

Portable Ladder Safety

The Portable Ladder Safety Program establishes training and standard procedures for all Florida State University employees that use portable ladders at work. This program pertains to the use of step ladders, straight ladders, extension ladders, and other variations of portable utility ladders. This program does not apply to step stools less than 3 feet in height.

Governing Regulations

Florida State University has developed the Portable Ladder Safety Program to safeguard employees that perform work with portable ladders. This program is intended to prevent ladder-related incidents and to promote compliance with the Occupational Safety and Health Administration (OSHA) and American National Standards Institute (ANSI) standards.

- [29 CFR 1910.23](#)
- [29 CFR 1926 Subpart X](#)
- ANSI A14.1,14.2,14.5 - 2007

Duties and Responsibilities

Environmental Health and Safety

- Developing, updating, and promulgating training and guidelines
- Maintaining training records
- Validating program implementation
- Revising and updating the program as necessary

Supervisors

- Ensuring that applicable personnel have been trained
- Ensuring that applicable personnel comply with this program
- Removing defective, damaged, or prohibited ladders from service
- Conducting periodic visual inspections of ladders to ensure integrity
- Performing (or recording) annual inspections (Supervisor or designee)

Employees

- Completing ladder safety training
- Complying with the requirements of this program
- Conducting visual inspections of ladders prior to use for defects and damage
- Ensuring safe conditions prior to use
- Removing defective, damaged, or prohibited ladders from service

Program Elements

Ladder Types

There are four primary portable ladder types: step-ladders, straight ladders, extension ladders, and extension trestle ladders. A step-ladder is a self-supporting ladder, non-adjustable in length, having flat steps and a hinged back. A single straight ladder is nonadjustable in length, consisting of only one

section, while an extension ladder is a portable ladder adjustable in length, consisting of multiple sections.

Ladder Composition

The rails on a ladder are generally composed of wood, metal, or fiberglass. The following information outlines important details regarding the different properties of these materials as they apply to ladders.

Wood and metal ladders are not recommended for use by employees on the Florida State University campus. New ladders purchased at FSU should be of fiberglass construction.

Wood Ladders

Wood ladders are electrically non-conductive and are the best natural insulator against heat. However, they can be electrically conductive if wet. Wood ladders are heavier than metal and susceptible to rotting and splitting in the absence of a protective finish.

Metal Ladders

Metal ladders are relatively strong and lightweight, but they are prone to dent, bend, and conduct heat. They must not be used when working on or near electrical wires or when working around sources of electrical energy sources. Metal ladders must be labeled with a "DANGER" sticker indicating an electrocution hazard.

Fiberglass Ladders

Fiberglass ladders are strong and electrically non-conductive, but they are generally heavier than metal ladders. Fiberglass may chip or crack upon impact, and when overloaded, fiberglass may crack to the point of failure.

Ladder Selection

The American National Standards Institute (ANSI) requires that a duty rating sticker be placed on the side of each ladder. When selecting a ladder, ensure that the ladder has an adequate proper duty rating to support the combined weight of the user and the material. Materials include the weight of clothing, protective equipment, and supplies being carried or stored on the ladder. When selecting a ladder, it is critical that the overall load does not exceed the rated load capacity. The ladder duty ratings are as follows:

- Type IAA (Extra Heavy Special Duty Industrial): for heavy duty, such as utilities, contractors, and industrial use. The load capacity must not to exceed 375 pounds.
- Type 1A (Extra Heavy Duty Industrial): for heavy duty, such as utilities, contractors, and industrial use. Load capacity not to exceed 300 pounds.
- Type I (Industrial): for heavy duty, such as utilities, contractors, and industrial use. Load capacity not to exceed 250 pounds.
- Type II (Commercial): for medium duty, such as painters, offices, and light industrial use. Load capacity not to exceed 225 pounds.
- Type III (Household): for light duty, such as light household use. Load capacity not to exceed 200 pounds.

Ladder Inspection & Repairs

Each employee utilizing a ladder must inspect the ladder prior to use. The employee performing the inspection must visually inspect and confirm that applicable criteria are met within the “[Portable Ladder Inspection Checklist](#)” (See Appendix A). An employee must re-inspect the ladder immediately after events that could impact the integrity of the ladder (e.g. dropping the ladder or transporting the ladder). Ladders that do not meet the requirements of the “[Portable Ladder Inspection Checklist](#)” must be tagged as “Dangerous, Do Not Use” and removed from service immediately. The ladder must be cut vertically from top to bottom before being disposed to prevent anyone from using the ladder. Improvised repairs must not be made to ladders. In addition, ladders must not be painted with an opaque finish or coated with any material that may hide defects. The Checklist is for reference when conducting the pre-use inspections. Checklists must be completed when a ladder is taken out of service and/or when conducting annual inspection on ladders.

Ladder Storage & Transport

As a best practice, ladders should be stored in a location out of direct sunlight and away from chemicals or materials that may cause decay or damage. Materials must never be stored on a ladder or hung from a ladder in storage. All ladders must be secured during transport to prevent damage.

