

Marshall Municipal Utilities
STAIRWAYS AND LADDERS
Effective July 1, 2011

REQUIREMENT GUIDELINES

This policy applies to all access related activities involving stairways and ladders; including the construction and set-up, inspection and use. All MMU employees shall comply with the requirements set forth by this policy.

GENERAL STAIRWAY REQUIREMENTS

This section contains specifications for the safe design and construction of fixed industrial stairs. This classification includes, but is not limited to, interior and exterior stairs around machinery, tanks, and other equipment; and stairs leading to or from floors, platforms, or pits. Fixed stairs shall be provided for access from one structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any equipment which requires attention routinely during operations.

1. Stairways having four or more risers or rising more than 30 inches, whichever is less, shall be equipped with a standard stair rail system along each unprotected side or edge.
 - a. Stairways less than 44 inches wide and fully enclosed shall be equipped with at least one handrail, on the right side descending.
 - b. Stairways greater than 44 inches wide but less than 88 inches wide, handrails shall be provided on each enclosed side.
 - c. Stairways 88 inches wide or greater shall be equipped with a handrail on each enclosed side, and one stairway railing system located approximately midway of the stairway width.
2. Fixed stairways shall have a minimum width of 22 inches.
3. Fixed stairs shall be installed at angles to the horizontal of between 30 degrees and 50 degrees.
4. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five (5) feet.

GENERAL LADDER REQUIREMENTS

1. Each employee using ladders must be trained, by a competent person, to recognize hazards related to ladders and must know the procedures to be followed to reduce these hazards. The training must include, if applicable, the following areas:
 - a. The nature of fall hazards in the work area.
 - b. The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
 - c. The proper construction, use, placement, and care in handling of ladders.
 - d. The maximum intended load-carrying capacities of ladders.
2. Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.

3. A double-cleat ladder or two or more separate ladders shall be provided when ladders are the only means of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic.
4. When not in use, all ladders shall be secured and stored in a proper location that does not prevent access / egress of doorways or exits; nor shall ladders be stored in a location that creates or presents a recognized hazard (falls, exposed moving parts of machines, confined spaces, etc.).
5. Ladders shall not be used beyond their maximum intended load, or beyond the manufacturer's rated capacity.
6. Ladders shall be maintained free of oil, grease, and other slipping hazards.
7. Wooden ladders shall not be painted so as to obscure a defect in the wood; only a clear, nonconductive finish shall be used.
8. All metal ladders and other conductive ladders shall not be used in the vicinity of exposed energized lines and equipment.
9. Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement, and shall be used only for their designed purpose: Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
10. The area around the top and bottom of ladders shall be kept clear. Ladders shall not be placed in front of doorways unless the door is chocked open, or locked closed. Provide a barricade as needed to keep traffic or other activity away from the ladder.
11. Only one employee shall work from a single ladder at one time. If more than one employee is required, one ladder per employee shall be used.
12. When ascending or descending a ladder, the user shall face the ladder.
13. Each employee shall maintain three points of contact at all times when using a ladder. Employees shall not carry any load or object that could cause the employee to lose balance and fall, or cause the employee to not be able to maintain three points of contact.
14. Ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty defective components shall be withdrawn from service immediately and replaced.

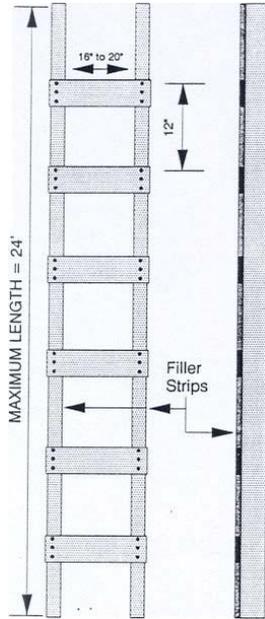
SPECIFIC TYPES OF LADDERS

STEP LADDERS – REQUIREMENTS

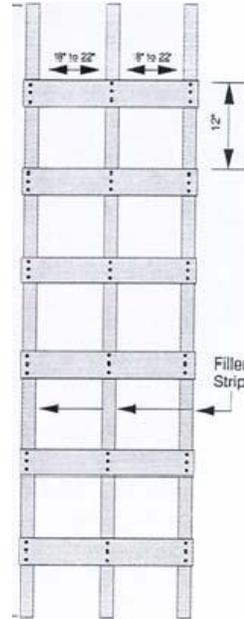
1. Step ladder legs shall be fully spread and locked. Step ladders shall not be used as straight or extension ladders.
2. Step ladders exceeding 20 feet in height are prohibited.
3. Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.

4. Employees shall not exceed the rated capacities.
5. Employees shall not sit or stand on the platform or the top two rungs of a step ladder.

JOB-MADE LADDERS – REQUIREMENTS



SINGLE CLEAT LADDER



DOUBLE CLEAT LADDER

TABLE OF MATERIAL SIZES		
SIDE RAILS		
LENGTH OF LADDER	THICKNESS	DEPTH
(FEET)	(NOMINAL)	(NOMINAL)
UP TO 14	2"	4"
14 TO 24	2"	6"

1. No job-made ladder shall exceed 24 feet in length.
2. Cleats shall be spaced so that they are no less than 10 inches apart, nor greater than 14 inches apart.
3. Cleats shall be 1X4 nominal or 2X4 stress grade material that is straight-grained and free of knots. Wood spacers shall be installed in between the cleats.
4. The minimum clear distance between side rails shall be 12 inches.
5. When job-made ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (36 inches) above the upper landing surface to which the ladder is used to gain access.
6. Job-made ladders shall be placed on a four to one ratio (for every four feet in height, the feet of the ladder must be placed one foot back).
7. Job-made ladders shall be secured to prevent movement.

PORTABLE LADDERS – REQUIREMENTS

1. Rungs, cleats, and steps of portable ladders and fixed ladders shall be spaced not less than 10 inches apart, nor more than 14 inches apart.
2. The minimum clear distance between side rails for all portable ladders shall be 12 inches.
3. When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (36 inches) above the upper landing surface to which the ladder is used to gain access.
4. Portable ladders shall be placed on a four to one ratio (for every four feet in height, the feet of the ladder must be placed one foot back), and shall be secured to prevent movement.
5. Single portable ladders exceeding 30 feet in height are prohibited. Two-section extension ladders shall not exceed 60 feet in height.

FIXED LADDERS - REQUIREMENTS

1. If the total length of the climb on a fixed ladder equals or exceeds 24 feet (7.3 m), the ladder must be equipped with ladder safety devices; or self-retracting lifelines and rest platforms at intervals not exceeding 150 feet (45.7 m); or a cage or well and multiple ladder sections with each section not exceeding 50 feet (15.2 m) in length. These ladder sections must be offset from adjacent sections and landing platforms must be provided at maximum intervals of 50 feet (15.2 m).
2. Fixed ladders shall support at least two loads of 250 pounds each, concentrated between any two consecutive attachments.
3. Fixed ladders shall support added anticipated loads caused by ice buildup, winds, rigging and impact loads resulting from using ladder safety devices.
4. The continuation of horizontal or vertical grab bars shall extend at least 42 inches above the access level or landing platform.
5. Fixed ladders shall be used at a pitch no greater than 90 degrees from horizontal, measured from the back side of the ladder.