

 <p>Jurong Port</p>		
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General

- 1.1 Ladders selected by OMC and the Contractor shall be commercially manufactured to an international and local industrial standard and Code of Practice (CP).
- 1.2 Aluminium ladders shall comply with SS 176: Portable Aluminium Ladder.
- 1.3 No ladders will be used for operations requirements.

Types of Portable Ladders

- 2.1 Portable ladders are designed and manufactured in various forms to meet the requirements. It includes:
 - Straight ladder
 - Extension ladder
 - Sectional ladder
 - Hooked ladder
 - Step ladder
 - Trestle ladder
 - Platform ladder
- 2.2 Contractors shall use certified portable ladders only..

Use of Ladders

- 3.1 Portable ladders can be inherently hazardous depending on location and proposed use, and as such they should only be used where safer means of access such as stairs, scaffolds, man-lifts, or ramps are not suitable or practical.
- 3.2 Contractors shall consider the number of workers requiring access to elevated work locations, as well as the extent and duration of the work before deciding on the safest and the most economical means of access.
- 3.3 Where a significant amount of elevated work is to be performed the Contractor shall carry out a risk assessment, JSA to determine the appropriate method of access.
- 3.4 Ladders shall not be used as default work platform.
- 3.5 Hot work shall not be conducted from ladders.
- 3.6 Work requiring the use of both hands shall not be executed from portable ladders.
- 3.7 Contractors are recommended to consider safer types of access for these types of work, such as stationary or rolling scaffolds or powered elevating platforms which is more efficient and significantly reduce the potential accidents.
- 3.8 In deciding on the best type of access for various tasks and work locations, the Contractors shall also consider:

- the amount of materials involved;
- the time workers spend on the access equipment;
- weather conditions;
- equipment available onsite;
- condition of surface from which access must be made;
- room available;
- potential for shared use with other trades; etc.

3.9 It is critical that consideration be given to worker access for specific tasks and for entire work areas. Ladders must not be used where other means of access are practical and safer.

3.10 If there is no practical alternative to ladders, Contractor shall ensure that ladders provided are suitable and in good condition, and the employees are trained to use them properly.

3.11 While using ladders, the local legal requirements and best practices shall be followed by the Contractors, which include, but not limited to:

- Check the ladder for defects at the start of a shift, after it has been used in another location by other workers, or after it has been left in one location for a lengthy period of;
- Areas surrounding the base and top of the ladder should be clear of trash, materials and other obstructions since getting on and off the ladder is relatively more hazardous than other aspects of use;
- The base of the ladder should be secured against accidental movement. Use a ladder equipped with non-slip feet appropriate for the situation, nail a cleat to the floor, or otherwise anchor the feet or bottom of the side rails;
- The ladder must be set up on a firm level surface. If its base is to rest on soft, uncompacted or rough soil, a mud sill should be used;
- The top of the ladder should be tied off or otherwise secured to prevent any movement. If this is not possible, given the type of ladder or circumstances of its use, one worker shall hold the base of the ladder while it is being used;
- If a ladder is used for access from one work level to another, side rails shall be installed and shall extend a minimum of 900 mm above the landing. Grab rails shall be installed at the upper landing so that a worker getting on and off the ladder has secure handholds;
- Erected at an angle of 4:1 i.e. for every 4 metres vertical, the base of the ladder shall be 1 metre.

3.12 Portable ladders shall not be used horizontally as substitutes for scaffold planks, runways, or any other service for which they have not been designed;

