



SCAFFOLD SAFETY GUIDELINES

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Scaffolding Summary

A scaffold is any temporary elevated platform and its supporting structure used for holding people, materials or both. It is designed to provide an elevated work area that is more efficient than other means. Scaffolding can be used for a variety of jobs in new construction, maintenance and repairs, and renovation. When properly erected and maintained, scaffolds provide employees with safe access to a work location that would normally be out of reach.

Even when they are properly used, scaffolds present risks to employees and those who are passing or working under the scaffold. In addition to the operations exposure, serious injuries can occur during the erection, dismantling and alteration of a scaffolding system.

Research and investigation indicates that the three main causes of scaffolding accidents are:

- Equipment failure
- Incorrect operating procedures
- Environmental conditions

All of these situations can cause people and material to fall from a scaffold, or can contribute to the collapse of a scaffold.

The following are procedures and guidelines to use when inspecting and training employees on proper use of scaffolds. We do not erect or dismantle scaffold we hire an outside vendor to complete these steps.

Safety Requirements

Eight basic requirements should be addressed when using scaffolding. The frame safety requirements can be broken down into three sections – equipment, operations, and environment. Any defective components will be tagged, and employees will be required to follow appropriate instructions.

Equipment

Base Section – A stable structure can only be built upon a foundation that is square and level. To ensure stability, set supported scaffolds on base plates, mudsills or some other adequate firm foundation. This is critically important. Footings must support the scaffold – including the expected load – without settling or displacement. Supported scaffold poles, frames, uprights, etc., must be plumb and braced to prevent swaying and displacement. Use a level to achieve the desired right angles.

Support Structure – To prevent a scaffold from falling. The four key considerations for adequate support are:

1. Capacity – Scaffolds and their components must support, without failure, their own weight and at least four times their maximum intended load. Do not overload a scaffold by allowing too many people or material on the platform, or by concentrating too much of the load in one area.
2. Bracing – Connect frames and panels with cross, horizontal or diagonal braces, alone or in combination, which secure vertical members together laterally. As frames are stacked, cross braces must keep the scaffold plumb, level and square. All brace connections must be secured to prevent dislodging.
3. Pinning – Join frames and panels together vertically by coupling or stacking pins, or equivalent means. Frames and panels should also be locked together to prevent uplift (the separation of a

frame from the one below it).

4. Components – Scaffold components made by different manufacturers should not be intermixed unless they fit together without being forced. The scaffold's structural integrity must be maintained. In addition, scaffold components of dissimilar metals should not be used together unless a competent person has determined that the galvanic action will not reduce the strength of any component below standards.
5. Wheels or Casters – Wheels or casters shall be properly designed for strength and dimensions to support 4 times the design working load. All scaffold wheels, casters and swivels shall be provided with a positive locking device, or other effective means to prevent movement of the scaffold.
6. Leveling – Where leveling of the elevated work platform is required, screw jacks or other similar means for adjusting the height shall be provided in the base section of each mobile unit. The screw jack shall extend into its leg tube at least 1/3 its length, but in no case shall the exposed portion of the screw jack exceed 12 inches.

Access – Experience shows that workers are most vulnerable to falls when they are climbing on or off the scaffold. Employees must have safe access at any level of a scaffold that is two feet above or below an access point. This does not include the use of cross bracing as a means of access, which is not allowed. Means of safe access include hook-on or attachable ladders, stair towers, ramps, and walkways. Cross bracing is not designed for accessing a scaffold.

Fall Protection – Falls are the leading cause of injuries and deaths associated with scaffold use. We require protection for our employees through a personal fall arrest or guardrail system.

Personal Fall Arrest Systems – Lanyards should be attached to a vertical lifeline, horizontal lifeline or scaffold structural member. When vertical lifelines are used, fasten them to a fixed safe point of anchorage, independent of the scaffold, and protect the line against sharp edges and abrasion. In addition, you should not attach two or more vertical lifelines to each other or to the same point of anchorage. Horizontal lifelines should also be secured to two or more structural members of the scaffold.

Guardrail Systems – Standard rails are required on all scaffold platforms. All scaffold work levels 30 inches or higher above the ground or floor shall have guardrail protection that meets the requirements. Rails should be installed along all open sides and at both ends of platforms.

