



COURSE 12858

Scaffolds

Review Material

Uscontractorlicense LLC

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Summary Of This Course

Scaffolds

Approved by the

Wisconsin Department of Safety and Professional Services Safety and Buildings Division

Course Identification Number 12858

Educational Credit Hours: 4 Hours

Course Provider:

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On December 16, 2010 OSHA issued Compliance Guidance for Residential Construction which rescinded the Interim Fall Protection Compliance Guidelines for Residential Construction. Scaffolding is one component of the residential construction fall hazard regulations. This course is intended to assist employers and employees in their efforts to comply with the current OSHA scaffold requirements for construction work, as falls are the leading cause of death for workers engaged in residential construction.

This Course is approved for the following electrical Registrations/Certifications or Licenses:

Automatic Fire Sprinkler Contractors License	4 Hours of Continuing Education	Registered Electrician
Automatic Fire Sprinkler Contractor - Maintenance License	4 Hours of Continuing Education	Residential Journeyman Electrician
Cross Connection Control Tester	4 Hours of Continuing Education	Residential Master Electrician
Commercial Plumbing Inspector	4 Hours of Continuing Education	Plumbing Inspector
Dwelling Contractor Qualifier	4 Hours of Continuing Education	Utility Contractor
Elevator Inspector	4 Hours of Continuing Education	
Elevator Mechanic	4 Hours of Continuing Education	
Elevator Mechanic - Restricted	4 Hours of Continuing Education	
Industrial Journeyman Electrician	4 Hours of Continuing Education	
Journeyman Electrician	4 Hours of Continuing Education	
Journeyman Automatic Fire Sprinkler Fitter	4 Hours of Continuing Education	
Journeyman Plumber	4 Hours of Continuing Education	
Journeyman Plumber - Restricted Appliance	4 Hours of Continuing Education	
Lift Mechanic	4 Hours of Continuing Education	
Manufactured Home Installer	4 Hours of Continuing Education	
Master Electrician	4 Hours of Continuing Education	
Master Plumber	4 Hours of Continuing Education	
Master Plumber - Restricted Appliance	4 Hours of Continuing Education	

This course is a distance learning or e-learning course, which allows the attendee to complete the course on their time schedule.

Course Outline

This course is a distance learning or e-learning course, which allows the attendee to complete the course on their time schedule.

Scaffold Introduction
Ladders and Stairways
Stair Towers
Ramps and Walkways
Scaffold Use in the Construction Industry
General Requirements for Scaffolds
Criteria for Suspended Scaffolds
Access Requirements
Fall Protection Requirements
Specific Scaffold Requirements
Aerial Lift Requirements
Appendix
Definitions Used In The Document

Exam

40 questions related to the reference materials are used to test the attendee on their comprehension of the materials. A 70% score will need to be attained in order to pass this course.

Answer Sheet(s)

1 bubble style answer sheets are included. When you are finished with the exam, you may return the answer sheets for grading to:

By Mail: Uscontractorlicense LLC
PO Box 268
Platteville, Wisconsin 53818

By Email: michael@uscontractorlicense.com
By Fax: 608-571-0096

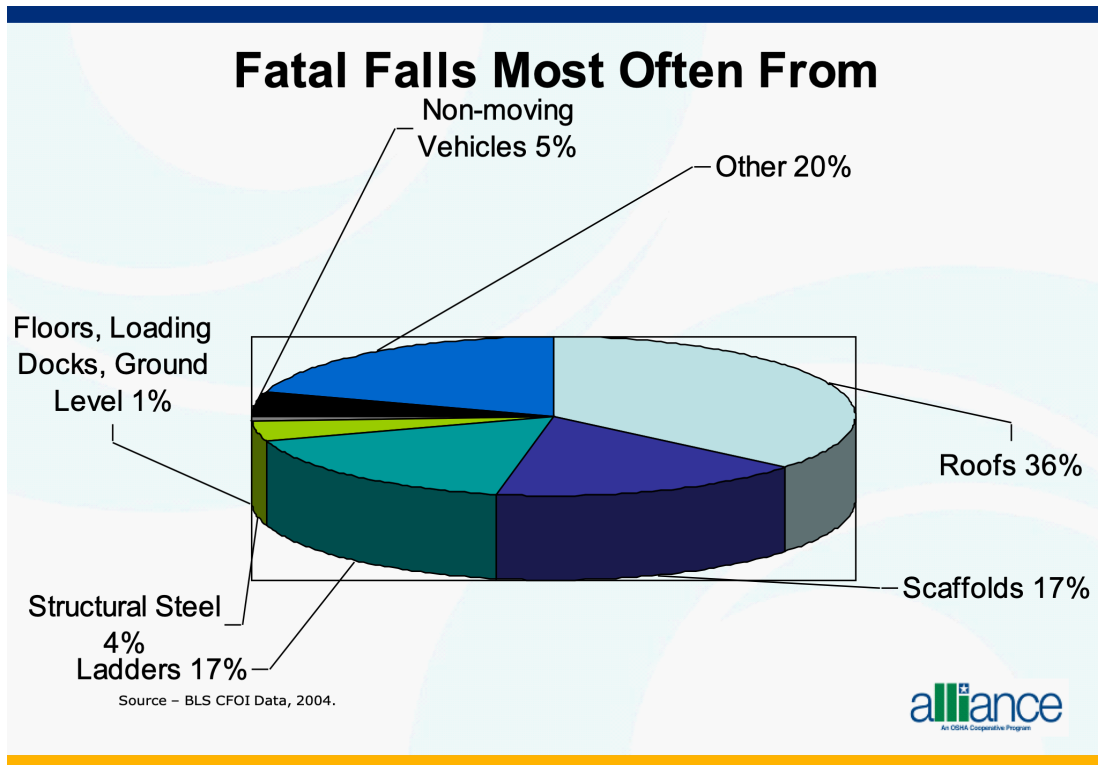
Once we get the answer sheets back, we will grade them, enter your hours into the attendance portal and email or mail you back your certificate of completion(s). You will be responsible for renewing your license with the DSPS at www.license.wi.gov website.

Any questions, please contact us at 608.348.6688

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Scaffolds



Events surrounding these types of accidents often involve a number of factors, including unstable working surfaces, misuse of fall protection equipment, and human error.



According to the U.S. Bureau of Labor Statistics (BLS), an average of 89 workers are killed from scaffolds each year.

Common hazards associated with all scaffolds: falls from elevation, due to lack of fall protection; collapse of the scaffold, caused by instability or overloading; being struck by falling tools, work materials, or debris; and electrocution, principally due to proximity of the scaffold to overhead power lines.

