

## Ladder Safety

Ladders are one of the biggest hazards of overhead work. **OSHA estimates there are 50 fatalities and almost 25,000 injuries each year due to falls from stairways and ladders in the construction industry alone.**

Ladders must be inspected prior to each use:

- 1) Wooden ladders should be free of sharp edges and splinters. They should not have excess wobble. Wooden ladders should never be painted because that can hide cracks. Grease accumulation on wooden ladders can cause grease to transfer electricity.
- 2) Ladders must be in good condition with tight joints, all hardware and fittings securely attached, and should operate freely without any binding.
- 3) Metal bearings of locks, wheels and pulleys should be frequently lubricated.
- 4) Ladders with broken or missing steps, rungs, cleats, or broken side rails shall not be used.
- 5) Any ladder with defects should be discarded or marked and tagged as "Dangerous, Do Not Use".

General Rules:

- 1) Never use a closed up step ladder in place of an extension ladder, such as leaning a closed step ladder against a wall.
- 2) Do not use any ladder in windy conditions unless it is an emergency, and the ladder is securely fastened at both ends.
- 3) Do not leave placed ladders unattended.
- 4) When placing a ladder near a door be sure the door is locked.
- 5) Never attempt to adjust a ladder while standing on the ladder.
- 6) Never jump from a ladder. Exit from the bottom rung.

Ladder length:

- 1) Always use the proper length ladder and remember you will need extra length for a safe angle and for overlap on extension ladders.
- 2) Ladders used to climb on a horizontal surface, like a roof, should extend 3 to 4 feet above the roof.
- 3) Extension ladders range from 16 to 40 feet, and safe overlap is clearly defined. The safe overlap is 1-3 feet for ladders up to 36 feet and 4 feet or more for ladders over 40 feet.

Electrical Hazards:

- 1) Make sure there are no live electrical hazards within 10 feet on either side of where the top of the ladder will be placed.
- 2) When working anywhere near live electrical hazards use non-conductive ladders and tools.
- 3) Never allow grease to accumulate on wooden ladders or they can become conductive.

### Ladder placement:

- 1) Don't use ladders on soft ground where one leg may sink into the soil more than the other.
- 2) Ideally the ladder is placed on a firm, level surface. If this is not possible the bottom of the ladder should be lashed or braced in place, or a spotter should secure the bottom of the ladder.
- 3) When using a ladder with wheels first set the wheel brakes.
- 4) Extension ladders should extend at least 3 feet above the top of the surface to be climbed.
- 5) Use a 4:1 ratio. The bottom of the ladder should be 1 foot away from the wall for every 4 feet of height:

4-foot height = 1 foot from wall

8-foot height = 2 feet from wall

12-foot height = 3 feet from wall

16-foot height = 4 feet from wall

20-foot height = 5 feet from wall

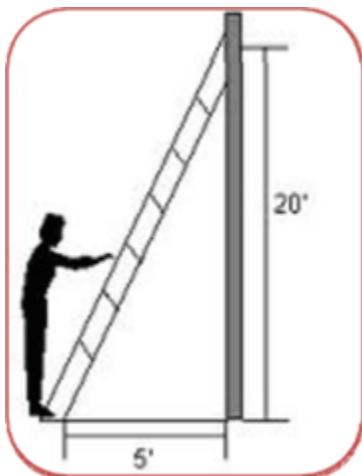
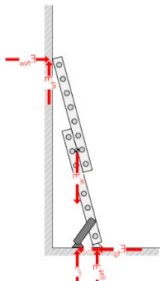


Figure 1 - 4:1 Ratio

- 6) Whenever possible the top of the ladder should be lashed in place.
- 7) Place extension ladders so the upper section rests on the lower section. The bottom section should be closest to the wall.



- 8) When using ladders near doors, equipment travel paths, or similar areas make sure the area is blocked off to prevent the ladder from being struck or dislodged.

