



WAGNER-MEINERT LLC
Engineers – Contractors

Scaffold Safety Program (Section 22)

PURPOSE

To provide safety guidelines for erecting and dismantling elevated work platforms.

SCOPE

This procedure applies to all facilities.

DEFINITIONS

Fixed Scaffolds include the following; tubular welded frame, bracket scaffolds, tube and coupler (tube-lox) scaffolds, wood pole scaffolds and trestle scaffolds.

Suspended Scaffolds include the following: two-point suspended scaffolds, multilevel suspended scaffolds, floats, needle-beam scaffolds, boatswain's chair and electric hoist platforms.

Qualified Person means a person with specific training, knowledge and experience in the area that the person has the responsibility and authority to control.

REFERENCES

OSHA 29 CFR 1926.451 - Scaffolding
ANSI A 10.8 - Safety Requirements for Scaffolding

1.0 RESPONSIBILITY

- 1.1 Supervision is responsible for implementing and administering this procedure. In addition, supervision is in charge of the scaffolding erection and are responsible for the work being performed
- 1.2 The Safety Director is responsible to make sure all employees have the necessary training. Supervision is responsible for implementing and administering this program.

2.0 SAFE WORK PRACTICE

- 2.1 Any elevated work presents a many potential hazards; (fall, electrical, falling objects, therefore, it is essential that precautionary measures are thorough. Retraining is done annually or if conditions change from the original hazard assessment.
- 2.2 All working platforms must be capable of sustaining a minimum-working load of 75 psf on 6-ft spans or have a safety factor of 4 to1 for the intended load.
- 2.3 Posts shall be plumb, and scaffold platforms shall be level.
- 2.4 A stationary scaffold shall be secured to the building or a fixed structure vertically every 25 ft starting at the base of the scaffold and horizontally every 30 ft.
- 2.5 Outriggers may be used in lieu of tying off, or scaffolds may be clamped together so that the height does not exceed three times the smallest base dimension without additional stabilization.
- 2.6 A qualified person shall determine the structural integrity of structural steel, reinforcing steel, and concrete or building members prior to the attachment of scaffolds by bracing or tie off.
- 2.7 Where persons are required to work or walk under scaffolding, a screen guard of No. 18 gage ½ in. wire mesh or equivalent shall be provided between the toe board and handrail.
- 2.8 All employees shall tie off with a safety harness when there is no or an incomplete handrail, when there are openings over 18 inches in the working platform, or when on suspended working platforms.
- 2.9 Swinging stages, floats, and boatswain's chairs shall be tested before using (test by applying a dead load with unit close to floor or ground).
- 2.10 Crews requiring scaffolds shall request them well in advance to avoid delays and to allow time to provide the best scaffold for the job.
- 2.11 Scaffold erection crews shall inspect all components for defects as the erection

proceeds. Any components found to be defective shall be set aside and tagged for repair or disposal.

- 2.12 Daily inspections shall be performed under the direction of competent supervision responsible for the work being performed. All defects shall be corrected at once or have defective tags attached.
- 2.13 All lumber used in scaffolding should be fire-retardant treated except when otherwise specified in writing by the companies division or client. Fire retardant may be applied by pressure treatment or fire retardant paint. Non-combustible scaffolding such as aluminum pick boards or aluminum grating should be used whenever it is practical to do so.

3.0 FIXED SCAFFOLDS REQUIREMENTS

Fixed scaffolds include tubular welded-frame scaffolds, bracket scaffolds, tube and coupler (Tube-lox) scaffolds, and trestle scaffolds.

3.1 Tubular Welded-Frame Scaffolds Requirements

- 3.1.1 Scaffolds of 10 ft or more in height shall include diagonal braces, handrails, mid-rails, toe boards, and 2 in. x 10 in. or 2 in. x 12 in. scaffold planks or manufactured scaffold decking which will provide a complete working deck without gaps or openings. Corner posts shall have the metal feet in place.
- 3.1.2 On soft ground, wooden sills of at least 2 in. x 10 in. lumber or channel iron shall be provided. Scaffold planks shall be rough-cut undressed lumber.
- 3.1.3 Scaffold planks shall be painted on each end for 12 in. to designate it as an inspected plank only to be used for scaffolding, and marked for overhang limits.
- 3.1.4 When scaffold sections are erected, only scaffold pins are to be used for the corner post connections. (Do not use tie-wire or welding rods.)
- 3.1.5 When casters are used for a rolling scaffold, they shall be locked except when the scaffold is being moved. No one shall be permitted on a scaffold while it is being moved.
- 3.1.6 Scaffold screw jacks shall be extended in accordance with the manufacturer's recommendations but in no case shall they be extended in excess of 12 in.
- 3.1.7 Whenever screw jacks and casters wheels are not used, metal base plates must be used for adequate base support. All supports are to

be pinned and secured.