The majority of the workers injured in scaffold accidents attribute the accident to either planking or support giving way, or to the employees slipping or being struck by a falling object.

Scaffold Access

Climbing the structural cross-braces of a scaffold is *unsafe*, and specifically forbidden by federal standards. However, OSHA permits direct access from another scaffold, structure, or personnel hoist.

If such access is not possible, portable ladders, hook-on ladders, attachable ladders, stair towers, stairway-type ladders, ramps, walkways, or built-in ladders must be used, under the following regulations:

Portable, Hook-on, and Attachable Ladders

- Must be positioned so as not to tip the scaffold.

Hook-on and Attachable Ladders

- Must be specifically designed for the type of scaffold with which they are used.
- Must have their lowest rung no more than 24 inches above the level on which the scaffold is supported.
- When used on a supported scaffold more than 35 feet high, must have rest platforms at 35-foot maximum intervals.

Must have a maximum rung length of 11½ inches, and a maximum space between rungs of 16¾ inches.

Stairway-Type Ladders

- Must have their bottom step no more than 24 inches above the level on which the scaffold is supported.
- Must have rest platforms at 12-foot maximum intervals.
- Must have a minimum step width of 16 inches, except that mobile stairway-type ladders shall have a minimum step width of 11½ inches.
- Must have slip-resistant treads on all steps and landings.

Stair Towers

- Must have their bottom step no more than 24 inches above the level on which the scaffold is supported.
- Must have a stair-rail, consisting of a top-rail and a mid-rail, on each side.
 - The top-rail of each stair-rail must also be capable of serving as a handrail, unless a separate handrail is provided.
 - Stair-rails and handrails must be designed and constructed to prevent punctures, lacerations, snagged clothing, and projection.
 - Handrails, and top-rails used as handrails, must be at least 3 inches from other objects.
 - Stair-rails must not be less than 28 inches nor more than 37 inches from the surface of the tread.

- Must be at least 18 inches wide between stair-rails, and have a landing platform at least 18 inches wide by at least 18 inches long at each level.
- Must have slip-resistant surfaces on all treads and landings.
- Must be installed between 40 degrees and 60 degrees from the horizontal.
- Must have uniform riser height, within ¼ inch, for each flight of stairs, except for the top and bottom steps of the *entire system*.
- Must have uniform tread depth, within ¼ inch, for each flight of stairs.

Built-in Scaffold Ladders

- Must be specifically designed and constructed for use as ladder rungs.
- Must have a rung length of at least 8 inches.
- Must not be used as work platforms when rungs are less than 11½ inches, unless each employee uses fall protection or a positioning device [29 CFR 1926.502(e)].
- Must be uniformly spaced within each frame section.
- Must have rest platforms at 35-foot maximum intervals on all supported scaffolds more than 35 feet high.
- Must have a maximum space between rungs of 16¾ inches.

Steps and rungs of ladders and stairways must line up vertically with each other between rest platforms.

Ramps and Walkways

- Must have guardrails which comply with [29 CFR 1926.502(b)] 1926 Subpart M if more than 6 feet above lower levels.
- Must have a slope of no more than 1 vertical to 3 horizontal degrees (20 degrees above the horizontal).
- Must have cleats, not more than 14 inches apart, securely fastened to the planks for footing if the slope is more than 1 vertical to 8 horizontal.

Direct Access

Direct access to or from another surface shall only be used when the scaffold is not more than 14 inches horizontally and 24 inches vertically from the other surface.

Number and Rate Per 100,000 Workers of Fatal Falls by Industry Division, United States, 1980-1994

Source: NIOSHA Worker Deaths by Fall, September 2000 (National Traumatic Occupational Fatalities (NTOF) Surveillance System)

INDUSTRY DIVISION	N	%	RATE
Agriculture/Forestry/Fishing	507	6.3	0.99
Mining	211	2.6	1.69
Construction	4044	49.9	3.89
Manufacturing	943	11.6	0.30
Transportation/Communications/Public Utilities	518	6.4	0.45
Wholesale Trade	145	1.8	0.22
Retail Trade	250	3.1	0.09
Financial/ Insurance/ Real Estate	106	1.3	0.10
Services	765	9.4	0.14
Public Administration	181	2.2	0.23
Not Classified	432	5.3	--
Total	8102	100.0	.49

Scaffold Use in the Construction Industry

Summary and Explanation of the Final Rule

What are the highlights of the scaffolding standard?

OSHA's scaffolding standard has several key provisions:

- Fall protection or fall arrest systems—Each employee more than 10 feet above a lower level shall be protected from falls by guardrails or a fall arrest system, except those on single-point and two-point adjustable suspension scaffolds. Each employee on a single-point and two-point adjustable suspended scaffold shall be protected by both a personal fall arrest system and a guardrail.

1926.451(g)(1)

- Guardrail height – The height of the toprail for scaffolds manufactured and placed in service after January 1, 2000 must be between 38 inches (0.9meters) and 45 inches (1.2 meters). The height of the toprail for scaffolds manufactured and placed in service before January 1, 2000 can be between 36 inches (0.9 meters) and 45 inches (1.2 meters). **1926.451(g)(4)(ii)**

- Crossbracing – When the crosspoint of crossbracing is used as a toprail, it must be between 38 inches (0.97 m) and 48 inches (1.3meters) above the work platform. **1926.451(g)(4)(xv)**
- Midrails – Midrails must be installed approximately halfway between the toprail and the platform surface. When a crosspoint of crossbracing is used as a midrail, it must be between 20 inches (0.5meters) and 30 inches (0.8 m) above the work platform. **1926.451(g)(4)**
- Footings – Support scaffold footings shall be level and capable of supporting the loaded scaffold. The legs, poles, frames, and uprights shall bear on base plates and mud sills. **1926.451(c)(2)**
- Platforms – Supported scaffold platforms shall be fully planked or decked. **1926.451(b)**



What is wrong with this picture?

- Platform consists of only one plank;
- Plank is supported by another plank that is supported by a window sill;
- No fall protection.

Corrective Action: Provide adequate support for planks. Fully plank Platform. Provide fall protection .

- Guying ties, and braces – Supported scaffolds with a height-to-base of more than 4:1 shall be restrained from tipping by guying, tying, bracing, or the equivalent. **1926.451(c)(1)**
- Capacity – Scaffolds and scaffold components must support at least 4 times the maximum intended load. Suspension scaffold rigging must at least 6 times the intended load. **1926.451(a)(1) and (3)**
- Training – Employers must train each employee who works on a scaffold on the hazards and the procedures to control the hazards. **1926.454**
- Inspections – Before each work shift and after any occurrence that could affect the structural integrity, a competent person must inspect the scaffold and scaffold components for visible defects. **1926.451(f)(3)**
- Erecting and Dismantling – When erecting and dismantling supported scaffolds, a competent person must determine the feasibility of providing a safe means of access and fall protection for these operations. **1926.451(e)(9) & (g)(2)**

When is a competent person required for scaffolding?

