

Ladders: Straight and Extension

General Construction-Purchasing Standards

There is no economy in purchasing cheap, flimsy ladders. The kind and quality of wood used have an important bearing on the strength of the ladder. Manufactured ladders must comply with OSHA, ANSI and manufacturer specifications. New ladders should be checked for the following characteristics:

- All wood for ladder construction should be of straight grain, thoroughly seasoned stock.
- It should be free from large checks, shakes, decay, or injurious knots. Small, firm knots are permissible.
- Single ladders over 30 feet in length are not recommended.
- The width between side rails at base should in no case be less than 11 1/2 inches for ladders up to and including 12 feet in length. For longer ladders, this width should be increased at least onequarter of an inch for each additional foot of length.
- Ladders generally can be placed into these categories: fixed, portable and job made. Special requirements apply to each ladder type.
- A stairway or ladder should be provided at all access points with a difference in elevation of 19 inches or more if no ramp, runway, sloped embankment or personnel hoist is provided.

Maintenance and Inspection

- Ladders should not be painted with an opaque material which will have a tendency to hide flaws in the wood. Preferably, ladders should be protected by an application of boiled linseed oil, or a coat of clear shellac, varnish, lacquer, or polyurethane coating. To control the hazard of splinters and rough spots, the ladder rail should occasionally be sanded smooth and refinished.
- Before using any ladder, it should be inspected carefully. Check both rails and all rungs for cracks or breaks which might cause failure. Make certain that the rungs are free of grease or other slippery material. Check the ladder rails for warping, which may cause the rungs to pull out.
- Ladders should be protected from the weather whenever possible, and should be hung on a ladder rack of suitable design, to prevent damage during long periods of inactivity.
- If a straight ladder is to be used against poles, trees, or round surfaces, the top rung should be replaced with a chain or strap which will conform to the shape of the object it leans against.
- Use a ladder long enough to fit the job. Keep one hand on the ladder or use a safety belt and spanner when it is necessary to use both hands while working.

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- Extension ladders should be equipped with at least two automatic locks of an approved design. All locks and guide irons should be of such strength and construction that the extended ladder will be equal in strength to a straight ladder of continuous side rails.

Ladder Usage

- Always face the ladder when ascending or descending. The climber's eyes should be kept on the ladder rungs as the climber ascends. This practice helps detect unsafe ladder rungs before weight is placed on them.
- Use the "Three Point Rule" when ascending or descending a ladder. Keep both of your hands and at least one foot in contact with the ladder at all times.
- Tools or materials should be raised by means of a rope after the climber has reached the working position.
- The recommended safe angle for a ladder is to have the distance between its base and the object against which it leans equal one-fourth of the total length of the ladder itself. Extension ladders should not be extended until they are placed in a vertical position.
- Never lean too far to one side of a ladder. Take the time to move it so that your work will be within easy reach.
- It is usually a two-person job to get a heavy extension ladder into a vertical position. To avoid back strain, get help rather than attempt to perform this job alone. Make certain that both automatic locks of an extension ladder are in proper position on the supporting rung before mounting the extended section. Make certain that fingers will not be pinched when the locks fall into position.
- If the surface on which a ladder must be used is slippery, or if the ladder is unusually long, tie the base of the ladder to a substantial support.
- When it is necessary for two people to carry a ladder, both should be on the same side of it, and should walk in step. Spikes, hooks, or ladder feet should face toward the rear when it is being carried.
- When a ladder is too short for the job attempted, it should not be elevated by placing it on boxes or other unstable surfaces. If the ladder is placed on any platform which is not protected by adequate hand rails and toe board, the bottom of the ladder should be locked by a cleat.
- All straight and extension ladders should be equipped with "safety feet" that are adapted to the kind of surface on which the ladder is to be used.
- After being positioned, all straight and extension ladders should be securely tied off to the building or other fixed object in order to prevent the ladders from slipping or tipping over.
- Training should be provided for all employees using ladders.
- Side rails should extend 36 inches above the landings.

Contact your local Great American Loss Prevention Specialist for additional information.

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