



PRÉVENTEX

LADDERS AND STEPLADDERS

Pride doesn't have to go before a fall

Used as a means of access or as temporary working positions, ladders and stepladders are indispensable tools in every workplace. However, it is important to pick the one best suited to the task at hand. And whether you use a ladder or stepladder, you should be aware of the hazards associated with their use and know how to prevent these risks.

The present information file contains information on:

- ◆ Hazards linked to the use of ladders and stepladders
- ◆ Choosing the right tool
- ◆ Maintenance and repair
- ◆ Transportation and storage

And remember: Pride doesn't have to go before a fall – Take pride in climbing safely.

HAZARDS RELATED TO LADDERS AND STEPLADDERS

Using ladders and stepladders can be dangerous and cause injuries. There are three main types of risk.

1. Hazards related to the condition of the ladder

- ◆ Check the side rails and rungs. Are they broken? Slippery? Are the rungs loose?
- ◆ Are there any missing rungs?
- ◆ Check the rope that links the sections of double ladders. Inspect the hoisting rope on extension ladders. They are less likely to break if they are in good condition.

2. Hazards related to installation

- ◆ The top of the ladder may slip sideways.
- ◆ The bottom part of the ladder may collapse.
- ◆ If too inclined, the ladder may give way under the user's weight.
- ◆ If too upright, the ladder may fall backwards.

- ◆ If installed in a busy area, the ladder may be accidentally knocked over.
- ◆ There are risks of shocks during transportation.
- ◆ Used as a means to access a location, the ladder should reach above the level of the location, to prevent falls.

3. Hazards related to usage

Users may lose their balance:

- ◆ If they carry heavy or cumbersome objects.
- ◆ When pulling off parts or objects.
- ◆ If using a ladder that is not appropriate to the situation.
- ◆ If their body, feet or hands are in the wrong position.
- ◆ If the ladder sways.
- ◆ If the ladder breaks (under excessive weight).

Users may also lose their balance when transferring from the ladder to the area to be reached, or the reverse.

MAKE THE RIGHT CHOICE

Stepladders should only be used as temporary work positions. They should be at least one meter lower than the highest point to be reached in order to establish a wide and solid base from which to work and to ensure that the tool tray is at the appropriate height.

Ladders can be used as a means to go from one storey to another or as temporary works positions to carry out renovation, repairs, installation or maintenance work.

There are different lengths of ladders and stepladders. Choose one according to the following factors:

- ◆ Work location
- ◆ Duration of work
- ◆ Type of work



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Association
paritaire
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*Hazards related to ladders
and stepladders*

Make the right choice

Setting up the ladder

*How to use ladders
and stepladders*

Advice on transportation

Advice on storage

*Inspection and
maintenance schedule*

Legal reference material



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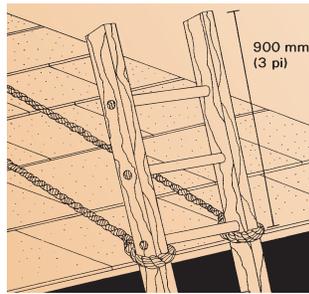
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Work location

Used as a means of access, the ladder should exceed the point to be reached by at least one meter.

Near open electrical circuits,

ladders or stepladders made of wood or fiberglass are recommended.

The following chart gives the recommended distances to electrical circuits.

Voltage	Minimum distance	
Under 125,000	3 m	10 ft
From 125,000 to 250,000	5 m	17 ft
From 250,000 to 550,000	8 m	27 ft
Over 550,000	12 m	40 ft

If these distances cannot be respected, the electrical power supply must be turned off or the employer must agree on safety measures with the electricity provider.

If the workplace is not equipped with stairs, ramps, passages or mechanical devices designed to raise people, ladders should be used to access work stations.

Duration of work

When used as temporary work positions, ladders are only suitable for work lasting under one hour.

If the work is expected to last over an hour, it should be done from a safer work surface such as scaffolding or a raised platform.

Type of work

Ladders and stepladders should be resistant enough to withstand the load and strain that they will be subjected to.

Commercial ladders and stepladders must meet standard number *CAN3-Z11-M81* regarding portable ladders.

