

Ladders

A **ladder** is a vertical or inclined set of rungs or steps. Using ladders presents inherent risk. There are many different types of ladders; knowing how and when to use each type, as well as inspection and proper maintenance of the ladder, can help reduce the risk.

Choosing the Correct Ladder

Ultimately, the best way to reduce risk when using a ladder for a task is to choose the right type of ladder for the job.

- Check that the ladder can hold at least four times the intended weight load; don't forget to factor the weight of tools, materials, etc. that will travel on the ladder with the user. The loading label can be found on the side of the ladder; do not use a ladder that is missing this label.
- Metal ladders should not be used to conduct electrical work. Instead, use ladders made with non-conductive material (e.g., fiberglass) if there is any potential for contact with electricity.
- Ensure the ladder is tall enough for the job.
- Working from a properly constructed scaffold or a lift is generally safer than working from a ladder; however, specialized training is required for those who work or build scaffolds, use lifts, or use fall protection equipment.

The common types of ladders found at TWU, and their associated best practices, are discussed below.

Step Ladders

A step ladder is a portable, self-supporting, A-frame ladder. It has two front side rails and two rear side rails. Generally, there are steps mounted between the front side rails and a bracing between the rear side rails.

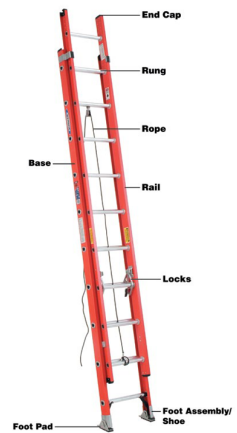
- Do not use the top of the step ladder as a step.
- Place ladders on stable and level surfaces that are not slippery to prevent injury.
- Do not use the cross-bracing on the rear section of the ladder, unless the ladder is specifically designed with steps on both sections.
- Metal spreader or locking devices must be provided on step ladders to hold the front and back sections in an open position while in use. Ensure that the spreaders are in good condition and securely connected.
- Don't climb a closed step ladder. The feet are not designed to hold weight this way, and there is a high likelihood of the ladder slipping out from under you if a step ladder is used as an extension ladder.



Extension Ladders

Also known as “portable ladders”, extension ladders usually have two sections that operate in brackets or guides allowing for adjustable lengths. Because extension ladders are not self-supporting, they require a stable structure that can withstand the intended load.

- Firmly and evenly position the base of the ladder on a non-slippery, level surface.
- Ensure that the bottom ladder side rails are equipped with nonslip feet (and that those side rails are, indeed, placed on the ground!). Be aware that nonslip feet are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used upon oily, metal, concrete, or slippery surfaces.
- Engage the guides or brackets on the upper sections to ensure they will not slide down as the ladder is being used.
- Ensure that both upper side rails are firmly and evenly supported. Support area should be at least 12 inches wide on both sides of the ladder.
- If the ladder is being used to access a roof or platform, ensure that the ladder extends a minimum distance of 3 feet above the surface being accessed.



Step Stools

A step stool is a stool with one or two steps that often fold away beneath the seat. Step stools are commonly used in offices, libraries, and laboratories to access shelves, tops of animal cages, etc. Step stools that look like small step ladders, like the one shown here, generally provide better stability and its hand hold helps users maintain their balance, which minimizes the potential for falls.

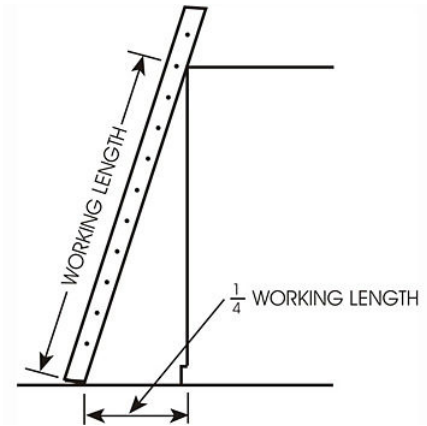
Fixed Ladders

A fixed ladder is a ladder with rails or individual rungs that is permanently attached to a structure, building, or equipment. Cages are required for fixed ladders that are greater than 20 feet in length. Newly-installed fixed ladders that are 24 feet in length or more must be equipped with a ladder safety device; existing ladders that meet this description must be retrofit with the device by the end of 2036. Rungs on fixed ladders shall be at least 16 inches wide, $\frac{3}{4}$ (three-quarters) inch minimum diameter, and have a maximum of 12 inches between runs with even spacing and at least 7 inches of clearance between the ladder and the structure upon which it is affixed.



Proper Ladder Positioning

- Non-self supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support). For example, the base of a 20-foot ladder leaning against a wall should be 5 feet back from the wall.
- A good rule of thumb is that if a user is standing at the base of a ladder with their arms extended straight forward, their palms should fall on the rung directly in front of them.
- If the ladder is being used to access a roof or platform, ensure that the ladder extends a minimum distance of 3 feet above the surface being accessed.



Safe Climbing Procedures

- Do not use ladders that are wet or have oils, grease, wet paint, or other slipping hazards.
- Never position a ladder in front of a doorway opening towards the ladder.
- Always remain centered on the ladder. Do not reach to the sides. Your belly button should never extend beyond either side rail.
- Always face the ladder; do not climb down or up a ladder while facing away from the ladder.
- Keep in mind the “three points of contact”: always maintain contact with one hand and two feet, or two hands and one foot, while climbing or descending the ladder.
- Do not carry objects or loads that could cause loss of balance and/or falling.

Inspection/Maintenance

- Visually inspect the step ladder before using it; obvious structural damage, missing or bent rungs, missing or damaged safety devices, and the presence of grease, dirt, or other contaminants could cause slips and falls.
- Only use ladders with an ANSI A14 label. This label indicates that the ladder meets ANSI/OSHA design criteria.
- Ladders that fail inspection must be immediately tagged “Dangerous: Do Not Use” and either placed out of service or disposed.

Training

Training is required for all TWU employees and volunteers who use stepladders, extension ladders, or fixed ladders. Training can be found on TWU’s [Bridge employee learning system](#). For more information on TWU’s ladder safety program, visit the [Ladder Safety website](#).