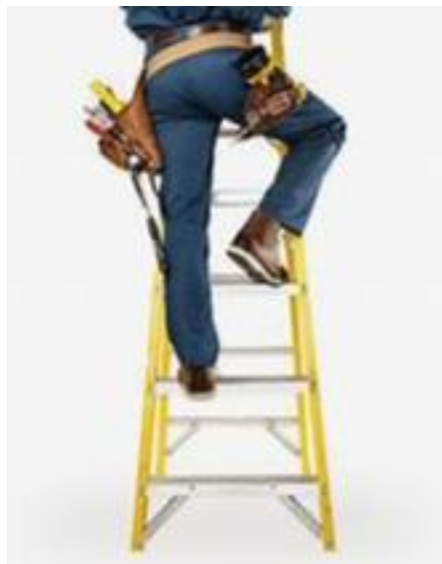




Ladder Safety Training

Participant Workbook



Video Link



<https://www.youtube.com/watch?v=9rm8uUsseuo>

From the workbook you can view the video here by clicking the arrow on the picture.

OR

On the training dashboard. This video is accessible to complete your training from the dashboard. You can view the video from within the course.

NOTE: The video mentions restaurants. This course is designed to train all industrial sectors, not just restaurants.

Also, the video mentions ANSI standards (in one area of the video) which are American Standards. This course is designed around the Canadian Standards not the American Standards.

In this course we will discuss:

1. Know when to use a ladder
2. Decide how to choose the correct type of ladder for the job required
3. Understand how to use a ladder safely
4. Care and maintenance of the ladder
5. Follow correct Safety Precautions.

Introduction:

Falls, even at ground level, can result in fractured limbs, other serious injuries and even fatalities.

Falls from height can increase the likelihood of serious injury and ladders are obviously involved in many fall accidents.

Ladders can fall, break, come into contact with power sources, break through supporting structures and of course, they can be knocked over.

There are many potential hazards associated with the use of ladders. The key is to select the appropriate ladder for the task and always follow safe work procedures.

Types of Ladders

- Step stools
- Straight or extension ladders
- Step or "A" frame ladders
- Built-in mounted ladders (manholes)



How ladders can be dangerous

- Using the wrong ladder for the job
- Using ladders incorrectly
- Using defective ladders



Step Ladders

Step Ladders are most frequently used when there is not adequate support for a straight ladder next to where the work is to be carried out.

Step ladders are commonly made from aluminum, fiberglass, or wood.

It is important to select the appropriate ladder when working near any power source, for example a fiberglass ladder. Also, do not use a wet ladder near any power source.

Selecting the appropriate step ladder will enable you to comfortably reach your work without standing above the third top step.

Having selected a ladder of appropriate material and height, it is important to check the general condition of the ladder. This should be done prior to each use.

Only use ladders that are in good repair.

Ensure the ladder is clean, especially the steps.

Make sure the ladder is structurally sound; pay particular attention to any movement or instability with the steps and side rails. Make sure that the ladder feet are well maintained. All portable ladders should be fitted with nonslip feet.

Never use a wooden ladder that has splits or cracks, loose bolts, loose hinges, burrs or splinters, or has damaged side rails or steps.

Do not use metal ladders that show signs of twisting or distortion, corrosion, missing or loose components, excessive wear or damage.

Likewise, fiberglass ladders with mechanical damage should not be used.

Any ladder that is damaged should not be used. Rather, they should be appropriately tagged and then either disposed of or repaired.

And finally, read any safety warnings, check that the load rating of the ladder is appropriate, and follow the manufacturer's advice.

Place the ladder on a firm surface and fully extend the legs.

The ladder must then be locked off.

There are several different varieties of stepladder.

With this ladder it is important that the back supports are not used as steps. Alternatively, this ladder can be used on either side, but bearing in mind that only one person should be on a ladder at any one time.

Other variations on the step ladder include platform step ladders which have enlarged platforms at the top that provide a stable working area. These designs may also include hand rails for additional security.

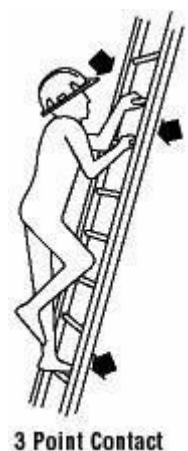
Straight Ladders

Straight ladders are commonly made from:

- Metal
 - Fiberglass, or
 - Wood, which can also be reinforced with wire
- Another variety of straight ladder is: the extension ladder.

