply external heat on cylinders for removing gas it is dangerous and may lead to explosion of cylinder/s.

Flammable gas cylinders to be stored away from oxidizing materials.

## Checklist for Compressed Gas Cylinder Safety

| Sl | Description | Yes/No |
|---|---|---|
| 01 | Is there "no smoking" signs posted in the area? | |
| 02 | Is the storage area clearly identified, dry, and well-ventilated? | |
| 03 | Are the cylinders stored in an upright position? | |
| 04 | Are the cylinders secured with a chain or appropriate belt above the midpoint, but below the shoulder? | |
| 05 | Are the cylinders capped and valves closed when not in use ? | |
| 06 | Is the storage area at least 15' away from all flammable, combustible or incompatible substances? | |
| 07 | Are cylinders stored with the same hazard class?<br>(Note: Inert gases are compatible with all other gases) | |
| 08 | Are cylinders stored so that full cylinders remain separate from empty cylinders? | |
| 09 | Are cylinders segregated into “FULL” or “EMPTY” groups at locations or in racks for each category? | |
| 10 | Are compressed gases handled only by properly trained persons? | |
| 11 | Are cylinders transported in Trolley? | |
| 12 | Is all pressure from regulators and hoses not currently used removed? | |
| 13 | Are cylinders which require a key to open the main valve shall have the key left in place on the cylinder valve while it is open? | |
| 14 | Are the Cylinder and Torch fitted with Flash Back arrestor on both ends ? | |
| 15 | Are only approved valves, regulators, manifolds, piping and other associated equipment used in any system that requires compressed gas? | |
| 16 | Is the LPG Cylinder is fit for use ?<br>(Check Due for Pressure Testing date on LPG Cylinder.) | |
| 17 | Are damaged or leaking cylinders reported to HSSE immediately? | |

## 15.9 RESTING BELOW EQUIPMENT/VEHICLES

Under no circumstances any person to be sleeping/taking rest below any vehicle or equipment.

## 15.10 USING JACK SAFELY

To avoid having an accident of your own follow these simple, basic rules:

- Use a jack with a rated capacity that equals or exceeds the load you're lifting.
- Always set the jack on a firm and level foundation.
- To prevent slipping, use a wooden-block softener between the head of the jack and the load.
- Set the jack perpendicular, at a right angle, to the load.
- If there is a chance the load will swing to the side, install props or guys before doing any lifting.
- Have enough help when you install or move a jack.
- When you're working on a floor of any kind, make sure the load limit of the floor isn't exceeded.
- Before working under a raised load install blocking to keep the load from accidentally falling.
- Keep jacks in good shape and well lubricated, but only lubricate at the points where lubrication is specified. Check for broken teeth and other defects. Never throw or drop jacks.
- When a jack develops any defect whatever, turn it in for repair and be sure to test it under load before putting it back in service.

Make sure you are using your jack the safe way.

## 16. SAND BLASTING SAFETY

Grit / shot blasting shall only be carried out by personnel wearing appropriate protective clothing,

The work site must be kept in good order, gangways, walkways etc shall be clear of hoses, pots, containers etc. at all times.

### 16.1 SAFETY REQUIREMENTS

Deadman switch/handle:

Deadman handle - incorporating a remote shut-off control valve is to be installed on ALL blast hoses.

Earthing - No blasting is to be carried out without proper earthling. This is to avoid static electricity.

### 16.2 PERSONAL SAFETY GEAR

Full sleeve cotton coveralls, long sleeve gloves, safety boots, blasting helmet with a provision of fresh air supply through dual filter system. Remote control with Deadman and one assistant at all times during operations.

For painters, safety requirements are, cotton coveralls, full sleeve gloves, barrier cream, safety shoes, safety glasses/goggles, hard hat, face covering, spray masks.

### 16.3 CORROSION CHECKS ON ABRASIVE BLASTING POTS/AIR RECEIVERS

Due to the water content in compressed air, corrosion is likely to occur, corrosion checks are to be carried out daily during use.

Air receivers, Compressors, and pots should be fitted with moisture separators. Water is to be drained daily.

### 16.4 FRESH AIR SUPPLY TO BLASTERS AND PAINTERS

The air is filtered through a multistage cartridge regulated and directed to Blasters / painters helmet. The air receiver filters and helmet is to be inspected daily during use.

**DO NOT POINT YOUR GUN/DISCRAGE HOSE TOWARDS POPLE/VEHICLE OR AREA WHICH CAN CAUSE INJURY OR DAMAGE.**

## 17. IMPORTANT TELEPHONE NUMBERS

| | |
|---|---|
| **Port Safety (For Emergency only)** | **+91 9924 333 333** |
| **Port Safety** | **+91 9824188298** |
| **Port Security** | **+91 9574 109 993** |
| **Port Control** | **+91 9904 086 633** |

Fire station is manned round-the-clock; they may be contacted for any assistance in emergency.

# 18. CONTRACTORS SAFETY PERFORMANCE MONITORING

## INTRODUCTION

Port Pipavav is continually striving to improve safety and health standards throughout its operational areas and has an expectation of its contractors to do the same. When working together to improve safety and health of contract workers, both benefits that come from a comprehensive and systematic contractor safety improvement process include the following:

Improved quality and productivity occur because a comprehensive sub-contractor safety improvement process requires that workers be properly trained for their job tasks and familiar with their job requirements

Fewer incidents result in less need for regulatory action and more controllable project costs

The potential for damage to Port Pipavav' facilities and the contractor's equipment is minimized

This procedure is intended to help Port Pipavav and its contractors to improve the contractor's safety performance while preserving the independent contractor relationship.

## SCOPE AND OBJECTIVES

The purpose of this procedure is to assist Port Pipavav and its contractors, who have a common need to continually improve their safety processes, to protect their personnel from workplace injury and illness, as well as from losses associated with incidents arising out of the work activities.

## IMPROVING CONTRACTOR'S SAFETY PERFORMANCE

**General**

Port Pipavav will contribute to improving contractor's safety performance through actions that may include:

- Making a deliberate management decision to establish an effective ongoing process that uses specific safety performance criteria for selecting sub-contractors
- Including specific safety language in contracts between Port Pipavav and its contractors
- When required, conducting meetings before bid submission to address specific contractor safety requirements
- Including site-specific safety and health requirements in contractor's bid package
- Requesting safety and health information from each prospective contractor and evaluating it during the selection process
- Establishing specific training requirements for contractors
- Conducting pre-mobilization briefings that specifically address safety expectations

- Requiring formal contractor safety inductions
- Reviewing the safety and health performance of contractors, with the expectation of continuous improvement
- Maintaining copies of injury and illness statistics and other measures of safety performance for all contractors at each location
- Using safety performance information to evaluate contractors

Port Pipavav Commitment to Improving Contractor's Safety Performance

Common to all successful contractors' safety programs is Port Pipavav commitment to and continued support of their efforts. Where required, Port Pipavav will provide resources towards safety and review how the contractor's safety is being addressed

**Contract Safety Language**

Although standard safety language (for example, "the sub-contractor must comply with all port safety rules and requirements as per relevant laws") may be included in a contract, additional safety language may be necessary to clearly convey Port Pipavav expectations. An addendum to the standard contract may be developed and attached to the contract when more detailed safety requirements must be addressed for a particular project or work activity.

**Sub-contractor Bid Package and Pre-bid Safety Meeting**

Port Pipavav will inform its contractors of its safety expectations by clearly outlining its safety performance requirements in its bid package. A pre-bid safety meeting may be called to reinforce this point. Port Pipavav may request specific safety information from the sub-contractor that can be used as part of the selection process.

**Site-Specific Safety and Health Requirements in the Bid Package**

Safety procedures vary among companies and job sites and may have a significant impact on a contractor's proposal and subsequent work. Therefore, even though the contract language and pre-bid package include the safety requirements, it is important that before the contract is awarded, each bidder be made aware of the specific job-site safety rules that will apply. Safety and health requirements for contractors will be consistent with those of Port Pipavav for its own employees.

**Selection of contractors**

Port Pipavav will evaluate its contractor's safety programme by using the safety information furnished by the contractor in response to the pre-bid request. The following points may indicate the quality of a contractor's safety performance:

- Commitment by its top management as demonstrated by an ongoing safety program that supports the contractor's safety improvement process.
- The completeness of the Contractor's safety program and their appropriateness for the work site and the safety standards of Port Pipavav.

