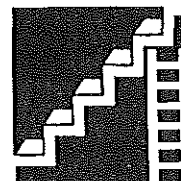




Section K. Stairways and Ladders

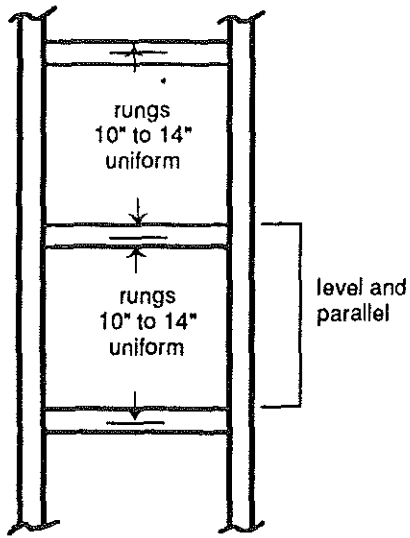


1. Stairways

- a. Stairways or ladders shall be provided for access to all areas where there is a break in elevation of 19 inches or greater, and no ramp, slope, or other means are provided.
29 Code of Federal Regulations (CFR) 1926.1051(a)
- b. Temporary stairways shall have landings at least every 12 feet of vertical rise. These landings shall measure at least 30 inches in direction of travel and 22 inches wide.
29 CFR 1926.1052(a)(1)
- c. All points of access to stairways shall be clear of construction materials.
29 CFR 1926.25(a); .1051(a)(3)
- d. Where doors or gates swing directly onto a stairway, a platform shall be provided, and the swing of the door or gate shall not reduce the effective width of the platform to less than 20 inches.
29 CFR 1926.1052(a)(4)
- e. Stairways shall be free of hazardous projections, such as protruding nails.
29 CFR 1926.1052(a)(6)
- f. If stairway steps are slippery, they shall not be used until materials causing the slippery conditions have been removed.
29 CFR 1926.1052(a)(7)
- g. Stairways with 4 or more stairs or stairs that rise more than 30 inches shall have handrails installed on all unprotected sides.
29 CFR 1926.1052(c)(1)
- h. Guardrails on stairways shall be at least 36 inches high. Midrails, screens, mesh, or equivalent intermediate vertical members shall be provided.
29 CFR 1926.1052(c)(3)(i), (c)(4)
- i. Handrails shall be surfaced to prevent injury to the hands from punctures or lacerations.
29 CFR 1926.1052(c)(8)
- j. A permanent metal stairway or a landing with hollow pan-type treads (which will be permanently filled with concrete or other material) shall be temporarily filled to the level of the nosing with wood or other solid material. This material shall be installed for the entire width and depth of each panned step.
29 CFR 1926.1052(b)(1)
- k. To prevent falls, handrails shall be an appropriate size and shape for workers' hands. All handrail supports shall be capable of withstanding a lateral force of 200 pounds.
29 CFR 1926.1052(c)(5)
- l. Temporary handrails shall have a minimum of 3 inches of clearance between the handrail and the wall.
29 CFR 1926.1052(c)(11)

