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1.0 Policy

It is the Company's policy to follow national and corporate standards and guidelines for scaffold safety. This policy shall apply to all site employees and contractors.

2.0 Purpose

The purpose of this policy is to outline general guidelines for the safe construction, operation and maintenance of scaffolds. This policy also outlines the safety guidelines while personnel are working on and around scaffolds.

3.0 Definitions

- 3.1. **Access ladder:** A separate attachable or built-in means of access to and from a scaffold work platform, with regularly spaced steps or rungs, having a maximum variation between adjacent rungs of two inches. Spacing between rungs may be up to 16½ inches if such spacing is necessitated by practical limitations of the equipment where the ladder is being used.
- 3.2. **Bearer:** A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.
- 3.3. **Boatswain's chair:** A suspended seat designed to accommodate one worker in a sitting position.
- 3.4. **Brace:** A tie that holds one scaffold member in a fixed position with respect to another.
- 3.5. **Competent person:** 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.
- 3.6. **Coupler:** A device for locking together component parts of tube and coupler scaffold, such as a right angle clamp.
- 3.7. **Double pole or independent pole scaffold:** A scaffold supported from the base by a double row of uprights, independent of support from the walls, and constructed of uprights, ledgers, horizontal platform bearers and diagonal braces.
- 3.8. **Fabricated plank or platform:** Built-up platform designed to support workers on a scaffold, manufactured using metal or non-metal structural members with solid slat, or open mesh decking, such as pencil boards.
- 3.9. **Fabricated tubular frame scaffolding:** A sectional, panel or frame metal scaffold substantially built-up with pre-fabricated tubular sections, consisting of posts and horizontal bearers with intermediate members. Panels or frames are braced with diagonal or cross braces.
- 3.10. **Interior hung scaffold:** A scaffold suspended from the ceiling or platform of a structure.
- 3.11. **Ledger (stringer):** A horizontal scaffold member extending from post to post and supporting the put-logs or bearer, forming a tie between the posts.

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- 3.12. **Maximum intended load:** The total of all loads, including the working load, the weight of the scaffold and other loads as may be reasonably anticipated.
- 3.13. **Mid rail:** A rail approximately midway between the guardrail and platform secured to the uprights erected along the exposed sides and ends of platforms.
- 3.14. **Outrigger scaffold:** A scaffold consisting of a work platform supported by outriggers. It projects beyond the wall or face of the structure, the inboard ends of which are secured inside of such structure or platform.
- 3.15. **Put-log:** A scaffold member upon which the platform rests.
- 3.16. **Runner:** The lengthwise horizontal bracing or bearing members or both.
- 3.17. **Scaffold:** Any temporary elevated or suspended platform and its supporting structure for workers, or materials, or both.
- 3.18. **Scaffold load ratings:** Minimum loading for these categories:
- **Heavy-duty loading:** For scaffold designed and constructed to carry a working load of 74 lb/ft².
 - **Medium-duty loading:** For scaffolding designed and constructed to carry a working load of 50 lb/ft².
 - **Light-duty loading:** For scaffold designed and constructed to carry weights of specified nature (i.e., materials on a pallet). Planks, scaffold and accessories shall be designed based on these loads if they exceed the standard loading.
- 3.19. **Single-point adjustable suspension scaffold:** A manually or power operated unit designed for light-duty use, supported by a single wire rope from an overhead support, arranged and operated to permit raising/lowering the platform to the desired working position (sky climber and painter's basket).
- 3.20. **Toe board:** A barrier secured along the sides and ends of a platform, to guard against materials, tools and other loose objects falling.
- 3.21. **Tube and coupler scaffold:** An assembly consisting of tubing which serves as posts, bearers, braces, ties, runners, a base supporting the posts, and special couplers which serve to connect the uprights and join the various members.
- 3.22. **Two-point suspension scaffold (or swinging scaffold):** A scaffold, the platform of which is supported by hangers or stirrups at two points, suspended from overhead supports to permit rising or lowering the platform to the desired working position by tackle or hoisting machines.
- 3.23. **Working load:** Load imposed by men, materials and equipment combined.

