



Queen's University Environmental Health and Safety

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Revision: 1.0	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 sometime from which to perform work. There are a number of hazards that can cause accidents resulting in serious injuries.

These potential injuries include:

- Falling from ladders (especially when getting on or off)
- Struck by objects or by ladder
- Tripping over ladders
- Muscle strain from carrying heavy ladders.

Causes of ladder accidents include:

- Ladder not secured
- Slippery surfaces (feet, rungs, footwear)
- Improper angle
- Improper set-up
- Poor grip
- Unsafe position on ladder
- Defective/damaged ladder
- Ladder positioned too close to electrical lines
- Using ladder in high winds

2. Scope

This SOP applies throughout the University and all off campus sites. This SOP also applies to all faculty, staff, and students who are paid to do research, or carrying out any other work that takes place off-campus and is under the purview of the University.

3. Applicable Legislation

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



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4. Responsibilities

4.1 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 his/her authority.

4.2 Responsibilities of Supervisors

Supervisors must:

- Ensure that all staff and students are aware of this SOP and have been trained in the safe use of ladders.
- Ensure that ladders are inspected before use.

4.3 Responsibilities of Faculty, Staff and Students

Faculty, Staff and Students must:

- Inspect ladders before use.
- Tag any defective ladder and remove from use immediately.
- Report any defective ladder to supervisor.

5.0 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.

Extension Trestle Ladder - A self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable extension section, with a suitable means of locking the ladders together.

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 potable ladder of fixed size with a platform provided at the intended highest standing level.



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Portable Ladder - A ladder that can be readily moved or carried and usually consists of siderails joined at intervals by steps, rungs, cleats or rear braces.

Step Ladder - A self-supporting portable ladder, non-adjustable in length, having flat steps and hinged back.

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.

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.

6.0 Ladder Rating

When selecting a duty rating adequate for your needs, you MUST allow for the combined weights of: the user + clothes + tools + material. 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



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7.0 Safe Use of Ladders on or Around Electrical Equipment

Metallic or metal type ladders shall NOT be used around electrical energy, components and sources.

8.0 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.

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

9. Inspection and Maintenance

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

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

10. 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, manufacturers 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 either have a CSA/ANSI rating, or a manufacturer's load rating.



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10.1 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.
- 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.

11. Revision History

March 5, 2012, Initial Release

Ladder/Step Stool Inspection Checklist

Ladder Type/ID _____ Location: _____
 Material: Wood Metal Other

	Date of Inspection							
‘A’ Acceptable ‘X’ Unacceptable or ‘N/A’								
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) aluminum
 - 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 have received training in 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: _____