Walking and Working Surfaces

1. Purpose

In compliance with OSHA regulations, ANSI standards and BP GDP 4.5-0002 Use of Temporary Ladders, this policy establishes requirements designed to eliminate slip, trip, and fall hazards associated with walking, climbing and working surfaces.

2. Scope

This policy applies to personnel at all work locations and includes requirements for floors, runways, ramps, stairs, and ladders.

3. Minimum Requirements

	Minimum Requirements	Supporting Documentation
1.	All work areas, storerooms, service rooms, passageways, and other means of access shall be kept clean and orderly at all times	Section 6
2.	Fall protection shall be used on temporary ladders where the height of climb exceeds 10 feet (3 meters).	Section 6
3.	Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails.	Section 7
4.	Rung and cleat ladders (e.g., extension ladders) shall, where possible, be used at a pitch of 4:1, height to distance of base from the wall.	Section 8

4. Definitions

Fixed ladder—A ladder permanently attached to a structure, building, or equipment.

Handrail—A single bar or pipe supported on brackets from a wall, as on a stairway, to furnish persons with a handhold in case of tripping.

Hole—An opening measuring 1 to 12 inches in its least dimension through which materials but not persons may fall.

Opening—An opening measuring 12 inches or more in its least dimension through which persons may fall.

Platform—A work surface elevated above lower levels.

Runway—A passageway elevated above the surrounding floor or ground level, such as a catwalk along a difficult-to-reach structure or a walkway between buildings.

Standard railing—A vertical barrier erected along exposed edges of a floor opening, ramp, platform, or runway to prevent falls of persons.

Temporary ladder—Ladder not affixed permanently to a structure. This includes scaffold, extension or straight ladders, platform and folding ladders.

Walking and working surface— Any surface on which employees perform or gain access to their job duties or upon which employees are required or allowed to walk or work while performing assigned tasks.

5. Roles and Responsibilities

A. Team Leaders are responsible for enforcing this policy.

B. All personnel are responsible for implementing this policy.

6. General Requirements

A. All work areas, storerooms, service rooms, passageways, and other means of access shall be kept clean and orderly at all times. Trash and other debris must not be allowed to accumulate.

B. Floors shall be maintained in a clean and, so far as possible, a dry condition.

1. Areas with wet processes must have drainage, and platforms, mats, or other dry standing places shall be provided where practicable.

2. Spills must be cleaned up immediately, even if they are not chemically hazardous.

C. All work areas and shall be kept free from protruding nails, splinters, holes, or loose boards.

D. Where mechanical handling equipment (e.g., forklift) is used, sufficient and safe clearances shall be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be made. Aisles, passageways, and other means of access shall be kept clear and in good repair, with no obstructions that could create a hazard.

1. Permanent aisles, passageways, and access routes shall be appropriately marked where materials or equipment may encroach upon.

E. Covers or guardrails or both shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

F. In every building, the loads approved by the building official shall be marked on plates (in pounds per square foot) of approved design, which shall be securely affixed in a conspicuous place in each space to which they relate.

G. Walking and working surfaces, including stairs, scaffolds, and ladders, must be maintained in a safe condition and free of any fall hazards. Any defective stairs, scaffolds, or ladders must be repaired before further use or replaced.

H. Workers should observe obstructions in walkways, e.g. piping, and determine proper actions to minimize the risk. Examples of actions include designating an alternate route, providing stairs over the obstacle, post a warning sign, or paint the obstacle with high visibility paint.

I. Piping shall not be used as a step or work platform. Engineering shall be consulted if piping will be used in any structural manner.

J. The following hierarchy of controls should be used to assist selection of mechanism for accessing and egressing elevated platforms.

