

## Purpose

*This document is intended to serve as a reminder of safe work practices and is not a complete presentation of this topic. It should be used by individuals trained and competent in this subject. It is not intended to replace or supersede company procedures, industry standards and/or applicable governmental laws and regulations.*

## Scope

This guideline describes the minimum rules and requirements for the care and use of wooden, metal and plastic (fiberglass) portable ladders. *Fixed ladders are addressed under the Fall Protection Safe Work Practice.*

## Applications

To promote ladder safety, maximum serviceability and eliminate unnecessary damage, use good, safe practices when climbing, storing, inspecting or transporting any ladder.

All employees whose work involves the use of portable ladders should be trained in ladder use, inspection and care.

## Definitions

**Ladder:** An appliance usually consisting of two side rails joined at regular intervals by cross pieces called steps, rungs, or cleats, on which a person may step when ascending or descending.

**Stepladder:** A self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails. (No Ladder exceeding 20' in height) Stepladder types are:

Type I Industrial stepladder, 3 to 20 feet in length, for heavy duty, such as utilities, contractors, and heavy industrial use. (300# load rating)

Type II Commercial stepladder, 3 to 12 feet in length, for medium duty, such as painters, contractors, and light industrial use. (Either 225# or 250# load rating)

Type III Household stepladders, 3 to 6 feet in length, for light duty, such as light household use. (200# load rating)

**Single Ladder:** A non-self supporting portable ladder, nonadjustable in length, consisting of one section. The overall length of the side rails designates its size. (Wood/Metal - Not to exceed 30' in length) (Fiberglass - Type I - 30'; Type II - 24'; Type III - 16')

**Extension Ladder:** A non-self supporting portable ladder, adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged to permit length adjustment. Its size is designated by the sum of the lengths of sections measured along the side rails. Stops shall be in place to ensure proper section overlap (*see table below*).

**Extension Ladder (Continued)**

Wood Ladder- length shall not exceed 60' with no section longer than 30';

Metal Ladder- Two Section ladders will not exceed 48' in length; multi section ladders shall not exceed 60'; Fiberglass ladder - Two section ladder - Type I - 60', Type II - 48', Type III - 32'; Fiberglass Ladder- Three section ladder - Type I - 72', Type II - 60')

On multi-sectional extension ladders the minimum overlap between adjacent sections shall be as follows:

<u>Ladder Type</u>	<u>Size of ladder (feet)</u>	<u>Overlap (feet)</u>
Wood/Metal	Up to and including 36 Feet	3
Fiberglass	Up to and including 32 Feet	3
Wood/Metal	Over 36 and including 48 Feet	4
Fiberglass	Over 32 and including 36 Feet	4
Wood/Metal	Over 48 and including 60 Feet	5
Fiberglass	Over 36 and including 48 Feet	5
Fiberglass	Over 48 and including 72 Feet	6

**Sectional Ladder:** A self supporting ladder, nonadjustable in length, consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. The overall length of the assembled sections designates its size.

**Trestle Ladder:** A self supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal angles at the base. The length of the side rails measured along the front edge designates the size. (No sections longer than 20')

**Extension Trestle Ladder:** A self supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The trestle ladder base designates the size. (No sections longer than 20'.)

**Special Purpose Ladder:** A portable ladder which represents either a modification or a combination of design or construction features in one of the general purpose types of ladders previously defined, in order to adapt the ladder for special or specific uses. (Such as *Painter's ladder* (12' or less) or *Mason's ladder* (40' or less)).

**Trolley Ladder:** A semi fixed ladder, nonadjustable in length (20' or less), supported by attachments to a track, the plane of the ladder being at right angles to the plane of motion.

**Side Rolling ladder:** A semi fixed ladder, nonadjustable in length (20' or less), supported to attachments by a guide rail, which is generally fastened to shelving, the plane of the ladder also being its plane of motion.

**Rungs:** Metal or wooden cross pieces of circular or oval cross sections on which a person may step when ascending or descending.