4.0 Responsibilities

4.1 Superintendent

The Company's superintendent is responsible for the implementation, maintenance and compliance with this policy. Responsibilities include:

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- 4.1.1 Ensure compliance with the provisions of this written policy for scaffold erection, use and dismantling.
- 4.1.2 Ensure all inspections and documentation take place and are filed as specified in this policy and that deficiencies are identified and corrected.
- 4.1.3 Ensure a scaffold competent person is on site during erection, alteration, design and disassembly.
- 4.2 Safety Coordinator (or his or her designee)
 - 4.2.1 Perform monitoring of this policy, aid in interpreting requirements under this policy, assist process units in determining hazardous workplace conditions, keep inspection records, and verify a competent person is on site during erection and disassembly.
- 4.3 Employees
 - 4.3.1 Follow the guidelines and requirements in this policy.
 - 4.3.2 Report all unique situations requiring review or concerns pertaining to scaffolds.
- 4.4 Scaffold Contractors
 - 4.4.1 Ensure all personnel comply with all sections of this policy.
 - 4.4.2 Comply with the same roles and follow the same procedures as the Company's employees.
- 4.5 Competent Person
 - 4.5.1 A competent person is a person who is trained and capable to identify and properly correct hazards associated to scaffolds. This includes:
 - Proper erection procedures.
 - Determining safe working loads.
 - Proper inspections for specific types of scaffolds.
 - Proper disassembly procedures.
 - 4.5.2 The competent person will have the authority to approve, inspect and enforce all modifications, corrective measures and safe work practices associated with scaffolds.

5.0 General Requirements

- 5.1 All Scaffolds
 - 5.1.1 Scaffolds shall be erected in accordance with this standard for employees engaged in work that cannot be done safely from the ground or from solid construction.
 - 5.1.2 The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable

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objects, such as barrels, boxes, loose brick or concrete blocks may not be used to support scaffolds or planks.

- 5.1.3 Guard rails, mid rails and toe boards shall be installed on all open sides and ends of platforms four feet or more above ground.
- 5.1.4 Guard rails shall be installed no less than 36 inches or more than 45 inches high with a mid rail.
- 5.1.5 Guard rail and mid rail supports shall be at intervals not to exceed 10 feet.
- 5.1.6 Toe boards shall be 1 inch x 4 inch lumber, or the equivalent. Toe boards will be a minimum height of four inches above the working surface with no more than a ¼ inch gap.
- 5.1.7 Top rails shall support a force of 200 pounds applied in any direction, 150 pounds for mid rails and 50 pounds for toe boards. Acceptable guard rail material shall be as follows, or the equivalent:
 - 1-1/4" x 1-1/4" x 1/8" in structural angle iron
 - 1" x .07" wall steel tubing
 - 1.99" x .058" wall steel tubing
 - 2" x 4" lumber
- 5.1.8 Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load.
- 5.1.9 Scaffolds shall not be altered or moved horizontally while in use or occupied except when a scaffold has been specifically designed for such use.
- 5.1.10 Any scaffold damaged or weakened for any reason shall be immediately removed from service and shall not be used until repairs have been completed and approved by a competent person.
- 5.1.11 Scaffold shall not be loaded in excess of the working load for which it is intended. Manufactured scaffolds must be used in accordance with the manufacturer's recommendations.
- 5.1.12 All load-carrying timber members of scaffold framing shall be a minimum of 1,599 lb/ft² (stress grade) construction grade lumber. All dimensions are normal sizes as provided in the American Lumber Standards, except where rough sizes are noted. Only rough or undressed lumber of the size specified will satisfy minimum requirements.
- 5.1.13 All planking shall be two inches (nominal) chosen for scaffold plant use as recognized by grading rules approved by the Board of Review of the American Lumber Standards Committee for the type of wood used. The maximum permissible spans for 2 x 10" (nominal) or 2 x 9" (rough) planks shall be:

Working Load lb/ft²	Permissible Span (ft)
25	10
50	8
75	7

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- 5.1.14 Platform planks shall be laid with openings no more than one inch between planks or scaffold members.
- 5.1.15 Bolts used in the construction of scaffolds shall be of adequate size and in sufficient numbers at each connection to develop the desired strength of the scaffold. Do not use nails.
- 5.1.16 Planks or platforms in a continuous run shall be overlapped (minimum 12 inches) and secured.
- 5.1.17 An access ladder or equivalent safe access shall be provided to work platforms on all types of scaffolds. The ladder and platform shall be secured. On welding jobs and especially hazardous jobs, two accesses are recommended.
- 5.1.18 Wood scaffold planks, unless cleated or otherwise restrained at both ends, shall extend over their supports not less than six inches, nor more than 12 inches. Fabricated scaffold planks and platforms, unless cleated or otherwise restrained by hooks or equivalent means at both ends, shall extend over their end supports not less than six inches, nor more than 12 inches.
- 5.1.19 The poles, legs or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.
- 5.1.20 Materials being hoisted onto a scaffold will have a tag line.
- 5.1.21 Overhead protection shall be provided for workers on a scaffold exposed to overhead hazards.
- 5.1.22 Scaffolds in areas where persons are required to work or pass under the scaffolds will be taped off with yellow caution tape, and signs stating "Danger Overhead Work" will be posted at the boundaries. Orange netting will be erected on any scaffold more than one tier high where other people have to pass underneath or nearby.
- 5.1.23 Employees will not work on scaffolds during storms or high winds (i.e., 35 mph).
- 5.1.24 Employees will not work on scaffolds covered with ice, unless all ice is removed and planking is sanded to prevent slipping.
- 5.1.25 Tools, materials and debris are not allowed to accumulate on scaffold platforms.
- 5.1.26 Treat or protect fiber or synthetic rope used in work involving corrosive substances.
- 5.1.27 All rope used for scaffold suspension shall be capable of supporting at least six times the intended load.
- 5.1.28 Special precautions shall be taken to protect scaffold members, including wires, fiber, or synthetic rope, when using a heat producing process, such as cutting or welding.
- 5.1.29 Lumber sizes refer to nominal sizes unless otherwise stated.

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- 5.1.30 Scaffolds shall be secured to permanent structures through use of anchor bolts, wire, cable or other equivalent means.
- 5.1.31 Ladders or makeshift devices shall not be used to increase height of scaffold.
- 5.1.32 When scaffolds are to be enclosed with tarps or such, take special precautions to allow for effects of wind loading and weather.
- 5.1.33 Free-standing scaffolds with height-to-base ratio more than 4:1 must be restrained from tipping by guying or other means.
- 5.1.34 Any changes or alterations to the manner in which a scaffold is built, including dismantling any segment of the scaffold, will be referred to the erecting group.

5.2. Tube and Coupler Scaffold (Tube Lock Scaffolding)

- 5.2.1. Medium-duty tube and coupler scaffold shall be the standard at all Company job sites.
- 5.2.2. Medium-duty tube and coupler scaffold shall have all posts, runners and bracing of nominal two-inch (1.9") OD steel tube. Posts spaced not more than six feet apart by eight feet along the length of the scaffold shall have bearers of nominal 2-1/2 inch (2.375") OD steel tube or pipe. Posts spaced not more than five feet apart by eight feet along the length of the scaffold shall have bearers of nominal two-inch (1.90") OD steel tube.
- 5.2.3. Couplers shall be of a structural type, such as a drop-forged steel, or malleable iron. Gray cast iron is prohibited.
- 5.2.4. Heights and working levels for medium duty tube and coupler scaffold are listed below. Drawings and specifications of all tube and coupler scaffolds outside the limitations listed shall be designed by a licensed professional engineer, and a copy shall be available at the job site for inspection purposes.

Tube and Coupler Scaffolds (Medium Duty)		
Uniformly distributed load		Not to exceed 50 lb/ft ²
Post spacing (longitudinal)		8 feet
Post spacing (transverse)		6 feet
Working Levels	Add. Planked Levels	Maximum Height (ft)
1	11	125
2	1	125

- 5.2.5 Competent and experienced personnel shall erect all tube and coupler scaffolds.
- 5.2.6 Posts shall be accurately spaced, erected on suitable bases and kept plumb.
- 5.2.7 Runners shall be erected along the length of the scaffold, located on the inside and outside posts at even heights. When tube and coupler guard rails and mid rails are used on outside posts, they shall be used in lieu of outside runners. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than four feet six inches (4'6") on centers.