- 3.1.8 Scaffolds shall have solid footing and shall be erected so that vertical members are always plumb and the platform is as horizontal as practical.
- 3.1.9 Scaffold planks must have cleats, be wired down, or otherwise secured against accidental displacement.
- 3.1.10 Wedge shims shall not be used. Work from incomplete scaffolds, when approved, will require that the employee take added precautions to meet accident prevention and fall protection requirements.
- 3.1.11 Safety harnesses must be worn if handrails are missing or the platform is incomplete or other fall hazards exist.
- 3.1.12 Horizontal braces of 2 in. x 4 in. lumber or equivalent shall be secured across corner posts when it is necessary to remove the diagonal braces. Diagonal braces shall not be removed from more than one section in a series of sections unless there are four braced sections between.
- 3.1.13 Ladders shall be used if access to the scaffold platform is blocked or the scaffold climbing devices are more than 16 in. apart.
- 3.1.14 Every scaffold higher than 50 ft. must be inspected and approved by a licensed professional engineer. This inspection shall be documented and kept on file.
- 3.1.15 Toe boards shall be secured in a firm manner by interlocking at the corner posts with notches, wiring, nailing, U-clamping to the bearing members, or by use of approved commercial toe board systems.
- 3.1.16 Employees gaining access to scaffolds shall have both hands free at all times and shall use the hand-over-hand method of climbing on the rungs. Employees shall not use toe boards as handholds or footholds to gain access to the platform.

4.0 Bracket Scaffolds Requirements

- 4.1 Where more than one layer of horizontal bars has been placed and conditions permit, the scaffold shall be secured to an inside horizontal bar.
- 4.2 If conditions do not permit attaching the bracket scaffold to an inside horizontal bar, the scaffold shall be secured with a minimum of three 3/8-in. diameter U-bolts attached to each end and middle of the outer horizontal or vertical bar. Additionally, No. 9 wire shall be placed at a minimum of every fourth tie location.

- 4.3 The horizontal reinforcing bar shall be secured to a vertical reinforcing bar that is either embedded in concrete or has been spliced by an approved method.
- 4.4 Each scaffold shall have a 4 ft x 1/4 in. safety chain attached to the ends of the scaffold and secured to an inner rebar other than the bar that is supporting the scaffold.
- 4.5 Guardrails and toe boards shall be installed on all open sides and ends of scaffolds.
- 4.6 No more than three persons plus the necessary tools and equipment shall be permitted on a single scaffold section at any one time. The load is not to go beyond the scaffold's designed capacity. Bracket scaffolds shall be constructed to support 1,550 lb. and the capacity shall be posted on the scaffold.
- 4.7 Employees working with safety harnesses shall have the lanyard secured above the point of operation, but under no circumstances shall it be attached to the scaffold.
- 4.8 Scaffolds may be painted caution yellow to give the adjacent crane operators a better perspective when working close to them during the day or night.

5.0 Tube and Coupler (Tube-Lox) Scaffolds

- 5.1 Posts shall be erected on suitable bases and maintained plumb.
- 5.2 Diagonal cross bracing shall be provided horizontally every third section, vertically every fourth section, and whenever posts are farther apart than 7 ft, the braces shall be at 45 degree angles.
- 5.3 Runners shall be erected along each side vs. the scaffold at the bottom and top of each section.
- 5.4 Bearers and braces shall extend past the posts a minimum of 4 in., but not more than 12 in. Extensions of these shall not protrude into walking or climbing areas.

6.0 Trestle Scaffolds

- 6.1 Trestle scaffolds shall have at least a 6 in. ridgepole and should be limited to one level only.

7.0 Suspended Scaffolds Requirements

Suspended scaffolds include two-point suspended scaffolds, multilevel suspended scaffolds, floats, needle-beam scaffolds, boatswain's chairs, and electric hoist

platforms.