The contractor's response to pre-bid safety requests (see Appendix B), which may include the following:

**Injury and illness incidence rates (see Appendixes C and D)**

The contractor's safety staffing plan. The plan describes the on-site person or persons appointed by the contractor who will be responsible for safety. It also describes their expertise and authority.

A description of the safety induction to be provided by the contractor to all their employees on site.

The contractor's enforcement and disciplinary action program regarding safety violations.

The contractor's policy and programs regarding alcohol and drugs.

A list of safety equipment that will be provided by the sub-contractor.

A narrative from the contractor's viewpoint that identifies the significant hazards of the job and a listing of the steps that will be taken to eliminate or minimize the potential for accidents (e.g. Job Safety Analysis).

A description of the contractor's programs to comply with applicable regulatory requirements

A description of the contractor's employee training program.

As part of the commitment described in Section 1, Port Pipavav management will make it clear that high-quality safety programmes and high safety performance will be key elements in the selection and post-work evaluation of any contractor.

**Site Training Requirements for contractors**

The information submitted by a contractor in response to Port Pipavav pre-bid request (see Appendix B, Item n) will describe the specific training objectives the sub-contractor intends to accomplish before and during the project. This information should allow Port Pipavav to review for the first time the training priorities of the contractor. Subsequent discussions can then be initiated that will further define and assign responsibility for specific training that Port Pipavav or contractor may need to provide.

**Pre-mobilization Safety Meeting**

After the contract has been awarded, a mobilisation safety briefing will be held between the contractor and Port Pipavav. Port Pipavav representatives will discuss the specific safety requirements of the project with the contractor's representatives who will be directly responsible for the planned work. This discussion is important because the contractor's representatives who attend the meeting may not be the same individuals who prepared the bid or attended the pre-bid meeting.

**Safety Induction of the contractor's Workforce**

Before work is started, Port Pipavav will identify and present to the contractor's management, important safety rules required by Port Pipavav for working on the project. The contractor may use all or part of this information in the safety induction. This information is typically communicated through one or more of the following:

- Written material
- A safety handbook
- Verbal instructions.

Appendix E provides a list of items that are typically included in a sub-contractor safety induction.

**Review of the contractors' Safety Performance**

Port Pipavav will periodically review its job site to verify that Contractors performing work on site have effective safety programmes that address the applicable safety and health regulations and comply with the safety provisions in the contract. Conducting periodic reviews of the job site jointly with the contractors' supervisory personnel is an effective way to assess the contractors' compliance with the contract. Using an evaluation checklist like the one shown in Appendix F can assist in the review effort.

**Maintaining Safety Statistics for contractor Performance**

Port Pipavav awareness of the contractor’s safety performance, by means of job-site injury and illness statistics, provides two immediate benefits:

Incidence rates can be calculated in accordance with the recommendations given in Appendixes C and D. These incidence rates can be used to measure the effectiveness of the sub-contractors' accident prevention programmes.

Demonstrating that the Port Pipavav is interested in safety performance throughout the duration of the project emphasises to Contractors that satisfactory performance extends far beyond pre bid and pre-mobilisation submittals and discussions.

As a minimum, Port Pipavav will request photocopies of all job-site safety statistics and other measures of safety performance; the corresponding man-hours worked; and a copy of the accident investigation report for each on-site recordable case experienced by the contractor while carrying out the contract.

### Safety Performance and Evaluation

Each completed contractor project should be reviewed not only for the quality of the work, adherence to the schedule, and cost but also for the effectiveness of the contractor's safety programme. This overall assessment may be used by Port Pipavav in its future bid lists. Contractors that have demonstrated a higher sustained level of safety performance and have achieved the safety goals established by Port Pipavav should be considered for inclusion in these lists. Contractors should be aware that they will be held accountable for good safety performance.

## CONTRACTOR'S ACTION TO IMPROVE SAFETY PERFORMANCE

### General

Although Port Pipavav expectations can affect the contractor's safety performance, the commitment of the contractor's management to safety is critical because each contractor is in the best position to know how to attain improved safety performance.

### Compliance with Port Pipavav Safety Expectations

The recommendations given in Section 2 will help the contractor to meet Port Pipavav expectations and identify steps that can be taken to improve safety performance.

### Accident Investigation and Prevention

Occupational injuries, illnesses, and incidents should be immediately reported to Port Pipavav Safety Manager; their cause should be identified; and actions should be taken to prevent their recurrence. The contractor should investigate and document accidents, injuries, illnesses, and near misses. To prevent accidents, the contractor is expected to report any workplace hazards, irrespective of their cause, to Port Pipavav Safety Manager.

### Safety Inspections

Performing safety inspections of ongoing work is important to the safety programme success. Although Port Pipavav may conduct periodic surveys of the contractor's work, frequent and thorough safety inspections performed by the contractor are necessary.

### Safety Training

Port Pipavav expects the contractor's personnel to be knowledgeable about their assigned duties. This includes all applicable requirements for safety, health, and fire prevention associated with the performance of their work. As evidence that its personnel have been trained to perform their assigned duties, the contractor should provide documentation of its

employee training. The documentation should include the names of those trained, the course content, the date the course was held, and the names of the instructors.

Note: It is understood that the contractor will review Port Pipavav site-specific safety, health, fire protection and emergency information

**Medical Care**

Prompt initial treatment of occupational injuries can often improve recovery rates and reduce the time away from the job. Contractors involved in large projects should consider first aid training for their senior staff and appointing a paramedic on site. In all cases Port Pipavav contractors will have access to ports medical and emergency care facilities

**Emergency Response Plans**

Proper attention by the contractor to Port Pipavav emergency response plans increases the probability that the desired response will take place. Periodic drills should be conducted to practice and improve the plans and documents to be in place for verification when required..

**Incentive Programs**

Motivational programs, such as awards for a contractor employee or employees who achieve specified safety goals, may improve safety performance when properly implemented. Specified goals may, for example, focus on safety suggestions, Job Safety Analysis, the development of safety slogans, or the identification of hazards.

## EFFECTIVE SAFETY AND HEALTH COMMUNICATION

Ongoing safety and health discussions between Port Pipavav and the contractor are necessary if the contractor safety programme is to be effective. Special safety and health conditions may arise that might not have been discussed or identified during the pre bid and pre-mobilisation safety discussions, the subsequent safety meetings, the safety manuals, or the written safety rules and these conditions should be anticipated as the work progresses. Therefore, open communication must be maintained between Port Pipavav and the contractor, as well as the contractor's work force. No limitations should be placed on the identification and discussion of any safety and health issues. The identification and discussion of relevant safety and health issues should be emphasized throughout the performance of the contract.

## APPENDICES

**Appendix A-** Fatal 5 – Global Operational Standards - Safety

**Appendix B-** Bid Package: Request for Information

**Appendix C** – Safety Evaluation: Injury & Illness Rates

**Appendix D** – Injury and Illness Performance Report

**Appendix E** – Safety Induction

**Appendix F** – Safety Programme Checklist

# APPENDIX A

## GOSS1- TRANSPORTATION

Global Operational Standard - Safety

# Transportation

GOSS1

### Purpose

APM Terminals shall identify and control the risks associated with the movement, the use and maintenance of mobile equipment and pedestrians.

On-site pedestrians and mobile equipment have been involved in a significant proportion of fatal and high potential incidents.

Effective compliance with this standard shall be demonstrated by:

- Identification and management of hazards and risks.
- Minimizing interactions between pedestrians and mobile equipment through safe design.
- Use of technologies to warn / alert operators of equipment.
- Safe efficient operation of vehicles and mobile equipment.
- Establishment of traffic management plans and procedures.
- Managing operator fatigue.
- Effective communication between operators, pedestrians and those supervising mobile equipment operations.
- Establishment of safe procedures for pedestrian/equipment interaction.
- Consistent use of high visibility clothing and reflective tape/ markings on vehicles.

Mobile equipment includes light vehicles such as cars, trucks, vans, utilities, shuttle buses and other personnel vehicles, in addition to reach stackers, TTs, RTGs, large/ small forklifts, straddle carriers, trains etc used in operational areas.

Hierarchy of control.

### 1.0 Systems

1.1 Sites shall undertake risk assessments to identify the exposure to pedestrians and the use of mobile equipment.

GMR03

1.2 Principles of the 'hierarchy of control' shall be used when implementing risk controls to keep all pedestrians safe.

1.3 The following measures shall be adopted as a minimum to control the movement, use and maintenance of equipment and pedestrians.

a. Terminal design and layout.

b. Traffic flow.

c. Access control and no-walk zones.

d. Providing mobile equipment that is fit for purpose.

e. Maintaining mobile equipment in a safe condition.

f. Using mobile equipment in a safe manner.

g. Training and management of mobile equipment operators.