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- 5.2.8 Bearers shall be installed transversely between posts and shall be securely coupled to the posts with the inboard coupler bearing on the runner coupler. Where guard rail and mid rail are required, no outboard runner is required.
- 5.2.9 The length of the bearer shall exceed the post spacing of the width of the scaffold by the amount necessary to have full contact with the coupler.
- 5.2.10 Bearers used to provide a cantilever support for use as brackets for light and medium duty scaffolds shall not carry more than two 10-inch planks unless knee braced.
- 5.2.11 Bracing across the width of the scaffold shall be installed at the ends of the scaffold at least at every fourth level. Such bracing shall extend diagonally from the outer post or runner at the next level.
- 5.2.12 Longitudinal diagonal bracing shall be installed on the outer rows of poles at approximately 40° to 50° from the base of the first outer post to the last post, alternating directions to the top of the scaffold. When conditions preclude the attachment of this bracing to the post, it may be attached to the runners.
- 5.2.13 Large scaffolds shall be tied and securely braced at intervals not to exceed 30 feet horizontally and 26 feet vertically.
- 5.2.14 Guard rails, mid rails and toe boards shall be installed as required in the General Requirements portion of this procedure. Caution tape and signs shall be installed as required in the General Requirements portion of this procedure.
- 5.2.15 Access to all built-up scaffolds must be by one or more of these means:
 - Portable wood or metal ladders must be manufactured and used in accordance with American National Standards for wood and metal ladders.
 - Access ladders must be positioned so their use will not have a tendency to tip the scaffold. Maximum spacing between rungs of such ladders shall not exceed 16½ inches, provided the ladder part was designed for climbing.
 - Employees can use hook-on or attachable metal ladders specifically designed for use with the type of scaffold used.
 - Do not use cross braces as a means of access.

5.3 Fabricated Tubular Frame Scaffold (Stack-up Scaffold)

- 5.3.1 Tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed and proved to safely support four times the maximum intended load.
- 5.3.2 Spacing of panels or frames shall be consistent with the loads imposed.
- 5.3.3 Frames or panels shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally. The cross braces shall be of such lengths to automatically square and align vertical members so the erected scaffold is always plumb, level, square and rigid. All brace connections shall be made secure.

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- 5.3.4. Panel or frame legs shall be set on adjustable bases or plain bases on mudsills or other foundations adequate to support the maximum intended load.
- 5.3.5. The panels or frames shall be placed on top of the other with coupling or tacking pins to provide proper vertical alignment of the legs.
- 5.3.6. Where uplift may occur, panels shall be locked together vertically by pins or equivalent methods.
- 5.3.7. Guard rails, mid rails and toe boards shall be installed as required in the General Requirements portion of this procedure. Personal protection of people at ground level shall be provided as required in the General Requirements portion of this procedure. Cross braces shall be considered equivalent to guard rails when workers are required to work on intermediate levels.
- 5.3.8. Access to all built-up scaffolds must be provided as required in the Tube and Coupler Scaffold portion of this procedure.
- 5.3.9. Where applicable the scaffold must be secured as required in the Tube and Coupler Scaffold portion of this procedure.
- 5.3.10. Maximum permissible spans of planking shall conform to the General Requirements portion of this procedure.
- 5.3.11. Tubular frame scaffolds more than 125 feet above the base plates shall be designed by a licensed professional engineer, and copies of the drawings and specifications shall be made available at the job site for inspection purposes.
- 5.3.12. Competent and experienced personnel shall erect all fabricated tubular frame scaffolds.
- 5.3.13. Do not mix different manufacturers' scaffold frames and their respective components.
- 5.4. Two-Point Suspension Scaffolds (Swinging Scaffold)
 - 5.4.1. Two-point suspension scaffold platforms shall not be less than 20 inches or more than 36 inches wide overall. U-bolts or other equivalent means shall securely fasten the platform to the hangers.
 - 5.4.2. Two-point suspension scaffold hangers shall be made of wrought iron, mild steel or equivalent material having a cross-section capable of sustaining four times the maximum load, and be designed with a guard rail, intermediate rail and toe board.
 - 5.4.3. Hoisting machines (manual or power driven) shall be of a tested design when used on two-point suspension scaffolds.
 - 5.4.4. All power operated gears and brakes shall be enclosed.
 - 5.4.5. In addition to normal operating brakes, all power-driven units must have an emergency brake, which engages automatically when the normal speed of descent is exceeded.

