



LANSING COMMUNITY COLLEGE

# Ladder Safety Program

This document provides the minimum requirements for developing, implementing, and maintaining Lansing Community College's Ladder Safety Program. Specifically, the document details the safety control measures the college has implemented to protect employees, students, visitors, vendors, and contractors. Lansing Community College's Ladder Safety Program conforms to MIOSHA General Industry Safety And Health Standard Part 2. Walking-Working Surfaces and Lansing Community College Board of Trustees Policy 6.090.

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Occupational and Environmental Safety Department, Administrative Services Division

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## 1.0 Introduction

The Ladder Safety Program provides the minimum requirements for the safe selection, use, inspection, and maintenance of ladders. It also educates all personnel on the risks associated with ladder usage and the necessary precautions to mitigate them. The program is designed to ensure a consistent approach to ladder safety across all college divisions, departments, and programs. It does not cover scaffolds, fall protection, or elevated platforms. These fall under separate programs.

## 2.0 Definitions

- **Combination Ladder:** A portable ladder can be used as a stepladder, single, or extension ladder.
- **Contractors:** Hired external workers.
- **Employees:** Company staff members (full-time, part-time, student employees, faculty members).
- **Extension Ladder:** A non-self-supporting portable ladder adjustable in length.
- **Fixed Ladder:** A ladder permanently attached to a structure.
- **LCC Community:** employees, visitors, vendors, students, and contractors.
- **Stepladders:** These are self-supporting portable ladders that are non-adjustable in length, with flat steps and a hinged base. They are designed to support one person along with all necessary equipment (tools, materials, Personal Protective Equipment, etc.), and they are constructed under the following general classes:
  - **Type I** – Industrial, heavy-duty ladder with a load capacity of not more than 250 pounds.
  - **Type IA** – Extra-heavy industrial ladder with a load capacity of not more than 300 pounds.
  - **Type II** – Commercial, medium-duty ladder with a load capacity of not more than 225 pounds.
  - **Type III** – Household, light-duty with a load capacity of not more than 200 pounds.
    - **Type III ladders are not to be used in the workplace**
- **Step Stools:** A self-supporting, foldable portable ladder with flat steps under 32 inches in size.
- **Supervisor:** Manager of employees.
- **Temporary Agency Employees:** Workers from staffing agencies
- **Top Cap:** The uppermost horizontal member of a portable stepladder.
- **Top Step:** The first step below the top cap of a portable stepladder.
- **Working Length:** The length of a non-self-supporting portable ladder measured along the rails from the base to the top bearing point.
- **Working Load:** Maximum applied load, including the user's weight, materials, and tools
- **Vendors:** Product or service providers.
- **Visitors:** Non-staff guests.

## 3.0 Responsibilities

### 3.1 Occupational and Environmental Safety (OES) Department

Responsible for:

- Developing and providing administrative oversight for LCC's Ladder Safety Program.

- Providing subject matter expertise and technical resources to Executive Leadership Team (ELT) members and supervisors.
- Acting as a liaison with local, state, and federal regulatory agencies.

### 3.2 Executive Leadership Team Member (ELT)

Responsible for:

- Implementing and sustaining LCC's Ladder Safety Program.
- Ensuring supervisors have the authority to act to protect the safety of the LCC community as assigned within their divisions, departments, or programs.
- Providing adequate financial resources and personnel to maintain safe work environments and instructional spaces.
- Acting when personnel are not complying with LCC's Ladder Safety Program.

### 3.3 Supervisors

Responsible for:

- Representing their division, department, or program in maintaining a safe and healthy learning and working environment for the affected LCC Community.
- Implementing LCC's Ladder Safety Program at the division, department, or program level.
- Ensuring that ladders purchased/used in the division, department, or program are code-compliant and appropriate for the needed safe-work tasks.
- Ensuring that periodic ladder inspections have been conducted and documented and program reviews within their divisions, departments, or programs are conducted ([See Appendix A](#)).
- Ensuring the development and maintenance of a ladder inventory for their division, department, or program ([See Appendix B](#)).
- Ensuring that defective ladders are tagged "Do Not Use" and removed from service.
- Ensuring ladders are stored properly as defined in this program.
- Ensuring labels on ladders are legible and intact.
- Providing employees with ladder safety training and maintaining training records.
- Informing employees about the hazards associated with ladder use and the measures to mitigate these risks.
- Ensuring ladders are used in accordance with the safe work practices outlined in this program.