OSHA's scaffolding standard defines a competent person as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous to employees, and who has authorization to take prompt corrective measures to eliminate them."

The 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. **1926.451(f)(7)**
- To determine if it is safe for employees to work on or from a scaffold during storms or high winds and to ensure that a personal fall arrest system or wind screens protect these employees. (Note: Windscreens should not be used unless the scaffold is secured against the anticipated wind forces imposed.) **1926.451(f)(12)**

- *For Training:*

- To train employees involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds to recognize associated work hazards. **1926.454(b)**

- *For Inspections:*

- To inspect scaffolds and scaffold components for visible defects before each work shift and after any occurrence which could affect the structural integrity and to authorize prompt corrective actions. **1926.451(f)(3)**
- To inspect ropes on suspended scaffolds prior to each workshift and after every occurrence which could affect the structural integrity and to authorize prompt corrective actions. **1926.451(d)(10)**
- To inspect manila or plastic (or other synthetic) rope being used for top rails or midrails. **1926.451(g)(4)(xiv)**

- *For Suspension Scaffolds:*

- To evaluate direct connections to support the load. 1926.451 (d)(3)(i)
- To evaluate the need to secure two-point and multi-point scaffolds to prevent swaying. **1926.451(d)(18)**



Direct connections need to be evaluated by a competent person.

Violation in the picture to the left: Anchor point for lifeline rope not evaluated prior to use

- *For Erectors and Dismantlers:*

- To determine the feasibility and safety of providing fall protection and access. **1926.451(e)(9) and 1926.451(g)(2)**
- To train erectors and dismantlers (effective September 2, 1997) to recognize associated work hazards. **1926.454(b)**

- *For Scaffold Components:*

- To determine if a scaffold will be structurally sound when intermixing components from different manufacturers. **1926.451(b)(10)**
- To determine if galvanic action has affected the capacity when using components of dissimilar metals. **1926.451(b)(11)**

When is a qualified person required for scaffolding?

The standard defines a qualified person as "one who—by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience—has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project."

The qualified person must perform the following duties in these circumstances:

- *In General:*
 - To design and load scaffolds in accordance with that design. **1926.451(a)(6)**
- *For Training:*
 - To train employees working on the scaffolds to recognize the associated hazards and understand procedures to control or minimize those hazards. **1926.454(a)**
- *For Suspension Scaffolds:*
 - To design the rigging for single-point adjustable suspension scaffolds. **1926.452(o)(2)(i)**
 - To design platforms on two-point adjustable suspension types that are less than 36 inches (0.9 m) wide to prevent instability. **1926.452(p)(1)**
 - To make swaged attachments or spliced eyes on wire suspension ropes. **1926.451(d)(11)**



A single-point adjustable scaffold consists of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels. The most common among these is the scaffold used by window washers to clean the outside of a skyscraper (also known as a boatswain's chair).

For Components and Design:

- To design scaffold components construction in accordance with the design. **1926.451(a)(6)**

When is an engineer required?

The standard requires a registered professional engineer to perform the following duties in these circumstances:

- *For Suspension Scaffolds:*
 - To design the direct connections of masons' multi-point adjustable suspension scaffolds. **1926.451(d)(3)(i)**
- *For Design:*
 - To design scaffolds that are to be moved when employees are on them. **1926.451(f)(5)**
 - To design pole scaffolds over 60 feet (18.3 meters) in height. **1926.452(a)(10)**
 - To design tube and coupler scaffolds over 125 feet (38 meters) in height. **1926.452(b)(10)**
 - To design fabricated frame scaffolds over 125 feet (38 meters) in height above their base plates. **1926.452(c)(6)**
 - To design brackets on fabricated frame scaffolds used to support cantilevered loads in addition to workers. **1926.452(c)(5)**
 - To design outrigger scaffolds and scaffold components. **1926.452(i)(8)**

What other standards apply to scaffolds?

29 CFR contains other standards that apply to construction work such as the responsibility to initiate and maintain programs (**1926.29(b)(1)**); exposures to dusts and chemicals (**1926.33, .55, .59, .62, and .1101**); hand and power tools (**1926.300 - .307**); electrical (**1926.300 - .449**); personal fall arrest systems (**1926.502**); and ladders (**1926.1050 - .1060**).

General Requirements for Scaffolds

Capacity

What are the capacity requirements for all scaffolds?

Each scaffold and scaffold component must support without failure its own weight and at least four times the maximum intended load applied or transmitted to it. **1926.451(a)(1)**

A qualified person must design the scaffolds, which are loaded in accordance with that design. **1926.451(a)(6)**

Scaffolds and scaffold components must not be loaded in excess of their maximum intended loads or rated capacities, whichever is less. **1926.451(f)(1)**

Load carrying timber members should be a minimum of 1,500 lb-ft/in² construction grade lumber. **Appendix A (1)(a)**



- Restrained from tipping by guys, ties, or equivalent when higher than 4:1 ratio
- Support installed per recommendations or at closest horizontal member to the 4:1 height

Scaffold Platform Construction

What are scaffold platform construction requirements?

Each platform must be planked and decked as fully as possible with the space between the platform and uprights not more than 1 inch (2.5centimeters) wide. The space must not exceed 9 inches (24.1centimeters) when side brackets or odd-shaped structures result in a wider opening between the platform and the uprights. **1926.451(b)(1)**

What are the requirements for scaffold planking?

Scaffold planking must be able to support, without failure, its own weight and at least four times the intended load.

1926.451(a)(1)

Solid sawn wood, fabricated planks, and fabricated platforms may be used as scaffold planks following the recommendations by the manufacturer or a lumber grading association or inspection agency. **Appendix A (1)(b) and ©**

Tables showing maximum permissible spans, rated load capacity, and nominal thickness are in **Appendix A (1)(b) & (c)** of the standard.

What is the maximum deflection of a platform?

The platform must not deflect more than 1/60 of the span when loaded. **1926.451(f)(16)**

Are there requirements for work on platforms cluttered with debris?

The standard prohibits work on platforms cluttered with debris. **1926.451(f)(13)**

How wide does the work area need to be on scaffolding?