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- 5.4.6. When roof irons or hooks are used for the support of two-point suspension scaffolds, they shall be of wrought iron, mild steel or other equivalent material of size and design to support the imposed loads.
- 5.4.7. Guard rails and mid rails shall be installed as required in the General Requirements portion of this procedure. The hoisting machine and stirrup shall be considered equivalent to an end guard rail unless located more than 18 inches from the end of the platform.
- 5.4.8. Each worker shall have a lifeline, which shall extend to the ground, suspended from a substantial structural member other than the scaffold, or from suspension equipment that will safely support the worker's weight. Each worker shall wear fall protection tied to the lifeline by a lanyard, and to a fall prevention device that will limit the fall to no more than two feet.
- 5.4.9. Two-point suspension scaffolds shall be suspended by wire ropes.
- 5.4.10. All wire ropes, slings, hangers, platforms and other supporting parts shall be inspected before each installation. Periodic inspections shall be made while the scaffold is in use.
- 5.4.11. On suspension scaffolds designed for a working load of 500 pounds, no more than two employees shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three employees shall be permitted to work at one time.
- 5.4.12. All two-point suspension scaffold platforms shall be of a light metal type of tested design and manufacture, commonly referred to as "pencil boards".
- 5.5. Single-Point Adjustable Suspension Scaffold
 - 5.5.1. The scaffolding power units shall be of a tested design.
 - 5.5.2. All power-operated gears and brakes shall be enclosed.
 - 5.5.3. In addition to normal operating brakes, all power-driven units must have an emergency brake, which engages automatically when the normal speed of descent is exceeded.
 - 5.5.4. Guard rails, mid rails and toe boards shall be installed as required in the General Requirements portion of this procedure.
 - 5.5.5. Each worker will have a lifeline, which shall extend to the ground, suspended from a substantial structural member other than the scaffold, or from suspension equipment that will safely support the worker's weight. Each worker shall wear fall protection tied to the lifeline by a lanyard, and to a fall prevention device that will limit the fall to no more than two feet.
 - 5.5.6. The hoisting machines, wire ropes and other equipment shall be maintained and used in accordance with the manufacturer's instructions.
 - 5.5.7. The wire rope used for hoisting should be changed each 12 months under normal use, and earlier if there are signs of deterioration.

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5.6. Inspections

- 5.6.1. A competent person before each work shift shall inspect scaffolds and scaffold components for visible defects and after any occurrence which could affect a scaffold's structural integrity. Repairs shall be made before people are allowed to use the scaffold, and the scaffold tag shall be red.
- 5.6.2. A scaffold tag signed and dated by the competent person shall be affixed to the scaffold ladder. The tag shall indicate whether the scaffold is complete or incomplete. If incomplete, the tag tells why, (missing handrail, plank missing, etc.). Fall protection is required to be worn, with lanyards secured, by employees working from incomplete scaffolds. The tag must be annotated, "Fall Protection Required" when scaffold is incomplete. A scaffold sign saying "Fall Protection Required" **shall not be used** in lieu of a scaffold tag.
- 5.6.3. The scaffold tag shall be placed adjacent to the access ladder on the lowest or ground level. The color scheme of the scaffold tag system shall be green, yellow and red. Any additional information shall be noted on the tag.

Green	Scaffold is complete and available for use
Yellow	Scaffold is either not complete or problems exist that shall cause the user to use additional equipment and/or caution.
Red	Scaffold is not available for use

- 5.6.4. Each person using the scaffold shall visually check the scaffold tag and scaffold before accessing the scaffold.

5.7. Training

Competent persons shall be trained according to the OSHA standards and requirements. This training shall instruct the competent persons to be:

- Knowledgeable about structural integrity of scaffolds and the degree of maintenance needed to maintain them.
- Able to evaluate the effects of occurrences such as a dropped load, or a truck backing into a support leg.
- Knowledgeable about the requirements of the applicable OSHA standard and this policy.
- Knowledgeable in how to identify and correct hazards encountered in scaffold work.

5.8 All scaffold users shall be trained by a competent person in these:

- The hazards associated with the type of scaffold being used and the procedures to control or minimize those hazards
- The nature of any electrical hazards, fall hazards and falling object hazards
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection and falling object protection systems being used
- The proper use of the scaffold, and the proper handling of materials on the scaffold
- The maximum intended load and the load-carrying capacity of the scaffold being used

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5.9 People involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting a scaffold shall be trained by a competent person to recognize:

- Any hazards associated with scaffold work.
- The nature of scaffold hazards.
- The correct procedures for performing the above activities.
- The design criteria, maximum intended load-carrying capacity and intended use.

5.10 Retraining shall be undertaken whenever any of these occur:

5.10.1. The employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds.

5.10.2. Changes at the worksite present a hazard about which a person has not been previously trained.

5.10.3. Where changes in the type of scaffolds, fall protection, falling object protection, or other equipment present a hazard which a person has not been previously trained.

5.10.4. Where inadequacies in the affected person's work involving scaffolds indicate the worker has not retained requisite proficiency.

6.0 Reference

6.1 29 CFR 1926.450 Scaffolds.

7.0 Attachments

7.1 Attachment A: Scaffold Diagram

Signatures

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Attachment A

