

Ladder Safety: Are Your Ladders Safe?

OSHA estimates that there are more than 11,000 lost workday injuries and more than 13,000 non-lost work day injuries annually due to falls from ladders. In Oregon, over 1,000 workers per year are seriously injured in falls from ladders. Most falls involve portable ladders that move, tilt, or shift while the worker is climbing or descending, and are usually less than 10 feet above the ladder's support. Unstable or slippery base surfaces are the primary reason ladders fall over. Other reasons include miss-stepping, slip of the foot, overreaching, overloading, using damaged ladders, improper use, and being struck by a vehicle or other object.

In 2003 alone there were 351 reported falls from ladders used in the construction industry in Oregon. The indirect costs of an injury is often four times the direct costs.

Let's look at some ways to prevent injuries to our employees.

Step-by-Step Approach

- The right selection
- Frequent inspection
- Proper setup
- Safe use
- Appropriate maintenance and storage
- Effective training

Ladder Selection

Ladders come in different types because they are designed to meet the needs of various tasks. It is very important that you match the ladder to both the task and the environment.

The first step in ladder selection is choosing the right style of ladder for the job. Different styles of ladders are designed to keep you safe and productive when climbing or standing. Using the incorrect style of ladder, or simply ignoring the limitations of climbing equipment, can result in a fall or serious injury. There are two main categories of portable ladders: non-self supporting (extension, straight) and self-supporting (step). All ladders are required to have non-slip bases.

There are four key elements you should consider when selecting a ladder:

- Style – Which kind of ladder is right for the job (step, extension, multi-purpose, etc.)?
- Size – How high do you need to reach?
- Duty Rating – What is the application? How much weight will be on the ladder?
- Material – Where will the ladder be used? Is contact with electrical wires even a remote possibility?

Exceeding the weight capacity could cause structural damage to the ladder and injury to the ladder user. When selecting the ladder, determine the amount of weight that will be

applied to it. Remember to add the user's weight, the weight of any personal protective equipment (PPE), the weight of their tool belt, and the weight of any material that will be carried on the ladder.

All portable ladders receive one of five ratings based on their maximum working load (the maximum weight they can safely support). The ratings are:

Professional (Type 1AA) – 375 lbs.

Extra Heavy Duty (Type 1-A) – 300 lbs.

Heavy Duty (Type 1) – 250 lbs.

Medium Duty (Type II) – 225 lbs.

Light Duty (Type III) – 200 lbs.

Inspection

Ladders must be inspected by a competent person for visible defects on a periodic basis, and before further use after any occurrence that could affect their safe use such as a collapse, tip over, when exposed to corrosives (oil, grease, etc.), or welding contact. They must be inspected frequently, both daily and prior to use. Don't wait until you get to the job site, because the temptation to use a defective ladder is too great when you're already at the site and wanting to get to work. Start with the three Ds: defects, damage, and deterioration.

When inspecting the rails, look for bends, cracks, splitting, and loose rail connections; make sure they are free from grease, oil, sharp points, edges, or splinters. Also make sure all warning labels and instructions are in view.

When inspecting rungs, cleats, and steps, look for missing or severely worn rungs, bends, dents, cracks, splitting, and loose/unsecured side rail connections. Make sure they are free from grease, oil, and dirt, and that the slip-resistant material is intact/adequate (metal), and there are no sharp points, edges, splinters, or snags.

What do you do when a ladder is defective?

- Tag – “Do Not Use”
- Destroy and discard ladder if not repairable
- If repairable, consult the vendor/manufacturer to ensure it can be repaired to its original capacity.

Setting Up

Next to the selection of the ladder, setting it up is the most important step to ladder safety. Over half of all ladder accidents are caused by falls when the ladder tips over.

There are four steps to setting up a ladder:

1. Check the work area for potential hazards
2. Inspect the ladder
3. Properly equip personnel involved with the set up
4. Set up the ladder

Check the work area to make sure that there is sufficient room to set up the selected ladder based on its needs, such as 4:1 ratio for extension ladders. Look up to identify overhead hazards that the ladder could contact, such as electrical lines, tree branches, or other obstructions. Prior to setting up the ladder, look at the surface the ladder will be resting on. Check to see if the area has any potential hazards such as debris, stored material, water or other liquid, loose soil, or rock...anything that may affect the stability of the ladder. Make sure that it has sufficient strength to support the anticipated working load of the ladder.

Use

Many falls from ladders occur as a result of simply not using ladders according to safe use guidelines. Follow this simple list of rules:

- Use ladders only for the purpose they were designed.
- Never step over the top of the ladder.
- For proper balance, face the ladder and keep your belt buckle between the rails.
- Keep three points of contact: two hands and a foot or two feet and a hand.
- Do not carry heavy or bulky objects; use a bucket and rope or a tool belt.
- Do not hurry up a ladder.
- Do not move the ladder while anyone is standing on it.
- Do not have more than one person at a time on a ladder unless the ladder is designed for it.
- Do not use ladders as a platform.
- Make sure your shoes are clean before you climb.
- Do not place tools or material on a ladder.
- Do not work on ladders during a severe storm or strong wind.
- Do not work on ladders that are covered with ice or snow.

Maintenance and Storage

Periodic maintenance and proper storage will extend a ladder's life and cut replacement costs. Maintenance includes little more than inspecting the ladder for damage, tightening connections, and lubricating movable parts. Neglected ladders quickly become unsafe ladders.

Training

Employers must establish a training program to ensure workers understand safe work practices relating to ladders. Whatever the training looks like, it should include the five major points of ladder safety: selection, inspection, set up, use, and maintenance and storage.

Your training program must cover the nature of fall hazards in the work area; proper construction, use, placement, and care; correct procedures for erecting, maintaining, and disassembling fall protection systems; and capacities of ladders.

For more information contact OR-OSHA or your AGC safety and loss control consultant.