

Safety Director's Bulletin

(One in a series of safety information bulletins from your Joint Insurance Fund)

S2008-2
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Ladder Safety

Ladders are one of the most frequently used tools in the workplace and in the home. Familiarity can lead to underestimating the dangers associated with ladder use. According to the American Academy of Orthopedic Surgeons, more than half a million people are treated each year for ladder-related injuries in the United States, and approximately 300 people die every year from these accidents. **More than half of the deaths occur to people working from ladders.** When the task requires working above floor level, you need to decide whether to use a ladder or an elevated work platform. Factors to consider in making this decision include:

- The length of time the job will take
- Side-to-side movement of work
- Movement between work areas
- Two hands needed to do work

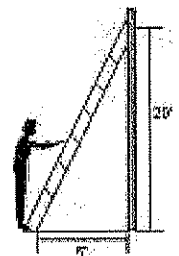
Use a ladder for jobs like wiring a security light or replacing a bulb. But consider using an elevated platform when you have to do strenuous work such as freeing a seized nut, installing a run of cable trays or removing a heavy object. Any sudden movement can cause you to lose your balance.

Twice as many falls occur while descending ladders compared to going up ladders. Managers must reinforce proper climbing body position and basic ladder safety policies:

- Make sure you have the right footwear. Footwear should be clean, in good condition and without dangling laces. Wear shoes with slip-resistant soles and minimum half inch heels.
- Do not hold objects in your hand when moving up or down, or stepping on or off a ladder. Attach objects to your tool belt or use a line after you get to your work spot.
- Always maintain 3-point contact when ascending or descending ladders. Hands should be slid along side rails so as to always be in contact with ladder. Extend arms and keep knees inside the rails when moving up or down ladder. Don't rush.
- On nearing the bottom, watch where you place your feet. Make sure you do not miss the lower rungs as you step off.

The main cause of falls from straight and extension ladders is sliding of the ladder base. For stepladders, the main cause is tipping sideways. Proper set-up and positioning should be emphasized as the main control against these hazards.

- Always inspect a ladder before you use it; recheck it if it has been unattended. Ensure the feet of an extension ladder are set on firm, level surface.
- Extension and straight ladders must be set using the "4:1 Rule." A field test for this is to stand with the balls of your feet against the inside of the rails. Extend your arms to shoulder height. The palms of your hands should be just inside the rails.



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Conner Strong Risk Control
September 15, 2008

- The ladder should extend 3 feet (3 rungs) past the upper landing, such as a roof, for safe access.
- Do not overreach. Move the ladder so that you can keep your belt buckle (navel) inside the rails and both feet on the same rung throughout the task. Always face the ladder.
- Avoid working side-on from a stepladder, especially when applying force, such as when drilling. Do not place a foot on another surface (a window frame) to extend your reach.
- Ladders should be secured top and bottom, for all but the shortest-term tasks.

Safe use of all types of ladders

- Do not use a ladder if you have a medical condition, or are taking medication that could affect your safety. Discuss any of these conditions with your supervisor.
- It is recommended only Type I, IA or IAA ladders be purchased by municipalities.
- Evaluate environmental conditions before and during tasks requiring the use of ladders. High winds, rain or ice, will dramatically increase the risk of using ladders. Decide if the work must be performed under these conditions and if so, take additional precautions.
- When working on or close to electrical equipment that is live or may become live, use ladders that will not conduct electricity, such as those with fiberglass side rails. Maintain a 10 foot clearance from overhead electrical wires, including the arc of the extended ladder.
- Do not place ladders in front of doorways, or at intersections of aisles, unless sufficient means to protect the worker and pedestrians have been established.
- Do not throw things from ladders. Keep the bottom of the ladder clear of debris.

Using an extension ladder

- Extension ladders are primarily for access to higher levels, and not as work platforms.
- If you must work from an extension ladder, consider using a fall protection system attached to a secure anchor point on the building, especially if pushing, pulling, or prying. And keep both feet on the same rung.
- Never work from any of the top 3 steps of a straight or extension ladder.
- Never move a ladder while someone is on it.
- Lower the top section of an extension ladder before you move it.



Using a step ladder

- Make sure the legs are fully open and the spreader bar is locked before you use. All four feet must be on the same level surface. Do not use a step ladder as a straight ladder or to access upper platforms.
- When working from a stepladder do not stand on the top step or cap plate.
- Do not stand on the back leg brace.



Inspection and maintenance of ladders

- Ladders must have a documented inspection "frequently" under OSHA regulations. Follow manufacturer's recommendations.
- If a ladder is found to be defective, it must be clearly tagged "Dangerous-Do Not Use" and removed from service. Repairs must be made by a qualified technician.
- Ladders should be supported at multiple points when in storage.