



Scaffolding

Applicable OSHA Compliance Information:

- 29 CFR 1910.28 - Safety Requirements for Scaffolding
- 29 CFR 1915 Subpart E - Scaffolds, Ladders and Other Working Surfaces
- 29 CFR 1926.452(a) - Additional Requirements Applicable to specific types of scaffolds

Safety / Compliance Tips

Scaffold Definition

A scaffold is defined as an elevated, temporary work platform. There are three basic types of scaffolds:

- Supported scaffolds, which consist of one or more platforms supported by rigid, loadbearing members, such as poles, legs, frames, outriggers, etc.
- Suspended scaffolds, which are one or more platforms suspended by ropes or other non-rigid, overhead support.
- Other scaffolds, principally manlifts, personnel hoists, etc., which are sometimes thought of as vehicles or machinery, but can be regarded as another type of supported scaffold.

Training:

Before any employee is allowed to erect, work from, dismantle or inspect scaffolding, he/she must be properly trained. The required training will cover:

- Scaffold assembly
- Safe work practices
- Common hazards associated with scaffold use
- Scaffold inspections
- Scaffold disassembly

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Safety / Compliance Tips (Cont'd)

Competent person

- All scaffolds used in the shipyard are to be assembled under the direction of a Scaffold Competent Person only.
- OSHA requires employers to provide training by a competent person to each employee who is involved in erecting and/or disassembling a scaffold. A competent person is defined as one who:
 - o Is capable of identifying existing and predictable hazards, and
 - o Has authorization to take prompt corrective measures to eliminate them.
- Personnel designated as Scaffold Competent Persons are capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

The OSHA standard requires a competent person to perform the following duties under these circumstances:

In General:

- To select and direct employees who erect, dismantle, move, or alter scaffolds
- To determine if it is safe for employees to work on or from a scaffold during storms, high winds, slippery icy conditions

For Training:

- To train employees involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting scaffolds.
- To recognize hazards associated while working with scaffolds

For Inspections:

- To inspect scaffolds and scaffold components for visible defects
- Prior to each shift inspect and correct defects before using the scaffold

For Erectors and Dismantlers:

- To determine the feasibility and safety of providing fall protection and access.
- To train erectors and dismantlers to recognize associated work hazards.

Requirements for Designing and Constructing Scaffolds

Scaffolds must be designed by a qualified person, and be constructed and loaded in accordance with that design. OSHA defines a qualified person as one who:

Possesses a recognized degree, certificate, or professional standing, or has extensive knowledge, training and experience, and therefore can solve or resolve problems related to the work or the project. A qualified person must do adequate pre-planning to assure the safe erection and use of the scaffold.

Pre-planning includes:

- Determining the type of scaffold necessary for the job
- Determining the maximum load of the scaffold
- Assuring a good foundation, and
- Avoiding electrical hazards.

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Scaffold Assembly General Requirements

- All scaffolding components shall be installed in accordance with the manufacturer's recommended procedures. No unauthorized alterations are allowed.
- Scaffolds shall be furnished, erected, or used when persons are engaged in work that cannot be performed safely from the ground or from solid construction.
- Scaffolds shall be designed and erected to safely support the design load.
- Footing for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load. Barrels, boxes, brick, concrete block, and other unstable objects shall not be used to support scaffolds or planks. Screw jacks are the most common means of scaffold leveling on a sound, rigid surface. Not more than 12 inches of the screw jack shall extend below the bottom of the nut/top of caster.
- Anchorage, guying, tying off, or bracing of scaffolds shall be affixed to substantial and structurally sound structures, or the equivalent, using anchor bolts or equivalent.
- Guardrails (including toe boards and top rails) shall be installed on all open sides and ends of platforms more than 5 feet above the ground or floor or other platform. Exceptions to this include the following:
 - During erection or dismantling of the scaffolding
 - Walls or bulk heads completely surround the scaffolding
 - When fall protection systems provide better protection
- Top rails shall be installed at 42 inches. However, if the work in progress will not allow a top rail at 42", alterations may be made at no less than 38 inches nor more than 45 inches above the working surface of the scaffold.
- Toe boards shall be 1" X 4" lumber or equivalent. The toe board shall extend a minimum of 3 ½" above the working surface of the scaffold. They are required with the guardrail systems on all open sides and ends of scaffolds at locations where persons are required to work or pass under the scaffold.
- If materials are piled higher than the toe boards and are in areas where persons are required to pass beneath the scaffold, the scaffolds shall be provided with a wire mesh or suitable alternative between the toe board and the top rail extending along the entire opening. The area below the scaffolds will be barricaded to restrict employee access.
- If the wire mesh or alternative is used, the midrail can be eliminated.
- Cross bracing can be used in place of a midrail when the crossing point of 2 braces is at least 20" but not more than 30" above the platform. It is acceptable as a guardrail provided the crossing point of 2 braces is between 31" and 48" above the working platform of the scaffold. The end points at each upright shall not be more than 54" apart.
- Maximum Intended Load scaffolds shall be capable of supporting, without failure, their own weight and at least 4 times the maximum intended load.
- Scaffold Access is an access ladder or equivalent which shall be provided (except during erecting or dismantling) by one of the following:
 - Portable ladder - wood metal or fiberglass
 - Scaffold frame with a maximum spacing between the climbing surfaces of the frame not to exceed 16.5" and the length of the climbing surface shall not be less than 10"
 - Hook-on attachment ladders specifically designed for its intended purpose
 - Step or stair-type access specifically designed for its intended purpose
 - Direct access of adjacent structure or personnel hoist