### 3.4 Faculty

Responsible for:

- Ensuring the instructional spaces are safe and free of recognized hazards.
- Consistently practicing safety procedures.
- Following the employee role as well as their primary faculty role with responsibility to students.
- Ensuring students understand the proper use of ladders and safety procedures, including pre-use inspections and the importance of maintaining three points of contact.
- Ensuring students use ladders according to the safety guidelines provided.
- Ensuring that students do not alter, splice, or misuse ladders in any manner.
- Conducting pre-use inspections of ladders before each class or practical session.
- Ensuring ladders are stored properly according to the program's guidelines.

- Removing damaged or defective ladders from use immediately and reporting them for repair or replacement.
- Identifying and implementing corrective/preventive actions.

### 3.5 Employees

Responsible for:

- Ensuring their safety. Once informed about the extent of risk and safe procedures for their activities, all individuals working with ladders must accept a shared responsibility for operating safely.
- Completing the designated ladder safety training prior to use.
- Selecting and using a ladder safely.
- Inspecting ladders before each use and reporting any defects to their supervisors.
- Maintaining three points of contact while climbing ladders.
- Avoiding carrying objects that could cause a loss of balance while climbing ladders.

### 3.6 Students

Responsible for:

- Adhering to all safety protocols and rules.
- Being responsible for ensuring a safe learning environment where physical well-being and educational pursuits are protected.
- Familiarizing themselves with the safety measures.
- Actively participate in safety training relevant to their courses or activities
- Immediately report any accidents or unsafe conditions to their faculty members.

### 3.7 Vendors and Contractors

Responsible for:

- Complying with all local, state, and federal safety requirements.
- Ensuring that all their employees performing work on LCC properties have been trained.
- Coordinating activities and procedures with the facilities department, division, department, or program, providing oversight before work begins.
- Taking preventive measures to protect their employees under normal operating conditions and in foreseeable emergencies.

### 3.8 Temporary Agency Employees

Responsible for:

- Follow the same requirements as employees.

## 4.0 Ladder Construction Requirements

- Fixed and portable ladders and step stools must meet OSHA and ANSI A14.1 materials and construction specifications.
- Portable ladders must display the appropriate legible ANSI standard compliance marking and other ladder markings. Labels/markings must be replaced when they are no longer legible.
- Wooden ladders are not to be used at LCC.

## 5.0 Ladder Usage

Do not use items as ladders that are not meant to be ladders. Chairs, tables, boxes, etc., are not ladders and will easily cause accidents.

### 5.1 Selection and Use of Ladders

- Select a ladder with the proper length and duty rating for the intended work.
  - NOTE: When properly installed, a leaning ladder must extend at least 36" above the edge of a roof/mezzanine. A step ladder must be tall enough so that the top two rungs of the ladder are not utilized to access the work.
- Metal ladders must never be used near electrical equipment. Fiberglass ladders are designed to provide adequate protection from electrical hazards.
- Ladders shall not be used for purposes other than the manufacturer's original intention.

### 5.2 Inspection and Maintenance

- A pre-use inspection must be conducted before the use of a ladder.
- Inspect the ladder for broken or defective parts before each use.
- Remove damaged or defective ladders from use and notify your supervisor of the damaged or defective ladder.

