

SCAFFOLDING SAFETY



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1. PURPOSE AND SCOPE

The safety of all **H2 Enterprises, LLC (H2)** employees engaged in scaffold erection and dismantling, as well as those Employees who work on, or use scaffolds shall be insured. This **H2** Safety Procedure provides the minimum procedures to be followed when scaffolds and platforms are erected and utilized on worksites. (This procedure does not apply to suspended personnel baskets).

2. REFERENCES

OSHA 29 CFR 1926: Subpart L; Scaffolds (1926.450-.454)

OSHA 29 CFR 1910.28: Safety Requirements for Scaffolding. WAC 296-155 Part J-1 – Scaffolding

3. DEFINITIONS

- a. **Boatswains' Chair** - A single jointed adjustable suspension scaffold consisting of a seat or sling designed to support one Employee in a sitting position.
- b. **Brace** - A rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.
- c. **Cleat** - 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.
- d. **Competent Person** - One who can identify 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.
- e. **Coupler** - A device for locking together the tubes of a tube and coupler scaffold.
- f. **Guardrail** - A vertical barrier, consisting of, but not limited to, top-rails, mid-rails, and posts, erected to prevent Employees from falling off a scaffold platform or walkway to lower levels.
- g. **Heavy Load Rating** - Designed and constructed to carry a working load of 75 pounds per square foot.
- h. **Lifeline** - A component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), which serve as a means of connecting other components of a personal fall arrest system to the anchorage.
- i. **Light Load Rating** - Designed and constructed to carry a working load of 25 pounds per square foot.

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- j. **Maximum Intended Load** - 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.
- k. **Medium Load Rating** - Designed and constructed to carry a working load of 50 pounds per square foot.
- l. **Outrigger** - the structural member of a supported scaffold used to increase the base width of a scaffold to provide support for the increased stability of the scaffold.
- m. **Qualified Person** - One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge,
- n. **Rated Load** - Manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.
- o. **Scaffold** - Any temporary elevated platform (supported or suspended) and it's supporting structure (Including points and anchorage), used for supporting Employees or material or both.
- p. **Single Pole Scaffold** - A suspended scaffold consisting of a platform(s) resting on bearers, the outside ends of which are supported on runners secured to a single of posts or uprights, and the inner ends of which are supported on or in a structure of building wall.
- q. **Suspended Scaffolds** - Scaffold with one or more platforms, suspended by rope or other non-rigid means from an overhead structure. Examples include Single- Point, Two-Point, and Multi-Point Adjustable Suspension Scaffolds; Interior Hung Scaffolds; Float (ship) Scaffolds; Boatswain's Chair; Centenary Scaffolds.
- r. **Three Points of Contact** - Term used for a method of safe ladder climbing where between a climber's two hands and two feet, at least three of them are in contact with the ladder rung/rails always while ascending or descending the ladder.
- s. **Tube and Coupler Scaffold** - A supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

4. RESPONSIBILITIES

a. **Site Management**

Site Management is responsible for assuring overall implementation of and compliance with the H2. Scaffolding procedures. They must be familiar with these procedures and utilize the expertise at their own disposal to ensure employees are protected while erecting, dismantling and working on scaffolding.

Site Managers shall designate scaffolding Supervisors as Competent Persons.

b. **Supervisor**

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Supervisors Responsible for the Employees performing work on the scaffolds must:

- 1) Ensure Employees have received the proper scaffold user training.
- 2) Confirm each job has been properly evaluated for hazards such as design, fall protection, electrical protection, falling object protection, etc., and that these hazards have been eliminated or controlled.
- 3) Monitor continuously to assure proper compliance.

Supervisor of scaffold crews must:

- 1) Have completed training as a Competent Person
- 2) Ensure all scaffold craftsmen have had proper training.
- 3) Continuously monitor the scaffold work to ensure compliance with OSHA, DOSH and H2 standards.
- 4) Ensure that competent person performs initial inspections on completed scaffold prior to use, prior to each shift, or after any occurrence which may affect a scaffold's structure.

c. Employee

Employees shall receive scaffold user training, and shall work according. Employees shall inspect the scaffold tag and take the required precautions prior to working on the scaffold.