Safely using a ladder

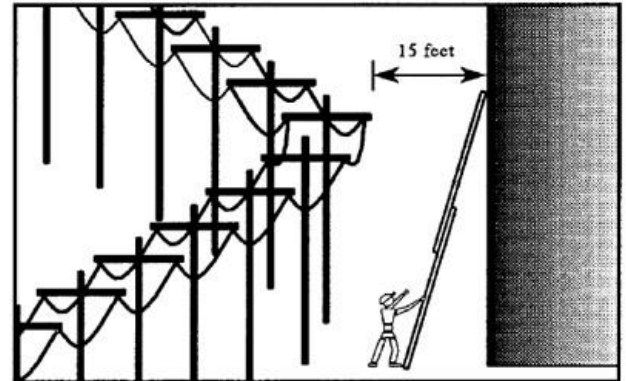
- Use the correct ladder for the job not too big or too small and check load capacities.
- Take the time to get the right size and type of ladder and not the most available one.
- Consider the use and the need for a non-conductive ladder.



Getting Started

- Determine the size and type of ladder you will need
- Will you be working with or around electrical energy?
If so, a non-conductive ladder will be required
- Watch out for overhead power lines.

Voltage	Distance (Metres)
750-150,000	3
150,001-250,000	4.5
250,001 +	6



Pre-use ladder inspection

- Check to make sure that rungs do not have oil or slippery substance on them
- Check to make sure that rungs and rails are not split, broken, or damaged. If so tag it out for repairs.
- If it cannot be properly repaired tag it out of service and throw it away.
- Check to make sure feet, slip locks, and spreaders are working.



Set-up Considerations

- Make sure that ladder is placed on an even surface and that the ground is not too soft to prevent sinking
- Use the 4 to 1 ratio against a base for straight or extension ladders
- Extend straight or extension ladders 3 rungs above the roof surface.
- Tie off ladders against the building if working above 10 feet.



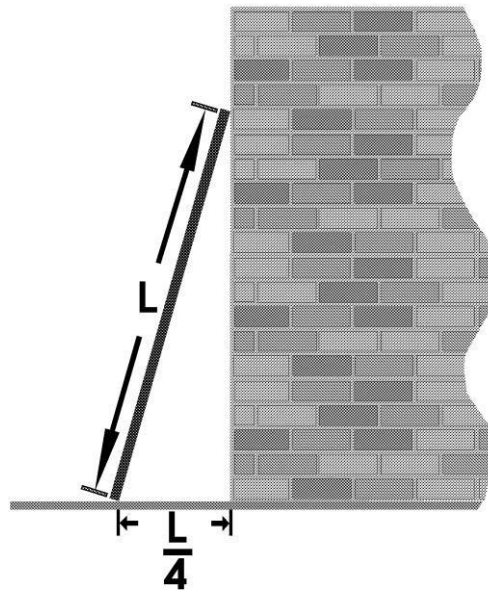
SAFE ANGLE

The safe angle for a ladder can be determined by using the principle of “4 to 1”, or “Four up, one out”.

For every 4 feet in height, the base of the ladder should be 1 foot out or away from the ‘contact point’.

The ‘contact point’ is that point where the ladder touches the support structure.

‘Height’, in this instance refers to the height of the ‘contact point’ from the ground.’



Consider the Land Down-under

- Barricade off area below your ladder so pedestrians don't walk into or under your ladder while you're on it.
- Also you may drop something and injure someone passing by below you.



ERECTING LADDERS

Short and light ladders can be placed directly in position on a firm surface. Longer or heavier ladders may require two people to erect.

Check that the surface is suitable. Place the ladder on the ground at right angles to the wall or support.

The bottom of the ladder should be placed according to the '4 to 1' rule: being set apart from the wall at a distance approximately $\frac{1}{4}$ the height of the estimated point of contact.

Make sure there are no overhead obstructions and check for power lines.

While steadying the ladder side rails with their feet, one person firmly holds onto the side rails. The other person lifts the ladder above their head and slowly walks forward. As the person raising the ladder reaches the center point, the ladder must be firmly held down at its feet, as it will tend to tip over and try to lift at this point.

Both lifters should steady the ladder as it approaches its vertical position and then gently lower it into position.

Check on the angle of the ladder and adjust the position if necessary. Recheck that the ladder is on a firm and level surface.

Also, with ladders that have metal reinforcing ties, these ties should be closer to the wall than their adjacent rung.