#### Safely Climbing a Ladder:

- 1) Clean muddy or slippery shoe soles prior to climbing.
- 2) Make sure the ladder rungs are free of grease, oil, dirt, snow, or ice.
- 3) Always face the ladder while climbing up or down.
- 4) Wear shoes with heels and place feet firmly on each rung.
- 5) Always maintain three points of contact with the ladder. This means two hands and a foot, or two feet and one hand. Always grip the rungs and not the side rails. If your foot slips holding the rungs will be safer than the side rails. Tools must be carried in a tool belt or hoisted in a bag or bucket later. Never throw tools to anyone on a ladder.
- 6) Never climb a ladder with another person on the ladder.
- 7) Never use the top 2 steps of a stepladder or the top 4 rungs of extension ladders except a fixed ladder.
- 8) Stay centered within the ladder. A good rule is to keep your belt buckle inside the side rails.
- 9) If you become dizzy or panicked drape your arms over a rung and rest your head against another rung or side rail. Climb down slowly.

#### Ladder Storage:

- 1) Ladders should be stored securely so they can't fall on anyone.
- 2) When stored horizontally ladders must be supported every 6 feet to prevent sagging.
- 3) Store plastic and fiberglass ladders away from sunlight.
- 4) Store ladders where they are protected from weather.

Fall Protection: Fall protection is usually required above 4 feet in general industry and above 6 feet in construction. However, the fall protection requirement is waived while working on portable ladders. Fall protection is required on fixed ladders at heights above 24 feet. An example of a fixed ladder is a ladder permanently fixed to the side of a building. Even though it is waived while on a ladder as described above, you may need fall protection once you leave the ladder to work at heights.

Labels: It is important to be able to read all warning/instruction labels on ladders. The ladder manufacturer will usually mail a free replacement if the label becomes damaged or faded.

## Ladder Safety Quiz

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Read each question carefully and choose the most correct answer with an X next to the answer.

- 1) Ladders can be used by:  
 A. Anyone who needs one  
 B. Only trained employees  
 C. Only the maintenance or facilities department  
 D. Only management
  
- 2) Before using a ladder, I should:  
 A. Ask for permission  
 B. Inspect it for defects  
 C. Put on gloves  
 D. Put on safety glasses
  
- 3) Step ladders should be:  
 A. Painted red so they can be seen easily  
 B. Used only indoors  
 C. Open fully  
 D. Never used at work
  
- 4) If a ladder has a red tag it means:  
 A. It is for outside use only  
 B. It is safe for use near electrical hazards  
 C. It has a defect and is not safe to use  
 D. It is for indoor use only
  
- 5) Extension ladders should extend above the top step off point by:  
 A. 1-2 feet  
 B. 2-3 feet  
 C. 3-4 feet  
 D. 4-5 feet

- 6) Before using a ladder assembly with wheels you must first:
- A. Use it only on concrete floors
  - B. Set the wheel brakes
  - C. Have a spotter hold it in place
  - D. Tie it to the structure
- 7) The highest step you can stand on with a step ladder is:
- A. Top step
  - B. Second to top step
  - C. Third to top step
  - D. Fourth to top step.
- 8) Step ladders can be used closed up if they are leaned against a solid wall:
- A. True
  - B. False
- 9) Extension ladders should never be used:
- A. Within 10 feet of power lines
  - B. On uneven ground
  - C. Horizontally
  - D. All of the above
- 10) Which practices are **unsafe** when using a ladder:
- A. Leaning away from the centerline
  - B. Using on an uneven surface
  - C. Carrying tools in your hands
  - D. All of the above
- 11) Ladders with loose rungs should be:
- A. Used carefully
  - B. Used only with assistance from another worker
  - C. Used only by trained personnel
  - D. Tagged "out of service" and not used at all
- 12) When using an extension ladder to climb a 16-foot wall the base should be \_\_\_ feet away from the wall.
- A. 8
  - B. 6
  - C. 4
  - D. 2

## Ladder Safety Quiz Key

- 1) B
- 2) B
- 3) C
- 4) C
- 5) C
- 6) B
- 7) B
- 8) B
- 9) D
- 10) D
- 11) D
- 12) C

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