Inspect each scaffold being worked on, and report any defects to supervision immediately.

Use any required fall protection according to training.

Never alter or repair any scaffold without training or authorization.

d. Competent Person

Competent Persons shall assist Site Supervisors with compliance with this policy.

Competent Persons are responsible for supervising scaffold erection and performing inspections prior to initial use, before each shift, and upon any occurrence, which may affect the structural integrity of the scaffold.

e. Qualified Person

Qualified Person is responsible for scaffolding design, scaffolds erected over 125 feet high, and pole scaffolds erected over 60 feet high.

f. Site HSE Representative

The Site HSE Representative shall assist Site Management in compliance with this policy.

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The Site HSE Representative shall monitor field scaffolding activities for compliance, and keep Site Management informed of the results.

g. Corporate Safety Department

The Corporate HSE Department will assist Site Management with compliance of this policy, as well as provide expertise to ensure the overall success of the Company Safety Program.

5. TRAINING

Training Requirements for Scaffold Erectors (These requirements are applicable to each Employee who is involved in erecting, altering, disassembling, moving, repairing or inspecting a scaffold).

Training shall be performed by a Competent Person to recognize any hazards associated with scaffold erection.

Training shall include the following topics as applicable:

- a. The nature of scaffold hazards (fall, electrical, falling objects, fall protection, use and load capacity).
- b. The correct procedures for erecting, altering, disassembling, moving, repairing, and inspecting the type of scaffold intended to be used.
- c. The design requirements, as well as the maximum load-carrying capacity and intended use of the scaffold.

Training Requirements for Scaffold Users (These requirements are applicable to each Employee who performs work on a scaffold):

- a. Scaffold User training shall be performed by a person designated by the Site Manager.

The training shall include the following topics as applicable:

- a. The proper use of the scaffold, and the proper handling of materials on the scaffold.
- b. The maximum intended load and load-carrying capacities of the scaffold used.
- c. The nature of any overhead work/falling object, personal fall, and electrical hazards in the work area, and the correct procedures for dealing with electrical hazards.
- d. The proper use personal fall protection equipment and fall protection systems.
- e. The overhead work/falling object protection system being used.
- f. The requirements of this **H2**. Policy applicable to scaffold users.
- g. When conditions change retraining must occur.

Retraining shall occur when there is a change in the job site, when equipment is changed, or when the competent person deems necessary through observation of employee.

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6. INSPECTION AND STORAGE

a. Inspection

- 1) Scaffold users shall read scaffold tags prior to using any scaffold.
- 2) The instructions or warnings outlined on the tag must be followed.
- 3) Users shall inspect the scaffold prior to and during use, and report any defects or concerns to Supervision.
- 4) Before each work shift, scaffolds and scaffold components shall be inspected for visible defects by a competent person, prior to initial use. Before erecting and during dismantling, trained scaffold craftsmen shall inspect all scaffold components. Those found with defects must be repaired or replaced immediately.
- 5) Handrails, mid-rails, cross bracing, and steel tubing shall be inspected for nicks, especially near center span, and indications where a welding arc has struck.
- 6) Scaffold components shall be straight and free from bends, kick dents, and severe rusting. Scaffold frame weld zones shall be inspected for cracks and ends of tubing for splitting or cracking.
- 7) Manufactured decking shall be inspected for loose bolt or rivet connections and bent or dented frames.
- 8) Plywood surfaces shall be inspected checked for softening due to rot or wear.
- 9) Scaffold boards should be inspected for rot, cracks, notches, and other damage.
- 10) Each quick connecting device should be inspected to see that it works properly.
- 11) Casters, if used, should be inspected for smooth rolling surfaces, free turning, free acting swivel, and to be sure that the locking mechanism is in working order.
- 12) There are no scaffold storage requirements established for **H2**.