- 3.13 When a task can only be done while standing on a portable ladder, the length of the ladder must be such that the worker stands on a rung no higher than the fourth rung from the top i.e. the top 3 rungs of the ladder shall not be used to stand on.
- 3.14 Ladders shall be supported by an additional person whilst in use. The third person shall ensure that they are positioned in such a way as to prevent the ladder from slipping or falling backwards. Step ladders shall be supported, by an additional person, to prevent sideward falls.
- 3.15 Unless suitable barricades have been erected, ladders shall not be set up in passageways, doorways, driveways, or other locations where they can be struck or displaced by persons or vehicles using the access route;
- 3.16 Ladders shall not be placed against flexible or movable surfaces;
- 3.17 Personnel shall always face the ladder when climbing up or down and when working from it.
- 3.18 3-points of contact shall always be maintained when climbing up and down a ladder, i.e. two hands and one foot or two feet and one hand on the ladder at all times. This is especially important when the user gets on or off a ladder at heights;
- 3.19 When working from a ladder, users shall keep their centre of gravity between the side rails. A person's centre of gravity is approximately in the centre of the body at belt height (so-called buckle rule).
- 3.20 Climbing or descending a ladder, while carrying tools or equipment, shall be prohibited. Tools, equipment and materials should be placed in a container and raised or lowered by rope.
- 3.21 Boots shall be free of mud, grease, or other slippery materials when using ladders.
- 3.22 Never straddle the space between a ladder and another object.
- 3.23 Never erect ladders on boxes, carts, tables, or other unstable surfaces.
- 3.24 When erecting long, awkward, or heavy ladders, two or more persons should share the task to avoid injury from over-exertion and damage to ladders.
- 3.25 Ladders may not be painted, except for the platform and top step, which will be painted to warn users not to step thereon.
- 3.26 Before setting up straight or extension ladders, check the area for overhead power lines. Ladders made of aluminium or other conductive material should never be used near power lines. Only competent electricians and approved workers using ladders made of non-conductive material are allowed to work in close proximity to energized electrical lines.
- 3.27 Straight ladders will not be longer than 7.5 meters, and extension ladders will not be longer than 11 meters.
- 3.28 Step ladders and platform ladders will not be longer than 3.5 meters as determined by the front rail.
- 3.29 The ladder shall be secured at the top or equipped with a suitable stabilizer;

- 3.30 Ladders must never be spliced together to make a longer ladder. Side rails will not be strong enough to support the extra loads.
- 3.31 Straight ladders should not be used as bracing, skids, storage racks, or guys. They were not designed for these purposes and the damage caused by such abuse can later result in an accident during normal use;
- 3.32 Only one person at a time should be allowed on a single-width ladder.
- 3.33 Step ladder, trestle ladder and platform ladder must have locking mechanisms locked before using.

Inspection of Ladders

- 4.1 Regular inspection and maintenance will increase the useful life of ladders and reduce the potential for incidents.
- 4.2 Repairs of ladders shall only be done by qualified personnel.
- 4.3 The procedures for ladder inspection and maintenance include:
 - Ladders shall be inspected for structural rigidity.
 - All joints between fixed parts should be tight and secure.
 - Hardware and fittings should be securely attached and free of damage, excess wear, and corrosion.
 - Movable parts should operate freely without binding or excessive play. This is especially important for gravity-action ladder locks on extension ladders.
 - Non-skid feet should be checked for wear, imbedded material, and proper pivot action on swivel feet.
 - Deteriorated, frayed or worn ropes on extension ladders should be replaced with a size and type equal to the manufacturer's original rope or sent back manufacturer for repair.
 - Aluminium ladders shall be checked for dents and bends in side rails, steps, and rungs. Repair should be made only by the manufacturer. Replacing a rung with a piece of conduit or pipe is not allowed on site.
 - Wooden ladders are susceptible to cracking, splitting, and rot and should either be unpainted or covered with a transparent finish in order that checks, cracks, splits, rot, or compression failures can be readily detected. Repairs should be consistent with good woodworking practice. Only wood equal to or better than the wood used by the manufacturer should be used in the repair.
 - The bases, rungs, and steps of all ladders should be examined for grease, oil, caulking, imbedded stones and metal, or other materials that could make them slippery or otherwise unsafe.

Storage of Ladders

- 5.1 Storage areas should permit easy access and be cool and dry, particularly if wooden ladders are kept there.
- 5.2 Areas where the moving of other materials can damage ladders should be avoided.
- 5.3 Ladders should be supported during storage and transportation to prevent sagging or chafing.
- 5.4 Sufficient storage racks are recommended for the storage of ladders to avoid sagging. Long ladders need support at least every 1.8 meters.
- 5.5 Never rest a ladder on any of its rungs. Ladders must rest on their side rails;
- 5.6 When being transported, ladders should be “top freight”, – nothing should be piled on them, and secured to prevent movement.
- 5.7 If damage occurs during storage, the ladder shall be tagged using an out of service tag and repaired. Cause of damage shall be studied and corrected to prevent further damage to ladders.