Each scaffold platform and walkway must be at least 18 inches (46 centimeters) wide. When the work area is less than 18 inches (46 centimeters) wide, guardrails and/or personal fall arrest systems must be used. **1926.451(b)(2)**

Are guardrails required on all open sides of scaffolding?

The standard requires employers to protect each employee on a scaffold more than 10 feet (3.1 m) above a lower level from falling to that lower level. **1926.451(g)(1)**

To ensure adequate protection, install guardrails along all open sides and ends before releasing the scaffold for use by employees, other than the erection and dismantling crews. **1926.451(g)(4)**

Guardrails are not required, however,

- When the front end of all platforms are less than 14 inches (36 centimeters) from the face of the work; **1926.451(b)(3)**
- When outrigger scaffolds are 3 inches (8 centimeters) or less from the front edge; **1926.451(b)(3)(I)**
- When employees are plastering and lathing 18 inches (46 centimeters) or less from the front edge. **1926.451(b)(3)(ii)**

What materials are unacceptable for guardrails?

Steel or plastic banding must not be used as a toprail or a midrail. **1926.451(g)(4)(xiii)**

Criteria for Supported Scaffolds

What are supported scaffolds?

Supported scaffolds are platforms supported by legs, outrigger beams, brackets, poles, uprights, posts, frames, or similar rigid support. **1926.451(b)**

The structural members, poles, legs, posts, frames, and uprights, must be plumb and braced to prevent swaying and displacement. **1926.451(c)(3)**



Supported scaffolds consist of one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Do employees working on supported scaffolds need to be trained?

All employees must be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and how to control or minimize those hazards. The training must include fall hazards, falling object hazards, electrical hazards, proper use of the scaffold, and handling of materials. **1926.454(a)**

When do supported scaffolds need to be restrained from tipping?

Supported scaffolds with a height to base width ratio of more than 4:1 must be restrained by guying, tying, bracing, or an equivalent means. **1926.451(c)(1)**

How can one prevent supported scaffolding from tipping?

Either the manufacturers' recommendation or the following placements must be used for guys, ties, and braces:

- Install guys, ties, or braces at the closest horizontal member to the 4:1 height and repeat vertically with the top restraint no further than the 4:1 height from the top.
- Vertically—every 20 feet (6.1 meters) or less for scaffolds less than three feet (0.91 meters) wide; every 26 feet (7.9 meters) or less for scaffolds more than three feet (0.91 meters) wide.
- Horizontally—at each end; at intervals not to exceed 30 feet (9.1 meters) from one end. **1926.451(c)(1)**

What are the footing and foundation requirements for supported scaffolds?

Supported scaffolds' poles, legs, posts, frames, and uprights must bear on base plates and mud sills, or other adequate firm foundation. **1926.451(c)(2)(i) and (ii)**



POLES

- Restrict movement of existing platform until bearers are set, and braced
- Couplers have to be made of structural steel
- The use of couplers made from gray cast iron is prohibited
- Designed by P.E. when more than 125 feet
- Transverse bracing form an "X" across width of the scaffold must be installed at scaffold ends

May forklifts, front-end loaders, or similar equipment support platforms?

Forklifts can support platforms only when the entire platform is attached to the fork and the forklift does not move horizontally when workers are on the platform. **1926.451(c)(2)(v)**

Front-end loaders and similar equipment can support scaffold platforms only when they have been specifically designed by the manufacturer for such use. **1926.451(c)(2)(iv)**

What materials can be used to increase the working level height of employees on supported scaffolds?

Stilts may be used on a large area scaffold. When a guardrail system is used, the guardrail height must be increased in height equal to the height of the stilts. The manufacturer must approve any alterations to the stilts. **1926.452(v)**

Note: A large area scaffold consists of a pole, tube and coupler systems, or a fabricated frame scaffold erected over substantially the entire work area. **1926.451(b)**

Fabricated frame scaffolds are the most common type of scaffold because they are versatile, economical, and easy to use. They are frequently used in one or two tiers by residential contractors, painters, etc., but their modular frames can also be stacked several stories high for use on large-scale construction jobs.

Criteria for Suspended Scaffolds

What are suspension scaffolds?

A suspension scaffold contains one or more platforms suspended by ropes or other non-rigid means from an overhead structure, **1926.450(b)**, such as the following scaffolds: single-point, multipoint, multi-level, two-point, adjustable, boatswains' chair, catenary, chimney hoist, continuous run, elevator false car, go-devils, interior hung, masons', and stone setters'



Two-point adjustable suspension scaffolds, also known as swing-stage scaffolds, are perhaps the most common type of suspended scaffold. Hung by ropes or cables connected to stirrups at each end of the platform, they are typically used by window washers on skyscrapers, but play a prominent role in high-rise construction as well.

Are there requirements for suspension scaffolds?

Some of the requirements for all types of suspension scaffolds include:

- Employers must ensure that all employees are trained to recognize the hazards associated with the type of scaffold being used. **1926.451(d)(1)**
- All support devices must rest on surfaces capable of supporting at least four times the load imposed on them by the scaffold when operating at the rated load of the hoist, or at least one-and-a-half times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater. **1926.451(d)(1)**
- A competent person must evaluate all direct connections prior to use to confirm that the supporting surfaces are able to support the imposed load, **1926.451(d)(1)**
- All suspension scaffolds must be tied or otherwise secured to prevent them from swaying, as determined by a competent person. **1926.451(d)**
- Guardrails, a personal fall arrest system, or both must protect each employee more than 10 feet (3.1 meters) above a lower level from falling. **1926.451(g)**
- A competent person must inspect ropes for defects prior to each workshift and after every occurrence that could affect a rope's integrity. **1926.451(d)(10)**
- When scaffold platforms are more than 24 inches (61 centimeters) above or below a point of access, ladders, ramps, walkways, or similar surfaces must be used. **1926.451(e)(1)**
- When using direct access, the surface must not be more than 24 inches (61 centimeters) above or 14 inches (36 cm) horizontally from the surface. **1926.451(e)(8)**
- When lanyards are connected to horizontal lifelines or structural members on single-point or two-point adjustable scaffolds, the scaffold must have additional independent support lines equal in number and strength to the suspension lines and have automatic locking devices. **1926.451(g)(3)(iii)**
- Emergency escape and rescue devices must not be used as working platforms, unless designed to function as suspension scaffolds and emergency systems. **1926.451(d)(19)**

Are there specific requirements for counterweights?

