



SAFE WORK PRACTICE: PORTABLE LADDERS

A. OVERVIEW: PORTABLE LADDER SAFETY

Unsafe use of portable ladders can lead to falls, possibly causing severe injury or death. Portable ladders including step, extension and trestle ladders are the most common ladders used in the workplace. All ladders must be used and maintained in accordance with manufacturer specifications.

Falling from heights is a leading cause of occupational injury in Canada.

B. HOW TO CONTROL THE HAZARD:

Falls from portable ladders can be prevented by always inspecting the ladder before use and following safe work guidelines while using the equipment. Mount Royal does not loan out ladders to contractors or external groups. Contractors who were not expecting to use a ladder for their tasks (e.g. engineers performing assessments) may be permitted to use an MRU-owned ladder with approval and supervision from the contracting department.

Proper work / rest regimes will need to be used to combat fatigue. In the case of working on ladders not all personnel are able to work with their arms above their head for long periods.

C. INSPECTING THE LADDER:

Before using the ladder, it must be inspected for safety.

- Check the grade of the ladder to ensure the ladder is the right one for the job. (Refer to Section G for information).
- Check the maximum weight load limit to ensure the ladder is designed to hold you and any tools you may be using on the ladder. (Refer to Section G for information).
- Check rails for cracks, checks, bends or defects.
- Check for broken or missing rungs.
- Are the feet worn or broken
- Check the braces.
- Ladders should not be painted, as this can cause damage or hide preexisting damage to the ladder.

D. STORAGE OF LADDERS

- Store ladders in a clean and dry area, where they are secure and obstructed from unauthorized access.
- Do not leave a ladder unattended over night or for a period of time.

E. PROCEDURE

Mount Royal University does not use damaged or broken ladders, and does not repair ladders. Tag damaged or broken ladders out of service (DO NOT USE) until they have been disposed of.

A FLHA should be completed for any tasks involving step extension and trestle portable ladders at Mount Royal University.

- 1) All users using portable ladders have received appropriate training for the equipment they will be using.
- 2) All individuals working under the ladder or in the work zone must wear proper personal protective equipment (PPE) (hard hat, steel toe boots, and safety glasses).
- 3) Check the area for hazards. EG. Busy area – cordoning off area or creating a drop zone.
- 4) Set a drop zone with an appropriate barricade if there is a possibility of equipment or materials falling on others.
- 5) Always select a ladder that is appropriate for the task you will be performing.
- 6) Use only Grade 1, 1A, or 1AA ladders for construction.
- 7) Check that the environmental conditions are appropriate for the ladder. Do not use a ladder in high winds, or when environmental conditions make it unsafe.
- 8) Always ensure that the ladder is used on a firm and level surface for use.
- 9) Do not set ladders on the platforms of scaffolds, boom devices or scissor lifts.
- 10) Make sure that the ladder is level and secure to prevent side slip or kick out from the base.
- 11) Do not place objects such as boxes, lumber, etc, under the ladder to obtain extra height.
- 12) Watch out for overhead hazards when using a ladder, e.g. power lines or clearance issues.
- 13) Look at where the top of the ladder is resting and anchors. Ensure it is solid and stable.
- 14) Ensure that an extension ladder is tied off at the top and extends past the surface it is resting on by 3 ft or 1 m.

- 15) Have a second person hold the bottom of a long ladder, especially when tying or un-tying the ladder off. For short duration work, a worker must ensure, a ladder that is being extended 6 m (20 ft) that is not secured at the top, or where the ladder could move, is held at the bottom by another worker when the ladder is in use.
- 16) The bottom of the ladder should be away from the wall but never more than $\frac{1}{4}$ of the perpendicular height of the ladder.
- 17) Do not use a step ladder as a straight ladder.
- 18) Never stand on the top of a step ladder or on an extensions ladder no higher than the 4th rung from the top of the ladder.

Climbing the Ladder:

- 19) Wear slip resistant footwear, and make sure the ladder rungs are free of oil, grease or other slippery substances.
- 20) Always maintain three (3) points of contact when on climbing a ladder, e.g. two (2) feet, one (1) hand.
- 21) Always face the ladder when climbing or descending.
- 22) Always keep your body within the rails of the ladder, do not lean from the ladder.
- 23) Always consider openings within the floor when considering whether or not fall protection should be used. If there is a chance that you could fall a greater distance through a floor opening, then fall protection should be used.
- 24) If you must carry tools, use a tool belt or a bucket attached to a hand line. Dropped tools should be mitigated in the hazard assessment.
- 25) Only one person on a ladder at any time.

F. REFERENCE MATERIALS:

There is an application that can be used to maintain ladder safety. The Application NIOSH ladder safety can be downloaded for free to any smart phone.