7. PROCEDURE

a. General Requirements

- 1) All scaffolds shall be designed by a Qualified Person or manufacturer, and shall be erected, loaded and used in accordance with that design or specification.
- 2) Scaffolds shall be erected, altered, moved, or dismantled by trained scaffold erectors and under the Supervision of Competent Persons.
- 3) When scaffolding must be leveled by screw jacks or similar means, the following must be maintained:

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- a. The screw jack must extend at least one third of its length into the scaffolding leg tube, and
 - b. At no time may the exposed portion of the screw jack exceed 12 inches.
- 4) Scaffolds shall can support, without failure; its own weight and at least 4 times the maximum intended load.
 - 5) The footing or anchorage for all scaffolds shall be sound, rigid, and capable of supporting the loaded scaffold without settling or displacement. Unstable objects such as barrels, boxes, loose bricks, or concrete blocks, will not be used to support scaffolds.
 - 6) 12" x 12" base plates are recommended.
 - 7) The poles, legs, or uprights of scaffolds shall be plumb, secured and rigidly braced to prevent swaying and displacement.
 - 8) Manufactured scaffold components shall not be modified. Scaffold components of dissimilar metals and different manufacturers shall not be intermixed unless the components fit together without force. The scaffold's structure and integrity must be maintained as by the Competent Person.
 - 9) Supported scaffolds with a height to base ratio of more than four to one (4:1), three to one (3:1) in California, shall be restrained from tipping by guying, tying, bracing or the equivalent means.
 - 10) Design drawings must be made prior to erection and kept on site for any scaffold over 125 feet high. They must be made by a licensed professional engineer competent in his field.

b. Scaffold Platforms

- 1) Employees required to perform work on scaffold platforms shall be trained in recognition and control measures for the hazards associated with the type of scaffold being used.
- 2) Scaffolds with work platforms of 4 feet or more above the ground or next lower level should have complete guardrails and toe-boards installed.
- 3) All scaffold work platforms must be completely decked between the uprights and/or guardrail supports, not leaving more than one opening in the work platform which must be 9 ½ inches or less.
- 4) Scaffold platforms must be a minimum of 18 inches wide (20 inches wide for Canadian operations), except for when a work platform is being used with ladder jacks, pump jacks or a similar system which allows for a nominal width of 12 inches.
- 5) All scaffold decking shall be Scaffold Grade or equivalent.

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- 6) Scaffold Decking (boards) Scaffold Grade 2" x 10" or 2" x 12" board material only will be used. No paint or material, which would affect proper visual board inspection or work surface safety, may be applied to scaffold boards. Scaffold boards may be painted 10 to 12 inches on each end to denote use for the scaffold decking only.
- 7) Scaffold boards are not to extend over their end supports more than 12" inches or less than 6".
- 8) All decking on platforms shall be overlapped (minimum 12") or secured from movement.
- 9) Do not use cleat boards with cleats turned up.
- 10) Scaffold platforms should be level, if this is not possible, the platforms must be designed to ensure adequate footing for workers using the platform.

c. Scaffold Tags

The most effective means of communication between the scaffold builder and the scaffold user is a scaffold tag. The following guidelines will assist in developing an appropriate tagging system for any project.

The crew that erects the scaffold will complete and attach the appropriate tag (RED during erection).

The tag should be placed at eye level on or near the access ladder in plain view. A competent person shall ensure that the scaffold is erected properly and the tag attached is completely filled out.

If the scaffold needs to be altered in any way, the person who has signed the tag must be notified to authorize the change and re-tag if necessary.

An untagged scaffold must not be used.

If a scaffold is to be used for an extended period it should be inspected periodically by a Competent Person.

d. Tagging System

Color-coded tags assist in easy identification of a scaffold tag from a distance.

A simple three-tag system is used to identify complete and incomplete scaffolds.

- A Green-tag indicates a scaffold has been erected within scaffold erecting standards – it is plumb all parts are in order, it has complete handrails, mid-rails, toe-boards and decking, has cross bracing, an access ladder and it is erected on sill plates.
- Yellow-tag scaffolds warn that scaffolds that cannot be erected with all components complete. Also informs the user of any fall protection devices that may be needed. Additional safety requirements will be listed on the tag.

