

11.2: Scaffold Fall Protection

Scaffold Fall Protection

General

In general, each employee on a scaffold more than 10 feet above a lower level shall be protected from falling to the lower level. The types of fall protection to be provided to the employees depend on the type of scaffold used. The fall protection requirements for employees installing suspension scaffold support systems on floors, roofs, and other elevated surfaces are set forth in Subpart M.

Effective Date

Effective September 1997, the employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Employers are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

Personal Fall Arrest Systems

In addition to meeting the requirements of 1926.502(d), personal fall arrest systems used on scaffolds shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

Guardrail Systems

Guardrail systems installed to meet the requirements of this section shall comply with the following provisions:

1. Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.
2. The top edge height of Toprails or equivalent member on supported scaffolds manufactured or placed in service after January, 2000 shall be installed between 38 inches and 45 inches above the platform surface. The top edge height on supported scaffolds manufactured and placed in service before January 2000, and on all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches and 45 inches. When conditions warrant, the height of the top edge may exceed the 45 inch height, provided the guardrail system meets all other criteria.
3. When Midrails, screens, mesh, intermediate vertical members solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.
4. When Midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.
5. When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.
6. When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches apart.
7. Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 100 pounds for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds for guardrail systems installed on all other scaffolds.
8. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the mid rail or other member of at least 75 pounds for guardrail systems with a minimum 100 pound Toprail capacity, and at least 150 pounds for guardrail systems with a minimum 200 pound Toprail capacity.
9. Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
10. The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.
11. Steel or plastic banding shall not be used as a Toprail or Midrail.

12. Manila or plastic (or other synthetic) rope being used for Toprails or Midrails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the necessary strength requirements.
13. Crossbracing is acceptable in place of a Midrail when the crossing point of two braces is between 20 inches and 30 inches above the work platform or as a Toprail when the crossing point of two braces is between 38 inches and 48 inches above the work platform. The end points at each upright shall be no more than 48 inches apart.

Falling object protection

In addition to wearing hard hats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.

Falling object provisions

Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

1. The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area; or
2. A toeboard shall be erected along the edge of platforms more than 10 feet above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of 3/4 x 1-1/2 inch wood or equivalent may be used in lieu of toeboards;
3. Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below; or
4. A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or
5. A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

Toeboards

Where used, toeboards shall be:

1. Capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toeboard; and
2. At least three and one-half inches high from the top edge of the toeboard to the level of the walking/working surface. Toeboards shall be securely fastened in place at the outermost edge of the platform and have not more than 1/4 inch clearance above the walking/working surface. Toeboards shall be solid or with openings not over one inch in the greatest dimension.

Fabricated Frame Scaffolds (Tubular Welded Frame Scaffolds)

Moving Platforms

When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced, prior to receiving the new platforms.

Securing

Frames and panels shall be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections shall be secured. Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.

Where uplift can occur which would displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means. Scaffolds over 125 feet (38.0 m) in height above their base plates shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design.

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