Fit for purpose is a term used to describe equipment that is safe for use and appropriate for the task at hand.

GMR12

APM TERMINALS

STANDARD 1

1.4 Every site shall have an up-to-date traffic management plan and protocols providing for the safe movement of pedestrians and mobile equipment on site.

1.5 Review the plan whenever there is a change to operations or if there has been an incident involving pedestrians and mobile equipment and in any case, at intervals not exceeding one year.

**Pedestrian Safety:**

1.1 No-walk zones shall be established within all container stacking areas during operations. Site procedures shall be defined to incorporate: GMR39 GMR40

a. Planned pedestrian access to container stacking areas (out of operations). Procedures are to incorporate a requirement for mobile equipment to cease operations whenever pedestrians are in the designated area.

b. Where planned access is carried out (such as in the case of manually checking containers, cargoes or carrying out maintenance activities), the location of personnel should be clearly identified, physically indicating their presence to equipment operators. GMR42

c. Physical protections shall be identified and implemented.

1.2 A risk assessment shall be conducted to identify any other zones on the site which should be designated no-walk zones. The risk assessment shall also identify specific operations that require exclusion zones, such as in close proximity to mobile equipment and where loads are being handled, e.g. General cargo, wharf apron. GMR60 GMR58

1.3 The size of exclusion zones shall be based on the outcomes of the risk assessment and shall consider the potential for unexpected and/or uncontrolled movement of the load such as swinging, bouncing or rolling (Identification of drop zones).

1.4 Temporary operational zones are clearly defined and restricted as no walk zones (i.e. general cargo operations).

1.5 A terminal layout plan shall be developed which designates all areas as either:

a. **Zone A** Unrestricted zone that allows free access to any person, or Transportation

b. **Zone B** Walking is permitted only by persons who are aware of the risks and have been trained, inducted, are wearing PPE and have been authorized to do so; or

c. **Zone C** "No Walk" zone where walking by any person at any time is strictly prohibited other than in accordance with Area Isolation procedures i.e. all Mobile Equipment is stopped from entering that area.

1.6 Pedestrian segregation shall be established where multi modal operations such as container, general cargo, Container repair yards and bulk operations are in existence.

1.7 When a pedestrian is in any area where mobile equipment is operating or likely to operate and carrying a radio or mobile telephone, they are only permitted to use the communication device once they have reached a pre-determined and demarcated safe zone.

1.8 Clearly identifying areas where personnel work, such as twist lock stations, and making them highly visible to operators.

1.9 High visibility clothing. Pedestrians (employees, contractors and visitors) shall wear high visibility clothing in designated areas. ⇨ GMR22

1.10 Personal entertainment devices e.g. phone, players, shall not be used in the work environment.

**Mobile equipment Safety:**

2.0 Mobile equipment operated by APM Terminals or contractors shall be maintained in safe condition.

2.1 Critical safety devices shall be identified for each piece of equipment.

2.2 Procedures shall be in place for the operator or qualified person to complete and document a pre-operational check covering critical safety devices identified as 'no-go', no less than every 24 hours. ⇨ GMR17

2.3 In addition to 'no-go' items, equipment shall not be used if any other safety critical mechanical or electrical devices such as brakes, anti-collision devices or emergency stops are not working.

2.4 Use of visible identification system for all mobile equipment, such as numbering on all sides.

2.5 Controls should be identified to highlight mobile equipment (e.g. reflective tape, flags, lights, beacons)

2.6 Regular and preventative maintenance by qualified maintenance personnel, that includes all fitted safety and warning devices.

2.7 Site procedures shall be developed to ensure operators of mobile equipment:

a. Are competent in use of the equipment.

b. Check loads are stable and/or secured before they are moved.

c. Remain at the mobile equipment controls whilst a load is attached.

d. Report any damage or problems they are having with mobile equipment as the problem becomes evident.

e. Know and comply with site traffic management protocols.

f. Do not deactivate any limit switches or other safety devices during regular operation of mobile equipment.

g. Do not leave equipment idling unattended unless doing so is in accordance with defined procedures for equipment maintenance.

h. Do not engage in activities that will distract them from their duties.

i. Ensure all equipment guarding is in place and suitable for the task.

GMR21

All load bearing/lifting equipment shall be fit for purpose and in line with OEM &/or engineering requirements.

2.8 Site procedures shall be developed to ensure maintenance activities require the use of barriers and isolation measures including:

a. Lockout and Warning/out of service tags when equipment is not in safe working condition.

b. Barriers, hazard lighting and warning signs.

c. Wheels are isolated (e.g. chocks) when work is carried out.

d. Trestles/supports to secure hydraulic equipment, load bearing equipment, hydraulic rams and attachments from uncontrolled descent or movement.

2.9 Traffic management protocols shall prescribe:

a. Site speed limits. A maximum of 30 km/h (20 mph) applies in all APM Terminals sites. Lower limits should be selected if visibility, load stability or braking distances pose a hazard. Speedometers or other methods for measuring speed should be installed on all items of mobile equipment.

GMR38

b. Overtaking and right-of-way practices.

c. Systems to control movements of mobile equipment and pedestrians during standard operations and during activities associated with maintenance, refueling, parking, boarding or disembarking mobile equipment, accessing refrigerated container areas and fumigation.

d. Safe following distances based on operational circumstances and near sight (blind spot) limitations.

e. Illumination of running lights at all times when mobile equipment is operating. ⇨ GMR35

f. Parking procedures that require the load/attachment to be lowered as far as practical; parking brake on and engine off; use of wheel chocks where required and avoid parking on ramps.

g. External truck drivers designated safe areas for locking/unlocking of containers, tarping / tying down and designated safe areas in straddle operations.

h. One way sections and no entry areas. ⇨ GMR50

i. Monitoring and communication processes including signaling to ensure that operators of mobile equipment know the location of people or equipment in the area, in particular, cater for operator blind spots.

j. Restrictions on mobile equipment from pedestrian areas at times when there are people moving about.

k. Reference any traffic management regulations

2.10 Fatigue management procedures are in place for APM Terminals truck drivers required to drive outside our premises.

2.11 Formal procedures shall be defined to manage persons under the influence of drugs or alcohol.

2.12 Fitness for work program should be implemented to ensure personnel can perform their tasks safely. The program should aim to minimize impacts from:

a. Environmental conditions such as heat
a. Fasting
b. Fatigue
c. Medication and other medical conditions such as color blindness and epilepsy.
d. Drugs and alcohol

## 2.0 Equipment

Roads, walkways and terminal layouts shall be designed to minimize risks to pedestrians and shall include, but not be limited to:

a. Transportation with shuttle buses or vehicles — GMR43

b. Using physical barriers (e.g. concrete jersey barriers) to identify and separate pedestrians and workstations from mobile equipment, including main gate, pre-trip — GMR42

c. Installation and maintenance of road traffic control signs including directions and road separation markings for one and two way traffic flow, where applicable.

d. Clearly defining pedestrian walkways and ensuring they remain unobstructed. — GMR39

e. Painted walkways should be at least one meter wide, bounded on each side with a continuous line and formed with alternating colored stripes. Use of a picture depicting a person walking is encouraged. — GMR40

f. Locating workstations, pinning stations, equipment, bins, racks etc. in areas clear of the regular paths of mobile equipment.

g. Designating safe areas for external trucks to pin and unpin loads outside operational areas. Use of hard barriers should be used where ever possible.

h. Installing visibility aids such as bollards on blind corners and convex mirrors on intersections, blind corners and building entries/exits.

i. Maintaining lighting levels adequate for the range of operations carried out, including night operations. Ensuring minimum lighting of 10 lux on access routes for people and mobile equipment and a minimum lighting of 50 lux in operational areas where people and mobile equipment work in close proximity (Most jurisdictions specify local legal requirements for lighting levels (lux) in work areas). — See ILO – "safety and health in ports". — GMR45

2.1 Installing speed reduction measures (e.g. humps), to assist in reducing vehicle speeds in known areas of pedestrian activity.

2.2 Whether mobile equipment is owned, leased or hired, it shall only be used when in a safe condition.

2.3 Mobile equipment shall only be used for the purpose it was designed for, and in accordance with the suppliers instructions.