### 5.3 Placement and Setup

- Ladders may only be used on stable and level surfaces unless secured to prevent accidental displacement or movement.
- If the ladder is used where someone could walk under it, the area must be cordoned off with a visual barrier such as yellow caution tape to alert pedestrians to the hazard of something falling from the ladder.
- Ladders must not be placed in passageways, doorways, driveways, or any location where they may be displaced by activities conducted on any other work unless protected by barricades or guards.
- For leaning or extension ladders, tie, block, or otherwise secure while in use.
- Extension ladders must be placed at the proper angle. Use a 4:1 ratio for setting ladders (approximately 75 degrees) - for every four feet in height, the ladder base should be moved one foot from the wall or structure. For example, a 20-foot ladder should be placed about five feet from the base of the wall you will be accessing.
  - NOTE: When properly installed, a leaning ladder must extend at least 36" above the edge of a roof/mezzanine. A step ladder must be tall enough so that the top two rungs of the ladder are not utilized to access the work.
- Ensure a stepladder is properly set up and the spreader is locked in place before use.
- Do not use the stepladder as a lean-to ladder.
- Ladders may not be altered or spliced in any manner.

### 5.4 Climbing and Working on Ladders

- Ladders may not be moved, shifted, or extended while a person is on the ladder.
- When climbing up or down the ladder, always face the ladder and maintain at least three points of contact, such as two hands and one foot or two feet and one hand. Hands should be free for

climbing and not holding tools or materials. Use a rope and bucket to pull items up, or have someone hand them up.

- Always use 'hands-free' carrying devices, such as a toolbelt or rope and bucket, - when ascending and descending a ladder.
- When working aloft, secure tools and supplies so they cannot fall from the ladder.
- Do not do the following:
  - Stand on the top three rungs of a single or extension ladder.
  - Stand on the top cap or top step of a stepladder.
  - Work outside the ladder's footprint. Your center of gravity should remain within the ladder rails.
  - Place planks for walking on the top cap or any other part of a ladder.
- Do not use the X-bracing or other structures on the rear section of a stepladder for climbing unless the ladder is designed for climbing from both sides.

## 6.0 Ladder Inspections

### 6.1 Ladder Inspection Frequency

- **Each Use.** Conduct Pre-Use Inspections to ensure safety; portable ladders must be inspected before use.
- **Annually.** Conduct a Periodic Inspection of portable ladders per the manufacturer's recommendations.
- **As Needed.** Inspect a ladder after any event that could damage the ladder, such as a fall.

You should conduct an annual inspection before the use of new or modified equipment.

Inspection results must be documented and retained for 12 months. [See Appendix A.](#)

### 6.2 Instructions for Pre-Use Inspection

Inspect the ladder for the following items before each use. This inspection can be completed by a supervisor, employee, or faculty member who has had ladder training. If any defects are found, do not use the ladder and notify your supervisor immediately.

- **General Condition**
  - Check for visible cracks, splits, or corrosion on the ladder.
  - Ensure the ladder is clean and free of oil, grease, or other slippery substances.
  - Remove any Type III stepladders, tag, and notify the supervisor.
- **Rungs and Steps**
  - Ensure rungs and steps are not missing, loose, or broken.
  - Check for wear, damage, or deformation.
- **Side Rails**
  - Inspect for dents, bends, or other damage.
  - Ensure side rails are straight and not twisted.
- **Hardware and Fittings**
  - Check that all rivets, bolts, and screws are in place and secure.
  - Ensure that any moveable parts, such as locks or hinges, function properly.
- **Feet and Base**

- Ensure that the feet are secure and have non-slip surfaces.
- Check for cracks or other damage to the base.
- **Labels and Markings**
  - Ensure all manufacturer's safety labels and markings are legible and intact.
  - Ensure duty rating (Type I, IA, or II) is prominently displayed.
- **Functionality**
  - For extension ladders, ensure the locking mechanisms work properly.
  - For stepladders, check that the spreader bars lock securely.

### 6.3 Instructions for Annual Portable Ladder Inspection

Conduct a thorough annual inspection of all ladders to ensure long-term safety and compliance using the form in [Appendix A](#). Inspect each ladder in your inventory for the following items in detail. Tag any defective ladders with "Do Not Use" and arrange for repair or replacement. A supervisor or their designee must complete the inspection.