**Steps:** The metal or wooden flat cross pieces of a ladder on which a person may step when ascending or descending.

## Hazards

Falling from heights	Dropped objects
Contact with electrical hazards	Ladder footing uneven or unstable
Using an unsafe ladder	Overloading the ladder
Ladder at improper angle	Ladder improperly positioned (overreach)

## **Guidelines**

### ***Inspections***

- Ladders shall be inspected frequently and those, which have developed defects, shall be withdrawn from service for repair or destruction and tagged or marked as “*Danger Do Not Use.*”
- Ladders shall be maintained in good condition at all times. The joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operated freely without binding or undo play.
- Safety feet, overlap stops, rung locks and other auxiliary equipment shall be kept in good condition to ensure proper performance.
- Rungs and steps shall be kept free of grease and oil.
- If a ladder tips over it shall be inspected for: side rail dents, bends, damage or defects, damaged steps or excessively dented rungs, all rung or step to side rail connections, and hardware connections and rivets for shear or damage.
- Frayed or badly worn rope on extension ladders shall be replaced.
- Fiberglass ladders should be inspected periodically for damage from exposure to ultraviolet light (either sunlight or welding). If the resin is cracked or has degraded to the point where fiberglass is starting to surface, the ladder should be discarded.
- Ladders should never be painted. Paint may obscure defects in the ladder.

### ***Construction***

- All wood parts shall be sound, free from sharp edges and splinters, and free from decay or other irregularities.
- Uniform step spacing shall be not more than 12 inches. Steps shall be parallel and level when the ladder is in position for use. If steps are wooden they shall be a minimum of 1-½ inches in diameter. For ladders wider than 16 inches the steps shall be a minimum of 1-¾ inches.
- The distance between side rails shall be not less than 16 inches.
- A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in their open positions shall be a component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user.
- For metal ladders rungs shall be corrugated, knurled, dimpled, coated with a skid resistant material, or otherwise treated to minimize the possibility of slipping.
- Job made ladders shall be constructed to support at least four times the anticipated working load on the ladder.

### ***Usage***

- The base of portable non-self supporting ladder shall not exceed one quarter of the length of the ladder away from the top support. (i.e. for a 16’ ladder, 4’ from wall).
- The ladder shall be so placed as to prevent slipping, or it shall be lashed or held in position. When lashing a ladder, it must be held securely in place by a co-worker.
- Non-slip bases are not intended as a substitute for care in safely placing, lashing, or

holding a ladder that is being used on oily, metal, concrete, or slippery surfaces.

- Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds unless designed for such use.
- When ascending or descending a ladder the climber shall face the ladder and keep at least one hand free and on the side rail. (3 point contact at all times)
- When working from a ladder the employee shall not work in a manner that requires the use of both hands or lean past the side rails to reach the work.
- Only wooden or fiberglass ladders shall be permitted when there is a potential of electrical shock hazards.
- Ladders with rungs or steps at the front side only shall not be used by more than one employee at a time. Where use by more than one employee is anticipated, specially designed ladders with rungs or steps on both front and backside shall be used. Scaffolding is an option in this instance.
- Portable ladders shall be placed so that the side rails have a secure level footing.
- The top rest (what it is leaning against) for portable non-self supporting ladders shall be reasonably rigid and shall have ample strength to support the applied load.
- Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked, locked, or guarded.
- Ladders shall not be spliced together to provide longer sections nor be used as guys, braces, or skids, or for other than their intended purpose.
- When using a stepladder, do not stand on the top two steps.
- Portable rung ladders with reinforced rails shall be used only with the metal reinforcement on the under side.
- No ladder shall be used to gain access to an elevated working surface unless the top of the ladder extends at least three (3) feet above the working surface.
- Middle and top sections of sectional ladders shall not be used for bottom sections unless they have been equipped with safety shoes. Portable ladders shall be fitted with safety shoes when the hazard of slipping is possible.

## **References**

OSHA 29CFR1910.25 & .26 Wooden and Metal Ladders

OSHA 29CFR1926.1053 Ladders

ANSI A14.1 - Safety Requirements for Wooden Ladders

ANSI A14.2 - Safety Requirements for Metal Ladders

ANSI A14.5 - Safety Requirements for Portable Reinforced Plastic Ladders