2.4 Leased or hired mobile equipment used on site shall comply with local legislative requirements and as a minimum have;

a. Maintenance records including relevant test certificates

2.5 ROPS (Roll over protection system) and FOPS (Falling object protection system) should be fitted for mobile equipment where identified through risk assessment or required by legislation.

2.6 Safety devices required by law or identified through APM Terminals risk assessments shall be fitted to mobile equipment. The minimum ranges of safety devices to be fitted and used are detailed below.

GMR34, 35, 36, 27

| Item | Mandatory for all Equipment |
|---|---|
| Speed Limiter < 30 Km/h | Yes |
| Reversing alarms | Yes |
| Anti-slip stairs and platforms | Yes |
| Headlights wired always on | Yes |
| Roll over protection for cab | Yes |
| Guard frame for rear of cab protects against trailer overrun | Yes |
| Three point brightly coloured seat belts | Yes |

2.7 External third party vehicle entering through APM Terminals should comply with local legislative requirements.

"Equipment minimums" as indicated in GMR 2014. An updated and more exhaustive version is expected for 2015.

## 3.0 People

3.1 Inductions shall be conducted for all employees, contractors and visitors, including external truck drivers, before first entry.

GMR11

Safety induction program (to be released in 2015).

3.2 These inductions shall include requirements of the traffic management system and other pedestrian safety control measures.

3.3 Changes to the traffic management protocols shall be communicated to the workforce and other relevant personnel.

3.4 Employees and contractors operating mobile equipment for APM Terminals shall:

GMR12

Refer to HR for training related matters.

a. Be trained and assessed as competent before operating mobile equipment.

b. Have their competencies regularly assessed.

c. Hold a current and relevant permit, license or certificate of competency as required by local legislation.

3.5 Truck drivers, including third party truck drivers entering APM Terminals sites shall not bring other non-inducted people or passengers such as children, helpers or pets on site and shall;

a. In forklift, reach stacker, RTG and RMG container handling operations, remain in the vehicle while the truck is being loaded or unloaded.

b. In facilities where the truck drivers are required to leave their vehicles, such as straddle operations and general stevedoring, implement procedures to ensure drivers remain in designated safe areas and comply with pedestrian safety requirements for operational areas for the duration of their visit.

c. Only secure or un-secure loads in areas designated for this purpose and in a safe manner.

d. Not be permitted to enter or leave the site unless the load is adequately secured.

3.6 APM Terminals drivers operating transport vehicles on public roads:

a. Shall comply with local legal requirements, such as holding special licenses or permits and carrying specialised safety equipment when transporting dangerous goods.

b. Shall notify management if their license is suspended or cancelled.

c. Shall provide proof that their licenses and permits are current.

## GOSS2- SUSPENDED LOAD & LIFTING

Global Operational Standard - Safety

# Suspended Loads and Lifting

GOSS2

### Purpose

APM Terminals shall use appropriate equipment and safe system of work to minimize the likelihood of personnel being injured by swinging, shifting or falling loads during all load handling operations.

The handling of loads has been a factor in a significant proportion of fatal and high severity/potential incidents. Effective compliance with this standard will be demonstrated by:

- Adequate identification and management of hazards and risks.
- The appointment of a 'person in-charge' of the load handling operations.
- Selection and correct use of appropriate lifting gear and attachments to handle loads.
- Safe operation of cranes and other equipment, including ships gear and lifting devices.
- Use of safe load slinging techniques and slinging configurations which will result in safe , secure and efficient cargo movement.
- Effective communication between all people working in and around a lift.
- Safe positioning of personnel when working near loads.
- Ensuring that vehicles are not permitted to enter or leave the site unless loads are adequately secured.

PIC: Person in charge, authorized person (e.g. supervisor, rigger...) to supervise the lifting/ rigging operations.

Hierarchy of control.

### 1.0 Systems

1.1 Sites shall undertake risk assessments to identify the hazards associated with handling loads. The following controls shall be adopted as a minimum to control the risks associated with handling loads:

GMR03

1.1.1 Provision and maintenance of equipment required for safe handling of loads.

1.1.2 Correct selection and use of equipment required for safe handling of loads.

1.1.3 Ensuring the competency of operators handling loads.

GMR26
GMR17
GMR21
GMR12

1.2 Further risk assessments shall be conducted and documented to identify any other site specific hazards and controls necessary for safe load handling operations.

Project stack SOPs (current and/or applicable version of the SOP) are implemented.

1.3 Sites shall have defined procedures requiring:

1.3.1 An operator or qualified person to perform a visual and operational check of the lifting gear/equipment and handling attachments immediately before use; and when using ship's gear, ensure it is in survey.

APM TERMINALS

STANDARD 1

1.3.2 A nominated authorized person to perform a thorough check of the lifting gear and attachments after use.

GMR29

GMR17

1.3.3 Operators to report any damage or mechanical problems they are having with equipment as they become evident.

1.3.4 Unsafe equipment to be removed from use and appropriately tagged out of service.

1.4 Sites shall establish defined site procedures for load handling operations that specify, as a minimum, the following requirements:

1.4.1 Safe operating procedures for the different types of cargoes handled such as containers, tubular/cylindrical loads, bulk and bagged cargoes or irregularly shaped loads.

1.4.2 Loads shall not be carried or lifted over personnel or vehicles, and personnel shall never walk under a suspended load.

GMR48

1.4.3 Minimizing personnel contact with moving or suspended loads (to guide them into position etc). For example, use tag lines in operations requiring the positioning of personnel where there is the risk of crush injury from a moving load.

Tag line: related to general cargo, line used to assist in the guiding and placement of load by personnel, ensuring separation between this last and the load.

1.4.4 The load must not exceed the SWL of the equipment in use.

1.4.5 Operators must not engage in activities that will distract them from their duties. Mobile phones or personal entertainment devices of any kind must not be used when handling loads.

SWL: Safe work load is manufacturer's recommended maximum weight load for a line, rope, crane or any other lifting device or component of a lifting device.

1.4.6 Defined lines of communication and responsibility shall be established prior to proceeding with a lift that includes:

a. A competent person being appointed as the 'person in charge' of the load handling operations.

b. The 'person in-charge' being the only person signaling and directing crane operations at any time. This applies other than in the event of an emergency, when any person can signal the driver to stop.

GMR58

c. A clear means of visually identifying the 'person in charge'.

d. The 'person in-charge' should position themselves so that a clear line of sight is maintained at all times with the equipment operator, the load itself and any other personnel assisting with the lift or within the work area.

e. Where a clear line of sight is not achievable between the 'person in charge' and the equipment operator and the load, then an alternative safe method of work

shall be provided and radios must be used. In these circumstances the equipment operators are to be instructed not to move any loads until such time as the 'person in charge' has effectively communicated that all persons have been removed from any crush zones and it is safe to move the load.

f. Should it be necessary, a defined process for handing over responsibility for issuing instructions from one person to another i.e. the 'person in-charge' to a 'new person in-charge'.

1.5 The 'person in-charge' is responsible for directing load handling operations and prior to commencing the load transfer, shall ensure:

a. That all crush zones are identified and that no person is permitted inside a crush zone during any part of the lifting or lowering operation.

b. Safe positioning of personnel working near a load (such as in a vessel hold).

c. Removal of any obstruction to the path of equipment and the safe shifting of a load.

d. The load is correctly slung, in balance, secure and any load swing is minimized before lifting from or lowering into cargo spaces i.e. crane/hook attachment is set in plumb with the center of gravity of the load to prevent swing when load is lifted.

e. In conjunction with the crane operator, the ship's heeling/listing is monitored during load handling and action is taken to minimize the risk of uncontrolled shifting of loads, equipment and cargo.

f. Crane operators are directed where their visibility is impaired or ship's gear is being used.

g. Any loose items must be removed before transferring the load, for example items left on hatch lids or on top of loads ready for transport.

h. Use of personal protective equipment (PPE).

i. If there is any doubt about the safety of a load – DO NOT LIFT.

1.6 Fitness for work program should be implemented to ensure personnel can perform their tasks safely. The program should aim to minimize impacts from:

a. Environmental conditions such as heat.
b. Fasting.

c. Fatigue.
d. Medication and other medical conditions such as color blindness and epilepsy.
e. Drugs and alcohol.

## 2.0 Equipment

2.1 Load handling equipment shall only be used if it is fit for purpose. This applies to equipment that is owned, leased or hired.