7.1 Two-Point Suspended Scaffolds

When two-point suspended scaffolds are used, the following rules will apply:

- 7.1.1 These scaffolds shall have standard toe boards, mid-rails and handrails.
- 7.1.2 A lifeline for each employee shall be provided and secured independently from the scaffold support lines.
- 7.1.3 Employees shall be tied off at all times when on the scaffold, using a triple sliding hitch or catch hardware. Employees must be provided with a safe method of moving to and from the scaffold.
- 7.1.4 When moving the scaffold root supports, co-workers must remain behind the guardrail or be tied off with a safety boil to an independent support if there is no guardrail.
- 7.1.5 Protection for areas below the work shall be provided by the use of signs and barricades and screened staging, when applicable.
- 7.1.6 Do not lower the scaffold below the point of three turns of the supporting cables on the drum of a swinging stage scaffold. Supporting cables shall be marked or painted to include limits.
- 7.1.7 Check the loading on the stage one foot off the ground before using it.
- 7.1.8 Outrigger beams, when required, should extend from 1 Forklift Training to 6 Forklift Training beyond the edge of the building, and the inboard length from the fulcrum should be at least 1½ times the outboard length from the fulcrum. A mechanical stop to retain the supporting cables shall be secured at the outer end of the outrigger.
- 7.1.9 If cornice hooks are used, each hook must be tied back to something solid. All hooks must be latched.

8.0 Multilevel Suspended Scaffolds Requirements

- 8.1 Multilevel suspended scaffolds are used primarily for large-area vertical work such as installation of siding.
- 8.2 Multilevel suspended scaffolds shall have two lifelines attached to the scaffold, independent of the supporting lines.
- 8.3 Employees on the top stage will tie off with a safety harness to an independent lifeline.

- 8.4 Employees on the lower stages will tie off with a safety harness to the scaffold itself.

9.0 Floats

- 9.1 Floats shall be in accordance with standard rigging practices, using a 1 in. manila rope, or equivalent. The supporting ropes shall be run diagonally under the platform from corner to corner.
- 9.2 Employees working on floats shall tie off with a safety harness before getting on a float and untie after getting off a float.
- 9.3 Floats are to be constructed to the standard 4 ft. x 6 ft. size, and additional support shall be given to the platform with diagonal 1 in. x 4 in. braces on the bottom.
- 9.4 The platform shall be of 3/4 in. plywood or equivalent, with 4 in. x 1 in. minimum edging on top to prevent items from rolling off.

10.0 Needle-Beam Scaffolds

- 10.1 Needle-beam scaffolds shall be supported by 1 in. manila rope, 1/2 in. wire rope cable, 1/4 in. or high test chain or equivalent, using a standard scaffold hitch or eye splice, with supports on the beam not to be more than 10 ft. apart for the 4 in. x 6 in. timbers.
- 10.2 Needle-beams shall be construction grade lumber, with a minimum of 1,500-psi fiber stress.
- 10.3 The platform span between needle-beams shall not exceed 8 ft. when 2-in. scaffold plank is used. The overhang of scaffold planks shall not be less than 6 in. or more than 12 in.
- 10.4 Handrails and toe boards shall be used, and employees shall wear a safety harness.

11.0 Boatswain's Chairs

- 11.1 Seats shall be a minimum of 12 in. x 24 in. and 2 in. thick. Cleats fastened on the underside shall prevent splitting of the board.
- 11.2 Boatswain's chairs shall be suspended with the standard 5/8-in. nylon rope boatswain's sling through four corner holes.
- 11.3 The employee shall be tied off to an independent lifeline with a safety harness.

12.0 Electric Hoist Platforms

- 12.1 When working platforms are suspended from electric hoist mechanisms and used to raise and lower employees to and from working positions, a safety harness shall be worn and properly attached to a lifeline secured independently from the platform support line.
- 12.2 Such platforms shall have sides 42 in. in height above the platform.
- 12.3 Prior to each use, the hoist mechanism shall be visually inspected and the load support checked at 1 ft. off the ground.
- 12.4 The cable and the lay of the cable on the spool shall be checked constantly.