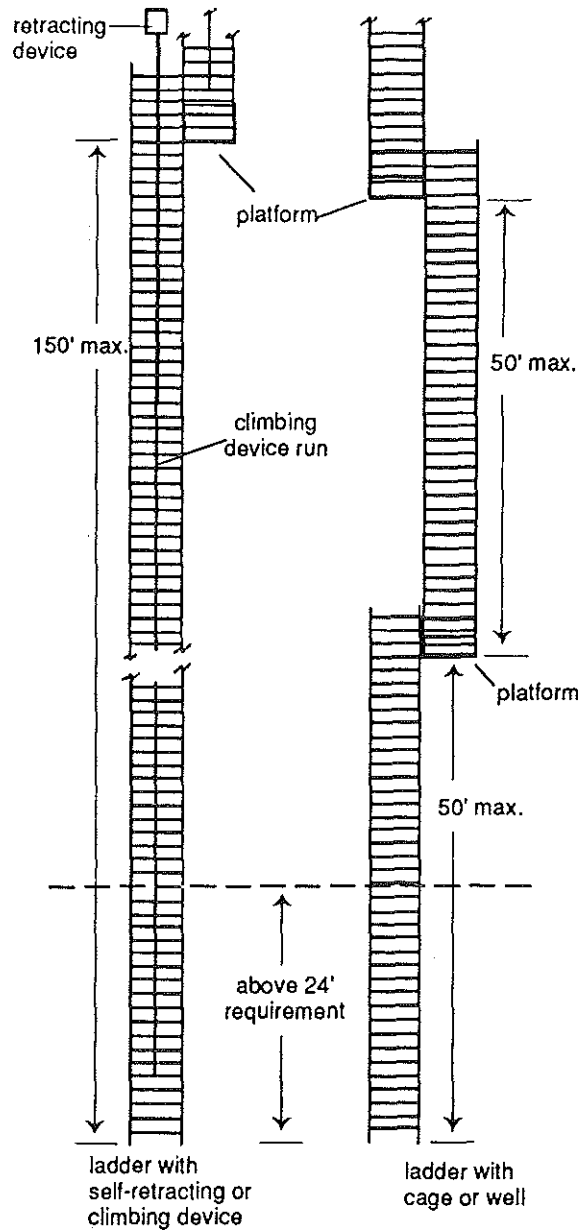
2. Ladders

- a. Self-supporting and nonself-supporting portable ladders shall be rated to support 4 times the maximum intended load.
29 CFR 1926.1053(a)(1)(i,ii)
- b. Two or more ladders or a double-cleated ladder shall be provided for access to or egress from a structure on which more than 25 people are working.
29 CFR 1926.1051(a)(2)
- c. Ladder rungs and cleats shall be parallel, level, and spaced uniformly. The rungs shall be uniformly set at an interval between 10 and 14 inches.
29 CFR 1926.1053(a)(2), (3)(i)



Ladder Rungs

- d. Fixed ladders with a rise of 24 feet or more shall be equipped with one of the following:
- a ladder climbing safety device;
 - a self-retracting life line and a rest platform at intervals not to exceed 150 feet; or
 - a cage or well and multiple ladder sections each not exceeding 50 feet in length with each ladder section offset from adjacent sections and provided with a platform at maximum intervals of 50 feet.
- 29 CFR 1926.1053(a)(19)(i,ii,iii)



Ladder Climbing Protection



e. The minimum distance between the 2 side rails of a fixed ladder and individual rung stepladders shall be 16 inches.

29 CFR 1926.1053(a)(4)(i)

f. The rungs of portable and fixed metal ladders shall be corrugated, knurled, dimpled, or coated with skid-resistant material.

29 CFR 1926.1053(a)(6)(i,ii)

g. Ladders shall not be tied or fastened together vertically unless they are specifically designed for that purpose.

29 CFR 1926.1053(a)(7)

h. When two or more separate fixed ladders are used to reach an elevated work area, they shall be offset and include a platform, guardrails, overhead protection, and toeboards.

29 CFR 1926.1053(a)(10)

i. Permanently attached ladders shall have a back clearance of 7 inches or more. Ladders used in elevator pits shall have a minimum perpendicular clearance of 4 1/2 inches.

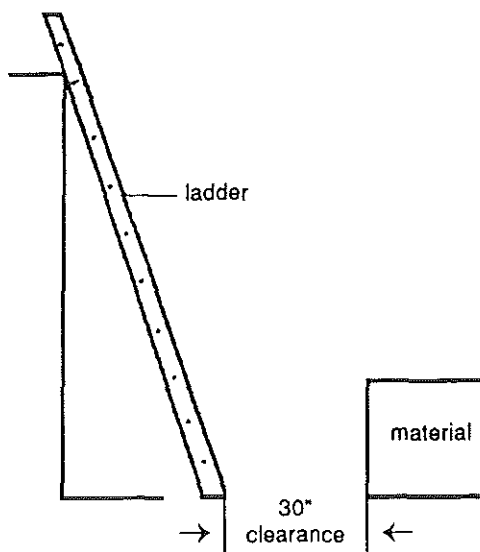
29 CFR 1926.1053(a)(13)

j. A landing platform shall be provided if the access/egress step-across distance from a structure is greater than 12 inches.

29 CFR 1926.1053(a)(16)

k. There shall be at least a 30-inch clearance at the base of the climbing side of a ladder. This may be reduced to 24 inches provided that a deflection device is installed to guide workers.

29 CFR 1926.1053(a)(14,15)



Climbing Clearance

3. Use Requirements for Ladders

a. A worker who ascends or descends a ladder shall face the ladder and not hand-carry objects or loads that could affect stability.