2.2 Safety devices shall be fitted to all load handling equipment and shall include, but not be limited to:

Fit for purpose: appropriate, and used in line with the OEM requirements, for its intended use.

a. Labels or placards indicating control functions on cranes.

b. Safe working load (SWL) stamps/tags on all attachments.

c. Limit switches on hoists and jibs.

d. Emergency stop buttons.

e. Warning bells or flashing lights that indicate equipment movement.

f. Additional safety devices required by law, or that have been identified by APM Terminals or through the risk assessment process.

Refer to equipment minimums.

2.3 All load handling equipment at APM Terminals sites shall be maintained in a safe condition and in accordance with manufacture's recommendations (or agreed PM schedules) through:

GMR30

PM: Preventive maintenance.

a. The use of suitably qualified maintenance and operations personnel.

b. Documented inspection and preventative maintenance programs.

c. Use of a lifting gear register maintained in compliance with local statutory requirements by a nominated, authorized person.

d. Maintaining adequate walkways, railings and steps/grab handle combinations to access unloading/loading operations as required.

e. All parts & assemblies attached to container handling equipment are inspected for the risk of falling objects as part of the preventive maintenance schedule.

GMR52

f. Manual spreaders for container operations are prohibited at APM Terminals sites.

GMR47

g. For operations involving ship cranes, only spreaders owned by APM Terminals shall be used.

# Suspended Loads and Lifting



## 3.0 People

3.1 APM Terminals employees and contractors handling loads and directing load handling operations shall:

a. Be trained and assessed as competent before carrying out operations.

Refer to global HR training program: ReQuip.

b. Have their competencies regularly assessed.

GMR15

c. Hold a current and relevant permit, license or certificate of competency as required by local legislation.

GMR 12

d. Be trained in the site specific protocols and obey all related rules.

3.2 In addition, the personnel issuing signals during load handling operations shall hold clearly defined responsibilities for monitoring the safety of others in areas where load handling operations are taking place.

## GOSS3- WORKING AT HEIGHT

Global Operational Standard - Safety

# Working at Heights

GOSS3

### Purpose

APM Terminals shall protect employees and contractors by controlling the risks associated with working at height. We shall comply with all local legislative requirements, and in some jurisdictions exceed those requirements.

Work at height means work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury.

Working at height has significant potential for fatal and serious incidents. Effective compliance with this standard will be demonstrated by:

- Eliminating or minimising the need for work to be done at height.
- Use of a safe system of work comprising appropriate fall prevention and protection measures.
- Identification and control of risks with different cargo presentations
- Adequate identification and management of hazards and risks.
- This standard shall be applied to any work carried within 2 meters of an unprotected edge which exposes to a fall of 2 meters or more

A Safe System of work is a formal procedure which results from systematic examination of a task in order to identify all hazards. It defines safe methods to make sure that hazards are eliminated or risks are minimised.

APM Terminals will work with stakeholders (such as shipping lines), to continue to research and identify safer practices for working at heights, in particular for working with cargo on board vessels.

### 1.0 Systems

1.1 Sites shall undertake risk assessments to identify hazards associated with working at height. These risk assessments need to consider both the risks to those working at height, and to persons working in the surrounding environment who may be struck by falling objects (i.e. twist locks, lashing bars, tools etc).

Hierarchy of control.

1.2 Eliminating work at height is the most effective way to control risk and should be considered in each risk assessment. Consideration should be given to the use of technical solutions.

1.3 Training and assessment of personnel required to work at heights shall include, but not be limited to:

1.3.1 Identification of the hazards associated with working at height, including other hazards present whilst carrying out work at height, for example, electrical hazards or those created by rain and high winds.

1.3.2 Identification and use of fall prevention and protection methods and equipment including: pre-use inspections; selection of suitable anchor points; what to do if a suitable anchor point is not available; use of harnesses, and the fitting of self-retracting lines.

GMR03
GMR02
GMR23
GMR51
GMR52

APM TERMINALS

STANDARD 1

1.3.3 Portable ladder safety; in particular, maintenance, tie off or person holding the ladder and 'three points of contact' during any ascent or descent.

1.3.4 Emergency response and rescue procedures, including rescue of a suspended person connected to fall arrest equipment.

1.3.5 Appropriate methods to secure tools and objects to prevent them from falling.

1.3.6 Awareness of surroundings, surfaces and maintaining the safety of others in the area.

1.4 Site procedures shall be developed to ensure selection of safe systems of work:

1.4.1 Where fall prevention measures (safety cages, elevated work platforms or scaffolding) take precedence over systems relying on fall protection (harnesses, self-retracting lanyards).

1.4.2 Where fall prevention and protection equipment is designed for the work environment and adequate for the task.

1.4.3 With a safe method of access.

1.4.4 That complies with local legislative requirements.

1.4.5 Are suitable for the physical attributes of potential users.

1.4.6 Adequate means of communication

1.4.7 Adequate level of supervision

1.5 Systems of work incorporating the use of self-retracting lines, full body harnesses, vertical and horizontal static lines and the use of anchor points shall be established and implemented when fall prevention measures cannot be used. These systems shall incorporate requirements ensuring:

1.5.1 In works of lashing and unlashing containers at the vessel's wing, where no guard-rail is available, wearing a harness with double lanyard is compulsory, and it should be attached to a structure of the vessel itself or to a container door.

1.5.2 Works on the edge of open hatches will only be performed after a ship's guard-rail is installed. If it is not possible to install the guard-rail, workers who have to go close to the edge of open hatches should carry out the activities wearing a safety harness attached to structures of the vessel or other suitable anchor point.

Suspension Trauma is a risk associated with falls whilst wearing a harness. Fatal injuries can be sustained within 5 minutes if a casualty is unconscious and in a prone position. If a fall occurs and the person is conscious, they should be encouraged to keep moving within the harness.

Right tools. Right job.

Self-retracting lines arrest a falling person through the use of an inertia reel mechanism and energy absorber.

1.5.3 Maintaining connection with a fixed point or static line at all times.

1.5.4 Use of dual lanyard arrangements whilst detaching and re-attaching lanyards at height.

1.5.5 Limiting any free fall to 2 meters or less.

1.5.6 Consideration of the pendulum effect (the arc around an attachment point that a person would swing if they fell).

1.5.7 That the fall arrest system activates before the falling person collides with a surface.

1.5.8 Anchor points shall be solid structures.

1.5.9 The use of a buddy system.

1.5.10 Persons who are trained to use work at height equipment shall be trained to identify adequate anchor points.

1.6 Ship's gangways must be fitted with nets and secured

1.7 Where activities involving working at heights are being carried out, with the exception of vessels under operation,where people maybe working or walking and there is potential for materials, tools or equipment to fall, then the area shall be isolated.

1.8 Where not covered by a safe operating procedure, a permit to work system should be used to control movement and prevent people and mobile equipment coming into the vicinity of an unprotected edge.

1.9 Work at height register shall be maintained

1.10 Fitness for work program should be implemented to ensure personnel can perform their tasks safely. The program should aim to minimize impacts from:

a. Environmental conditions such as heat
a. Fasting
b. Fatigue
c. Medication and other medical conditions such as color blindness and epilepsy.
d. Drugs and alcohol

Anchor points- Suitable for the safe anchoring of more than one person should be clearly identified.

Buddy systems require people to work with partners and remain in line-of-sight of others.

GMR02

PTW Manual.

A work at heights resister details the type of fall protection equipment and inspection requirements.

# Working at Heights



## 2.0 Equipment

2.1 Work cages shall be used as the means of control for container top working. Other means of control shall be assessed for general cargo or ship cranes operations.

2.2 When using personnel work cages the following requirements shall apply:

2.2.1 A full body harness shall be worn AND be attached at all times while working in and from any work cage such as, work cages.

2.2.2 A secondary attachment point shall be used to attach the cage to the spreader.

2.2.3 Work cages at all times shall be connected to the spreader or lifting attachment and under the crane drivers controls or CHE operators control.