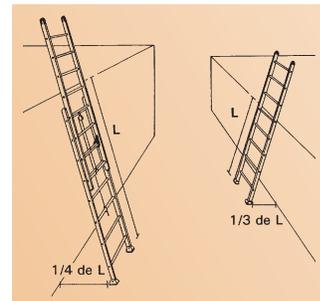
SETTING UP THE LADDER

Advice on installing a ladder

- ◆ Clear the surroundings of the ladder or stepladder. Cluttered surfaces may cause accidents.
- ◆ The surface on which the feet of the ladder or stepladder are resting should be even (no bumps or holes), solid, level and not slippery.
- ◆ Avoid placing a ladder in front of a door or other access point to prevent falls or collisions. If you cannot avoid it, mark off the work area with fences, ribbons or safety cones. If possible, lock the door.
- ◆ Clean the soles of your shoes to make sure they are not slippery or damp. Wear shoes with heels.



Ask for help in lifting heavy ladders. This precaution often prevents falls and injuries and makes it much easier to set up the ladder. One person holds the lower part while the other pushes the ladder up to raise it into place.



The distance from the feet of the ladder to the wall should be between 1/4 and 1/3 of the length of the ladder between its points of support.

Both side rails of the ladder should lean on the supporting surface at the top and bottom.

If the ladder is leaning against a post or in a corner, a support strap should be used.

Make sure that the top and the bottom of the ladder are safely anchored in order to prevent tipping or sliding. Another worker should hold the ladder during this process.

If using a ladder 9 meters long or over, ask one or two workers to hold the ladder strongly at shoulder height and put one foot on the lower rung.

Avoid setting up a ladder with multiple sections by yourself. Make sure the sections fit well before raising it up or climbing on it.

Make sure the safety clips are fully engaged before stepping on the ladder.

If you must remain on the ladder for an extended period of time, install a *Supportex* platform.

CONSULT THESE OTHER USEFUL DOCUMENT

MO-340328: Department of labour of Ontario; Fixed ladders, 1993

CS-000585: CSST, Échelles et escabeaux, 1997

ASP Construction : Les échelles et les escabeaux, 1996, BR-340131

(Joint Sector-based Association - Construction: Ladders and Stepladders)

Canadian Standards Association: Portable Ladders CAN3-Z11-M81

Canadian Center for Occupational Health and Safety: Safety Infograms C03, C04, C06, C07, C8, C10; RE-005540

Principales échelles portables utilisées dans le BTP; BR-002100

(Main types of portable ladders used in BTP)

Préventex Newsletter, Vol. 15, Number 2 and Vol. 11, Number 5

Regulation on Industrial and Commercial Establishments

Acknowledgments

Some of the illustrations used in this text were taken from a guide entitled Les échelles et les escabeaux (Ladders and Stepladders), published by JSA-Construction. Préventex thanks JSA for its authorization.

Advice on installing a stepladder

Fully extend the spreader bars of the stepladder and lock the brace.

Make sure the four feet of the stepladder are covered with non-slip shoes and are stable on the ground.

Never set up a stepladder in an elevator or hoist well.

HOW TO USE LADDERS AND STEPLADDERS

Whether you are using a ladder or a stepladder, make sure that its height and construction material are appropriate for the task. An aluminium stepladder is not suitable if there are electrical hazards.

Check that blocking and locking devices are fully engaged.

Face the ladder or stepladder while climbing up and down. Always keep at least one hand free.

Never climb up with tools in your hands. Hang them on your tool belt, or use a rope or a hoist.

Respect the rule of the three points of support: two hands and a foot, or two feet and a hand on the rungs.

Always avoid overloading the ladder or stepladder. The maximum load is indicated on the manufacturer's label.

Only one person may climb on the ladder or stepladder at any time.

Never stand on the last two rungs of a ladder or put weight on the last rung or the tool tray of a stepladder.

Never attempt to reach an area too far away. Keep your body between the side rails.

Avoid stepping across from the ladder or stepladder to another area or object.

Never leave tools on a ladder or stepladder: they may fall and injure a co-worker.

Never use a ladder or stepladder instead of scaffolding.

ADVICE ON TRANSPORTATION

Transporting a ladder or stepladder is much more easily done by two people, but whether you have help or not, the following advice should always be respected:

- ◆ Carry the ladder or stepladder at shoulder height, with one arm through the rungs.
- ◆ Keep the front part close to the ground to avoid hitting high obstacles.
- ◆ If two people are carrying the ladder or stepladder, keep as close as possible to the ends, both on the same side. Walk slowly and agree on signals for starting, stopping and changing direction. Avoid turning abruptly.
- ◆ Make sure the moving parts of extension ladders are locked into place and that ropes are secured.

ADVICE ON STORAGE

Store ladders and stepladders in locations that are protected from the elements.

Store ladders on hooks in a horizontal position, in a location that is easily accessible, well-ventilated and not too damp or hot (especially ladders and stepladders made of wood). Ladders should be supported every 2 meters to avoid warping.