1. Bring the work to grade and eliminating the need to access and egress heights.

2. Using an existing permanent structure.

3. Engineering controls consisting of temporary equipment to reduce the risk of a fall occurring in order of preference as follows.

a) Scissor lifts or mobile elevated work platforms.

b) Mobile platform stairs or ladders (with rear bar or chain).

c) Scaffolding with a lift or stairs.

d) Scaffolding with internal inclined scaffold ladder with protection (i.e., ladder trap hatch or handrails).

e) Scaffolding with external scaffold ladders accesses using a safety gate or swing arm system or onto platform with guardrails.

f) Ladders.

K. Fall protection shall be used on temporary ladders where the height of climb exceeds 10 feet (3 meters).

7. Guarding for Floor and Wall Openings and Holes

7.1. Floor Openings

A. Every stairway floor opening shall be guarded by a standard railing constructed in accordance with Section 7.4.

1. The railing shall be provided on all exposed sides (except at the entrance to the stairway).

B. Every ladder way floor opening or platform shall be guarded by a standard railing with a standard toeboard on all exposed sides (except at the entrance to the opening). The passage through the railing shall be either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

C. Every floor opening into which persons could accidentally walk shall be guarded by one of the following:

1. A standard railing with a standard toeboard on all exposed sides.

2. A floor opening hole cover of standard strength and construction. Whenever the cover is not in place, the floor hole shall be constantly attended or shall be protected by a removable standard railing.

7.2. Wall Openings and Holes

A. Every wall opening from which there is a drop of more than 4 feet shall be guarded by a rail, fence, door, or equivalent barrier.

B. Wall-opening barriers shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction (except upward) at any point on the top rail or corresponding member.

7.3. Open-Sided Floors, Platforms, and Runways

A. Every open-sided floor or platform 4 feet or more above the adjacent floor or ground level shall be guarded by a standard railing on all open sides except where there is an entrance to a ramp, stairway, fixed ladder, or other barrier that prevents someone from falling, e.g., a gap in the railing that allows access to an immediately adjacent valve.

1. The railing shall be provided with a toeboard wherever, beneath the open sides,

a) persons can pass;

b) there is moving machinery; or

c) there is equipment with which falling materials could create a hazard.

B. Floor-opening covers may be of any material that meets the following strength and design requirements:

1. Trench, conduit, or manhole covers and their supports, when located in plant roadways, shall be designed to carry a truck rear axle load of at least 20,000 pounds.

7.4. Stairway Railings and Guards

A. Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails, as specified below.

1. A standard railing shall consist of a top rail, an intermediate rail, and posts.
2. The railing shall have a vertical height of 42 inches (nominal) from the upper surface of the top rail to the floor, platform, runway, or ramp level.
3. The top rail shall be smooth-surfaced throughout the length of the railing.
4. The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp.
5. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.
6. A stair railing shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches and not less than 30 inches from upper surface of the top rail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

B. A standard toeboard shall be 4 inches (nominal) in vertical height from its top edge to the level of the floor, platform, runway, or ramp.

1. It shall be securely fastened in place and with not more than ¼-inch clearance above floor level.
2. It may be made of any substantial material, either solid or with openings not over 1 inch in the greatest dimension.

C. Where material is piled to such a height that a standard toeboard does not provide protection, paneling from the floor to the intermediate or top rail shall be provided.

D. All handrails and railings shall be provided with a clearance of not less than 3 inches between the handrail or railing and any other object, and capable of withstanding a load of at least 200 pounds in any direction.

8. Ladders

8.1. Fixed Ladders

A. All fixed ladders and stairs must be constructed, installed, and used in accordance with OSHA standards 1910.24 and 1910.27.

B. All fixed ladders and stairs must be visually inspected before use to verify that they are in a safe and operable condition. No inspection documentation is required.

C. Damaged ladders must be removed from service and tagged or marked “Dangerous—Do Not Use” until repaired or replaced.

D. Ladders shall be painted or otherwise treated, as applicable, to resist deterioration or corrosion that could be caused by the environment in which they are used.

