

LEARNING GUIDE

Ladders and Stepladders

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Ladders and stepladders are the most commonly used types of portable access equipment in the commercial, industrial and construction fields. These devices are very easy to use, which sometimes leads people to underestimate the risk of accidents. Here is a guide to using ladders and stepladders.

Portable Access Equipment

THE DURATION OF THE WORK

Ladders and stepladders may only be used as a workstation for work that lasts less than one hour. If the job requires more time, use equipment that provides better safety, such as scaffolding, a scissor lift or a bucket truck.

THE TASKS TO PERFORM

There are three different classes of portable ladders that should be used according to the type of workplace:

▶ **CLASS 1 EQUIPMENT**

Used on construction sites and in industry

▶ **CLASS 2 EQUIPMENT**

Used in the commercial and agricultural sectors

▶ **CLASS 3 EQUIPMENT**

For domestic use

MATERIAL OF THE EQUIPMENT

The type of material is an important criterion in the selection of portable access equipment. The main types of material used to manufacture ladders and stepladders are:

- ▶ Wood;
- ▶ Aluminum;
- ▶ Steel; and
- ▶ Fiberglass.

Portable access equipment made of fibreglass is preferable because it is non-conductive and the most durable, and thus protects the worker from the risks of electric shock.

During work carried out in the vicinity of electrical sources, it is very important to respect the minimum distances of approach. These distances are available in the appendix.

HEIGHT TO REACH

It is important to choose the right size of equipment to avoid musculoskeletal disorders and the risk of falling.

WORK ENVIRONMENT

It is essential to ensure that the supporting surface is flat, firm, stable and not slippery before installing any access equipment. If the access equipment is used to perform a job at a height of 10 feet or more, wearing a safety harness fastened to a fall arrest connecting device is mandatory. **A ladder or a stepladder should never serve as a gateway, scaffolding or support for a platform.**



IMPORTANT TO KNOW

In order to choose a stepladder of appropriate length, you must ensure that a space of 3 feet is between the object to reach and the top of the stepladder.

MAXIMUM LOAD CAPACITY

To determine the maximum load capacity of your equipment, you must take into account the combined weight of the:

- › Worker;
- › Clothing and personal protective equipment, such as outer workwear; and
- › Tools.

Portable Access Equipment Types

PORTABLE LADDERS

A portable ladder can easily be moved or transported. To be used, with the exception of the articulated ladder, it must be supported by a structure. For a portable ladder to be well secured, it must absolutely:

- › Be equipped with non-slip pads;
- › Have side rails well supported against the structure;
- › Be attached under the third step from the top;
- › Be used in a delimited work area;
- › Have a distance between the base and the support structure of a quarter of the useful length; and
- › Exceed the level to be reached by at least 3 feet.

SAFE USE OF A PORTABLE LADDER

- › Safety footwear;
- › Always use three support points;
- › Grab the rungs;
- › Maintain the centre of the body between the side rails;
- › One person at a time on the ladder;
- › Always face the ladder;
- › Use a positioning system;
- › Never use the last three rungs;
- › Safety harness if 10 feet or higher; and
- › Clear the base and the top.

STEPLADDER

The stepladder is self-supporting access equipment, which means that it does not need to be supported on a structure to be used. In order to secure a stepladder, ensure that:

- › The spreaders are completely unfolded and the locks are in position; and
- › The work area is delimited.



IMPORTANT TO KNOW

If it is composed of reinforcements, they must never be used to raise or lower the stepladder.

SAFE USE OF A STEPLADDER

- › Stand facing the steps;
- › Keep its centre of gravity between the side rails;
- › Never move a stepladder if a person is there; and
- › Never use the last and top steps.

ESCALATOR

The escalator enables a smoother climb than the other access equipment and the wheels under the stairs facilitate its movement. A wheel-locking mechanism can be engaged with a hand lever or by the weight of the user when he/she gets on the escalator. In order to secure it, ensure that:

- › It is equipped with rails along the stairs;
- › There are guards at the top; and
- › It is equipped with a small platform at the top enabling manipulations.

