



Queen's University Environmental Health and Safety

Date Issued: April, 2021	Page No.: 1	Document No.: SOP-Safety-15
Version: 1.1	Subject: Ladder Safety	

1. Introduction

The Environmental Health and Safety Standard Operating Procedure for ladder safety was developed by the Department of Environmental Health and Safety in accordance with the University's Policy Statement on Health and Safety and to ensure compliance with the Occupational Health and Safety Act.

Ladders are commonly used to reach or gain access to higher areas/levels and, at times, it may be necessary to perform tasks while on a ladder. There are numerous hazards that can, if not properly managed, result in accidents or serious injuries.

2. Scope

This SOP applies in all University owned and operated facilities, including off campus sites.

3. Applicable Legislation

Occupational Health and Safety Act (R.S.O. 1990)
CSA Standard CAN3-Z11-M81 Portable Ladders

4. Definitions

Combination Ladder - A Portable ladder capable of being used either as a step ladder or a single or extension ladder. It may also be capable of being used as a trestle ladder or a stairwell ladder.

Extension Ladder - A non-self-supporting portable ladder consisting of two or more sections travelling in interlocking rails, guides, or brackets so arranged as to permit length adjustment.

Load or Duty Rating - The recommended total weight that can be carried by a ladder. This includes the weight of the user plus any tools, materials, and accessories that the user takes on the ladder.

Platform Ladder - A self-supporting portable ladder of fixed size with a platform provided at the intended highest standing level.

Step Ladder - A self-supporting portable ladder, non-adjustable in length, having flat steps and hinged back. A step ladder is often bigger than a step stool and is meant for accessing higher areas.

Step Stool - A self-supporting, fixed, or foldable, portable ladder non-adjustable in length, 800 mm (32 inches) or less in overall size with flat steps and without a pail shelf. The ladder top cap is designed to be climbed on as well as all steps. The side rails may continue over the top cap.



Queen's University Environmental Health and Safety

Date Issued: April, 2021	Page No.: 2	Document No.: SOP-Safety-15
Version: 1.1	Subject: Ladder Safety	

Trestle Ladder - A self-supporting portable ladder, non-adjustable in length, consisting of two sections, hinged at the top to form equal angles with the base.

5. Responsibilities

5.1 Responsibilities of Directors, Department Heads and Managers

Directors, Department Heads and Managers must:

- Ensure that all pertinent supervisors, employees, and students are aware of this SOP and have been informed of the safe use of ladders.
- Ensure that this SOP is implemented in all facilities under their authority.

5.2 Responsibilities of Supervisors

Supervisors must:

- Ensure that all employees and students are aware of this SOP and have been trained in the safe use of ladders.
- Ensure that ladders are inspected before use as per the requirements of this SOP.
- Ensure that only Queen's University equipment is used and that no personal ladders, step ladders, or step stools are brought onto campus or used at an off-site location.

5.3 Responsibilities of Faculty, Staff and Students

Faculty, Staff and Students must:

- Read and understand the requirements of this SOP.
- Complete the training requirement outlined in this SOP.
- Inspect ladders before use.
- Tag any defective ladder and remove from use immediately.
- Report any defective ladder to supervisor.
- Only use Queen's University equipment as allowed by this SOP.

6. Training

All employees and students expected to work on and use portable ladders must receive appropriate training.

A supervisor or designate will act as the training coordinator. The coordinator will arrange to borrow the DVD 'A Practical Approach to Ladder Safety' from the Department of Environmental Health and Safety.



Queen's University Environmental Health and Safety

Date Issued: April, 2021	Page No.: 3	Document No.: SOP-Safety-15
Version: 1.1	Subject: Ladder Safety	

A copy of the attendance sheet and completed quizzes must be sent to the Department of Environmental Health and Safety.

7. Ladder Rating

When selecting a duty rating adequate for your needs, you **MUST** allow for the combined weights of the user, their clothes, their tools, and the materials needed. The maximum load rating of the selected ladder should **NEVER** be exceeded.