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- A RED tag indicates that, for the denoted reason (generally during erection), this scaffold is not safe and should not be used.

e. Access to Scaffold Platforms

- When scaffold platforms are more than 2 feet above or below a point of access, an attached ladder/stair must be used to reach the platform.
- Hooked-on ladders must be attached so that the bottom rung is no more than 24 inches above the scaffold supporting level.
- Access ladders must extend 36 inches above the platform being accessed. Scaffold bracing shall not be used for access or climbing.
- Hooked-on ladders shall be broken with rest platforms at 35-foot maximum vertical intervals.
- Hooked-on ladders shall be designed for use with the type of ladder being used. Rungs must be uniformly sized and spaced with a maximum interval of 16 and 3/4 inches between rungs.
- Rungs must be at least 11 1/2 inches long (left to right).

f. Scaffold Use

- Scaffolds shall not be loaded to exceed their maximum intended load or rated capacities.
- Debris shall not be allowed to accumulate on platforms. Do not stack material higher than 24" on the scaffold deck.
- Makeshift devices, such as boxes and barrels shall not be used on platforms to increase the working level height of Employees.
- Ladders shall not be used to increase the working level height of employees.

g. Exceptions

- When the ladder is placed and secured against a structure which is not a part of the scaffold, and the platform is secured against movement.
- Ladder must be secured against movement at the top and bottom legs.
- This ladder use is approved by the Superintendent.
- Tag lines or the equivalent shall be used when swinging loads are being hoisted onto or nearby the scaffold that may contact the scaffold.
- Scaffolds should never be altered or moved while they are in use or occupied.
- Scaffolds should not be moved without first removing all loose materials from the
- Scaffold deck (Include dismantling).
- Employees shall not work on scaffolds during storms or high winds.

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- ix. Employees shall not work on scaffolds covered with ice or snow, unless the planking has been cleared of slipping.
- x. Scaffolds shall not be erected, used, or dismantled, altered, or moved such that they or any conductive material handled on them may get closer to exposed or energized lines (See OSHA Regulations).

h. Fall Prevention and Fall Projection

- i. Each employee on a scaffold, more than 6 feet above the ground, shall be protected from falling by means of a complete guardrail system or approved personal fall protection.
- ii. Scaffold work platforms 4 feet, up to 6 feet, should have a complete guardrail system to prevent accidental falls. If guardrail system is incomplete or missing, personal fall protection is required.
- iii. In California, scaffolding that is 30 inches or more off the ground must have a top rail and mid rail installed on all open sides.

i. Fall Prevention

- i. All scaffold guardrail systems must meet the design/performance requirements set forth by OSHA/DOSH standards.
- ii. Guardrail systems shall be installed along all open sides and ends of platforms. Guardrails systems shall be completely installed before the scaffold is released for use by Employees other than erection and dismantling crews.
- iii. Personal fall protection shall be used where guardrail systems are incomplete, missing or moved.
- iv. In some cases, a building, structure, equipment, or piping may prevent the proper installation of a complete guardrail system, a Competent Person can determine whether these obstructions meet or exceed the applicable guardrail requirements. A Scaffold Tag should indicate if conditions are acceptable.

j. Personal Fall Protection

- i. Approved personal fall protection is required any time employees work on, or erect a scaffold which is not protected by a complete guardrail system and is 6-feet or more above the ground.
- ii. Personal fall protection used on scaffolds shall be attached by a lanyard to a vertical/horizontal lifeline or approved scaffold structure.
- iii. Personal fall protection is not required while using a designed ladder or access system, providing "three points of contact" are maintained when ascending or descending a scaffold ladder, and the requirements of this **H2**. Procedure and applicable OSHA/DOSH standards for ladders and stairways are met.
- iv. Employees may not climb any ladder with anything in their hands.

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k. Mobile (Rolling) Scaffolds

- i. Mobile scaffolds shall be used only on level surfaces free of major defects, or the wheels must be contained in channel runners.
- ii. Mobile scaffolds shall be braced by cross, horizontal, or diagonal braces to prevent racking or collapse of the scaffold and to ensure that the scaffold remains plumb, level and square.
- iii. No one is to ride on any part of a scaffold that is being moved.
- iv. All casters used with mobile scaffolding shall be provided with a positive locking device. Caster stems and wheel stems shall be pinned or secured in scaffold legs. Manual force used to propel the scaffold shall be applied as close to the base as possible.