Counterweights used to balance adjustable suspension scaffolds must be able to resist at least four times the tipping moment imposed by the scaffold operating at either the rated load of the hoist, or one-and-a-half (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater. **1926.451(a)(2)**

Only those items specifically designed as counterweights must be used. **1926.451(d)(3)(iii)**

Counterweights used for suspended scaffolds must be made of materials that can not be easily dislocated. Flowable material, such as sand or water, cannot be used. **1926.451(d)(3)(ii)**

Counterweights must be secured by mechanical means to the outrigger beams. **1926.451(d)(3)(iv)**

Vertical lifelines must not be fastened to counterweights. **1926.451(g)(3)(i)**

Can sand, masonry units, or rolls of roofing felt be used for counterweights?

No. Such materials cannot be used as counterweights. **1926.451(d)(3)(ii) and (iii)**

What are the specific requirements for outrigger beams?

Outrigger beams (thrustouts) are the structural members of a suspension or outrigger scaffold that provide support.

1926.450(b) They must be placed perpendicular to their bearing support. **1926.451(d)(3)(viii)**

Where do tiebacks for outrigger beams, cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices need to be secured?

Tiebacks must be secured to a structurally sound anchorage on the building or structure. Sound anchorages do **not** include standpipes, vents, other piping systems, or electrical conduit. **1926.451(d)(3)(ix) and (d)(5)**

How do tiebacks need to be installed?

A single tieback must be installed perpendicular to the face of the building or structure. Two tiebacks installed at opposing angles are required when a perpendicular tieback cannot be installed. **1926.451(d)(3)(x)**

What are the requirements for suspension ropes?

The suspension ropes must be long enough to allow the scaffold to be lowered to the level below without the rope passing through the hoist, or the end of the rope configured to prevent the end from passing through the hoist. **1926.451(d)(6)**

The standard prohibits using repaired wire. **1926.451(d)(7)**

Drum hoists must contain no less than four wraps of the rope at the lowest point. **1926.451(d)(6)**

Employers must replace wire rope when the following conditions exist: kinks; six randomly broken wires in one rope lay or three broken wires in one strand in one lay; one third of the original diameter of the outside wires is lost; heat damage; evidence that the secondary brake has engaged the rope; and any other physical damage that impairs the function and strength of the rope.

1926.451(d)(10)

Suspension ropes supporting adjustable suspension scaffolds must be a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms. **1926.451(f)(10)**

Suspension ropes must be shielded from heat-producing processes. **1926.451(f)(11)**

What are some of the requirements for power-operated suspension scaffold hoists?

Power-operated hoists used to raise or lower a suspended scaffold must be tested and listed by a qualified testing laboratory. **1926.451(d)(13)**

The stall load of any scaffold hoist must not exceed three times its rated load. **1926.451(a)(5)**

The stall load is the load at which the prime-mover (motor or engine) of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected. **1926.451(b)**

Gasoline power-operated hoists or equipment are not permitted. **1926.451(d)(14)**

Drum hoists must contain no less than four wraps of suspension rope at the lowest point of scaffold travel. **1926.451(d)(6)**

Gears and brakes must be enclosed. **1926.451(d)(15)**

An automatic braking and locking device, in addition to the operating brake, must engage when a hoist makes an instantaneous change in momentum or an accelerated overspeed. **1926.451(d)(16)**

What are some of the requirements for manually operated suspension scaffold hoists?

Manually operated hoists used to raise or lower a suspended scaffold must be tested and listed by a qualified testing laboratory. **1926.451(d)(13)**

These hoists require a positive crank force to descend. **1926.451(d)(17)**

When can welding be done from a suspension scaffold?

Welding can be done from suspended scaffolds when:

- A grounding conductor is connected from the scaffold to the structure and is at least the size of the welding lead;
- The grounding conductor is not attached in series with the welding process or the work piece;
- An insulating material covers the suspension wire rope and extends at least four feet (1.2 meters) above the hoist;
- Insulated protective covers cover the hoist;
- The tail line is guided, retained, or both, so that it does not become grounded;
- Each suspension rope is attached to an insulated thimble; and

- Each suspension rope and any other independent lines are insulated from grounding. **1926.451(f)(17)**

What materials can be used to increase the working level height of employees on suspended scaffolds?

No materials or devices may be used to increase the working height on a suspension scaffold. This includes ladders, boxes, and barrels. **1926.451(f)(14) and (15)**

Access Requirements

What are the requirements for access to scaffolds?

Employers must provide access when the scaffold platforms are more than 2 feet (0.6 meters) above or below a point of access. **1926.451(e)(1)**

Direct access is acceptable when the scaffold is not more than 14 inches (36 centimeters) horizontally and not more than 24 inches (61 centimeters) vertically from the other surfaces. **1926.451(e)(8)**

The standard prohibits the use of crossbraces as a means of access. **1926.451(e)(1)**

What types of access can be used?

Several types of access are permitted:

- Ladders, such as portable, hook-on, attachable, and stairway **1926.451 (e)(2)**,
- Stair towers **1926.451(e)(4)**,
- Ramps and walkways **1926.451(e)(5)**, and
- Integral prefabricated frames (**1926.451(e)(6)**).

What are the access requirements for employees erecting and dismantling supported scaffolds?

Employees erecting and dismantling supported scaffolding must have a safe means of access provided when a competent person has determined the feasibility and analyzed the site conditions. **1926.451(e)**

Use Requirements

Does the standard prohibit any types of scaffolds?

Shore and lean-to scaffolds are strictly prohibited. **1926.451(f)(2)**

Also, employees are prohibited from working on scaffolds covered with snow, ice, or other slippery materials, except to remove these substances. **1926.451(f)(8)**

What are the clearance distances between scaffolds and powerlines?

The standard requires specific clearance distances. See table on next page or **1926.451(f)(6)** for a table listing those distances.

Insulated Lines Voltage	Minimum Distance	Alternatives
Less than 300 volts 300 volts to 50 kv More than 50kv	3 feet (0.9 M) 10 feet (3.1 M) 10 feet (3.1 M) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)
Uninsulated Lines Voltage	Minimum Distance	Alternatives
Less than 50 kv More than 50kv	10 feet (3.1 M) 10 feet (3.1 M) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)

Fall Protection Requirements

What is fall protection?

Fall protection includes guardrail systems and personal fall arrest systems. Guardrail systems are explained below in another question. Personal fall arrest systems include harnesses, components of the harness/belt such as Dee-rings, and snap hooks, lifelines, and anchorage point. **1926.451(g)(3)**

Vertical or horizontal lifelines may be used. **1926.451(g)(3)(ii) through (iv)**

Lifelines must be independent of support lines and suspension ropes and not attached to the same anchorage point as the support or suspension ropes. **1926.451(g)(3)(iii) and (iv)**

When working from an aerial lift, attach the fall arrest system to the boom or basket. **1926.453(b)(2)(v)**

What are the fall protection requirements for all scaffolds?

