



ROSE STATE COLLEGE

Ladder Safety Program

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I. Scope:

- A. The following safety program applies to the use of any ladder used on Rose State College Campus. Included are portable ladders (which include step ladders; straight ladders; extension ladders and extension trestle ladders); fixed ladders; job made ladders and rolling ladders. It applies to all Rose State College employees. Allowing non-Rose State College personnel the use of ladders owned by Rose State College is strongly discouraged unless proper training has been provided and a waiver signed. Documentation of these requirements is the responsibility of the lending personnel.
- B. Ladders are one of the most commonly used tools. Ladders allow access to various levels or heights necessary to carry out work functions. Unfortunately the use of ladders is a major source of injury and fatalities every year. The National Safety Council (NSC) has reported that falls from ladders accounts for 16% of all fatal injuries in construction and 24% of non-fatal injuries involving days away from work. It is also one of the ten most frequently cited standards every year by OSHA.
- C. The very use of ladders presents many potential hazards in addition to falls. Other hazards are pinches, cuts, struck by, sprains and strains as well as bump hazards and contact with or arcing of live conductors resulting in electrical shock/electrocution.
- D. Users must be aware of possible hazards and take proper precautions to reduce these risks. Proper use and work practices eliminate or mitigate these hazards providing a safe work environment. Below are recommended items that the user should perform before and after using a ladder.

II. Selection:

- A. Use the ladder designed for your tasks.
 - 1. Consider the ladder rating
 - 2. Type of ladder necessary (step ladder, extension, etc.)
 - 3. The height which needs to be achieved
 - 4. Material the ladder is made of
- B. For step ladders, the top of the ladder must be within 3 feet of the highest point you must reach to perform the work.
- C. Never stand on the top cap and top step of a step ladder
- D. Never use the top three steps of a straight or extension ladder
- E. Step ladders cannot exceed 20 feet in length
- F. Straight (single) ladders cannot exceed 30 feet in length
- G. Extension ladders cannot exceed 60 feet in length
- H. For maximum working heights for a specific length ladder([See Chart 1](#))
- I. The amount of overlap between the fly and base section of an extension ladder is dependent upon the length of the ladder([See Chart 2](#))
- J. Do not exceed the duty rating for the classification ladder being used([See Table 1](#))

Working Height Chart:

Maximum Use Height

Chart 1

Ladder Length Guidelines					
STEP LADDER HEIGHT SELECTION GUIDE		EXTENSION LADDER LENGTH SELECTION GUIDE			
STEP LADDER SIZE	APPROX. HIGHEST STANDING LEVEL	LADDER SIZE	MAXIMUM EXTENDED LENGTH	*WORKING RANGE TO TOP SUPPORT	*MAXIMUM ACCESSIBLE ROOF HEIGHT RANGE
4'	1' 11"	16'	13'	7-1/2' - 12 1/2'	4-1/2 - 9-1/2'
5'	2' 10"	20'	17'	9-1/2 - 16- 1/2'	6-1/2 - 13-1/2'
6'	3' 9"	24'	21'	11-1/2 - 20'	8-1/2 - 17'
7'	4' 9"	28'	25'	13-1/2 - 24'	10-1/2 - 21'
8'	5' 8"	32'	29'	15-1/2 - 28'	12-1/2 - 25'
10'	7' 7"	36'	32'	17-1/2 - 31'	14' - 28'
12'	9' 6"	40'	35'	19' - 33-1/2'	16' - 30-1/2'
14'	11' 5"	44'	39'	21' - 37-1/2'	18' - 34-1/2'
16'	13' 4"	48'	43'	23' - 41-1/2'	20' - 38-1/2'
18'	15' 3"	60' (3 section extension)	48'	23' 46-1/2'	20' - 43-1/2'
20'	17' 2"	*When set up at the proper 75-1/2° angle			

Extension Ladder Overlap

Chart 2

Ladder Size (Feet)	Overlap (Feet) for Type I and IA Ladders	Overlap (Feet) for Type II and III Ladders
Up to and including 32'	3'	3'
Over 32', up to and including 36'	4'	4'
Over 36', up to and including 48'	5'	5'
Over 48'	6'	6'

Duty Rating Table:

Table 1

Ladder Duty Rating			
<u>Rating</u>	<u>Description</u>	<u>Intended Use</u>	<u>Capacity (pounds)</u>
Type IAA	Industrial	Heavy Duty	375
Type IA	Industrial	Heavy Duty	300
Type I	Industrial	Heavy Duty	250
Type II	Commercial	Medium Duty	225
Type II	Household	Light Duty	200

III. Use:

- Do not use a ladder which does not have an ANSI duty rating sticker attached to the side.
- Get help when handling a heavy or long ladder (10 feet or more).
- When using straight ladders or extension ladders, set up the ladder using the 4 to 1 rule (approximately 75-1/2 ° angle from the horizontal)
- Keep ladder away from electrical wires. Check for overhead electrical wires before setting up.