13.0 Scaffold Erection and Dismantling Requirements

A risk of serious accident may exist when scaffolds are being erected or dismantled. All individuals working on scaffolds at these times shall comply with the following safety rules and regulations:

- 13.1 Employees must keep both hands empty for secure handholds when moving above on scaffolds.
- 13.2 Pockets, pouches, and tool belts are to be used to carry the necessary tools for the work.
- 13.3 Scaffold members shall be hoisted or lowered with a hand line or passed from and to hand. Throwing items up to employees or dropping them is not permitted.
- 13.4 Constant fall prevention measures must be maintained. Provisions shall be established for using a safety harness and working on firm scaffold decks when this can be done safely.
- 13.5 Scaffold feet shall be established on a firm and level base of support.
- 13.6 When scaffolds are to be secured to fixed structures or outriggers are to be used, they shall be installed as soon as possible. When dismantling a scaffold, these should be left on as long as is practical.
- 13.7 The coordination of this activity with surrounding operations and environment shall be given priority consideration.

14.0 SCAFFOLD TAGGING

14.1 General Scaffold Tagging Requirements

- 14.1.1 This scaffold tagging procedure is designed to ensure the safe use of all scaffolds.
- 14.1.2 A scaffold that is ready for use shall be tagged with either a green or a yellow tag.
- 14.1.3 A green scaffold tag designates a complete scaffold, as defined by the manufacturer.
- 14.1.4 A yellow scaffold tag designates a scaffold that is not complete but which is altered to suit a specific job and may be used safely. A yellow scaffold tag shall detail the reason or reasons the scaffold is incomplete and safety measures needed.
- 14.1.5 If scaffold is in the process of being erected, changed, or dismantled, it shall have a red tag. A scaffold that contains a red scaffold tag shall be considered unsafe and shall not be used.
- 14.1.6 If a scaffold has been damaged or is defective, a Red Tag must be attached.
- 14.1.7 The yellow, red, and green scaffold tags are approximately 4 in. wide by 8 in. long with a hole centered at the top of the tag.

15.0 Installation & Removal of Scaffold Tags

- 15.1 A qualified person shall determine whether a useable scaffold receives a yellow or a green tag. He/she shall be responsible for completing all pertinent information on the tag and affixing the tag to any scaffold erected under his/her supervision.
- 15.2 The scaffold tag shall be affixed to each scaffold access ladder approximately 5 ft., 6 in., from its base, where it will not interfere with normal access.
- 15.3 The qualified person may remove a scaffold tag from a scaffold that has been damaged, has been improperly modified, is missing components, or is deficient in any safety aspect. A red tag may be used in these circumstances.
- 15.4 After a scaffold has been repaired, the qualified person shall inspect it to

determine whether it is ready to be re-tagged and shall do so accordingly.

- 15.5 Periodic inspections shall be performed to ensure that all tags are legible and in good condition.
- 15.6 Inspection, attention, and stability are three keys to scaffold safety. No tag on scaffold shall be considered the same as a red tag.

16.0 INSPECTION AND TESTING - SCAFFOLD PLANKS

- 16.1 Scaffold planks shall be inspected and tested upon receipt, prior to use, and users shall examine each plank visually prior to each use.
- 16.2 Examine planks for knots, excessive grain slope, shakes, decay, dry rot, and other defects.
- 16.3 Density of lumber should be equivalent to Douglas Fir and capable of supporting four times the intended load. Moisture content should not exceed 20 percent.
- 16.4 All scaffold planks shall be scaffold grade or equivalent as recognized by approved grading rules.
- 16.5 Planks shall be 2 in. x 10 in. or 2 in. by 12 in. heavy duty (75 psi on 6 ft. span).
- 16.6 Discard the plank as a scaffold plank if evidence of a defect is noted.

17.0 SPECIAL SCAFFOLDING

- 17.1 Any scaffold a qualified person must approve.

18.0 STORAGE OF SCAFFOLDING

- 18.1 Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards.

DOCUMENT MANAGEMENT:

If after reading this program, you find that improvements can be made, please contact the Safety Director. We encourage all suggestions because we are committed to the success of our Scaffold Safety Program. We strive for clear understanding, safe behavior, and involvement from every level of the company.

CHANGE CONTROL:

All management system changes are reviewed, approved or disapproved by the Safety Committee.

This program was initially developed on September 22, 2004, replacing the former Scaffold Safety Program entirely.

Revision No. 1 (September 22, 2004)

Revision No. 2 (January 3, 2006)

Revision No. 3 (June 26, 2006)

Revision No. 4 (September 6, 2007)

Revision No. 5 (March 3, 2010)

Revision No. 6 (October 7, 2011)

PERSONNEL:

The Owners of Wagner-Meinert, LLC have the ultimate responsibility for the Scaffold Safety Program. They have designated the Safety Director and the Human Resource Director to manage the Scaffold Safety Program

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