Ladder Setup & Securement

Employees must ensure that the following “proper use” criteria are met:

- Ladders must be set up on a flat, level surface.
- Ladders must not be placed in front of a door opening unless the door is blocked open, locked, or guarded.
- Ladders must not be used horizontally as a platform, a runway, or scaffold.
- Ladders must not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- The area around a ladder must remain clear from debris, equipment, tools, etc.
- Ladders must not be loaded beyond the maximum manufacturer’s rated capacity.
- Ladders must not be set up or used outdoors during wind speeds exceeding 20 miles per hour.
- Ladders must not be set up or used on slippery surfaces such as oily deposits.
- Ladders must not be used by more than one employee at a time.
- Shorter ladders must not be spliced together to create longer sections.
- Standing ladders must not be left unattended.
- Aerial lifts or other means should be considered in place of using a ladder when feasible.
- Whenever possible, use the buddy system, one employee to hold the ladder in place while the other is working. Working with a buddy can also be helpful for accessing tools and equipment. The buddy is also available to get help if an incident occurs.

Employees must set up the ladder according to the following chronological steps depending on the type of ladder:

Step-Ladders

1. Lay the step-ladder on the ground and extend and lock the metal spreaders in place.

2. Lift the ladder from the top and walk it up until the ladder is sitting on all four feet.
3. If the ladder is large or the task is too difficult alone, ask for help to set up the ladder. Using two people, raise the ladder like one would a straight ladder. Have one person on the front side rails and the other person on the back side rails. Separate the front from the back by walking in opposite directions. Ensure the spreader is engaged and the hinge is locked.
4. Once the ladder is in the upright position, the metal spreader must be checked again to ensure that the spreader is locked prior to use. A step-ladder must not be used in a folded position.

Straight and Extension Ladders

1. Lay the ladder on the ground with the base resting against the bottom of a wall and the top pointing away from the wall.
2. Starting at the top, lift the ladder over your head and walk under the ladder to the wall. Move hands from rung to rung as you go.
3. When the ladder is vertical and the top is against the wall, pull the base out so that the distance from the wall is one-fourth the height to the point of support.
4. If using an extension ladder, extend the ladder up as necessary from the ground only.
5. The minimum overlap for any two sections on an extension ladder must be at least three feet.
6. No ladder must be used to gain access to another location unless the top of the ladder extends at least 3 feet above the point of support at eave, gutter, or roofline.
7. When possible, each ladder must be secured at the top and bottom to prevent movement. At a minimum, the bottom must be securely blocked against a fixed object such as a cleat, tied to the base of the wall, or footed against another person.

Ladder Climbing and Standing

When climbing or standing on a ladder, the following safety precautions must be followed:

- The top two steps of a stepladder and the top two rungs of a straight or extension ladder must not be used for standing.
- Shoes and rungs must be free of mud, soil, paint, or other slippery materials.
- When ascending or descending, the user must face the ladder.
- At least one hand must be free to grasp the ladder at all times. Maintain at least three points of contact with the ladder (two feet and one hand or two hands and one foot) when climbing the ladder.
- The top rest for portable rung and cleat ladders must be rigid and have strength to support the load.
- Do not stand on the pail shelf of a step-ladder.
- Do not stand on the back bracing of a step-ladder.
- Do not straddle the front and back of a step-ladder.
- Both hands should be free to grasp the ladder when ascending or descending; supplies or equipment must not be hand carried by the worker on the ladder; instead, a rope, block, tool belt, or pulley system must be used to carry tools or equipment.
- When working to the side of a ladder, the centerline of the body must be maintained between the side rails. Do not overreach or lean too far to one side.
- Do not move, shift, or extend ladders while in use.

- Never climb onto the back side of a ladder, slide down the rails of a ladder, or sit on ladder rails.
- If one feels sick or dizzy while climbing or standing on a ladder, do not try to climb down in a hurry. Drape your arms around the rungs and rest your head against the ladder until you feel better. Then climb down slowly .
- If conditions such as wind change while working, work must be abandoned on the ladder until work conditions improve.

Work Near Energized Circuits or Equipment

Safe work practices must be maintained to prevent electrical shock or other injuries caused by contact with energized electrical equipment or circuits. These work practices must be consistent with university programs and policies including but not limited to the “[Hazardous Energy Control \(Lockout-Tagout\)](#)” based upon nature and extent of the hazards. Under no circumstances must metal ladders be used where contact could occur with energized electrical equipment or circuits.

Training & Recordkeeping

Employees must be trained on the following topics prior to portable ladder setup or use:

- Ladder types, compositions, and parts
- Ladder selection and inspection
- Ladder storage, setup, and use

Employees must be retrained after an incident or as necessary to maintain their understanding and knowledge regarding the safe use of ladders. Training records must be retained by Environmental Health and Safety. Records must contain the employee name, date of training, and the subject of the training.

Appendices

Appendix A: [Portable Ladder Inspection Checklist](#)