E. All fixed ladders that are greater than 20 feet in height, as measured from a lower level, e.g., the ground, must have a cage or a climbing assist device. Ladders installed after November 19, 2018, new or replaced, must be equipped with a personal fall arrest system or a ladder safety system. After November 18, 2036, all fixed ladders shall be equipped with a personal fall arrest system or a ladder safety system.

8.2. Temporary Ladders

A. An alternative engineering solution should be implemented where an extension or straight ladder is being used as part of normal operations.

B. Temporary ladders shall be constructed and used in accordance with OSHA standards 1910.25 and 1910.26.

C. All temporary ladders must be visually inspected prior to each use. No inspection documentation is required.

D. Damaged ladders must be removed from service and tagged or marked “Dangerous—Do Not Use” until repaired or replaced.

E. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

F. Employees must not use ladders with a maximum weight rating less than the expected load of the employee plus tools and equipment.

G. Temporary ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized parts.

H. All temporary ladders must be properly stored after each use. If left standing, they must be secured from falling.

I. When the use of an extension ladder is the only means of access to complete the work, the extension ladders are limited to 30 feet (9 meters).

8.3. Ladder Use

A. When temporary ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet above the upper landing surface; the ladder shall be secured at its top to a rigid support that will not deflect and a grabrail shall be provided to assist employees in mounting and dismounting the ladder.

B. Step ladders shall not be used for accessing an elevated work area unless designed by the manufacturer for this use.

C. Fall protection shall be used on temporary ladders where the height of climb exceeds 10 feet (3 meters).

D. Ladders shall be maintained free of oil, grease, and other slipping hazards.

E. Ladders shall be used only for the purpose for which they were designed.

F. Extension ladders shall have rung-locks fully engaged while in use.

G. Step ladders shall be equipped with a metal spreader or locking braces that securely holds the front and back sections in an open position while the ladder is in use.

H. Non-self-supporting ladders should be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support). In other words, the length-to-pitch ratio is 4:1. For every 4 feet of the ladder’s length, the base of the ladder should be placed a distance of 1 foot from the vertical wall.

I. Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.

J. Ladders placed in any location where they can be displaced by workplace 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.

K. The area around the top and bottom of ladders shall be kept clear.

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

M. Ladders shall not be moved, shifted, or extended while occupied.

N. Employees shall not stand on the top two rungs of a ladder.

O. When ascending or descending a ladder, the user shall face the ladder with both hands available to climb.

P. Each employee shall maintain “three points of contact” at all times and use at least one hand to grasp the ladder when progressing up and/or down the ladder.

Q. An employee shall not carry any object or load that could cause the employee to lose balance and fall.

8.4. Performing Work from a Ladder

A. If the ladder does not have an inbuilt platform or safety rail, fall protection is required when working from a ladder above 6 feet (2 meters).

8.4.1. Platform Ladders

Platform ladders are preferred to be used in place of an extension ladder or straight ladders when performing work. In this case, platform ladders:

A. Shall be used on level ground with support for all four sides of its base.

B. Not moved while someone is on it.

C. Not used on ice, snow, or slippery surfaces unless suitable means to prevent slipping is employed.

8.5. Ladder Maintenance

A. All ladders shall be maintained in a safe condition, with special attention given to the following:

1. Joints between steps and side rails shall be tight.
2. Hardware and fittings shall be securely attached.
3. Moveable parts shall be free and operable.
4. Metal bearings of locks, wheels, pulleys, etc. shall be lubricated.
5. Frayed or badly worn rope shall be replaced.
6. Safety feet shall be operable.
7. Rungs and steps shall be kept clean and free of defects.
8. Structural members have been painted or treated to prevent rust.

9. References

1. OSHA 29 CFR 1910.22, “Walking-Working Surfaces: General Requirements.”
2. OSHA 29 CFR 1910.23, “Ladders.”
3. OSHA 29 CFR 1910.25, “Stairways.”
4. OSHA 29 CFR 1926.1053, “Construction: Ladders.”