CSA Grade 1 (or ANSI Type I or higher) ladders **MUST** be used at Queen's University.

Maximum Load Capacity	Rated Use	CSA Standard	ANSI Standard	Allowed at Queens
170 kg (375 lbs)	Special Heavy Duty Designed for the most demanding industrial and construction applications	Grade 1	Type IAA	Yes
135 kg (300 lbs)	Extra Heavy Duty Designed for frequent use in maintenance, construction and industrial applications.	Grade 1	Type IA	Yes
115 kg (250 lbs)	Heavy Duty Industrial Designed for use by contractors in maintenance, construction, and industrial applications.	Grade 1	Type I	Yes
100 kg (225 lbs)	Medium Duty Commercial Designed for moderate use by homeowners, painters, handymen etc.	Grade 2	Type II	No
90 kg (200 lbs)	Light Duty Household Designed for infrequent household chores, cleaning, painting etc.	Grade 3	Type III	No

8. Ladders

Ladders can be used as a quick and easy way to access work at any given height; however, they are often used improperly and can result in injury. Selecting the wrong ladder, failing to ensure that a worksite is safe and secure, and the improper use of a ladder can easily result in falls and injury.



Queen's University Environmental Health and Safety

Date Issued: April, 2021	Page No.: 4	Document No.: SOP-Safety-15
Version: 1.1	Subject: Ladder Safety	

Ladders are meant for short duration work only, if you need to use a ladder for more than 10 minutes at a time you should find alternative options such as a manlift or scaffolding.

If there is the potential for a worker to fall from a ladder at a height greater than 10' (3m), fall arrest equipment must be used. Changing the way work is completed (ex: working from ground level), using a scissor lift, or using scaffolding are often preferred alternatives to ladders.

To reduce the risks of using a ladder a worker must:

- Select the proper ladder for the job (ex: step stool, platform, or extension ladder).
- Inspect the ladder to ensure that it is in good condition and not damaged (Appendix A Ladder/Step Stool Inspection Checklist).
- Use the ladder only on firm, level surfaces.
- Identify overhead hazards prior to setting up the ladder.
- Stabilize the base of the ladder to prevent it from movement and secure the top of the ladder when working above 10 ft (3m).
- Extend the ladder 3 feet or 3 rungs above any upper surface that you are accessing.
- Ensure that the ground around the ladder is clear of obstructions and that the rungs are clear and free of slippery substances.
- Keep the area around the ladder clear of traffic and obstructions, when necessary, use a spotter or danger tape.
- Ensure that tools are secure while ascending and descending the ladder.
- Setup your ladder at an appropriate angle of 4:1 (ex. 1 foot out from the wall for every 4 feet up).
- When using a ladder above 10 ft (3m) as a workstation, use fall arrest equipment.
- Always face the ladder when ascending or descending and maintain 3 points of contact.
- Do not overreach beyond the side rails of the ladder.
- Metallic or metal type ladders shall NOT be used around electrical energy, components, and sources.
- Only use ladders as intended, never use them horizontally as scaffold planks or a runway.

Common causes of ladder accidents include:

- Overreaching.
- Ladder not properly secured.
- Slippery surfaces (feet, rungs, footwear).
- Improper angle and/or setup.
- Unsafe position on ladder.
- Defective/damaged ladder.
- Ladder positioned too close to electrical lines.
- Using ladder in high winds.



Queen's University Environmental Health and Safety

Date Issued: April, 2021	Page No.: 5	Document No.: SOP-Safety-15
Version: 1.1	Subject: Ladder Safety	

9. Step Stools

Users of step stools (including library type rolling step stools) do not have to watch the DVD 'A Practical Approach to Ladder Safety' however, a supervisor or other competent employee must go over the following guidelines, manufacturer's instructions, and complete Appendix C 'Step Stool Safety Acknowledgement'.