An extension ladder must be raised in the same manner as we have just described, ensuring that it begins the raise in its closed position.

Once in the near vertical position, the person behind the ladder steadies the ladder with the heels of the hands against the ladder rungs, making sure their fingers are well clear.

The person at the front, places their feet at the bottom of the side rails and uses the rope to raise the ladder to the required height, making sure that there are no obstructions.

Make sure the clutch or extension lock is securely in place and there is sufficient overlap. Usually, three or more rungs of overlap are required depending on the height of the ladder.

The ladder should then be gently lowered into position.

Ladders, particularly larger ladders, should not be erected in windy or rainy conditions.

SECURING AND POSITIONING OF LADDERS

Securing Ladders

Once the ladder is correctly positioned one person must hold the base of the ladder firmly while the other climbs. The ladder should then be secured at the top contact point, at the side rails.

If the ladder is only to be used for a short time and not secured, the person at the bottom should remain with the ladder until it is removed on completion of the task.

Commonly, ladders are secured with rope, but straps and chains are also used.

Safe Positioning of Ladders

There are a number of basic rules that should be applied whenever positioning a ladder:

- Ladders are best placed on firm, dry, level ground – and should not be placed on unstable or slippery surfaces.
- Avoid wet or oily floors or floors with loose material. Clean and dry floors if necessary.
- Never use boxes, drums or blocks to gain extra height or to act as a foundation.
- Never place a ladder near live electrical wiring.
- Never place a ladder against pipes where damage may occur.
- Never rest the top of the ladder against objects that may move.
- Never rest the ladder against brittle or weak surfaces like glazing or plastic gutters. In these situations, 'spreader-bars' or 'stand-offs' may be employed.
- If placing a ladder in front of a doorway, ensure the door is either locked or blocked open. You should also have a person stand guard.
- Warning signs and barricades may also be used.

Climbing tips

- Keep at least one foot and one hand on the ladder at all times (maintain 3 point contact)
- Hold the side rails not the rungs when climbing or descending a ladder
- Only take one step at a time
- Do not stand on the top step of an “A-frame” ladder.



Moving a Ladder

- Never attempt to move a ladder while you are on it (rock-n-roll, or hip-hop)
- Take the time to move a ladder instead of “over-reaching” your position.
- If your body is outside the rails, you are over-reaching.



Carrying materials

- Use a tool belt to keep hands free
- Lift materials from a hand line bucket from the ground

Consider using mechanical equipment instead of a ladder if at all available or possible.



Evaluation

Name: _____ Date: _____

1. The When selecting a step ladder, you should be able to comfortably reach your work without standing above the _____ step.

- a) Top
- b) 3rd top
- c) Bottom
- d) Middle

2. What is the most appropriate ladder to use near power sources?

- a) Wooden
- b) Metal
- c) Fiberglass
- d) Aluminum

3. Damaged ladders should be _____ then either disposed of or repaired.

- a) Tagged
- b) Used
- c) Painted
- d) Put away

4. When erecting a ladder, what is the correct ratio that it should be from the wall?

- a) 2:1
- b) Whatever feels safe
- c) There is no set ratio
- d) 4:1

5. Which of these can be used to secure a ladder?

- a) Rope
- b) Chain
- c) Specially designed securing device
- d) All of the above

6. When should you check the general condition of a ladder?

- a) Monthly
- b) Prior to each use
- c) When it feels like there is a problem with the ladder
- d) Daily

7. When assessing that the ladder is structurally sound, what should you pay particular attention to?

- a) The steps
- b) The side rails
- c) The feet
- d) All of the above

8. Which of these is not a part of team lifting practice when 2 people are carrying a ladder?

- a) They should lift on a count
- b) They should face the same direction
- c) They should be the same size
- d) They should walk at the same pace

9. What part of a ladder should be used when securing it at the top contact point?

- a) The rungs
- b) The side rails
- c) The top feet
- d) Anywhere

10. Which of these is an acceptable surface to put a ladder on to get extra height?

- a) Large Box
- b) Pallet
- c) Drum
- d) None of the above

Review your answers and correct any that are incorrect.

Please give your quiz to your contact person at your organization for them to keep on file.

ANSWERS

1. B) 3rd top
2. C) Fiberglass
3. A) Tagged
4. D) 4:1
5. D) All of the above
6. B) Prior to each use
7. D) All of the above
8. C) They should be the same size
9. B) The side rails
10. D) None of the above