

"Wall opening" means an opening at least 30 inches (76 cm) high and 18 inches (46 cm) wide in any wall or partition through which employees can fall to a lower level.

§ 1910.22 General requirements.

(a) *Surface conditions and clearances.* (1) Surfaces shall be designed, constructed and maintained free of recognized hazards that can result in death or serious injury to employees.

(2) When surfaces cannot be maintained free of hazards, such as snow, ice or oil, that can result in death or serious injury to employees, employees shall be provided with a means to avoid or minimize their exposure to them.

(3) A minimum free clearance of 18 inches (46 cm) shall be provided for employee passage around or between obstructions.

(4) Manways or manholes built on or after (insert date one year after effective date of the final rule in the **Federal Register**) leading to sewers, non-pressurized tanks, atmospheric vessels and enclosures, and other confined spaces shall be at least 24 inches (61 cm) in diameter.

(b) *Application of loads.* (1) All surfaces shall be designed, constructed and maintained to support their maximum intended load. The maximum intended load shall not be exceeded.

(2) The employer shall ensure that employees involved in warehousing or storage activities know the intended load limits for structurally supported surfaces in the areas where they work.

(c) *Access and egress.* The employer shall ensure that employees are provided with and use a safe means of access to, and egress from, one surface to another.

(d) *Inspection, maintenance, and repair.* (1) The employer shall ensure through regular and periodic inspection and maintenance that walking and working surfaces are in safe condition for employee use.

(2) The employer shall ensure that all hazardous conditions which are discovered are corrected, repaired, or temporarily guarded to prevent employee use. Repairs shall be made in a manner that will restore the walking and working surface to a safe condition for employee use.

(3) Only qualified persons shall be permitted to inspect, maintain or repair

walking and working surfaces except for the incidental cleanup of non-toxic materials.

§ 1910.23 Ladders.

(a) *Scope and application.* This section covers all ladders, except that:

(1) This section does not apply to ladders which are used only for firefighting or rescue operations, or to those ladders which form an integral part of machinery; and

(2) Fixed ladders that are used only by qualified climbers, as defined in § 1910.32(b)(5), are not required to be equipped with ladder safety devices, wells or cages, provided the following requirements are met:

(i) The installation and maintenance of the ladder safety devices, wells or cages present a greater hazard than having a qualified climber use a fixed ladder without this protection.

(ii) The ladder is climbed two or fewer times per year.

(b) *General requirements.* (1) Employers shall ensure that all employees who use ladders with a working height of six feet (1.82 m) or more receive the necessary training, such as how to inspect ladders, and use such ladders properly.

(2) Ladders shall be used only for the purposes for which they were designed.

(3) Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-fourth of the working length of the ladder (the distance along the ladder between the foot and top support).

(4) When ladders are used for access to an upper landing surface, the ladder siderails shall extend at least three feet (.9 m) above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, the ladder shall be secured at the top and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder.

(5) Ladders shall be used only on stable and level surfaces unless secured to prevent their accidental displacement. Non-self-supporting ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement.

(6) Single rail ladders shall not be used.

(7) Ladders shall not be moved, shifted or extended while occupied by employees.

(8) Ladders placed in any location where they can be displaced by other activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.

(9) Ladders with structural or other defects shall be immediately tagged with a danger tag reading "Out of Service," "Do Not Use," or similar legend in accordance with § 1910.145, and shall be withdrawn from service until repaired.

(10) All ladder repairs shall be made by a qualified person trained and familiar with the design and the proper procedures for repairing defective components.

(11) Ladders shall be inspected for visible defects prior to the first use each workshift, and after any occurrence which could affect their safe use.

(12) The top of a non-self-supporting ladder shall be placed with the two rails supported unless it is equipped with a single support attachment.

(13) Emergency escape ladders shall comply with all applicable requirements of this section except those requiring fall protection systems.

(14) The top of a stepladder shall not be used as a step.

(c) *Design, construction, maintenance and inspection.*

(1) Portable ladders shall be capable of supporting, without ultimate failure, the following loads:

(i) Each non-self-supporting ladder: At least four times the maximum intended load applied or transmitted to the ladder in a downward and vertical direction when the ladder is placed at a 75½ degree angle from the horizontal.

(ii) Each self-supporting ladder: At least four times the maximum intended load in a fully opened position on a level surface.

(2) Ladders designed in accordance with ANSI A14.1–1982, ANSI A14.2–1982, and ANSI A14.5–1982 are deemed to be in compliance with the requirements of paragraph (c)(1) of this section for the type of ladder to be used. The working loads corresponding to the duty ratings of portable ladders that pass the applicable ANSI test requirements shall be as follows:

Duty rating	Ladder type	(pounds)	Working load (Kg)
Extra heavy duty	IA	300	136.2
Heavy duty	I	250	113.5
Medium duty	II	225	102.2
Light duty	III	200	90.8

(3) The design of combination ladders shall be such that the ladder will be capable of meeting the requirements in paragraphs (c)(1) or (c)(2) of this section for stepladders when in the stepladder position, and for extension ladders when in the extension ladder position.

(4) The maximum intended load used for the design of portable ladders shall be at least 200 pounds (90.6 Kg).

(5) The combined weight of the employee using the portable ladder and any tools and supplies carried by the employee shall not exceed the maximum intended load of the ladder.

(6) Fixed ladders shall be capable of supporting at least two loads of at least 250 pounds (114 kg) each, concentrated between any two consecutive attachments, plus anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from the use of ladder safety devices. The number and position of additional concentrated loads of 250 pounds (114 kg)