SAFE USE OF AN ESCALATOR

- › Delimit the work area;
- › Check the proper functioning of the locking mechanism;
- › Keep its centre of gravity between the guard rails;
- › Never move the escalator if a person is there; and
- › Check that the identification label is present and legible.

Handling, Maintenance and Storage

HANDLING

Ideally, the transportation of a portable ladder is done by two people. If you are alone, you must:

- › Put the equipment on your shoulder with one arm engaged between the side rails;
- › Always keep the front lower; and
- › Do not turn suddenly.



IMPORTANT TO KNOW

When two people are present to handle the equipment, it is recommended that they be on the same side and keep as close as possible to the ends.

MAINTENANCE AND STORAGE

The maintenance and storage of portable access equipment will be determined based on their lifespan. Here's what to do:

- › Regularly clean and lightly lubricate the moving parts;
- › Remove from service any broken or defective equipment;
- › Avoid putting or stacking material on the equipment; and
- › Store access equipment after each use, preferably in a location that is dry and well ventilated, easy to access, not busy, sheltered from the weather and away from heat sources.

APPENDICES

INSPECTION POINTS FOR PORTABLE ACCESS EQUIPMENT

IDENTIFICATION

Equipment No.:	Date of inspection:
Area No.:	Inspected by:

INSPECTION POINTS

VISUAL INSPECTION	COMPONENTS	COMPLIANT	NON-COMPLIANT
Good condition of the different parts of the equipment: no bends, cracks, punctures or any other defects	Rails		
	Steps		
	Levels		
	Top		
	Spaces		
Verification of the state and the proper functioning of the components	Non-slip pads		
	Cable/Pulley		
	Levelling devices		
	Hooks/handles/thongs		
	Hinges		
	Guides		
	Wheels		
All rivets are present, securely inserted and in good condition			
All nuts and bolts are present and in good condition			
The assembly points between the pieces do not show any play, cracking or other anomalies			
All welds are not cracked or damaged			
All metal components are virtually free of rust and corrosion			

REPAIRS

MINIMUM APPROACH DISTANCES NEAR ELECTRICAL SOURCES

Voltage (Volts)	Distance	
	Metres	Feet
< 125 000	3	10
125 000 to 250 000	5	17
250 000 to 550 000	8	27
> 550 000	12	40

REGULATORY DIMENSIONS FOR SITE-FABRICATED LADDERS

Parts of the ladder	Dimensions			
	Length	Width	Thickness	Spacing
2 side rails (single ladder)	Max: 4.8 m (15 ft. 9 in.)	38 mm (1.5 in.)	89 mm (3.5 in.)	Min: 400 mm (1 ft. 4 in.) (internal measure) ¹
3 side rails ^{1,2} (double ladder)		38 mm (1.5 in.)	140 mm (5.5 in.)	Min : 1.5 m (4 ft. 11.25 in.)
		89 mm (3.5 in.)	89 mm (3.5 in.)	Max : 2 m (6 ft. 6.75 in.) ³
Bars ⁴ (levels)	according to the spacing of the amounts	38 mm (1.5 in.)	89 mm (3.5 in.)	Max : 300 mm (11.75 in.) (measure between the tops) ⁵
Brackets	according to the spacing of the bars	38 mm (1.5 in.)	38 mm (1.5 in.)	-

¹ Unless the site where the ladder is used precludes this. In such a case, the width of the ladder may be reduced accordingly.

² Have three rails evenly spaced inside the dimension scale mentioned.

³ This spacing dimension refers to the measurement between the uprights at the ends of the double-width scale. Their spacing with the centre pillar must be of equal size and at least 400 mm (1 ft. 4 in.)

⁴ The rails of a double-width ladder must extend the full width of the ladder and be solidly fastened in place.

⁵ Such spacing shall be uniform within a flight (level).