Step stools must be inspected at least twice year and prior to each use. Appendix A (Inspection Checklist) or equivalent shall be completed on the bi-annual inspection.

Step stools must have a rating of CSA Grade 1, or ANSI Type I, to be used at Queen's University.

Proper use of step stools:

- Carry objects so as not to impair ability to climb/descend, maintain balance and preserve field of view.
- Keep hands above knee level when reaching downward to grasp objects.
- Keep belt buckle within centre of stool when reaching sideways, do not overreach.
- Avoid leaning backward while moving objects.
- Avoid rising on toes when reaching up to place or retrieve objects.
- Keep both feet on the stool.
- Avoid applying forceful or jerky pushing/pulling movements when there is the potential for an unexpected reaction.

10. Inspection and Maintenance

Departments shall inspect all ladders at least twice a year and prior to each use. If a ladder falls over it shall be re-inspected immediately for side rails dents or bends, excessively dented rungs, rung to side rail connections, hardware connections and possible rivet shear.

Appendix A (Ladder/Step Stool Inspection Checklist) or equivalent shall be completed on the bi-annual inspection.

11. Version History

Version 1.0: March 2012 – Initial Release

Version 1.1: April 2021 – Minor wording and format changes. Strengthened the language around the requirement that all equipment is to be provided by Queen's University.

Ladder/Step Stool Inspection Checklist

Ladder Type/ID: _____ Location: _____

Damaged or defective ladders must be tagged out of service immediately and reported to your supervisor.

‘A’ Acceptable or a checkmark ‘X’ Unacceptable or ‘N/A’	Date of Inspection							
Material: W=Wood M=Metal O=Other								
Steps or rungs (No broken, loose, missing).								
No Loose/missing nails, screws, bolts or other metal parts.								
No Cracked, split, rusted, or broken uprights, braces, or rungs.								
Wooden parts (smooth, no splinters)								
No Damaged or worn non-slip bases.								
Ladder stability.								
Moving parts moving freely (lubricated as required by manufacturer).								
Not Wobbly (side to side strain).								
No Loose or bent hinge spreaders								
Hinge spreader stops functioning correctly.								
Hinges (No loose, broken)								
Extension Locks (No loose, broken, missing)								
Rope (Not worn or rotted)								
Identification marks (legible)								
Ladder Stored properly								
Initials (person completing inspection)								
Notes:								

Ladder Safety Review Quiz

Name: _____ Staff Student Number: _____

Department: _____ Date: _____

1. The most common material used in the construction of ladders is _____.
 - A) aluminium
 - B) fiberglass
 - C) wood
2. Which type of ladder is rated for just 200 pounds and is not recommended for industrial or commercial operations?
 - A) Type I
 - B) Type II
 - C) Type III
3. A step ladder shall be carried to your destination in the _____ position.
 - A) closed
 - B) open
4. If a straight ladder contacts a wall at a height of 12 feet, the feet of the ladder should be placed _____ feet from the wall.
 - A) two
 - B) three
 - C) six
5. More than half of all ladder fall victims are holding objects with one or both hands when they fall.
 - A) True
 - B) False
6. You should only lean out beyond the side rails when working on a ladder when it is equipped with a stabilizing bar or other attachment that increases stability.
 - A) True
 - B) False
7. When using a multi-use ladder on stairs, the short end of the ladder should always be placed on the floor or landing area.
 - A) True
 - B) False
8. You should never attempt to tie two ladders together to gain additional height.
 - A) True
 - B) False

Step Stool Safety Acknowledgement

Name: _____ Staff Student Number: _____

Department: _____

I acknowledge that I have read the Queen's University Policy on ladder safety, and that I have received training from my department on the safe use of step stools and will abide by this policy and departmental instruction.

Signed: _____

Date: _____

Supervisor's Name: _____

Supervisor's Signature: _____

Date: _____