- E. Ensure that all electrical equipment used during ladder work is in good working condition and properly grounded.
- F. Clear the area around the base and top of the ladder of debris, tools and other objects.
- G. Set up barricades and warning signs when using a ladder in a doorway or passageway.
- H. Do not place a ladder against flexible or moveable surfaces or erect on unstable surfaces.
- I. Tie off ladder at the top and secure bottom to prevent it from slipping
- J. When accessing a roof or other working/walking surface, extend the ladder three feet beyond the access surface.
- K. Keep step ladders close to your work; don't overreach.
- L. When accessing a ladder observe the following guidelines:
 - 1. Ensure proper footwear is in good condition
 - 2. Avoid climbing with wet, muddy or slippery shoes.
 - 3. Ensure only one person is on a single width ladder at any given times.
 - 4. Face the ladder when ascending or descending and when working from the ladder.
 - 5. Keep the center of your body within the side rails.
 - 6. Maintain "three points of contact" (two hands and one foot or two feet and one hand) at all times.
 - 7. Grasp the rungs when climbing; not the side rails.
 - 8. Do not carry objects in your hands while climbing.
 - 9. Ascend and descend the ladder slowly so as not to cause the ladder to "bounce".

IV. Inspection:

- A. Ladders shall be visually inspected before and after each use.
- B. The ladder should be inspected whenever it has tipped over or subjected to any possible damage.
- C. Reject and tag out of service any defective ladder.
- D. If the ladder cannot be repaired, remove all identification labels, discard and remove from inventory. When discarded, the ladder should be marked "Destroy"/ "Cannot be Repaired" or render it completely inoperable. Notify the Safety and Risk Management Coordinator.
- E. All ladders must be thoroughly inspected annually and the record of each ladder inspection must be submitted to the Safety and Risk Management Coordinator. A copy of the inspection report is attached as ["Appendix A"](#).

V. Storage & Care:

- A. Store ladders to prevent damage from extreme heat and cold.
- B. Do not store ladders where they will come into contact with water or other chemicals.
- C. Store ladders where they will not be struck by moving objects or otherwise damaged.
- D. Store ladders in areas where they do not impede egress.

- E. Never paint a wooden ladder.
- F. Store extension ladders horizontal and supported every six feet.
- G. When transporting ladders, secure both ends.

VI. Training:

- A. All employees that utilize ladders should participate in the College “Ladder Safety Training Program”.
- B. Employees should receive training when:
 - 1. First hired;
 - 2. Observed using a ladder incorrectly or using the wrong type of ladder for the intended use;
- C. Training can be requested through the Safety and Risk Management Office by:
 - 1. Calling 733-6213; or
 - 2. e-mail at jtempleman@rose.edu;
- D. The training program is developed to ensure each employee can recognize all hazards related to the selection, use, handling and environmental surroundings affecting the safe use of ladders.
- E. Employees will receive information on the proper procedures and work practices to minimize these hazards.
- F. The program is designed to train each employee in the following areas, as applicable:
 - 1. The nature of fall hazards in the work area;
 - 2. The correct procedures for selecting, erecting, using and maintaining equipment;
 - 3. The proper construction, use, placement, and care in handling of ladders;
 - 4. The maximum intended load-carrying capacities of ladders used;
 - 5. Inspection of ladders;
 - 6. Work practices;
 - 7. Possible PPE;
 - 8. Other hazards presented by environmental conditions;
 - 9. Ergonomic concerns associated with the use of ladders;
 - 10. Hazard to others;
 - 11. Reference for information on ladder selection and use;

VII. References:

- A. OSHA help documents
 - 1. OSHA Construction e-tool
 - 2. OSHA Stairs and Ladder Booklet ([osha3124](#)).pdf
 - 3. OSHA Stairways and Ladder Safety Outreach
 - 4. OSHA Standards-([Link to standards covering Ladders](#)):
- B. American Ladder Institute:
 - 1. Develops seven ANSI standards currently
 - 2. Published according to a 5-year renewal cycle:
 - 3. ANSI standard number and content:

- a) A14.1 - Wood Ladders
- b) A14.2 - Portable Metal Ladders
- c) A14.3 - Fixed Ladders
- d) A14.4 - Job Made Wooden Ladders
- e) A14.5 - Portable Reinforced Plastic Ladders
- f) A14.7 - Mobile Ladder Stands and Mobile Ladder Stand Platforms
- g) A14.9 - Disappearing Attic Stairways

By following these simple procedures, ladder injuries can be prevented. For additional information, please contact the Safety and Risk Management Coordinator via phone at 733-6213 or via e-mail at jtempleman@rose.edu.