Employers must provide fall protection for each employee on a scaffold more than 10 feet (3.1 meters) above a lower level. **1926.451(g)(1)**

A competent person must determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. **1926.451(g)(2)**

How will I know what kind of fall protection to provide for a specific-type of scaffold?

The chart below illustrates the type of fall protection required for specific scaffolds.

Type of Scaffold	Fall Protection Required
Aerial lifts	Personal fall arrest system
Boatswains' chair	Personal fall arrest system
Catenary scaffold	Personal fall arrest system
Crawling board (chicken ladder)	Personal fall arrest system, or a guardrail system, or by a 3/4 inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board
Float scaffold	Personal fall arrest system
Ladder jack scaffold	Personal fall arrest system
Needle beam scaffold	Personal fall arrest system
Self-contained scaffold	Both a personal adjustable scaffold arrest system and a guardrail system
Single-point and two-point suspension scaffolds	Both a personal fall arrest system and a guardrail system
Supported scaffold	Personal fall arrest system or guardrail system
All other scaffolds not specified above	Personal fall arrest system or guardrail systems that meet the required criteria

Examples of Personal Fall Arrest Systems:



When can personal fall arrest systems be used when working on scaffolding and aerial lifts?

Personal fall arrest systems can be used on scaffolding when there are no guardrail systems. **1926.451(g)(1)(vii)**

Use fall arrest systems when working from the following types of scaffolding: boatswains' chair, catenary, float, needle beam, ladder, and pump jack. **1926.451(g)(1)**

Use fall arrest systems also when working from the boom/basket of an aerial lift. **1926.453(b)(2)(v)**

When are both fall arrest and guardrail systems required?

Fall arrest and guardrail systems must be used when working on single- and two-point adjustable suspension scaffolds and self-contained adjustable scaffolds that are supported by ropes. **1926.451(g)(1)**

Falling Object Protection

What protections from overhead falling objects do the standards require?

To protect employees from falling hand tools, debris, and other small objects, install toeboards, screens, guardrail systems, debris nets, catch platforms, canopy structures, or barricades. In addition, employees must wear hard hats. **1926.451(h)(1) & (2) and (3)**

Specific Scaffold Requirements

Are there additional requirements for specific types of scaffolds?

The standard addresses other requirements for specific types of scaffolds such as mobile, ladder, and pump jack, fabricated frame, and tube and coupler scaffolds. These are found in **1926.452**, "Additional Requirements Applicable to Specific Types of Scaffolds."



Pump jacks are a popular system used by many contractors to install building wrap and siding. Some contractors have used different variations of the pump jack that allow them to jack it up to just under the fascia and be used as catch platforms. There the system can be used as perimeter protection while sheathing and roofing operations are performed.

Aerial Lift Requirements

What are aerial lifts?

Vehicle-mounted aerial devices used to elevate employees—such as extensible boom platforms, aerial lifts, articulating boom platforms, and vertical towers—are considered "aerial lifts." **1926.453(a)(1)**

Do aerial lifts and mobile scaffolds have the same requirements?

The **1926.453** and **1926.454** standards apply to aerial lifts. The **1926.451**, **1926.452**, and **1926.454** standards apply to mobile scaffolds.

What are some of the specific requirements for aerial lifts?

Some specific requirements include the following:

- Only authorized personnel can operate aerial lifts.
- The manufacturer or equivalent must certify any modification.
- The insulated portion must not be altered to reduce its insulating value.
- Lift controls must be tested daily.
- Controls must be clearly marked.
- Brakes must be set and outriggers used.
- Boom and basket load limits must not be exceeded.
- Employees must wear personal fall arrest systems, with the lanyard attached to the boom or basket.
- No devices to raise the employee above the basket floor can be used. **1926.453(b)**

Training Requirements

What are the training standards for employees who work on scaffolds?

All employees who work on a scaffold must be trained by a person qualified to recognize the hazards associated with the type of scaffold used and to understand the procedures to control and minimize those hazards. **1926.454(a)**

What are the training standards for employees who work, erect, dismantle, move, operate, repair, maintain, or inspect scaffolds?

A competent person must train all employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds. Training must cover the nature of the hazards, the correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in use. **1926.454(b)**

Other recommended training topics include erection and dismantling, planning, personal protective equipment, access, guys and braces, and parts inspection. **Appendix D**

What are the retraining requirements for employees working on scaffolds?

The standard requires retraining when (1) no employee training has taken place for the worksite changes, scaffold changes, or falling object protection changes; or (2) where the employer believes the employee lacks the necessary skill, understanding, or proficiency to work safely. **1926.454(c)**

Non-Mandatory Appendices to the Standards

Why are the Appendices to the Subpart L scaffolding standards important? Do they address standard requirements?

All of the appendices are non-mandatory and contain selection criteria for planks; American National Standards Institute (ANSI) standard references for aerial lifts; criteria for determining the feasibility of providing safe access and fall protection, and training for erectors and dismantlers; and drawings of various types of scaffolds and components.

To summarize, **Appendix A** of **Subpart L** addresses scaffold specifications and provides non-mandatory guidelines to assist employers in complying with Subpart L requirements. These guidelines and tables provide a starting point for designing scaffold systems; however, they do not provide all the information necessary to build a complete system. Therefore, the employer is still responsible for designing and assembling these components so that the completed system meets the final rule requirements in **1926.451(a)**.

Appendix C lists national consensus standards related to aerial, vehicle mounted, manually propelled, self-propelled, mast climbing, and other such devices.

Appendix D serves as a guide to assist employers when evaluating the training needs for employees erecting or dismantling supported scaffolds.

Appendix E provides drawings of particular types of scaffolds and scaffold components as well as graphic illustrations of bracing patterns and tie-spacing patterns.

Other Sources of OSHA Assistance

How can OSHA help me?

OSHA can provide extensive help through a variety of programs, including assistance about safety and health programs, state plans, workplace consultations, voluntary protection programs, strategic partnerships, training and education, and more.

How can consultation assistance help employers?

In addition to helping employers identify and correct specific hazards, OSHA's consultation service provides free, onsite assistance in developing and implementing effective workplace safety and health management systems that emphasize the Comprehensive consultation assistance provided by OSHA includes a hazard survey of the worksite and an appraisal of all aspects of the employer's existing safety and health management system. In addition, the service offers assistance to employers in developing and implementing an effective safety and health management system. Employers also may receive training and education services, as well as limited assistance away from the worksite.

Who can get consultation assistance and what does it cost?