29 CFR 1926.1053(b)(20,22)

b. All points of access to ladders shall be clear of construction materials.

29 CFR 1926.25(a); .1051(a)(3)

c. If used in an area where it can be displaced by activity or traffic, a ladder shall be secured to prevent its accidental displacement.

29 CFR 1926.1053(b)(8)

d. All ladders shall be periodically inspected for defects (for example, broken or missing rungs) by a competent person. If a ladder has been damaged in any way, it shall be thoroughly inspected; if any defects are found, the ladder shall be tagged "DO NOT USE" and removed from service. Do not paint wooden ladders as painting will hide defects.

29 CFR 1926.1053(b)(15,16)

e. Portable ladders used to reach an upper landing of a structure shall have side rails that extend at least 3 feet above the landing.

29 CFR 1926.1053(b)(1)

f. Ladders shall be free of oil, grease, and other hazards that may cause a worker to slip.

29 CFR 1926.1053(b)(2)

g. Ladders shall be used only for the purpose for which they were designed. Ladder bases shall have slip-resistant feet (unless secured) and be used on a surface that is stable and level.

29 CFR 1926.1053(b)(7)

h. Ladders shall not be moved, shifted, or extended when workers are on them.

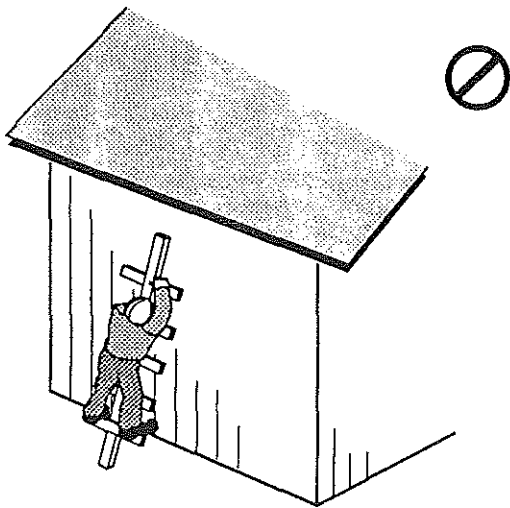
29 CFR 1926.1053(b)(11)

i. Ladders that may come in contact with exposed energized electrical equipment shall have nonconductive side rails.

29 CFR 1926.1053(b)(12)

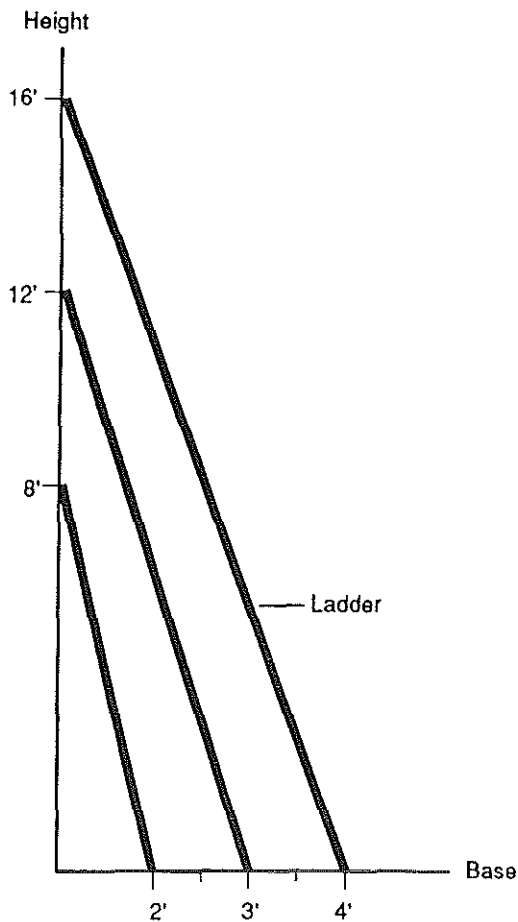


- j. Single-rail ladders shall not be used.
29 CFR 1926.1053(b)(19)



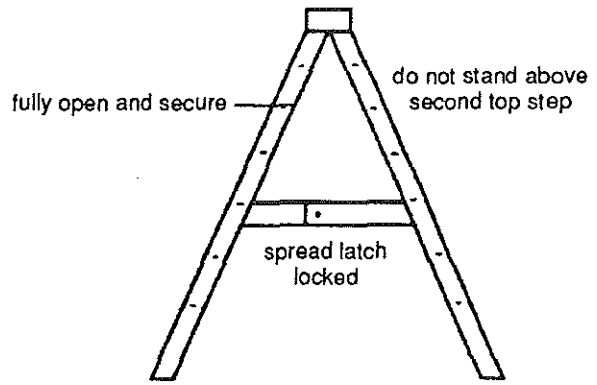
- k. Extension ladders shall be placed at a 4 to 1 ratio, height over distance, from the wall to the bottom of the ladder.

