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be provided to warn them to get off at the bottom floor.

(g) Upper limit stop. An automatic stop device shall be provided to stop the manlift when a loaded step passes the top landing, except that manlifts installed after October 3, 1983 shall have two such devices.

(h) Handholds and steps. Each step shall be provided with a corresponding handhold.

(i) Emergency ladder. A fixed emergency ladder accessible from any position on the lift and in accordance with the requirements of §1917.118(d) shall be provided for the entire run of the manlift.

(j) Landings. (1) Clear and unobstructed landing spaces shall be provided at each level. Manlifts constructed after October 3, 1983 and that have a distance of 50 feet (15.24 m) or more between floor landings shall have an emergency landing every 25 feet (7.62 m) or less of manlift travel.

(2) Open sides of emergency landings shall be protected by guardrails.

(3) Floor landing entrances and exits shall be guarded by mazes, self-closing gates, or equivalent devices.

(4) Landings shall be of sufficient size and strength to support 250 pounds (1,112 N).

(k) Floor opening guards. The ascending sides of manlift floor openings shall be provided with cones or bevel guards to direct the user through the openings.

(l) Maintenance. Manlifts shall be equipped, maintained, and used in accordance with the manufacturer's specifications, which shall be available at the terminal.

(m) Bottom pulley. (1) The lower pulley shall be supported by the lowest landing.

(2) Sides of the bottom pulley support shall be guarded to prevent contact with the pulley or the steps.

(n) Top clearance. A clearance of at least 11 feet (3.35 m) shall be provided between the top landing and the ceiling.

(o) Brakes. Manlifts shall be equipped with brakes that are:

(1) Self-engaging;

(2) Electrically released; and

(3) Capable of stopping and holding the manlift when the descending side is loaded with the maximum rated load.


§ 1917.118 Fixed ladders.

(a) Scope and applicability. This section applies to all fixed ladders except:

(1) Ladders forming an integral part of railway cars, highway carriers, cargo containers or other transportation carrier equipment;

(2) Climbing devices such as step bolts or structural members of tanks and towers;

(3) Ladders built into or vertically attached to tubular scaffold framing; and

(4) Ladders used only for fire-fighting or emergency purposes.

(b) Definitions—(1) Cage (basket guard) means a barrier enclosing or nearly enclosing a ladder's climbing space and fastened to one or both of the ladder's side rails or to another structure.

(2) Fixed ladder means a ladder, including individual rung ladders, permanently attached to a structure, building or piece of equipment.

(3) Ladder safety device means a support system limiting an employee’s drop or fall from the ladder, and which may incorporate friction brakes, lifelines and lanyards, or sliding attachments.

(4) Well means a permanent complete enclosure around a fixed ladder, which is attached to the walls of the well.

(c) Defects. (1) Ladders with broken, split or missing rungs, steps or rails, broken welds or connections, corrosion or wastage or other defect which may affect safe use shall be removed from service.

(2) Ladder repairs shall provide strength at least equivalent to that of the original ladder.

(d) Ladder specifications. (1)(i) Ladders installed before October 3, 1983, shall be capable of withstanding without damage a minimum concentrated load, applied uniformly over a 3½ inch (8.9 cm) width at the rung center, of 200 pounds (890 N).

(ii) Ladders installed after October 3, 1983 shall be capable of withstanding 250 pounds (1,112 N) applied as described
in paragraph (d)(1)(i) of this section. If
used by more than one employee simulta-
neously, the ladder as a unit shall be
able to simultaneous additional
loading in 250 pound (1,112 N) incre-
ments for each additional employee,
any additional loading in ~250
pounds per square foot (4.79 kPa)
and be fitted with

(2) (i) Ladders installed before Octo-
ber 3, 1983, shall have rungs evenly
spaced from nine to 16½ inches (22.9 to
41.9 cm) apart, center to center.

(II) Ladders installed after October 3,
1983 shall have rungs evenly spaced
from 12±2 inches (30.5±5.08 cm) apart,
center to center.

(3) (i) Ladders installed before Octo-
ber 3, 1983 shall have a width between
side rails of at least 10 inches (25.4 cm).

(ii) Ladders installed after October 3,
1983 shall have a width between side
rails of at least 12 inches (30.48 cm).

(4) The minimum distance between
the rung center line and the nearest
permanent object behind the rung shall
be 4 inches (10.16 cm), except that in
ladders installed after October 3, 1983,
the minimum distance shall be 7 inches
(17.78 cm) unless physical limitations
make a lesser distance, not less than
4½ inches (11.43 cm), necessary.

(5) When a ladder passes through an
opening or past overhead obstructions,
a minimum 24 inch (.61 m) clearance
shall exist between the climbing side
and any obstruction. Where this dis-
tance is less than 30 inches (0.76 m), a
deflection device shall be installed for
guidance through the opening.

(6) The side rails of ladders shall ex-
tend at least 36 inches (0.91 m) above
the top landing surface, unless grab
bars or equivalent holds are provided.

(7) Ladders whose pitch exceeds 90° to
the horizontal (slanting backward on
the climbing side) shall not be used.