Consultation assistance is available to small employers (with fewer than 250 employees at a fixed site and no more than 500 corporate wide) who want help in establishing and maintaining a safe and healthful workplace.

Funded largely by OSHA, the service is provided at no cost to the employer. Primarily developed for smaller employers with more hazardous operations, the consultation service is delivered by state governments employing professional safety and health consultants. No penalties are proposed or citations issued for hazards identified by the consultant. The employer's only obligation is to correct all identified serious hazards within the agreed upon correction time frame. OSHA provides consultation assistance to the employer with the assurance that his or her name and firm and any information about the workplace will not be routinely reported to OSHA enforcement staff.

Can OSHA assure privacy to an employer who asks for consultation assistance?

OSHA provides consultation assistance to the employer with the assurance that his or her name and firm and any information about the workplace will not be routinely reported to OSHA enforcement staff.

Can an employer be cited for violations after receiving consultation assistance?

If an employer fails to eliminate or control a serious hazard within the agreed-upon time frame, the consultation project manager must refer the situation to the OSHA enforcement office for appropriate action. This is a rare occurrence, however, since employers request the service for the expressed purpose of identifying and fixing hazards in their workplaces.

Does OSHA provide any incentives for seeking consultation assistance?

Yes. Under the consultation program, certain exemplary employers may request participation in OSHA's Safety and Health Achievement Recognition Program (SHARP). Eligibility for participation in SHARP includes, but is not limited to, receiving a full-service, comprehensive consultation visit, correcting all identified hazards, and developing an effective safety and health management system.

Employers accepted into SHARP may receive an exemption from programmed inspections (not complaint or accident investigation inspections) for a period of 1 year initially, or 2 years upon renewal.

For more information concerning consultation assistance, see the list of consultation directory at the end of this publication, contact your regional or area OSHA office, or visit OSHA's website at www.osha.gov.

Does OSHA have occupational safety and health training for employers and employees?

Yes. The OSHA Training Institute in Des Plaines, IL, provides basic and advanced training and education in safety and health for federal and state compliance officers, state consultants, other federal agency personnel, and private-sector employers, employees, and their representatives.

Institute courses cover diverse safety and health topics including electrical hazards, machine guarding, personal protective equipment, ventilation, and ergonomics. The facility includes classrooms, laboratories, a library, and an audiovisual unit. The laboratories contain various demonstrations and equipment, such as power presses, woodworking and welding shops, a complete industrial ventilation unit, and a sound demonstration laboratory. More than 57 courses dealing with subjects such as safety and health in the construction industry and methods of compliance with OSHA standards are available for personnel in the private sector.

In addition, OSHA's 73 area offices are fullservice centers offering a variety of informational services such as personnel for speaking engagements, publications, audiovisual aids on workplace hazards, and technical advice. For more information on grants, training, and education, write: OSHA Training Institute, Office of Training and Education, 1555 Times Drive, Des Plaines, IL 60018; call (847) 297-4810; or see **Outreach** on OSHA's website at www.osha.gov.

Does OSHA give money to organizations for training and education?

OSHA awards grants through its Susan Harwood Training Grant Program to nonprofit organizations to provide safety and health training and education to employers and workers in the workplace. The grants focus on programs that will educate workers and employers in small business (fewer than 250 employees), training workers and employers about new OSHA standards or about high risk activities or hazards. Grants are awarded for 1 year and may be renewed for an additional 12 months depending on whether the grantee has performed satisfactorily.

OSHA expects each organization awarded a grant to develop a training and/or education program that addresses a safety and health topic named by OSHA, recruit workers and employers for the training, and conduct the training. Grantees are also expected to follow up with people who have been trained to find out what changes were made to reduce the hazards in their workplaces as a result of the training.

Each year OSHA has a national competition that is announced in the *Federal Register* and on the Internet at www.osha-slc.gov/Training/sharwood/sharwood.html. If you do not have access to the Internet, you can contact the OSHA Office of Training and Education, 1555 Times Drive, Des Plaines, Illinois 60018, (847) 297-4810, for more information.

Does OSHA have other assistance materials available?

Yes. OSHA has a variety of materials and tools available on its website at www.osha.gov. These include e-Tools, Expert Advisors, Electronic Compliance Assistance Tools (e-CATs), Technical Links, regulations, directives, publications, videos, and other information for employers and employees. OSHA's software programs and compliance assistance tools walk you through challenging safety and health issues and common problems to find the best solutions for your workplace. OSHA's comprehensive publications program includes more than 100 titles to help you understand OSHA requirements and programs.

OSHA's CD-ROM includes standards, interpretations, directives, and more and can be purchased on CD-ROM from the U.S. Government Printing Office. To order, write to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, or phone (202) 512-1800. Specify OSHA Regulations, Documents and Technical Information on CD-ROM (ORDT), GPO Order No. S/N 729-013-00000-5.

What do I do in case of an emergency? Or if I need to file a complaint?

To report an emergency, file a complaint, or seek OSHA advice, assistance, or products, call (800) 321-OSHA or contact your nearest OSHA regional or area office listed. The teletypewriter (TTY) number is (877) 889-5627.

You can also file a complaint online and obtain more information on OSHA federal and state programs by visiting OSHA's website at www.osha.gov.

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Appendix

SUBPART L—SCAFFOLDS

§1926.450 Scope, application and definitions applicable to this Subpart.

(a) **Scope and application.** This subpart applies to all scaffolds used in workplaces covered by this Part. It does not apply to crane or derrick suspended personnel platforms, which are covered by §1926.550(g). The criteria for aerial lifts are set out exclusively in §1926.453.

(b) **Definitions.**

"Adjustable suspension scaffold" means a suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.

"Bearer (putlog)" means a horizontal transverse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests and which joins scaffold uprights, posts, poles, and similar members.

"Boatswains' chair" means a single-point adjustable suspension scaffold consisting of a seat or sling designed to support one employee in a sitting position.

"Body belt (safety belt)" means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

"Body harness" means a design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders, with means for attaching it to other components of a personal fall arrest system.

"Brace" means a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

"Bricklayers' square scaffold" means a supported scaffold composed of framed squares which support a platform.

"Carpenters' bracket scaffold" means a supported scaffold consisting of a platform supported by brackets attached to building or structural walls.

"Catenary scaffold" means a suspension scaffold consisting of a platform supported by two essentially horizontal and parallel ropes attached to structural members of a building or other structure. Additional support may be provided by vertical pickups.

"Chimney hoist" means a multi-point adjustable suspension scaffold used to provide access to work inside chimneys. (See "Multi-point adjustable suspension scaffold".)

