A Guide to Ladder Safety



INTRODUCTION

Ladders are common tools that can be helpful in many types of jobs. Serious injuries can result when a ladder is used improperly, in an unsafe area, or if it is faulty and has not been properly maintained. It is important to know how to select and inspect a ladder; the rules for safe ladder setup and use; and how to correctly transport, maintain, and store ladders.

Never use a ladder if your physical or mental condition could create a hazard (e.g. poor health, dizziness, or under the influence of drugs, alcohol or medication that could affect balance or judgment).

If you have any questions regarding your safety or the safety of a ladder, talk to your supervisor.

In some situations, an alternative method of working at heights such as using a scaffold, man lift, scissor lift, forklift, or an elevated work platform with railings may be better than using a ladder.

Ladders make many jobs easier and more accessible. Choose and use your ladder properly and safely.

SELECTION AND INSPECTION

Ladder types and materials are designed for specific functions and use. Select the ladder made with the appropriate material for the job (i.e. wood, metal, fiberglass, etc.)

Before using a ladder, visually inspect its condition. A ladder inspection begins from the top down. Look for loose steps and rungs. The rungs should be sturdy, clean, and not slippery from mud, grease, or oil. To prevent slips off a ladder, wipe off rungs and rails and clean slippery substances off of footwear.

The upright ladder legs should be strong and free of cracks, splits, and bent edges. The ladder’s braces should be solid. Nails, screws, bolts and other fasteners should be tight. The ladder’s feet should be examined and the non-slip base should be in good repair.

Different ladder types and materials have specific hazard inspection points.

- Wood ladders should never be painted with anything other than a transparent material and should not have cracks or splits.
- Metal and fiberglass ladders should be checked for bends and breaks. Metal ladders should be inspected for signs of corrosion.
- Step ladders should not be wobbly (a possible indication of side strain) and the hinges should be firm and straight.
- Extension ladders should have ropes, pulleys, and latching hooks in good condition (not rotted or frayed) with working extension locks that are properly seated.
- Consult proper references for the safe use of specialty ladders.

If you believe a ladder is unsafe, do not use it. Report the problem so that the ladder will be tagged, removed from service, and replaced or repaired.

Choose the appropriate type and length of ladder to safely do the job. Make sure the ladder is rated to support your weight and the weight of any tools or materials that will be used.

When working near electricity, exposed electrical wiring or electrical conductors, use ladders with non-conductive side rails; don't use metal ladders. Metal ladders should not be used where they could be lifted into overhead power lines. When working near electricity, fiberglass ladders are recommended rather than wooden ladders that may become wet and conduct electricity.

MAINTENANCE, TRANSPORT, AND STORAGE

Take good care of ladders so they will perform their function safely. Return a ladder to its proper storage area after each use. Proper storage will help prevent damage and make it easier for the next person to find the ladder when it is needed. If a ladder needs repair, report it so it will be taken out of service and replaced or repaired by designated servicing or maintenance personnel.

Protect the ladder from damage during transport. Carry ladders carefully. Support the ladder at the balance point. Control the end of the ladder so you don't hit anyone. Get help when carrying, putting up, or taking down a heavy or awkward ladder. When two people are carrying a ladder, both people should be on the same side. When hauling a ladder in a vehicle, tie it securely to the vehicle to prevent nicks, gouges, or chafing. Damaged bolts and joints can work loose and eventually cause the ladder to twist and become unstable.

Straight ladders should be stored flat or on wall brackets to prevent sagging or warping. Step ladders should be stored upright and in the closed position. All ladders should be stored in covered, protected areas away from moisture sources.

PLACEMENT

Before placement, clear the area around the base of the ladder. The feet of the ladder should have slip-resistant safety footing for use on a ground surface that is level and solid. If the ground is too soft, a solid and sufficiently wide support should be placed under each leg. Set up a ladder only on a surface that is level and capable of supporting the weight. Do not set ladders on scaffolds, boxes or other objects.

Protect ladders near doorways, walkways, or vehicle traffic areas by locking

doors, posting signs, setting up barricades, roping off the area, or setting out warning cones.

In many situations, a portable ladder should be tied, blocked, held, or otherwise secured against movement or slippage.

The following are all reasons to secure a ladder: the ladder is very high; the ladder is going to be used for a long time in one place; the nature of the work involves activities that could upset the ladder; the ladder is on a slippery surface; or weather conditions such as strong winds, are present.

When using a ladder to climb onto a higher surface level, be sure the ladder extends at least 36 inches (three rungs) above that surface level. This provides a hand-hold for getting on and off the ladder. It also provides a step that is below the ladder’s fulcrum point (the spot the ladder is resting against). Use this step so the ladder does not “kick out” when weight is put on it.

The top of a non-self-supporting ladder must rest against a strong stable surface. Set up non-self-supporting ladders at a height-to-base ratio of 4 to 1. (The vertical distance (X) from the top support point to the base of the ladder should be four times the horizontal distance (X/4) from the foot of the ladder to the base of the structure). A simple way to achieve this ratio is to place your feet at base of the ladder and extend your arms. If fingers or palms rest on the rung of the ladder then the ladder is close to ratio of 4 to 1. If the angle of the ladder is too small, it may fall backwards. If the angle is too great, the legs may slip out or the ladder may break.

The sections of an extension ladder must adequately overlap. The minimum overlap is as follows:

Ladder Size (feet)	Minimum Overlap (Inches)
Up to and including 32	**36**
Over 32, up to and including 36	**46**
Over 36, up to and including 48	**58**
Over 48, up to and including 60	**70**

Avoid tripping hazards by keeping the area around the tip and base of the ladder clear. Do not run hoses or extension cords along the ladder’s rungs where they

will create a tripping hazard.

USE OF LADDERS

Unless the ladder is designed to hold more than one person, only one person should be on the ladder at any one time.

Step on each of the rungs-never skip the last rung and jump down. If a ladder is unstable when you start to climb it, climb down and correct the problem. Take care to maintain the three point contact when getting off one level and transferring onto a ladder.

Use a tool belt to carry any tools. Once you are at your working height, use a rope to haul up needed tools and materials. For heavy loads use a rope and pulley system.

When working on ladders, keep your body centered between the side rails of the ladder. Do not lean out to the side when you’re on a ladder. Remember to keep your “belt-buckle” between the side rails. If something is out of reach, get down and move the ladder. Use extra caution on a ladder when the work involves a lot of force to push or pull. Excessive force can move your center of gravity and cause the ladder to tip and fall. Avoid having someone below you while you are working on a ladder. If it is unavoidable, make sure the person below is wearing a hard hat.

Never work on a stepladder leaning against a wall. Stepladders must be opened fully with the spreader locked before use.

When using a non-self-supporting ladder, climb no higher than the fourth step from the top. Never try to increase the height of a ladder by standing it on other objects such as boxes, barrels or scaffolds, etc. Never splice two ladders together.

Be careful when using ladders in situations that are unusual or unfamiliar.

Do not stand on the top cap of the ladder or the step below. If you must stand on a step above the normal safe limits, adequate handholds must be available or a personal fall protection system must be provided.

- Do not try to “walk” a ladder by jerking or rocking while you are on it.
- Do not move, shift, “hop the ladder”, or extend the ladder while in use.
- Do not tie or fasten together ladders to create longer sections unless they are specifically designated for such use.
- Do not use ladders as platforms, runways, or scaffolds. Use a ladder, not the walls to reach a higher level.

Never jump off a ladder.