INSPECTION AND MAINTENANCE SCHEDULE

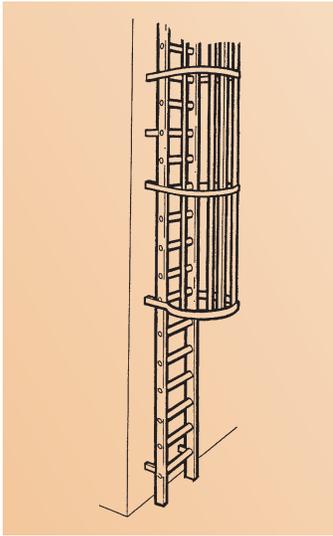
Before using a ladder, make sure that it is in good condition. Since there may be many types of ladders and stepladders in your workplace, PRÉVENTEX recommends designating a person to be responsible for conducting regular inspections, with the help of inspection charts such as those presented here.

STEPLADDERS

I 2

VERIFY

Condition of wood, aluminum or other material		
Condition of non-slip shoes		
Condition of brace (top, bottom, back)		
Condition of side rails and rungs		
Condition of steps and non-slip material		
Condition of spreader bars		
Condition of locking device		
Condition of tray		



FIXED LADDERS | 2

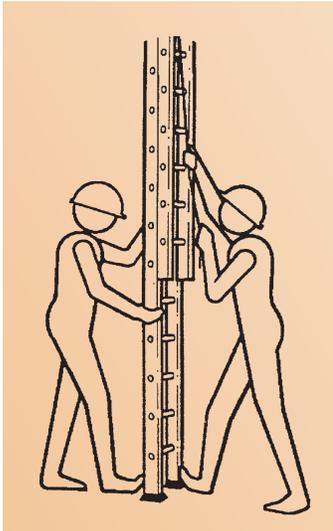
VERIFY

Condition of wood, aluminium, or other material		
Fit of rungs and side rails		
Signs of wear or cracks on rungs and side rails		
Cracks or rust on safety rails, bolt heads and rivets		
Condition (wear, rust) of ramps, supports and platforms		
Presence of sharp edges on side rails		
Fit of skirt on structure		
Missing rungs; anchoring. Any loose rungs ? (They are considered loose if movable by hand)		

LADDER | 2

VERIFY

Condition of wood, aluminium, or other material		
Missing rungs; anchoring. Any loose rungs ? (They are considered loose if movable by hand)		
Condition of screws, bolts and other metal parts. (Are they tight ?)		
Cracks, twists, wear or damage on rungs, brace, steps and side rails		
Presence of sharp edges on side rails		
Condition of non-slip shoes		
Presence of manufacturer's label		



EXTENSION LADDERS | 2

VERIFY

Condition of ropes or chains		
Condition of tips		
Condition of locking clips		
Operation of locking clips		
Lubrication of pulleys		

ROLLING STEPLADDERS | 2

VERIFY

Condition of wood, aluminium, or other material		
Condition of screws, bolts and other metal parts. (Check tightness.)		
Cracks, twists, wear or damage on rungs, braces, steps and side rails		
Condition of soldering tacks		
Presence of sharp edges on side rails		
Condition of steps and anti-slip material		
Condition and operation of locking device		
Condition and operation of wheels		



Inspections should be planned and carried out regularly. Since ladders and stepladders are often moved, PRÉVENTEX suggests giving them each a number in order to facilitate the task of the people in charge of inspecting and repairing them.

Ladders and stepladders should be inspected without delay every time they are used in unusual conditions (abnormal strain) or when an incident may have damaged them.

Ladders and stepladders should be protected: a transparent, non-conductive coating should be applied to wood ladders and stepladders (linseed oil, varnish, etc.); anti-corrosion paint can be used on metal ones; fiberglass ladders can be sprayed with a transparent lacquer or waxed with a paste.

Fiberglass ladders should be cleaned regularly.

Do not forget to lubricate pulleys on extension ladders.

Finally, remember you should never attempt to fix warped ladders or try to straighten them: they should be thrown out immediately !

LEGAL REFERENCE MATERIAL

The *Regulation on Industrial and Commercial Establishments*, Section III, Sub-section 3.6 is currently in effect, with reference to CSA Standard Z11-1969. Make sure you respect the regulation.

Please note that this regulation is in the process of being revised. Once the revision is completed, the Regulation will refer to Standard 1981. The following are some of the modifications that have been made.

Any portable ladder or stepladder used in the workplace must conform to the standard regarding *Portable Ladders*, CAN3-Z11-M81.