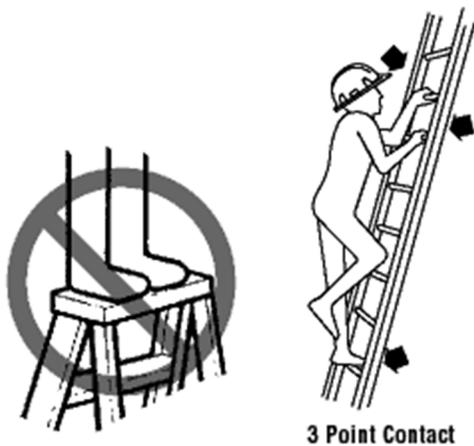
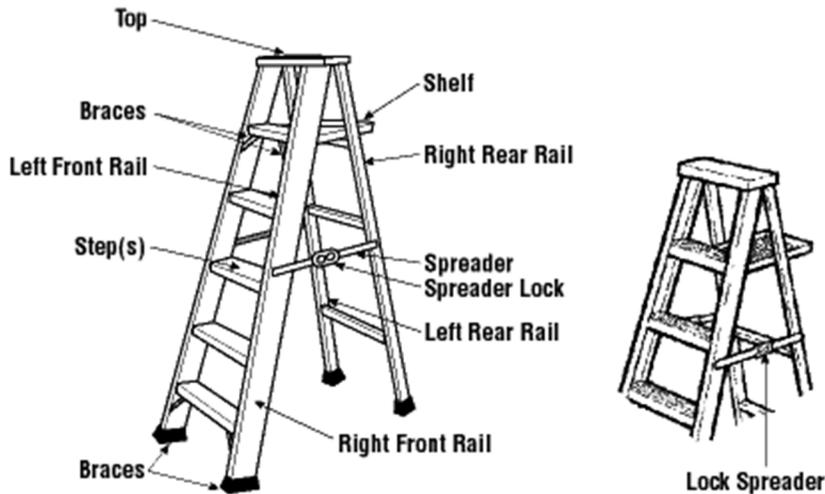
G. STEP LADDER INFORMATION:

The Canadian Standards Association (CSA) Standard Z11-12 recommends different lengths for different rating (or grades) of ladders.

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Table 1 -

Grade	Description of Grade	Length
1AA	Construction and industrial use; special duty with load rating of 170 kg (375 lbs)	3.6 m (12 ft)
1A	Construction and industrial use; extra heavy duty with load rating of 136 kg (300 lbs)	6 m (20 ft)
1	Construction and industrial use; heavy duty with load rating of 113 kg (250 lbs)	6 m (20 ft)
2	Tradesmen and farm; medium duty with a load rating of 102 kg (225 lbs)	3.6 m (12 ft)
3	Household; light duty with load rating of 91 kg (200 lbs)	2 m (6.5 ft)

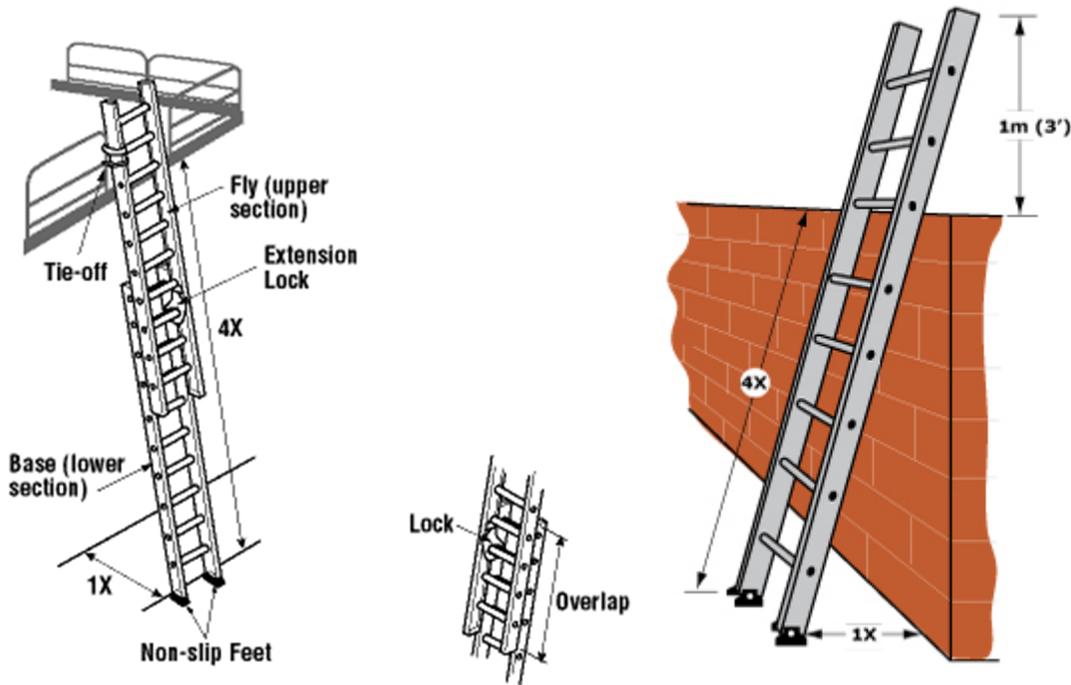


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H. EXTENTION LADDER INFORMATION:

Table 2 – Extension Ladder Overlap – Taken from CSA Standard CSA Standard CAN3-Z11-M81 (R2011), Portable Ladders.

Ladder Size M (ft.)	Overlap M (ft.) + or – 100 mm (4 inches.)
Up to and including 11 (36)	1 (3.3)
Over 11 (36) up to and including 15 (48)	1.25 (4)
Over 15 (48) up to and including 22 (72)	1.5 (5)



I. REFERENCE MATERIALS:

Pictures used taken from CCOHS Website. Canadian Centre for Occupational Health and Safety

Table 1 – Taken from Canadian Centre for Occupational Health and Safety Website.

Table 2 – Taken from CSA Standard CAN3-Z11-M81. (R2011)

- *CSA Standard CAN3-Z11-M81 (R2011), Portable Ladders;*
- *ANSI Standard A14.1-2007, American National Standard for Ladders—Wood—Safety Requirements;*
- *ANSI Standard A14.2-2007, American National Standard for*

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Ladders—Portable Metal—Safety Requirements; or
• *ANSI Standard A14.5-2007, American National Standard for Ladders—Portable Reinforced Plastic—Safety Requirements.*

J. REVISION HISTORY:

Date:	Revision:	Notes:
March 2017	01	Creation of Safe Work Procedure
February 2018	02	Update to E. Procedure (1,2,3)
August 2018	03	Update to C. Inspecting the ladder
January 2019	04	Update to B, re contractor use of ladders