(e) Protection against falls. (1) Fixed
ladders more than 20 feet (6.1 m) in
height shall be provided with a cage,
well, or ladder safety device.

(2) When a well or cage is used, lad-
ders with length of climb exceeding 30
feet (9.14 m) shall comply with the fol-
lowing provisions:

(i) The ladder shall consist of mul-
tiple sections not exceeding 30 feet (9.14
m) each;

(ii) Each section shall be horizontally
offset from adjacent sections, except as
specified in paragraph (e)(2)(iv) of this
section, and

(iii) A landing platform capable of
supporting a load of 100 pounds per
square foot (4.79 kPa) and be fitted with
wardrails complying with Sec.
1917.112(c) shall be provided at least
every 30 feet (9.14 m), except as speci-
fied in paragraph (e)(2)(iv) of this
section.

(iv) For ladders installed after Octo-
ber 3, 1983, offset sections and landing
platforms are not required if hinged
platforms capable of supporting 100
pounds per square foot (4.79 kPa), and
which are kept closed except when
opened for passage, are within the cage
or well at intervals not exceeding 30
feet (9.14 m).

(3) Ladders equipped with ladder safe-
ty devices shall have rest platforms;

(i) Capable of supporting a load of 100
pounds per square foot (4.79 kPa);

(ii) Located at intervals of 150 feet
(45.7 m) or less; and

(iii) Protected by guardrails com-
plying with § 1917.112(c) of three sides.

(4) Where used, ladder safety devices
shall:

(i) Be installed and maintained in ac-
cordance with the manufacturer’s in-
structions, which shall be available for
inspection;

(ii) Be repaired only with replace-
ment parts having performance capa-
bility at least equal to that of the
original parts;

(iii) Have a connection length be-
tween carrier centerlines and safety
belts of 10±2 inches (25.4±5.08 cm); and

(iv) Be installed in a manner that
does not reduce the ladder’s structural
capability.

(5) Ladder cages or wells shall:

(i) Be of rigid construction that al-
lows unobstructed use but prevents an
employee from falling through or dis-
lodging the cage or well by falling
against it;

(ii) Have smooth inner surfaces;

(iii) Extent at least 36 inches (0.91 m)
above landings; and

(iv) Extend to within 8 feet (2.44 m)
above the ground or base, except that a
maximum of 20 feet (6.1 m) is permitted
where the cage or well would extend
into traffic lanes.
§ 1917.119 Portable ladders.

(a) Scope and applicability. This section applies to all portable ladders, including job-made ladders for temporary use, unless otherwise specified.

(b) Standards for existing manufactured portable ladders. (1) Rungs of manufactured portable ladders obtained before October 3, 1983, shall be capable of supporting a 200-pound (890 N) load without deformation.

(2) Rungs shall be evenly spaced from 9 to 16½ inches (22.9 to 41.9 cm), center to center.

(3) Rungs shall be continuous members between rails. Each rung of a double-rung ladder (two side rails and a center rail) shall extend the full width of the ladder.

(4) Width between side rails at the base of the ladder shall be at least 12 inches (30.48 cm) for ladders 10 feet (3.05 m) or less in overall length, and shall increase at least ¼ inch (0.64 cm) for each additional 2 feet (0.61 m) of ladder length.

(c) Standards for manufactured portable ladders. Portable manufactured ladders obtained after January 21, 1998 shall bear identification indicating that they meet the appropriate ladder construction requirements of the following standards:

ANSI A14.1–1990, Safety Requirements for Portable Wood Ladders
ANSI A14.2–1990, Safety Requirements for Portable Metal Ladders
ANSI A14.5–1992, Safety Requirements for Portable Reinforced Plastic Ladders

(d) Standards for job-made portable ladders. Job-made ladders shall:

(1) Have a minimum and uniform distance between rungs of 12 inches (30.48 cm), center to center;

(2) Are capable of supporting a 250-pound (1,112 N) load without deformation; and

(3) Have a minimum width between side rails of 12 inches (30.48 cm) for ladders 10 feet (3.05 m) in height. Width between rails shall increase at least ¼ inch (0.64 cm) for each additional 2 feet (0.61 m) of ladder length.

(e) Maintenance and inspection. (1) The employer shall maintain portable ladders in safe condition. Ladders with the following defects shall not be used and either shall be tagged as unusable if kept on the premises or shall be removed from the worksite:

(i) Broken, split or missing rungs, cleats or steps;

(ii) Broken or split side rails;

(iii) Missing or loose bolts, rivets or fastenings;

(iv) Defective ropes; or

(v) Any other structural defect.

(2) Ladders shall be inspected for defects prior to each day’s use, and after any occurrence, such as a fall, which could damage the ladder.

(f) Ladder usage. (1) Ladders made by fastening rungs or devices across a single rail are prohibited.

(2) Ladders shall not be used:

(i) As guys, braces or skids; or

(ii) As platforms, runways or scaffolds.

(3) Metal and wire-reinforced ladders with wooden side rails shall not be used when employees on the ladder might come into contact with energized electrical conductors.

(4) Individual sections from different multi-sectional ladders or two or more single straight ladders shall not be tied or fastened together to achieve additional length.