



SECTION 14

LADDERS



1. LADDERS

A. OSHA References: 29 CFR 1926.1053 (Ladders)

B. General: Falls are the second leading cause of all accidents following motor vehicle accidents? At age 77 and over, falls are the leading cause of accidents. Annually, more than 30,000 people are disabled by falls from ladders. Providing properly designed and well-maintained ladders, providing training for workers in ladder safety, and routinely inspecting ladders, can prevent most of these accidents from occurring on-the-job. The major causes of falls from self-supported ladders are lack of stability and sliding. This section cannot possibly cover all types of ladders and all aspects of ladder safety encountered within the construction industry, therefore for additional information, you are referred to the above referenced OSHA standard.

C. Handling And Storage:

1. Ladders must be handled with care and not subjected to misuse during loading, transporting, erection, use, or dismantling.
2. All ladders must be stored in a vertical or horizontal position. If stored vertically the ladder will be secured with a chain or rope and fastened to a fixed structure to prevent accidental tipping. Ladders stored on a horizontal rack must be supported on a minimum of two brackets and in a manner that will prevent bowing or sagging of the side rails.
3. Ladders stored or used outside must be protected from inclement weather, heat, dampness, and/or exposure to chemicals.
4. Ladders must not be used as a workbench, a horizontal walkway, platform, or horizontal support for planking. The use of a ladder for other than ascending or descending is prohibited.
5. Ladders must be kept clean and free from any slippery substance at all times.

D. Inspection: All ladders require inspection prior to use and annually to insure condition. The ladder will be numbered and coded and the date of the inspection recorded. Damaged ladders will be taken out of service.

1. Ladders with out-of-date inspections will be returned to the Maul Electric, Inc. shop for inspection.



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2. Ladders must be inspected for the following:
 - a) Loose, cracked, broken, or missing pivot pins, hinges, or threaded bolts.
 - b) Side rails, ladder rungs, and steps for corrosion, rotting, splits, weather effects.
 - c) Loose, missing, worn, or damaged ladder safety shoes.
 - d) Moveable and non-slip rubber safety shoes.
 - e) Missing and or loose extension locks, which do not seat properly when the ladder is extended.
 - f) Proper rope and pulley functional with no rope deterioration.
 - g) All hinge spreaders on a stepladder must be properly bolted and not bent.
 - h) Unsafe ladders will be tagged as unsafe and removed or destroyed immediately.

E. General Ladder Safety:

1. Ladders must be rated for a minimum working weight of 250 pounds. The combined weight of the user and tools must not exceed the rating.
2. The ladder feet must be covered with a slip resistant material and free of oil.
3. The user must select the right ladder for the task.
4. Ladder users must avoid sudden shifts in body position and lack of attention.
5. The user must use climb and descend the ladder facing the ladder.
6. Only one person may be allowed to work from the ladder.
7. The ladder must be positioned on a stable surface.
8. The ladder must be positioned close to work.
9. The user must avoid reaching out too far.



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10. Non-conductive ladders must be used when working near electrical transmission equipment.
11. Fall protection of harness and shock absorbing lanyard must be used above 6 feet.
12. Wooden ladders must not be painted.
13. Ladders must not be walked or jogged when standing on them.
14. Materials and tools must not be stored on ladders.
15. Ladders must not be placed where they can block or obstruct or be struck by doors.
16. The users must climb and work from the ladder with the body near the middle of the rung or step.
17. Materials, tools, and equipment should not be carried up or down the ladder. They should be raised and lowered by rope.
18. Ladders must extend at least 36" above the upper landing surface.

F. Stepladders:

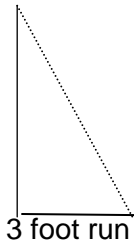
1. Stepladders must not be longer than 20 feet.
2. The minimum clearance width between the side rails at the top step must be 20 inches.
3. Minimum width of the step must be 3 inches.
4. The bucket shelf must be capable of being folded.
5. The metal spreaders must have sufficient strength to hold the ladder sections open.
6. The spacing between steps must be no greater than 12 inches.
7. Steps must be corrugated, serrated, knurled, dimpled, or coated with a skid resistant material.
8. The ladder must be fully open.

9. The top step must never be used.
10. Spreaders must be open, locked, and all feet contacting a firm surface.
11. Fall protection of harness and shock absorbing lanyard must be used above 6 feet.

G. Single Section And Extension Ladders

1. Extension and or single section ladders must not be rested or leaned against any unstable backing, such as boxes, drums, barrels, or any round objects.
2. Extension or single section ladders must be secured at the top with 3/8 inch or greater manila rope. The ladder will be held at the base while being secured.
3. It is prohibited to splice, tie, join, or fasten ladders together to form a longer section.
4. The pitch of the ladder shall be no less than 1/4 of the rise. (I.e. 12' rise = 3' run)

12 foot Rise



28 foot rise



NOTE: The rise is determined by measuring the distance from the base of the structure to the point where the ladder is resting. The run is determined by measuring from the base of the structure, horizontally to the base of the ladder.

5. Ever work from the top three rungs of an extension or single section ladder.
6. Safety harness and shock absorbing lanyards are required above 6 feet.

H. Fixed Ladders:



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1. Must be designed to withstand a single concentrated load of at least 200lbs.
2. Rungs for metal ladders must have a diameter of 3/4 inches.
3. Rungs at least 16 inch width and be spaced no more than 12 inches apart.
4. Metal ladders must be painted or treated to resist weather and chemical corrosion.
5. The preferred pitch is 75-90 degrees.
6. Unless protected by a cage must have 15-inch clear width on every side of the centerline of the ladder.
7. Rungs of individual rung ladders must have a design to prevent the foot from sliding off the end of the rung.
8. The step across distance from the ladder to the platform or structure may not be more than 12 inches or less than 2 and 1/2 inches.
9. Cages or wells must be provided for ladders more than 20 feet to a maximum unbroken length of 30 feet high.
10. The cage must extend at least 42 inches above the top landing and down to not less than 7 feet or more than 8 feet above the base of the ladder.
11. A landing platform is provided for each 30 feet of height with cages and every 20 feet without cages, wells or safety devices.