- Guardrails should be removed only when materials are being on-loaded or off loaded. Once the materials have been positioned, replace the guardrails immediately. Whenever employees are assigned within six feet from an area with a removed guardrail, they should be protected with the use of a personal fall arrest system.
- Ensure that each top rail, or equivalent member of a guardrail system, can withstand a force of at least 200 pounds. The top edge height of all top rails must be between 38-45 inches.
- Ensure that mid rails, screens, mesh, intermediate vertical members, and solid panels can withstand a force of at least 150 pounds. Screens and mesh must extend from the top edge of the guardrail system to the scaffold platform and along the entire opening between the supports.
- In lieu of guardrails, you may use cross bracing as a top rail or mid rail, as long as the crossing point is between 20-30 inches above the work platform for a mid rail, or between 38-48 inches for a top rail.

Platform – Except when used as a walkway, the platform is the main work area of the scaffold. Before any work begins, have a qualified person inspect the scaffold. In performing a safety check, both the platform structure and how it will be used, the platform decking should:

- Be fully planked or decked.
- Not have gaps greater than one inch between adjacent planks or deck units, or between the platform and the uprights (unless you can demonstrate that a wider space is necessary; in such cases the gap should be as small as possible and cannot exceed 9½ inches.)
- Be at least 18 inches wide, unless it is used in areas that you can demonstrate are so narrow that it must be less than 18 inches wide.
- Be kept clear of anything that could cause a worker to slip, trip or fall, such as tools, scrap material, ice, mud, etc.
- Be left undisturbed when platforms are moved to the next level, until the new end frames are in place and braced.
- The maximum work level height shall not exceed 3 times the least base dimension below the platform.
- Be cleated, or otherwise restrained, at each end when overlap is necessary, or overlapped at the centerline support by at least six inches.
- To protect passersby from falling objects, use debris nets or canopy structures, and barricade the areas below the scaffolding to prevent people from entering the area.

Operations

Stability – As a general rule, a scaffold becomes inherently unstable when its height is four times its minimum base dimension. In addition, even if a scaffold is plumb and square, extreme weather or damage to a structural component can affect a scaffold's stability. To reduce the likelihood of an accident, consider the following:

- Guys, Ties and Braces – When a scaffold reaches more than four times its minimum base dimension, restrain it with guys, ties or braces to prevent it from tipping. These devices should be installed where horizontal scaffold components support both inner and outer legs.
- Moving Scaffolds – Moving scaffolds should not be moved horizontally while employees are on them, unless a registered professional engineer has designed them for that purpose. Our analysis of actual accidents shows that even experienced scaffold operators have made this mistake.
- Weather – Employees are not to work on or from a scaffold during storms or high winds.
- Load Rating – The design working load of ladder stands shall be calculated on the basis of one or more 200-pound persons together with 50 pounds of equipment each.
 - The design load of all scaffolds shall be calculated on the basis of:
 - Light - Designed and constructed to carry a working load of 25 pounds per square foot.
 - Medium - Designed and constructed to carry a working load of 50 pounds per square foot.
 - Heavy - Designed and constructed to carry a working load of 75 pounds per square foot.
 - All ladder stands and scaffolds shall be capable of supporting at least 4 times the design working load.

Employee Training – We will have a qualified person inspect the scaffold. In addition, this person is responsible for training and supervising workers who use scaffolding. Training will address hazards of

scaffolding, fall protection and load capacities. If conditions change, all personnel will be retrained. Training will be documented and address pertinent requirements.

We will rely on the expertise other persons, such as consultants and scaffold systems representatives, to design, erect, move and dismantle scaffolds.

Environment

Electrical Hazards – Because scaffolds are often made of metal and used near overhead power lines, workers are at risk of electrocution.

Overhead Power Lines – Scaffolds should not be placed closer than 10 feet to a power line. If the nature of the work requires that the scaffolding be closer, contact the electric company or electrical system operator. You should not proceed with work until you are certain that the electrical lines have been de-energized or relocated, or that a protective covering has been installed to prevent accidental line contact.

Portable Electric Tools – When a power tool or cord fails, it can electrify a metal frame scaffold, posing a risk of electrocution to the worker holding the tools – and to those who contact the scaffold. Use GFCI (ground-fault circuit interrupters) on all portable electric equipment.