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Safety / Compliance Tips (Cont'd)

- Ladders must be positioned so that the scaffold cannot be tipped. Persons climbing or descending scaffold ladders shall have both hands free for climbing.
- Cross braces or handrail shall not be used as a means of access or degrees.
- Platforms are working surfaces which shall be fully planked or decked. The planks shall be laid with their edges close together so that the platform will be tight with no spaces through which tools or fragments of material can fall.
- Spaces cannot be more than 1" wide except around uprights.
- Plank overlapping - planks 10' long require a 6" minimum and 12" maximum overlap. Planks greater than 10' long require a 6" minimum and an 18" maximum overlap.
- If the platform cannot be fully planked or decked with standard units, the platform shall be planked as fully as possible. However, the remaining open space between the platform and guardrail shall not exceed 9.5".
- Only scaffold grade wood planking and decking meeting scaffold use requirements shall be used
- Set-up: poles, legs, and uprights of the scaffold shall be plumb, level, secured and rigidly braced to prevent swaying and displacement.
- Wood: all load carrying wood members of the scaffold, except the planks, shall be at minimum, #1 southern pine grade, #1 Douglas fir or the equivalent.
- The wood used can be used and reused provided the use has not damaged the lumber. New or used lumber that has been damaged or has deteriorated due to insects, decay, or chemical attack shall not be used.

Scaffold disassembly

- Disassembly of all scaffolding will be performed in accordance with the manufacturer's recommended procedures.
- Disassembly of scaffold will be performed at the direction of the Scaffold Competent person.
- Fall protection devices will be used where workers are exposed to unguarded elevations of 5" or higher above the working surface. Scaffold components that are damaged, worn or otherwise defective will be tagged out of service and separated from scaffold components that are in proper working condition.

Scaffold inspection

Scaffolds must be inspected by a Scaffold Competent Person prior to use each day. Additionally, employees who are working from scaffolds must be on the lookout for defects that may occur during work in progress and bring the problems to the attention of the Scaffold Competent Person or their immediate Supervisor ASAP. Daily scaffold inspections must be recorded and maintained on file in the area where the scaffold is in use.

Scaffolds must be inspected for the following:

- Anchor points for button lock brackets are secured and properly welded
- Support members that are broken, deteriorated, or has evidence of weld or torch exposure
- Scaffolds are level and plumb
- Footers are set on solid surfaces (where applicable)
- Guard rail and toe boards are in proper working condition
- Planking or platforms are free from cracks, excess burns, or other deterioration
- Planking and /or platforms are secured and have proper spacing and overlap
- Access to scaffolds are secured and in proper working condition
- Employees working on scaffolds are wearing all required PPE

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Safety / Compliance Tips (Cont'd)

Hazards

- Electrical Hazards - Scaffolds shall not be set up or used in the vicinity of power or other electrical lines or electrical conductors until such are insulated, de-energized (lock-out/tag-out) or otherwise rendered safe against electrical contact.
- Surface Hazards - All exposed surfaces shall be free of sharp edges, burrs, nails, or similar safety hazards.
- Vehicle Hazards - Where moving vehicles are present, the scaffold area shall be marked with warning such as, but not limited to, flags, roped-off areas, barricades, fences, or a combination thereof.
- Securing Scaffolds - Scaffolds shall be secured to a structure at intervals not exceeding 30' horizontally and 26' vertically.
- Overhead Protection - When persons are working on the scaffold and an overhead hazard exists, overhead protection shall be provided to the user and shall be positioned not more than 9' above the working platform of the scaffold.
- Snow and ice on the scaffold must be removed and the planking sanded or some equivalent non-skid material applied before the scaffold is to be used.
- Tools, materials and debris shall not be allowed to accumulate so as to create a hazard on scaffold platforms.

Fall Protection

- Fall protection is not required when employees are inspecting, investigating or assessing workplace conditions prior to the start of work or after work is completed when properly constructed guardrails are in place.
- Floor openings, including openings in the scaffold planking, 5' or more above the ground or floor shall be protected with a guardrail. Personal Fall Arrest systems can be used as an alternative or in combination with partial handrail.
- Employees who are in the process of assembling, working from, or disassembling scaffolding that is at a minimum of 5' or higher above the working surface must use fall protection equipment if guard rails are not present.

The personal fall arrest system:

- Shall be inspected prior to use (defective equipment shall not be used)
- Shall be properly worn
- Shall not be attached to a guardrail system
- Anchorage devices must have 5000# capacity
- Positioning devices shall prohibit an employee from falling.



*FOR MORE INFORMATION ON THIS TOPIC OR IF YOU HAVE QUESTIONS,
PLEASE CONTACT THE AEU LOSS CONTROL STAFF 866-AEU-8754*

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