2.2.4 When the work cage is attached, the crane speed should be reduce to a maximum of 25%

2.3 When using an elevated work platform/scissor lift:

2.3.1 A full body harness shall be worn and attached to an anchor point at all times; and

2.3.2 Personnel using the platform must be certified in its use (as required by local legislation). If there are no legal requirements, they must be assessed as competent by APM Terminals

2.3.3 Platforms shall be brought back to safe height before moving (as per OEM guidelines)

2.3.4 Fencing, guardrails, scaffolding, MEWPs and staging also protect against falls.

2.4 When scaffolding is used, the following shall apply:

2.4.1 Scaffolds are erected and tagged by a competent person

2.4.2 Scaffold are dimensioned and built to support safely the workloads it will receive

2.4.3 Scaffolds are secured and used on even surface

2.4.4 Scaffolds that are higher than four times the smallest width of its base are to be anchored to the building or to a strong enough structure, or should be cable-stayed

2.4.5 Scaffolds have a guard-rail system and toe-board

GMR31

GMR46

Work cages are defined as enclosed structures attached to lifting equipment for the safe transportation and working of personnel.

See ILO Code of practice – Safety & Health in ports.

(M)EWP: (Mobile) elevated work platforms.

2.4.6 Mobile scaffolds can only be used on flat surfaces and with their casters locked

2.4.7 Mobile scaffolds are to be wedged and anchored while in use to avoid their displacement and collapse

2.4.8 Mobile scaffolds are not allowed to be moved while there are persons or materials on the work platform

2.4.9 The scaffolds have their access ladder coupled to its structure

2.4.10 Scaffolds have all access points leading to the platform from inside.

2.4.11 Safety harness with double lanyard are worn when assembling, disassembling and working on the scaffolds.

2.4.12 Scaffolds should be in perfect use condition and without corrosion and a cracked or distorted structure

2.4.13 Scaffolds are assembled far from electrical installations and away from where they can be reached by machines or equipment

2.4.14 The use of ladders or other means on the scaffold work platform to reach higher points is strictly forbidden

2.5 When using a ladder the following shall apply:

2.5.1 Be on stable level ground.

2.5.2 Have non slip feet.

2.5.3 Be secured or supported by third party.

2.5.4 Must be placed at a safe angle – 75o to the horizontal.

2.5.5 Ladder extends 1 meter beyond the landing place.

2.5.6 Be included in the maintenance schedule and inspected prior to use.

2.6 When using baskets, the following shall apply:

2.6.1 Have a secondary attachment

2.6.2 Defined anchor points

2.6.3 When slinging with a multi-legged sling it must be assumed that only two of the sling legs are taking the load. Additional legs do not increase the SWL of the sling assembly

If you are unsure which type of equipment to use, once you have considered the risks, the Work at height Access equipment Information Toolkit (or WAIT) is a free online resource that offers possible solutions. http://www.hse.gov.uk/work-at-height/wait/wait-tool.htm

2.7 Fall overboard protection

2.7.1 Life rings with heaving line must be available and ready for use on quaysides/jetties with staff trained in their use.

2.7.2 Life vest/PFD are required and in use for all waterside exposed work areas.

2.8 Fall prevention and protection equipment shall be:

2.8.1 Maintained in accordance with manufacturer's recommendations.

2.8.2 Stored correctly to prevent damage.

2.8.3 Tested and tagged every six months (including anchor points), or more frequently if required by local legislation.

2.8.4 Visually inspected before and after use by a competent person.

2.8.5 Fall protection equipment shall be inspected and assessed to record the equipment condition and then destroyed following a fall or where there is evidence of excessive wear or mechanical malfunction.

Manufacturer recommendations should always be consulted to assess post fall reuse of equipment.

2.8.6 Records of inspection, maintenance and testing of all fall prevention and protection equipment shall be maintained.

2.8.7 Harnesses are the only acceptable form of equipment to be worn. Body belts are prohibited.

## 3.0 People

3.1 Employees or contractors working on behalf of APM Terminals shall use fall prevention or protection measures when they are:

3.1.1 Working within 2 meters of an unprotected edge which exposes them to a fall of 2 meters or more; or

3.1.2 Required to work on or near fragile surfaces, where they may fall more than 2 meters through the structure.

3.2 The competency of persons required to use safety cages; elevated work platforms and harnesses shall be regularly assessed (including contractors that undertake regular work and other labor).

3.3 Persons required to supervise work at height activities shall have a basic understanding of the inherent hazards and mitigations

3.4 When engaging contractors to undertake irregular tasks (for example, construction or crane overhaul work), an APM Terminals representative shall review the evidence of their competence to work safely at heights.

## GOSS4- STORED ENERGY

Global Operational Standard - Safety

# Stored Energy

GOSS4

### Purpose

APM Terminals shall control the risks arising from the uncontrolled release of stored energy.

Inadequate isolation of energy sources has figured in a significant proportion of our high potential and fatal incidents. Effective compliance with this standard will be demonstrated by:

- Identification and recognition of sources of potential stored energy.
- Introduction and enforcement of lockout/tag out systems.
- Ensuring the correct equipment is isolated for the particular task being undertaken.
- Ensuring that all stored energy is released or decayed after isolation.
- Effective communication, training and competence of personnel.
- Ensuring complacency does not affect compliance with isolation systems.

Stored Energy that may require isolation include electrical, mechanical, hydraulic, pneumatic, chemical, gravitational, thermal and radiation sources.

Hierarchy of control.

### 1.0 Systems

1.1 Sites shall undertake risk assessments to identify the hazards associated with working with and around uncontrolled energy sources. Controls for minimizing risk include:

GMR03

a. Providing isolation systems that are safe to use.

b. Developing isolation procedures that provide a safe system.

c. Using isolation systems in a safe manner including the use of specific PPE such as arc resistant clothing or foot wear.

d. Training and managing operators required to use the isolation system.

Procedures must include 'test for dead' to ensure zero energy remains in the system.

1.2 The purchase, design and lease of equipment shall give due consideration to meeting the requirements of this Standard.

1.3 All sites shall have a documented isolation and lockout/tag (LOTO) out system that applies equally to all equipment, activities and all personnel on site, including contractors.

GMR28

1.4 All sites shall have machine specific energy isolation procedures (LOTO) for all equipment with one or more energy sources. The only exemption is equipment or machinery that is of a single energy source controlled with a cord and plug.

APM TERMINALS

STANDARD 1

1.5 All written procedures require a verification step to determine the energy sources have been isolated. For example, using a voltage meter to check electrical or bleeding all air out of the system.

GMR49

Reefers halide testing APMM SOP.

1.6 Specific procedures shall be developed (based on a risk assessment process and approval) to mitigate exposure in special cases where it is not possible to achieve a zero energy state, or not possible to use a locking device.

1.7 A procedure shall be in place for isolation involving more than one person (group isolation).

1.8 A procedure shall be in place for transfer (hand-over) of the isolation between personnel and, in particular shift changeovers, this shall be included on the permission to work.

1.9 A system shall be in place which formally documents 'clearances' which allow people to recommence work following the necessity to isolate.

Only used where personnel have left locks/tags in place and left the site or in an emergency.

1.10 Formal procedures shall be in place which requires the investigation, reporting and subsequent removal of personal locks or tags by any person other than the owner of those locks/tags.

See LOTO SOP.

GMR21

1.11 The isolation procedures shall be periodically reviewed and documented to ensure that any previously unidentified 'gaps' are identified and rectified.

1.12 A system shall be in place for the management of change of equipment and/or processes for the isolation system, or installed isolations, and shall include specific steps to assess the impact of changes and the risk associated with these changes. This system shall include, but not be limited to:

Competencies for the tag out system must include a procedure for the removal of tags.

a. Changes to process conditions.

b. Purchase/installation of new equipment.

c. Modifications to existing equipment.

d. Internal and external incident findings and learning; and the need for revision of the system and/or guideline and/or additional training.

1.13 All sites working with split rim multi piece assemblies shall comply with global requirements where applicable.

1.14 Fitness for work program should be implemented to ensure personnel can perform their tasks safely. The program should aim to minimize impacts from:

a. Environmental conditions such as heat.
b. Fasting.
c. Fatigue.
d. Medication and other medical conditions such as color blindness and epilepsy.
e. Drugs and alcohol.

## 2.0. Equipment

2.1 The purchase, design and lease of equipment shall give due consideration to meeting the requirements of this Standard.

2.2 All hired and contracted equipment shall be reviewed to ensure that it meets site isolation requirements and the requirements of this standard, before use on site.

Fit for purpose: appropriate, and used in line with the OEM requirements, for its intended use.

2.3 Designated isolation points shall be identified and clearly labelled to identify the circuit or system over which they have direct control. These shall be identified through the risk assessment process, the energy source and magnitude (e.g. 480 volts, 95 PSI…), and labelling must be 'fit for purpose'.