Scaffold Guidelines

When properly maintained and used within their design limits, scaffolds are a cost-effective and safe method for providing temporary elevated work areas. This is true only if the scaffolds are in good repair, properly erected, maintained and used within their design limits.

- Scaffolding must be erected on firm footing capable of carrying the maximum intended load. Boxes, barrels, loose concrete blocks or brick must not be used to support the structure.
- Consideration must be given to the weight the scaffold is to carry. It must be capable of supporting, without failure, four times the maximum intended load. The load includes not only the weight of the people on the scaffold but also any supplies and equipment being used.
- Scaffolding is naturally unstable because it is usually a tall structure with a narrow base. To counteract this, the scaffold must be braced or tied off to a stable structure such as a ship's hull or building wall.
- The planking used must be "scaffold grade." The wood must be clear, free of loose knots, splits, or other defects. To create a proper work surface, generally 2 planks need to be laid side by side to create a 20" wide work platform. At the ends, the planking must overlap at least 6" but no more than 18" (limited to 12" for shipyards and construction) unless the planks are fastened to the supporting members.
- Toe boards at least 4" high (3 ½" for construction) should be installed along the outer scaffold edge, to prevent tools or materials from falling onto workers below.
- All scaffold work levels 6 feet or higher above the ground or floor shall have a toeboard at locations where persons are required to work or pass under the scaffold. (See Section 3210.)
- Guard rail requirements for supported scaffolds vary for different industries. The federal OSHA standard for construction and general industry requires guardrails when a platform is 10 feet or higher. In shipyards, they must be installed if the work platform is 5 feet or more above a solid surface, or at any distance above water. Some State codes may set the height at 6 feet. You must know the rule for your state or jurisdiction.

- Guard rails are usually made of 2x4 lumber or steel pipe. The top rail should be about 42” above the scaffold walking surface, with a “mid-rail” at about 21 inches. Fiber or wire rope can be used if it is attached to rigid supports and kept taut. However, a variance may be needed to do so in some jurisdictions. It should be noted that the railings must be of adequate strength to restrain someone who has started to fall.
- Railings can be omitted if a structure, such as a ship’s hull prevents their use. However, in these circumstances, you must wear a safety harness and life line if you working more than 5 feet above a solid surface. If over water, you must wear an approved buoyant work vest.

Finally, never make any changes to scaffolding yourself. Only designated “Qualified Persons” should make modifications. We require an outside company to erect and dismantle scaffold. Whenever in doubt or have questions ask your supervisor/superintendent before proceeding.

Scaffold Checklist Page 2	Sun		Mon		Tues		Wed		Thurs		Fri		Sa
INSPECTION ITEM	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Toe-boards:													
Are they installed on each opening and over areas where workers may be stationed below?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If are not installed, is the area below and adjacent to the scaffolding barricaded to prevent access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access:													
Are ladders, ladder frames, stair towers, ramps, walkways, or personnel hoists available?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If ladder frames are provided, are they aligned properly in the vertical direction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If ladders are used, do their heights extend three feet above the top landings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If ladders are used, are rest platforms provided at every 35 ft vertical interval?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Capacity/Design/Inspection Issues:													
If the scaffold system exceeds 36 feet in height, is a CAL/OSHA permit available?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If scaffold exceeds 125ft. high design drawing by a professional engineer must be on site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the scaffold been designed and constructed in accordance with the design?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If frames are stacked on top of each other, are they fastened together with couplers and coupling/pigtail pins to compensate for uplift?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspect for visible defects prior to each work shift and after any occurrence?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all workers using, erecting, dismantling, repairing, maintaining, or moving the scaffolding received appropriate training from a competent person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rolling Scaffold:													
Scaffold components and planking in safe condition for use and planks graded for scaffold use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tower level, plumb and height less than four times the minimum base width?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casters of proper size with effective locking devices which are locked when in use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Screw jacks extended less than 12"?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casters and all frames locked together?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guard railing in place on all open sides and ends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horizontal diagonal bracing been positioned properly at base and intermediate levels of 20'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Material secured before moving the scaffold?													
Platform fully planked and toe boards provided where necessary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees removed from the scaffold before it is moved?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scaffold free of makeshift devices or ladders to increase height?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safe ways to get on and off the scaffold without climbing on cross braces?													