

*Ladders are used in nearly all workplaces to access areas beyond an employee's normal reach. Ladders are very handy, but can also be very dangerous if overloaded, misused, or damaged. Falls from ladders can cause injuries ranging from sprains to death, but such injuries can be prevented if ladders are properly selected, used, and maintained.*

## Ladder Selection

**Style**—The first thing to consider when choosing a ladder is the desired style for the task at hand. In addition to basic step and extension ladders, many specialty ladders are available, including platform, twin step, and telescoping multi-purpose ladders. Whenever working near electricity, a fiberglass ladder should always be selected.

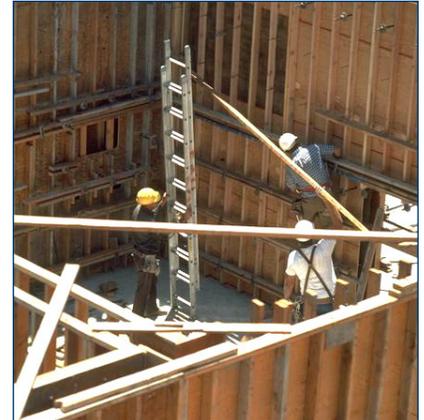
**Height**—Extension ladders should have a working height at least 6 feet longer than the highest contact point, which may be the wall or roof line. The extra length is necessary for proper setup, overlap of sections, and extension of the ladder above the roof line. Stepladder height should be based on the general rule that a person's maximum safe reaching height is approximately 4' higher than the height of the ladder. The highest permitted standing level on a stepladder is two steps down from the top. A person standing higher may lose their balance and fall.

**Duty Rating**—Ladders are rated according to the maximum weight they can safely support. The 5 rating classes are shown in the table below. Keep in mind that these ratings are for the combined weight of the user and any materials carried.

Type	Rating	Description
Type 1AA	375 lbs.	Extra-heavy-duty industrial ladder
Type 1A	300 lbs.	Heavy-duty industrial ladder
Type 1	250 lbs.	Heavy-duty industrial ladder
Type 2	225 lbs.	Medium-duty commercial ladder
Type 3	200 lbs.	Light-duty household ladder

## Portable Stepladders

Stepladders are the most popular style of ladder for most low to medium height tasks, although industrial stepladders may be as tall as 20 feet.



- Stepladders should be fully opened and spreaders locked before climbing.
- Stepladders should never be used as a straight ladder or climbed from the back bracing.
- The user should never stand above the second step from the top of a stepladder.
- Stepladders should only be placed on firm, level ground and never placed on boxes or tables to gain extra height.

## Portable Rung Ladders

Portable rung ladders are commonly used to access roofs and other high elevations. OSHA requires that single rung ladders be less than 30 feet in length and two-section extension ladders be less than 60 feet in length.

- The horizontal distance from the top support to the foot of the ladder should be one-fourth the working length of the ladder, forming a 75° angle.
- When using the ladder to gain access to a roof, it should extend at least 3 feet above the roofline.

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- Non-slip bases should be attached to all portable rung ladders.
- The minimum overlap for extension ladder sections should be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36	3
Over 36, up to and including 48	4
Over 48, up to and including 60	5

### General Safety Tips

- All ladder work should be completed within the side rails. If the user’s belt buckle goes outside the side rail, the ladder may become unstable and should be repositioned to reduce the amount of reach.
- Ladders should not be used in excess of their rated capacities.
- Ladders should be placed so there is secure footing; both on the ground and the surface where the top rests.
- Where there is a hazard of slipping, do not assume non-slip bases won’t fall—use additional precautions.
- Ladders should not be placed in front of door openings unless the door is open, locked, or guarded.
- Avoid carrying items up or down a ladder by hand. Use lift lines or tool belts. Use hoists for heavy loads.

### Ladder Maintenance

To ensure the safety of employees and the serviceability of your ladders, OSHA recommends the following maintenance guidelines:

- Ladders should be regularly inspected and maintained. This includes tight joints between steps and side rails, securely attached hardware and fittings, and properly operating movable parts.
- Metal bearings of locks, wheels, pulleys, etc. should be frequently lubricated.
- Frayed or badly worn rope on extension ladders should be replaced.
- Safety feet and other auxiliary equipment should be kept in good condition.

- Rungs and steps should be kept free of mud, grease, oil, and other slippery substances.
- Never paint, place stickers or tape, or otherwise cover any portion of a ladder.
- When defects are noticed, ladders should be removed from service and tagged “Dangerous—Do Not Use” until they can be repaired or replaced. Makeshift repairs are not recommended.

### Ladder Training

As simple it sounds, employees should be trained on the proper selection, use, and care of ladders. Employees who have been using ladders for many years may have developed habits that increase their risk for a fall. Information that should be included in ladder training includes:

- Choosing the right ladder for the task. Discuss which ladders to use in which situations.
- Inspecting the ladder before and after each use.
- Setting up and taking down the ladder. Be sure to discuss securing or lashing the top of extension ladders and clearing the area around the ladder.
- Preparing to go up and down the ladder, making sure the hands are free and soles are clean.
- Facing the ladder when climbing or descending, always maintaining 3 points of contact.
- Working from the ladder. Discuss keeping the center of the body between the side rails.

### For Additional Information

**Occupational Safety & Health Administration:**

[www.osha.gov](http://www.osha.gov)

- Stairways and Ladders: A Guide to OSHA Rules

**North Carolina State University:** [www.ncsu.edu](http://www.ncsu.edu)

- Checklist: Ladder Safety