2.4 Where practical, isolation should provide positive protection and be achieved by the use of permanent or temporary locking devices or establishment of a physical barrier or separation.

GMR37

Air cage SOP.

2.5 Where this cannot be achieved, a tagging system, minimizing the potential for tags to be inadvertently removed, shall be in place.

2.6 All tags and locks used in energy isolation shall be properly labeled or marked to identify the person(s) performing work under the energy isolation procedure.

2.7 All PPE shall be fit for purpose and used in line with the manufacturers instructions.

## 3.0 People

3.1 Employees and contractors required to undertake any form of Isolation for APM Terminals shall:

a. Be trained and assessed (including simulated field assessment) as competent before conducting isolation procedures.

b. Have their competencies regularly assessed.

c. Be regularly (and formally) updated of any changes to isolation systems that may affect the work they undertake.

3.2 Specific roles for employees with responsibilities for isolation (in particularly electrical, mechanical or process isolation) shall be defined, documented and agreed to.

3.3 A general awareness training shall occur for all employees that work with or around equipment that may be locked and or tagged out.

## GOSS5- CONTROL OF CONTRACTORS

Global Operational Standard - Safety

# Control of Contractors

GOSS5

### Purpose

All contractors and sub-contractors shall work in accordance with APM Terminals and site-specific requirements.

Contractors have been involved in a significant proportion of fatal and high potential incidents. Effective compliance with this standard will help prevent/reduce contractors related incidents and shall be demonstrated by:

- Selection of contractors with appropriate experience and standards.
- Contract management; for example, defining responsibilities and use of a formal contract.
- Effective and sufficient monitoring of contractor performance, behaviours and compliance with site rules.
- Effective communication between contractors and those involved in operations.
- Adequate identification and control of hazards and risks.

### 1.0 Systems

1.1 APM Terminals shall appoint a site representative responsible for managing each contractor or contract.

1.2 Before discussions with any potential contractors, the APM Terminals site representative shall define the scope of works and performance criteria. This shall include identification of hazards, assessment of risks and the accepted risk control measures relevant to the proposed works.

1.3 The rigor used to select and manage contractors is to be based on the potential risks from their work, the risks they may pose to the environment and the risks arising from their interaction with site operations. Special consideration is to be given to exposure of people to any of the Fatal 5.

1.4 Each site shall develop formal selection and evaluation procedures to assess the capacity of potential contractors to meet APM Terminals standards and local regulatory requirements. These procedures shall include:

a. Providing the potential contractor with information on the hazards and accepted risk control measures relevant to the work to be carried out. Where this due to an emergency this is not practicable, they are accompanied by a competent APM Terminals employee at all times.

Hierarchy of control.

In countries where the local rules and regulations are more extensive than the APM terminals standard, these need to be followed. If local rules and regulations are less than the APM Terminals standard, locations need to comply to the APM terminals standard.

APM TERMINALS

STANDARD 1

b. Reviewing contractor capabilities to manage risks in accordance with APM Terminals standards. This should include reviewing information on previous performance such as fatality rates such as risk management approach, incident management, safety or environmental prosecutions and results from reference checks.

1.5 Each site shall develop a contractor management systems to ensure:

a. The contractor is provided with an opportunity to identify hazards associated with the proposed works, and to review relevant safety and environmental risk management material (such as risk assessments and site procedures).

b. The contractor's risk management processes are integrated with site processes. Where in an emergency this is not practicable, they are accompanied by a competent APM Terminals employee at all times.

See Contractors Safety Management project.

c. The contractor has obtained permits and/or licenses necessary for the work.

d. The equipment used by contractors is fit for purpose (whether provided by the contractor or APM Terminals), and the personnel are competent in its use.

e. All contractor personnel receive site induction/orientation training, or in instances where an induction is not practicable, they are accompanied by a competent APM Terminals employee at all times.

f. Each site shall develop a contractor site induction/orientation program and the content shall be drawn from the following:

g. Formal and regular communication mechanisms with the contractor are defined, in particular, when there is a potential interaction between site operations and contractor activities.

h. Contractor performance is monitored to ensure that all safety and environmental requirements are met. Monitoring should include regular inspections, observations and audits of the work.

i. Formal, defined actions are taken where there are failures in contractor performance, including any failure to comply with site requirements.

j. Contracts should provide for commercial consequences such as penalties, bonuses or contract termination based on safety and environmental performance criteria.

k. The working environment and risks particular to site operations, including the fatality potential risk factors (Fatal 5 Standards), safety rules and procedures.

l. Traffic management protocols.

m. Requirements for the use of personal protective equipment.

n. Working in isolation or alone

o. Management of hazardous substances, prevention of potential soil contamination and spill response.

p. Waste disposal.

q. Protection of waterways and other applicable environmental conditions.

r. Access requirements including security controls, restricted access areas and site requirements for physically identifying or isolating contractor work areas.

s. Communication mechanisms.

t. Reporting lines.

u. Emergency response procedures.

v. Procedures for reporting hazards and incidents.

w. Works permit procedures.

1.6 Sites shall maintain a list of approved contractors who have demonstrated an ability to conduct their activities in accordance with APM Terminals standards.

1.7 The performance of contractors on this list shall be reviewed at least annually.

1.8 Fitness for work program should be implemented to ensure personnel can perform their tasks safely. The program should aim to minimize impacts from:

a. Environmental conditions such as heat
a. Fasting
b. Fatigue
c. Medication and other medical conditions such as color blindness and epilepsy.
d. Drugs and alcohol

## 2.0 Equipment

2.1 Mobile equipment and tools used by contractors shall be in safe working order and be under a regular maintenance schedule (whether provided by the contractor or APM Terminals).

2.2 Mobile equipment and tools used by contractors shall be fit for purpose and comply with the relevant requirements of the APM Terminals Fatal 5 Standards.

## 3.0 People

3.1 APM Terminals employees with responsibilities under the Contractor Management Plan shall receive training and be deemed competent in these areas.

3.2 Contractors shall be trained and hold the appropriate licenses/ certificates for all plant and equipment they operate.

## APPENDIX B- BID PACKAGE: REQUEST FOR INFORMATION

As part of the contractor's proposal and bid, the following safety-related information may requested from the contractor by Port Pipavav:

| | | YES | NO |
|---|---|---|---|
| **Respect for laws and regulation** | | | |
| 1 | Are you in Compliance with required Indian and international standards? | | |
| 2 | Do you have HSE certificates ISO 9001 and ISO 14001 | | |
| 3 | Do you have HSE certificates like OSHAS 18001 | | |
| **Responsibilities of Management** | | | |
| 4 | Do you have Corporate HSE Policy, HSE Management System | | |
| 5 | Do you have HSE organization chart (with names), job description, … | | |
| 6 | Do you have Site communication organization plan (safety instructions, HSE meetings, site talks…) | | |
| 7 | Do you have HSE induction document | | |
| **Operational procedures** | | | |
| 8 | Do you have HSE manual (including site operational procedures.) | | |
| 9 | Do you have Permit to Work System | | |
| 10 | Do you have Work at height procedure | | |
| 11 | Do you have Lifting and handling procedure | | |
| 12 | Do you have Document control system | | |
| 13 | Do you have Nomination of Site HSE responsible | | |
| **Risk evaluation and mitigation plan** | | | |
| 14 | Do you have General hazards identification (listing), job risks assessment and mitigation plan | | |
| 15 | Do you have Specific operational risks relating to Project service and mitigation plan | | |
| 16 | Do you have Housekeeping procedure | | |
| **Respect for the Environment & Sustainable Development** | | | |
| 17 | Do you have Environmental plan (waste reduction, water/air/soil management, antipollution plan..) | | |
| 18 | Do you have Waste management plan | | |
| 19 | Do you have Sustainable Development plan, actions | | |

| | | YES | NO |
|---|---|---|---|
| **Safeguarding of Health** | | | |
| 20 | Do you have Health and hygiene preparedness (medical fitness, capacity certificate, hygiene plan…) | | |
| 21 | Do you have Personnel protective equipment (Identification of requirement, Availability and Use) | | |
| 22 | Do you have an Identification and management procedure of dangerous substances | | |
| 23 | Do you have Fire prevention/protection equipments | | |
| 24 | Do you have Alcohol, drugs & smoking policy | | |
| 25 | Do you have Driving policy and measures | | |
| **Contractors and suppliers** | | | |
| 26 | Subcontractor evaluation system, close-out evaluation, contract HSE requirements (example.) | | |
| 27 | Contractor inspection & audit plan | | |
| **Personnel competency and training** | | | |
| 28 | Do you have Competence identifying and training plan | | |
| **Emergency preparedness** | | | |
| 29 | Do you have Emergency preparedness procedures, evacuation plan, firefighting, planned drills | | |
| **Incident analysis** | | | |
| 30 | Do you have Incident/accident report system | | |
| 31 | Do you have Investigation & action follow-up system | | |
| 32 | Do you have Anomalies reporting system | | |
| **Audits & inspections** | | | |
| 33 | Do you have Audits and inspections system | | |
| **HSE Indicators & Performances** | | | |
| 34 | Do you have Follow-up action plan, HSE improvement plan, incentive plan. | | |
| 35 | Do you have Goals & objectives system, targets and history (at least for the last 3 years) | | |
| 36 | Do you have Lagging indicators reported: Lost Time Injury Frequency LTIF, Total Recordable Incident Rate TRIR, Severity Rate SR, high potential Near Miss Incidents NIM and others… | | |