29 CFR 1926.1053(b)(5)(i)



Extension Ladder Stand 1b to 4h

- l. Stepladders should only be used fully unfolded, and workers shall not stand above the second from the top step.
29 CFR 1926.1053(b)(13)



Step Ladder

4. Training Requirements for Workers Using Ladders and Stairways

- a. A training program shall be provided for workers who use ladders and stairways at the construction site. As necessary, such a program may be integrated into the general employee orientation.

29 CFR 1926.1060(a)



- b. The employer shall ensure that each employee is trained in the following:
 1. the nature of fall hazards in the work area;
 2. correct procedures for erecting, maintaining, and disassembling fall protection;



- 3. proper construction, use, placement, and care of a stairway and ladder; and
- 4. the maximum load for each ladder.

29 CFR 1926.1060(a)(1)(i-v)



- c. Retraining in ladder safety shall be provided as necessary.

29 CFR 1926.1060(b)

5. Use of Ladders and Stairways During Demolition Operations

- a. During demolition operations, only designated stairways and ladders shall be used to gain access to a structure. All other access ways shall be sealed at all times.

29 CFR 1926.851(a)

- b. During demolition operations, each stairway and ladder in use shall be periodically inspected and maintained in a clean and safe condition.

29 CFR 1926.851(b)

- c. During demolition of a multistory building, stairwells in use shall be properly illuminated by either natural or artificial light and completely covered at least two floors below the floor on which work is being performed.

Note: As floors are removed fall protection may be necessary. Refer to Section III.A.2 of this guide for information regarding fall protection.

29 CFR 1926.851(c)



DEFINITIONS

Double-Cleated Ladder — A ladder that consists of three parallel, vertical support pieces connected by a series of rungs and crosspieces.

Handrail — A narrow metal or wooden railing to be grasped by a person for protection and support when walking on a stairway or ramp.

Hollow Pan-Type Treads — In the hollow steps of a permanent metal stairway, cavities that will be filled with concrete or another similar material.

Platform — A horizontal wooden or metal surface that is provided at regular intervals along a lengthy ladder and at points of access and egress, when needed, for the safety of the workers.

Rise — The vertical distance from the top of a stairway tread to the top of the tread located above it; or the vertical height from the ground to the top of any tread of a stairway.

Single-Rail Ladder — A ladder that consists of one vertical support piece to which the rungs or crosspieces are affixed.

**KEY ITEMS CHECK LIST
SECTION K. STAIRWAYS AND LADDERS**

Item	Paragraph	Notes
1. STAIRWAYS	K.1	
Are the required stairs provided?	K.1.a	
Do temporary stairs have landings every 12 feet?	K.1.b	
Are handrails installed?	K.1.i K.1.k K.1.l	
2. LADDERS	K.2	
Are ladders provided?	K.2.b	
Are safety cages, landings, or climbing-safety devices provided for high ladders?	K.2.d K.2.h	
Are ladder rungs parallel, level, and evenly spaced?	K.2.c	
3. USE REQUIREMENTS FOR LADDERS	K.3	
Are workers trained to set up and climb ladders (facing it, 4 rise to 1 run)?	K.3.k K.3.a	
Are ladders inspected?	K.3.d	
Are step ladders set correctly, and are workers instructed not to use the top step?	K.3.l	
4. TRAINING REQUIREMENTS FOR WORKERS USING LADDERS AND STAIRWAYS	K.4	
Are workers instructed in fall hazards; fall protection; and placement, use, and care of ladders and stairs?	K.4.b	
5. REQUIREMENTS FOR USING LADDERS AND STAIRWAYS DURING DEMOLITION OPERATIONS	K.5	
Is a single access designated and used exclusively?	K.5.a	