"Cleat" means a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.

"Competent person" means one who is 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.

"Continuous run scaffold" (Run scaffold) means a two-point or multi-point adjustable suspension scaffold constructed using a series of interconnected braced scaffold members or supporting structures erected to form a continuous scaffold.

"Coupler" means a device for locking together the tubes of a tube and coupler scaffold.

"Crawling board (chicken ladder)" means a supported scaffold consisting of a plank with cleats spaced and secured to provide footing, for use on sloped surfaces such as roofs.

"Deceleration device" means any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard, which dissipates a substantial amount of energy during a fall arrest or limits the energy imposed on an employee during fall arrest.

"Double pole (independent pole) scaffold" means a supported scaffold consisting of a platform(s) resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

"Equivalent" means alternative designs, materials or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

"Eye" or "Eye Splice" means a loop with or without a thimble at the end of a wire rope.

"Exposed power lines" means electrical power lines which are accessible to employees and which are not shielded from contact. Such lines do not include extension cords or power tool cords.

"Fabricated decking and planking" means manufactured platforms made of wood (including laminated wood, and solid sawn wood planks), metal or other materials.

"Fabricated frame scaffold (tubular welded frame scaffold)" means a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

"Failure" means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

"Float (ship) scaffold" means a suspension scaffold consisting of a braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

"Form scaffold" means a supported scaffold consisting of a platform supported by brackets attached to formwork.

"Guardrail system" means a vertical barrier, consisting of, but not limited to, toprails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

"Hoist" means a manual or power-operated mechanical device to raise or lower a suspended scaffold.

"Horse scaffold" means a supported scaffold consisting of a platform supported by construction horses (saw horses). Horse scaffolds constructed of metal are sometimes known as trestle scaffolds.

"Independent pole scaffold" (see "Double pole scaffold").

"Interior hung scaffold" means a suspension scaffold consisting of a platform suspended from the ceiling or roof structure by fixed length supports.

"Ladder jack scaffold" means a supported scaffold consisting of a platform resting on brackets attached to ladders.

"Ladder stand" means a mobile, fixed-size, selfsupporting ladder consisting of a wide flat tread ladder in the form of stairs.

"Landing" means a platform at the end of a flight of stairs.

"Large area scaffold" means a pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: a scaffold erected over the entire floor area of a room.

"Lean-to scaffold" means a supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

"Lifeline" means a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

"Lower levels" means areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

"Masons' adjustable supported scaffold" (see "Self-contained adjustable scaffold").

"Masons' multi-point adjustable suspension scaffold" means a continuous run suspension scaffold designed and used for masonry operations.

"Maximum intended load" means the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

"Mobile scaffold" means a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

"Multi-level suspended scaffold" means a twopoint or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

"Multi-point adjustable suspension scaffold" means a suspension scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels. Such scaffolds include chimney hoists.

"Needle beam scaffold" means a platform suspended from needle beams.

"Open sides and ends" means the edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).

"Outrigger" means the structural member of a supported scaffold used to increase the base width of a scaffold in order to provide support for and increased stability of the scaffold.

"Outrigger beam (Thrustout)" means the structural member of a suspension scaffold or outrigger scaffold which provides support for the scaffold by extending the scaffold point of attachment to a point out and away from the structure or building.

"Outrigger scaffold" means a supported scaffold consisting of a platform resting on outrigger beams (thrustouts) projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside the building or structure.

"Overhand bricklaying" means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. It includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

"Personal fall arrest system" means a system used to arrest an employee's fall. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.

"Platform" means a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

"Pole scaffold" (see definitions for "Single-pole scaffold" and "Double (independent) pole scaffold").

"Power operated hoist" means a hoist which is powered by other than human energy.

"Pump jack scaffold" means a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

"Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

"Rated load" means the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

"Repair bracket scaffold" means a supported scaffold consisting of a platform supported by brackets which are secured in place around the circumference or perimeter of a chimney, stack, tank or other supporting structure by one or more wire ropes placed around the supporting structure.

"Roof bracket scaffold" means a rooftop supported scaffold consisting of a platform resting on angular shaped supports.

"Runner" (ledger or ribbon)" means the lengthwise horizontal spacing or bracing member which may support the bearers.

"Scaffold" means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.

"Self-contained adjustable scaffold" means a combination supported and suspension scaffold consisting of an adjustable platform(s) mounted on an independent supporting frame(s) not a part of the object being worked on, and which is equipped with a means to permit the raising and lowering of the platform(s). Such systems include rolling roof rigs, rolling outrigger systems, and some masons' adjustable supported scaffolds.

"Shore scaffold" means a supported scaffold which is placed against a building or structure and held in place with props.

"Single-point adjustable suspension scaffold" means a suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels.

"Single-pole scaffold" means a supported scaffold consisting of a platform(s) resting on bearers, the outside ends of which are supported on runners secured to a single row of posts or uprights, and the inner ends of which are supported on or in a structure or building wall.

"Stair tower (Scaffold stairway/tower)" means a tower comprised of scaffold components and which contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.

"Stall load" means the load at which the primemover of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.

"Step, platform, and trestle ladder scaffold" means a platform resting directly on the rungs of step ladders or trestle ladders.

"Stilts" means a pair of poles or similar supports with raised footrests, used to permit walking above the ground or working surface.

"Stonesetters' multi-point adjustable suspension scaffold" means a continuous run suspension scaffold designed and used for stonemasons' operations.

"Supported scaffold" means one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

"Suspension scaffold" means one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

"System scaffold" means a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

"Tank builders' scaffold" means a supported scaffold consisting of a platform resting on brackets that are either directly attached to a cylindrical tank or attached to devices that are attached to such a tank.

"Top plate bracket scaffold" means a scaffold supported by brackets that hook over or are attached to the top of a wall. This type of scaffold is similar to carpenters' bracket scaffolds and form scaffolds and is used in residential construction for setting trusses.

"Tube and coupler scaffold" means a supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

"Tubular welded frame scaffold" (see "Fabricated frame scaffold").

"Two-point suspension scaffold (swing stage)" means a suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with means to permit the raising and lowering of the platform to desired work levels.

"Unstable objects" means items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

"Vertical pickup" means a rope used to support the horizontal rope in catenary scaffolds.

"Walkway" means a portion of a scaffold platform used only for access and not as a work level.

"Window jack scaffold" means a platform resting on a bracket or jack which projects through a window opening

To report an emergency, file a complaint, or seek OSHA advice, assistance, or products, call (800) 321-OSHA or contact your nearest OSHA regional or area office below. The teletypewriter (TTY) number is (877) 889-5627.

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