Appendix A

(Ladder Inspection Sheet)

INSPECTION		
Data of Inspection:	Name of Inspector:	
Department/Shop:	Ladder Identification Number:	
Type of Ladder: () Extension () Step () Fixed		
Construction of Ladder: () Wood () Metal () Fiberglass		
MONTHLY INSPECTION		
1. Are rungs, cleats or steps intact and free from damage?	Yes	No
2. Are rails free from cracks or splitting?	Yes	No
3. Is the ladder free from the accumulation of oil, grease or other material that may create a slipping hazard?	Yes	No
4. Is the ladder free from protruding objects that could cause injury?	Yes	No
5. If ladder is equipped with safety device is the device secured and operating properly on the ladder?	Yes	No
6. If ladder is equipped with locking device, is the service intact and functional?	Yes	No
7. If fixed ladder is equipped with cages, are cages intact and free from broken weld?	Yes	No
8. Is the ladder free from any other defects that may impair its safe usage?	Yes	No
COMMENTS		
Date ladder was repaired and returned to service:		

Appendix B

(Safety Tips)

The “Right” Way To Use A Ladder	The “Wrong” Way To Use a Ladder
RIGHT Properly set-up and use the ladder in accordance with safety instructions and warnings. Wear shoes with non-slip soles.	WRONG DON'T stand above the second step from the top of a stepladder or the fourth rung from the top of an extension ladder.
RIGHT Center body on the ladder and keep belt buckle between the rails while maintaining a firm grip.	WRONG DON'T climb a closed stepladder. DON'T climb on the back of a stepladder. DON'T stand or sit on a stepladder top or pail shelf.
RIGHT Haul materials with a line rather than carry them up an extension ladder. Use extra caution when carrying anything on a ladder.	WRONG DON'T climb a ladder if you are not physically and mentally up to the task.
RIGHT Climb facing the ladder, move one step at a time and firmly set one foot before moving the other.	WRONG DON'T place the base of an extension ladder too close to or too far away from the building.
RIGHT Have another person help with a heavy ladder. Have another person hold the ladder while you are working on it.	WRONG DON'T over-reach, lean to one side or try to move a ladder while on it. Climb down and then reposition the ladder closer to your work.
RIGHT Move materials with extreme caution so as not to lose balance or tip the ladder.	WRONG DON'T exceed the maximum load capacity or duty rating of a ladder. DON'T permit more than one person on a single-sided stepladder or an extension ladder.

Appendix C (OSHA Quick Card)



Portable Ladder Safety Tips



Falls from portable ladders (step, straight, combination and extension) are one of the leading causes of occupational fatalities and injuries.

- Read and follow all labels/markings on the ladder.
- Avoid electrical hazards! – Look for overhead power lines before handling a ladder. Avoid using a metal ladder near power lines or exposed energized electrical equipment.
- Always inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.

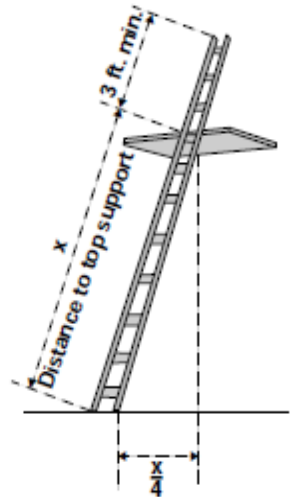


3-Point Contact

- Always maintain a 3-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing. Keep your body near the middle of the step and always face the ladder while climbing (see diagram).
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Ladders must be free of any slippery material on the rungs, steps or feet.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose.

(continued on reverse)

- Use a ladder only on a stable and level surface, unless it has been secured (top or bottom) to prevent displacement.
- Do not place a ladder on boxes, barrels or other unstable bases to obtain additional height.
- Do not move or shift a ladder while a person or equipment is on the ladder.
- An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support (see diagram). Do not stand on the three top rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface (see diagram).



- A ladder placed in any location where it can be displaced by other work activities must be secured to prevent displacement or a barricade must be erected to keep traffic away from the ladder.
- Be sure that all locks on an extension ladder are properly engaged.
- Do not exceed the maximum load rating of a ladder. Be aware of the ladder's load rating and of the weight it is supporting, including the weight of any tools or equipment.

For more complete information:

OSHA Occupational
Safety and Health
Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA

OSHA 3045-11N-03