

LADDER SAFETY

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

The scope of this SOP is limited to portable extension and step ladders. Other EHS SOPs or authoritative sources must be consulted regarding permanently installed ladders, scaffolding, aerial lifts, and other devices or conditions that present a fall hazard (e.g., platforms, roofs; floor openings where it would be possible to fall from one level to another; etc.).

The main hazard associated with the use of portable ladders is falls. Falls occur for a number of reasons, including the following:

- The ladder is in poor condition or is improper for the task at hand.
- The ladder is poorly located and/or incorrectly positioned.
- The surface on which the ladder is located is slippery or uneven.
- Proper techniques are not observed when using the ladder.

The following guidelines, most of which evolve from Occupational Safety and Health Administration (OSHA) regulations, are intended to minimize the risk of falls when using portable ladders.

1. Select ladders based on anticipated use and rated load capacity.
 - Load ratings, safe working height, and other safety information must be posted on the ladder by the manufacturer. This information should be replaced if it becomes worn or defaced. The rated capacity must be sufficient to accommodate the weight of the person and everything that they are carrying.
 - Portable ladders are not suitable for all situations. Depending on the task at hand, an aerial lift or other device may be the better choice. For example, a portable ladder is not a good choice when it is necessary for a person to carry heavy loads or shift their center of gravity while on the ladder; the resting point for the top of the ladder is weak or marginally secure (e.g., guttering); three points of contact cannot be maintained (two feet and one hand); the foundation/surface upon which the ladder will be placed is uneven, slippery, angled, or will otherwise make the ladder unstable; etc.
 - Remember the full height of the ladder is not available for use. For example, multi-section extension ladders must maintain a minimum overlap distance and extend a minimum of 3' past the top of the landing

- point. The top step and next two rungs down on a step ladder are not intended for climbing.
- Do not use portable ladders when working near (<20') live electrical lines. Do not use metal ladders when working on or near electrical devices (e.g., changing light fixtures, etc.) and the ladder could become energized.
2. Keep the ladder, safety feet, and auxiliary equipment in good condition at all times, and inspect before each day's use and after it tips over.
 - Keep dry and free of oil, grease, mud, etc.
 - Verify that the joint between the steps and side rails is tight, all hardware and fittings are securely attached, and movable parts operate freely without binding or undue play; rivets are secure; and side rails and rungs are free of excessive denting or other signs of wear.
 - Lubricate metal bearings of locks, wheels, pulleys frequently.
 - Replace frayed or badly worn rope.
 - Safety feet and other auxiliary equipment shall be kept in good condition to insure proper performance.
 - Immediately remove damaged ladders from service, label them as "Out-of-Service" and notify the appropriate supervisor.
 - Do not use ladders as guys, braces, skids, gin poles, or for other than their intended purpose.
 3. Position the ladder appropriately and maintain a safe stance while on the ladder.
 - Use a ladder of the proper height, as designed by the manufacturer. Do not splice or improvise to gain additional height.
 - Wear proper footwear; closed-toe, sturdy, and clean.
 - Inspect the area to be sure that it is free of electrical lines.
 - Do not position a ladder in an area where it can be bumped or dislodged (e.g., doorway, passage, window opening, etc.). If a ladder must be located where it can be struck or displaced, secure the area by locking doors, placing barricades, having someone stand watch, or other appropriate action.
 - The foundation upon which the ladder will be placed must be even, firm, level, and not subject to skidding/slippage. Do not use blocks, rocks, boxes, or other items to "level up" or gain height. Do not use a ladder in strong winds.
 - Observe the proper placement angle for extension ladders. The base of the ladder should be one-foot (1') out from the wall for every 4 feet of height. The side rails of an extension ladder that is used to access a higher landing must extend a minimum of 3' beyond that landing.
 - Secure extension ladders with tie downs or blocking of the base. If using step ladders, ensure that the ladder is fully opened and locked in place.
 - Face the ladder while climbing and descending. Maintain three points of contact at all times.

- Do not lean sideways out of the ladder's width. Do not lean so far that the feet pass outside of the ladder's side rails.
4. Properly transport, store, and maintain ladders.
- Ladders should be secured while being transported in a vehicle.
 - Get assistance when carrying large ladders to the work area.
 - Store ladders in a sheltered area where they will not fall unexpectedly, and will not block access to hallways and fire exits.
 - Wooden ladders are affected by exposure to heat and dampness. Therefore, they should be stored in a dry, well-ventilated area.
 - Never paint a wooden ladder as it can hide structural defects.
 - Ladders should be stored horizontally on racks or hooks with support points at the top, middle and bottom of the ladder to prevent sagging and warping.