



1. Purpose: Virginia Commonwealth University has developed this Portable Ladder Safety Program to safeguard employees that 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) Standards contained within 29 CFR 1910.23(c) and 1910.30.
2. Scope: The Portable Ladder Safety Program establishes training and standard procedures for all Virginia Commonwealth University employees that use portable ladders at work. This program pertains to the use of the following types of portable ladders: step ladders, straight ladders, extension ladders, and other variations of portable utility ladders.
 - a. Out of Scope: This program does not apply to:
 - 1) Fixed Ladders
 - 2) Step ladders less than 3 feet in height

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4. Definitions:

- Extension Ladder: a portable ladder adjustable in length, consisting of multiple sections.
- Portable Ladder: a ladder that can readily be moved or carried, and usually consists of side rails joined at intervals by steps, rungs, or cleats.
- Single Straight Ladder: a non-adjustable in length, consisting of only one section.
- Step Ladder: a self-supporting ladder, non-adjustable in length, having flat steps and a hinged back.



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5. Responsibilities:

a. Safety and Risk Management (SRM) is responsible for:

- Developing, updating and revising this program;
- Validating program implementation by verifying completion of ladder inspections; and
- Developing and delivering portable ladder safety training.

b. Departments who own or use ladders are responsible for:

- Ensuring that employees who use ladders have been trained and comply with this program;
- Removing defective, damaged, or prohibited ladders from service; and
- Conducting periodic visual inspections of ladders to ensure integrity.

c. Employees who utilize ladders are responsible for:

- Complying with the requirements of this program and attending applicable training;
- Conducting and documenting visual inspections of ladders prior to use for defects and damage and alerting their supervisor to remove defective or damaged ladders from service; and
- Ensuring safe conditions prior to using a ladder.

6. General Ladder Safety Requirements:

a. Ladder Selection: The type and composition of a ladder necessary for a particular job shall be determined based upon the specific task. The American National Standards Institute (ANSI) requires that a duty rating sticker be placed on the side of each ladder. When selecting a ladder, departments and users must ensure that the ladder has an adequate 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. The ladder duty ratings are as follows:

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



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- 5) Type III (Household): for light duty, such as light household use. Load capacity not to exceed 200 pounds.

- b. Ladder Storage and 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. Store ladders on sturdy hooks or wrapped with chain against a wall where they cannot be damaged or fall. Do not hang anything on ladders that are in a stored condition. All ladders shall be secured during transport to prevent damage.

- c. Ladder Setup and Securing: Employees shall ensure the following safe work practices are met prior to setup:
 - Ladders shall be set-up on a flat, level surface
 - Ladders shall not be placed in front of a door opening unless the door is blocked open, locked, or guarded.
 - Ladders shall not be used horizontally as a platform, a runway, or scaffold.
 - Ladders shall 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, etc.
 - Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond their manufacturer's rated capacity.
 - Ladders shall not be setup or used outdoors during wind speeds exceeding 20 miles per hour.
 - Ladders shall not be setup or used on slippery surfaces such as snow, ice, or oily deposits.
 - Ladders shall not be used by more than one employee at a time.
 - The maximum length of a step-ladder shall not exceed 20 feet, a single straight ladder shall not exceed 30 feet, and an extension ladder shall not exceed 36 feet. Aerial lifts or other means should be used for heights exceeding 36 feet.
 - Shorter ladders shall not be spliced together to create longer sections
 - Standing ladders shall not be left unattended
- 1) Employees shall setup the ladder according to the following chronological steps depending on the type of ladder:
 - a) Step-Ladders:
 - Lay the step ladder on the ground, and extend and lock the metal spreaders in place.
 - Lift the ladder from the top and walk it up until the ladder is sitting on all four feet.



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- If the ladder is large or the task is too difficult alone, ask for help to setup 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.
- Once the ladder is in the upright position, the metal spreader shall be checked again to ensure that the spreader is locked prior to use. A step ladder shall not be used in a folded position.

b) Straight and Extension Ladders:

- Lay the ladder on the ground with the base resting against the bottom of a wall and the top pointing away from the wall.
- 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.
- 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.
- If using an extension ladder, extend the ladder up as necessary from the ground only.
- The minimum overlap for any two-sections on an extension ladder shall be at least three feet.
- No ladder shall 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.
- When possible, each ladder shall be secured at the top and bottom to prevent movement. At a minimum, the bottom shall be securely blocked against a fixed object such as a cleat, tied to the base of the wall, or footed against another person.

d. Ladder Usage: When climbing or standing on a ladder, the following safety precautions shall be followed:

- The top two steps of a stepladder and the top two rungs of a straight or extension ladder shall not be used for standing.
- Shoes and rungs shall be free of mud, soil, paint, ice, 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 shall 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.
 - Supplies or equipment shall not be hand carried by the worker on the ladder; instead, a rope, block, tool belt, or pulley system shall 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 shall be abandoned on the ladder until work conditions improve.
- e. 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.
- 1) 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.
 - 2) 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 energy sources. Metal ladders must be labeled with a "DANGER" sticker indicating an electrocution hazard.
 - 3) 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.
- g. Working Near Energized Circuits or Equipment: Safe work practices shall be maintained to prevent electrical shock or other injuries caused by contact with energized electrical equipment or circuits. These work practices shall be consistent with university programs and policies including but not limited to the "Electrical Safety Program" and the



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"Control of Hazardous Energy (Lockout/Tag-out)" program based upon nature and extent of the hazards. Under no circumstances shall metal ladders be used where contact could occur with energized electrical equipment or circuits.

- f. Ladder Inspections: Each user shall inspect the ladder prior to use. The user performing the inspection shall visually inspect each ladder. A user shall 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 are damaged or missing parts shall be tagged as "Dangerous, Do Not Use" and removed from service immediately. Improvised repairs shall not be made to ladders. Only repairs that restore the ladder to the manufacturer's design specifications are permitted under this program. In addition, wood ladders shall not be painted with an opaque finish or coated with any material that may hide defects.

7. **Training and Record Keeping**: Employees will be trained on the following topics prior to portable ladder setup or use:
- Nature of all fall hazards in the work area;
 - Correct procedures for erecting, maintaining and disassembling the ladder system;
 - Proper construction, use, placement and care of handling of ladders; and
 - Ladder inspection requirements.

Employees shall be retrained after an incident or as necessary to maintain their understanding and knowledge regarding the safe use of ladders.

Training documentation will be retained by Safety and Risk Management and will include the employee name and signature and date, title and length of training.

8. **References**:

- OSHA Standard: 29 CFR 1910.23(c) Ladders
- OSHA Standard: 29 CFR 1910.30 Training Requirements
- Environmental Health and Safety and Risk Management policy: located in the VCU [Policy Library](#)