**Attachment to be provided:**

HSE Certificates

HSE Policy and HSE Management System (Table of Content)

HSE Organisation chart with names

HSE induction document

Permit to Work system description

Waste management plan

Safety indicators for the last 3 years

## APPENDIX C – SAFETY EVALUATION: INJURY & ILLNESS RATES

Port Pipavav requires a record be kept of all injuries and illness arising from the work. They include:

a. Fatalities

b. Lost Time Accidents, including the number of days lost

c. Restricted Workday Cases including the number of restricted days

c. Medical Treatment Cases

d. First Aid Cases

e. Near misses

The total number of employee-hours worked during the year or contract duration shall also be recorded and the contractor can easily compute above incidence rates by using the following formula:

$$\frac{\text{No of LTI} \quad X \quad 1000000}{\text{Man-hours worked}}$$

Port Pipavav will obtain data on incidence rates from prospective Contractors as one element of measuring reactive safety performance.

## APPENDIX D – INJURY AND ILLNESS PERFORMANCE REPORT

*(The following questionnaire will be used to collect actual injury and illness performance data for work being performed on Port Pipavav contracts.)*

**Injury and Illness Performance Report**

Provide your actual injury and illness data, as developed from your injury and illness safety statistics for the time period specified below.

Contractors name: ----------

Time period for data (give dates): ---------- to ----------

Job location and identification: ----------

Total man-hours worked during period: ----------

| **Item** | **Number** |
|---|---|
| Fatalities | ---------- |
| Lost Time Injury (LTI) | ---------- |
| Total Man-hours worked | ---------- |
| LTIF (Frequency/Rate) | ---------- |

Formula: $\frac{\text{No of (LTI)} \quad \text{x } 1000000}{\text{Man-hours worked}}$

Signed: ---------- Date ----------

## APPENDIX E – SAFETY INDUCTION

Each person who enters Port must undergo Safety induction. Port has established training centers inside and outside the Port to ensure adequate and smooth safety training. On successful completion of Safety training, a photo Safety pass issued with a validity date, once the validity of the Safety pass expires he/she must undergo the training again.

The following topics should be considered as part of a contractor's safety induction. The choice of topics for an induction is based on the type of work to take place and the duration of the project.

**a. Emergency Response Plan**: The plan contains procedures that are to be followed if a serious occupational injury or illness, a fatality, a structural failure, a fire, an environmental release, or any other emergency occurs.

**b. Work authorisation system:** This system is the Contractors written procedures for work permits and authorisation for such activities as hot work, entry to confined spaces, and control of hazardous energy sources.

**c. Incident notification:** Recordable injuries and illnesses, accidents, and damage or significant changes to process equipment need to be reported to Port Pipavav.

**d. Accident investigation**: Accident investigation reports need to be completed and given to Port Pipavav Safety Manager promptly, as specified in the contract. Accident investigations will be conducted on all or some of the following:

1. Fatalities (mandatory)
2. Lost Time Accidents (mandatory)
3. Restricted Workday Cases (mandatory)
4. Near misses.
5. Damage to company property or materials
6. Environmental damage

**e. Contractor safety training:** Port Pipavav requires the contractor to provide safety and health training for certain areas. The contractor should identify these in writing and present them to Port Pipavav before the job is started. Documentation of completed training is considered mandatory and should he available to Port Pipavav upon request. Examples of contractor training topics may include the following:

1. Hazard communication
2. Personal protective equipment
3. First aid and cardiopulmonary resuscitation (CPR)
4. Fire prevention and protection
5. Crane operations
6. Hot work and welding
7. Entry to confined spaces
8. Walk and work surfaces
9. Abrasive blasting
10. Housekeeping
11. Hazardous waste operations and emergency response plan

12. Work permits
13. Respiratory protection
14. Scaffolding requirements
15. Control of hazardous energy sources
16. Warning signs, signals, and barricades
17. Emergency evacuation and emergency medical assistance
18. Reporting and correcting hazards
19. Periodic documented safety inspections
20. Hazards of substance abuse
21. Fall protection

**f. Policy on alcohol and drugs:** This policy may include testing, search, and disciplinary provisions that are required by Port Pipavav and contractor.

**g. Correction of safety hazards:** Instructions should be communicated about corrective action for any safety hazards that may arise. Specific instructions on the need for immediate correction of imminent hazards should also be provided.

**h. Effects of poor job safety:** Poor safety performance on site by the contractor an result in personal injury, property damage, and delays and have an impact on the Contractors ability to secure work from Port Pipavav. Port Pipavav will ensure that contractors employees are aware of the importance of complying with the provisions of the contract and all applicable safety, health, and fire rules.

**i Attendance at safety meetings:** How contractor safety meetings are conducted and how often they are held should be discussed; mandatory attendance should be emphasized.

## APPENDIX F – SAFETY PROGRAM CHECKLIST

| APM Terminals Contractor Safety Assessment | | | |
|---|---|---|---|
| | | **Yes/No** | **Remarks** |
| **Identifying hazards and assessing the risks for Contractors** | | | |
| **1** | An APM Terminals business unit representative is accountable for managing and supervising each contractor | | |
| **2** | An APM Terminals business unit representative defines the scope of works and performance criteria before discussions with potential contractors commence | | |
| **3** | An APM Terminals business unit representative identifies key hazards and risks posed by the interactions between operations and the proposed works, and also arising from only the proposed works | | |
| **4** | Risk management principles have been applied to all contracted works | | |
| **5** | APM Terminals business unit has a predefined process to validate the competences of contractors performing high risk activities | | |
| **Selecting Contractors and risk profiling** | | | |
| **6** | The rigor with which contractors are selected and managed is linked to the risks associated with the contracted works | | |
| **7** | Potential contractors are provided with information on hazards and location risks | | |
| **8** | Contractors are assessed on their capacity to meet APM Terminals HSSE standards and regulatory requirements prior to engagement (previous history and reference checks are reviewed) | | |
| **9** | A list of approved contractors is maintained | | |
| **Managing Contractors** | | | |
| **10** | All contractor employees have successfully completed an APM Terminals safety induction | | |
| **11** | Before contracted work begins, scope of work is reviewed to be still in line with original scope | | |
| **12** | Contractors are required to identify hazards associated with proposed works | | |
| **13** | A toolbox talk is conducted with contractors prior to start of work (in shift) | | |

| | | | |
|---|---|---|---|
| **14** | Contractor risk management processes are integrated with APMT site processes | | |
| **15** | A Permit to Work system is in place according to APMT standard | | |
| **16** | APMT Work Permit roles have been clearly defined, trained and authorized throughout the organization | | |
| **17** | Individual contractors hold relevant permits to work and/or licenses | | |
| **18** | Equipment used by contractors is being maintained according to original equipment manufacturer standards (being audited by APM Terminals staff) | | |
| **19** | There are formal and regular communication mechanisms between APM Terminals representatives and the contractor | | |
| **20** | Contractor performance is monitored (inspections, observations, audits) with a predefined "evaluation of performance" process agreed and understood by the contractors | | |
| **21** | Contractors are supervised regularly through a predefined method | | |
| **22** | Failures in contractor performance are addressed through formal, defined actions | | |
| **23** | Performance of contractors on the approved list is reviewed at least annually | | |
| **General** | | | |
| **24** | Total number of contracted hours YTD | | |
| **25** | Number of incident with contractors YTD | | |