- **Identification**
  - Verify the ladder ID number and ensure it matches the inventory log [Appendix B](#).
  - Check that all identification labels are intact and legible.
- **Structural Integrity**
  - Check for any signs of structural damage, such as cracks, splits, corrosion, or significant wear.
  - Inspect for any modifications or splices made to the ladder.
- **Rungs and Steps**
  - Ensure all rungs and steps are present, secure, and free of damage or excessive wear.
  - Check for any deformation or instability in the steps.
- **Side Rails**
  - Inspect side rails for any bends, dents, cracks, or other damage.
  - Ensure they are not twisted and maintain their original shape.
- **Hardware and Fittings**
  - Check that all rivets, bolts, and screws are secure and free of rust or damage.
  - Ensure that moveable parts, such as locks, hinges, and spreader bars, operate smoothly and securely.
- **Feet and Base**
  - Ensure the ladder feet are secure and have non-slip surfaces.
  - Check for damage, wear, or missing parts at the base.
- **Labels and Markings**
  - Ensure all manufacturer's safety labels, weight ratings, and other markings are present and legible.
  - Replace any faded or missing labels.
- **Functionality and Safety Features**
  - Test the locking mechanisms on extension ladders for proper operation.
  - Verify that spreader bars on stepladders lock securely and are not damaged.
- **Additional Safety Features**
  - Inspect any additional safety features, such as rope and pulley systems, for wear and proper function.



- Ensure that any attached accessories are in good condition and securely fastened.
- **Storage Conditions**
  - Verify that ladders are stored properly according to program guidelines.
  - Check for exposure to elements that could cause damage, such as direct sunlight, extreme temperatures, or moisture.

## 6.4 Instructions for Annual Fixed Ladder Inspection

The facilities department is responsible for maintaining fixed ladders across the college. Annual inspections should include:

- **Structural Integrity**
  - Check for any signs of structural damage, such as cracks, splits, corrosion, or significant wear.
  - Inspect for any modifications or splices made to the ladder.
- **Rungs and Steps**
  - Ensure all rungs and steps are present, secure, and free of damage or excessive wear.
  - Check for any deformation or instability in the steps.
- **Side Rails**
  - Inspect side rails for any bends, dents, cracks, or other damage.
  - Ensure they are not twisted and maintain their original shape.
- **Hardware and Fittings**
  - Check that all rivets, bolts, and screws are secure and free of rust or damage.
  - Ensure that moveable parts, such as locks, hinges, and spreader bars, operate smoothly and securely.

## 7.0 Ladder Storage

### 7.1 Storage Guidelines

- **General Storage Rules:**
  - Store ladders in a clean, dry location to prevent exposure to moisture, which can cause corrosion or damage.
  - Avoid storing ladders in direct sunlight for prolonged periods, as UV rays can weaken materials, especially fiberglass.
  - Do not store ladders in areas with extreme temperatures or where they may be exposed to chemicals or fumes.
- **Storage Positions:**
  - **Horizontal Storage:**
    - Non-self-supporting ladders (e.g., extension ladders) should be stored horizontally.
    - Ensure ladders are supported at multiple points to prevent sagging. Use wall brackets or shelving that provide support at intervals no greater than one-third of the ladder's length.
  - **Vertical Storage:**
    - Self-supporting ladders (e.g., stepladders) should be stored vertically.

- Ensure ladders are in the closed position and secured to prevent tipping or falling. Use hooks or racks to keep them upright and stable.
- **Protection from Damage:**
  - Keep ladders away from areas where they may be struck by vehicles, heavy equipment, or falling objects.
  - Do not place heavy objects on top of stored ladders, which can cause bending or warping.
- **Accessibility:**
  - Store ladders in a designated area easily accessible to authorized personnel.
  - Ensure the storage area is organized and free from clutter to allow safe retrieval and return of ladders.
- **Labeling and Signage:**
  - Clearly label the storage area with appropriate signage to indicate that it is a ladder storage zone.
  - Include safety reminders about proper ladder handling and storage practices.
- **Regular Checks:**
  - Conduct regular checks of the storage area to ensure it remains clean, organized, and free from hazards.
  - Inspect ladders periodically while in storage to ensure they have not been damaged and remain in good condition.

