



STANFORD UNIVERSITY

ENVIRONMENTAL HEALTH & SAFETY

OHS# 08-011

Guidelines for Ladder Safety

Personnel using ladders are to follow safe work practices for ensuring safety as well as Cal/OSHA regulatory compliance [Title 8, California Code of Regulations, Sections 3277-3280]. General safe practices that employees are to be trained on include, but are not limited to the following:

Ladder Selection/ Inspection/ Maintenance:

A. Ladder Selection:	
<i>Note-- If elevated work involves moderate to heavy pushing, pulling, or lifting, recommend use of an aerial device (e.g., scissor-lift, boom-lift). Where a ladder must be used for such task, fall protection may be necessary-- Contact EH&S at x3-0448 for detailed requirements.</i>	
➤ Proper size	<p><u>Stepladders:</u> General rule-- the user can safely reach no higher than 3-4 feet above the ladder top. Stepladders longer than 20 feet shall not be used.</p> <p><u>Single/ extension ladders:</u> General rule-- The highest standing level is four rungs down from the top. Max length: Single ladder- 30 ft, extension ladder 60 ft.</p>
➤ Duty rating	The ANSI Duty Rating labeled on the ladder indicates the maximum safe load capacity of the ladder (person & tools)
➤ Ladder material ...	<ul style="list-style-type: none"> • <u>Fiberglass:</u> Electrically non-conductive, and preferred for most uses. • <u>Aluminum:</u> Strong and lightweight, however cannot be used near electricity. • <u>Wood:</u> Electrically non-conductive when dry, however can be more sensitive to extreme weather (heat, moisture).
B. Inspection/ Storage:	
➤ <u>Inspection</u> -- Prior to each use, inspect ladder for the following:	
<ul style="list-style-type: none"> • Free of cracks, splits, corrosion, and protruding nails, screws and splinters • Steps/ rungs free of oil/grease • Steps/ rungs firmly attached to side rails • Safety feet/base and other hardware in good condition • Movable parts operate smoothly without binding or excessive play • Ropes in good condition (for extension ladders) 	
If ladder is found defective, immediately remove from service for repair or destruction and mark "Danger, Do Not Use." Temporary fixes shall not be made.	
➤ <u>Storage</u> -- Store in an area sheltered from direct sunlight and rain. Ladders should be kept in horizontal position, with supports to prevent sagging.	

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Safe Ladder Use

A. Location

- Set up ladders away from where they can be accidentally struck or displaced
 - If necessary to work in occupied work areas, walkways, or roadways, barricade off a highly visible safety zone
 - Ladders shall not be placed in front of doors unless the door is locked or a guard is posted
- Never use metal ladders around exposed electrical equipment and wiring and keep ladders and tools at least 10 feet away from overhead lines at all times. If safe clearance is a concern, contact Facilities- Utilities Dept. at x3-2281 for assistance
- Keep access to and from ladders clear of mud, materials or debris

B. Ladder Setup

- Set up on a flat surface. Large flat wooden boards braced under the ladder can level a ladder on uneven ground and provide better footing on soft ground
- Ladders shall not be set on boxes, barrels, or other unstable bases to gain height
- Stepladders: Always open stepladder fully and ensure spreader bars are locked
- Single/ Extension Ladders:
 - For proper ladder angle, set ladder base 1 foot away from the wall for every 4 feet of ladder length
 - When accessing a roof or other elevated location, the ladder shall extend 3 feet above the roof/ elevated location.
 - Secure the ladder at the top to prevent it from slipping sideways or at its base from slipping outwards.
 - When not possible to tie at the top or secure it at its base, have a person brace the ladder at ground level (most suitable for ladders up to 16 ft. long)

C. Climbing

- Ensure shoes are free of mud, grease, or other substances that could cause a slip or fall
- Face ladder and use both hands; maintain three points of contact at all times
- Do not hand-carry tools/ materials; carry items on tool belt or raise/ lower items by hand lines or other means
- Never climb the bracing on the back of stepladders

D. General Use

- Do not stand/work on the top 3 rungs of a single/ extension ladder. For stepladders, do not stand/work on the topcap or first step
- “Belt Buckle Rule”: Stay centered, don’t let your belt buckle go past either side rail
- When working, keep at least 3 points of body contact with ladder:
 - ⇒ 2 feet + [1 hand or hips or chest]
- Only one person at a time on a ladder
- Never adjust or move ladder while on the ladder
- Avoid working on ladders in high winds

Contact EH&S at (650)723-0448 for any questions regarding ladder safety.