## 8.0 Ladder Maintenance

Only trained and qualified persons can make repairs to ladders. Modifying a ladder without the manufacturer's approval may compromise its integrity, causing it to no longer meet specifications.

- Ladder repairs must restore the ladder to a condition meeting the manufacturer's original design criteria before returning it to service.
- Follow ladder manufacturer instructions for lubricating mechanical parts, such as metal bearings of locks, wheels, and pulleys.
  - For articulated ladders, lubricate the hinges upon receipt and then annually or more frequently, depending upon use.
- Clean aluminum, fiberglass, and metal ladders with soap and water.
  - Immediately dry ladders.

## 9.0 Contractors and Vendors

- Responsible for supplying and using their own portable ladders.
- Must comply with all ladder safety requirements and standards.

## 10.0 Training Requirements

Ladder users must receive documented training on this program's contents and general safe-work procedures prior to their work activities. In addition, site-specific or task-specific safe-work orientation may be needed when using ladders for unusual operations.

- **Initial LMS Training:** Conducted for all new ladder-using employees, covering ladder safety hazards, load capacities, placement, and inspection criteria.
  - Supervisors are responsible for contacting HR to ensure employees who use ladders have been classified and assigned the appropriate training
- **Division, Department, and Program Specific:** Developed and conducted by division, department, and program supervisors according to the specific ladders and hazards present in the areas.
- **Refresher Training:** Conducted in LMS every three years to ensure ongoing compliance and safety awareness.
- Training records must be maintained for three years from the training date.

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## Appendix A:

### Annual Ladder Inspection Checklist and Program Review

#### General Information

- **Inspector Name:** \_\_\_\_\_
- **Inspector Signature:** \_\_\_\_\_
- **Division, Department or Program:** \_\_\_\_\_
- **Date of Inspection:** \_\_\_\_\_
- **Ladder ID/Serial Number:** \_\_\_\_\_
- **Ladder Type (e.g., stepladder, extension ladder):** \_\_\_\_\_

#### Identification and Labels

- Verify the ladder ID number and ensure it matches the inventory log.
- Check that all identification labels are intact and legible.

#### Structural Integrity

- Check for any signs of structural damage, such as cracks, splits, corrosion, or significant wear.
- Inspect for any modifications or splices made to the ladder.

#### Rungs and Steps

- Ensure all rungs and steps are present, secure, and free of damage or excessive wear.
- Check for any deformation or instability in the steps.
- Ensure rungs and steps of portable metal ladders are corrugated, knurled, dimpled, or coated with skid-resistant material to minimize slipping.

#### Side Rails

- Inspect side rails for bends, dents, cracks, or other damage.
- Ensure they are not twisted and maintain their original shape.

#### Hardware and Fittings

- Check that all rivets, bolts, and screws are secure and free of rust or damage.
- Ensure that moveable parts such as locks, hinges, and spreader bars operate smoothly and securely.

#### Feet and Base

- Ensure the ladder feet are secure and have non-slip surfaces.
- Check for damage, wear, or missing parts at the base.

**Functionality and Safety Features**

- Test the locking mechanisms on extension ladders for proper operation.
- Verify that spreader bars on stepladders lock securely and are not damaged.
- Ensure no structural defects, such as broken or missing rungs, cleats, or steps.

**Additional Safety Features**

- Inspect additional safety features such as rope and pulley systems for wear and proper function.
- Ensure that any attached accessories are in good condition and securely fastened.

**Storage Conditions**

- Verify that ladders are stored properly according to program guidelines.
- Check for exposure to elements that could cause damage, such as direct sunlight, extreme temperatures, or moisture.

**Maintenance**

- Ensure ladders are free of oil, grease, or other slipping hazards.
- Tag any defective ladders with "Do Not Use" and arrange for repair or replacement.

**Compliance**

- Ensure ladders are used only for the purposes they were designed.
- Confirm ladders are not loaded beyond their maximum intended load.

## Appendix B:

### Example Ladder Inventory

[illegible]