ENVIRONMENTAL HEALTH & SAFETY
THE UNIVERSITY OF TEXAS AT TYLER

PROGRAM FOR SCAFFOLDING

2023

TABLE OF CONTENTS

Introduction:

The University of Texas at Tyler Environmental Health and Safety department has developed this Scaffold Safety Program to ensure a safe work environment and to protect the health and safety of University Staff and any contractors or vendors working on University property. This program was written with guidance from OSHA guidelines and the University of Texas System Construction Safety Program.

Purpose:

This program establishes written procedures to be followed when using or working on scaffolding of any type on UT Tyler property to prevent falls and overhead hazard injuries.

Application:

This program applies to work performed by any UT Tyler employee, student, or contractor performing work in existing buildings, new construction in existing buildings, or new construction attached to existing buildings. It is enforced by the Department of Environmental Health and Safety (EH&S).

Notice:

Employees and outside contractors shall not use scaffolding until the following requirements have been met:

- The scaffolding has been certified by a qualified engineer.
- The scaffolding must be tagged and inspected by EH&S/Competent Person
- Must be inspected every shift by an EHS/Competent Person

Scaffolding may not be used until every single requirement is met. If the following conditions cannot be met, the scaffolding will be restricted to employees and others by erecting barriers, installing red “Do Not Operate” tags, and/or posting warning signs until requirements have been met.

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.

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.

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

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, top rails, mid rails, 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, self-supporting 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 two-point 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 (Thrust out) 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 (thrust outs) 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 prime-mover 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.

Stone setters' multi-point adjustable suspension scaffold means a continuous run suspension scaffold designed and used for stone setters' 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.

Types of scaffolding:

1. Ladder Jack - a simple device consisting of a platform resting on brackets attached to a ladder. Ladder jacks are primarily used on lighter loads
    a. No greater than 20ft in height
    b. No job made ladders – must use approved ladders
2. Pump Jack - Platform supported by vertical poles and movable support brackets.
3. Tube and Coupler - Platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.
4. Pre-constructed Frame - Platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.
5. System Scaffolding - Scaffold types designed for a narrow and very specific range of applications.
    a. Specialized for abstract/custom shapes
6. Mobile - Unpowered, portable, caster- or wheel-mounted supported scaffold.
    a. This is the only scaffolding permitted on UT Tyler property that is not required to be certified by a qualified individual provided it passes inspection by a competent individual.
7. Suspended - Platforms suspended by ropes, or other non-rigid means, from an overhead structure
    a. Tiebacks used to secure counterweights must be straight, not angled.
    b. Connections must be direct, not spliced or split
    c. Counterweights must be secure and immovable
    d. Wire ropes must be solid-free of patches, splices or other signs of repair

Stability Requirements:

1. Supported scaffolds with a height to base ratio greater than 4:1 (including any outrigging) must be restrained from tipping with at least one of the following:
    a. Guys, ties, braces
    b. Restraint devices should be installed at horizontal supports for both inner and outer legs
    c. Should be located starting at the 4:1 ratio point and continuing every 20 feet for scaffolding less than three feet wide and every 26 feet for scaffolding greater than 3 feet wide
2. Footings must be level
    a. Footings must be supported by proper mudsills or baseplates
    b. Unstable objects must not be used as platforms or bases
    c. Forklifts are never to be used to support scaffolds

Platform Requirements:

1. Must be fully planked or decked between front uprights and guardrails
2. Each end of a platform, unless cleated or otherwise restrained, shall extend over the centerline of its support by at least six inches but no more than 12 inches unless cantilevered, or guardrails are in place to prevent workers from accessing the over-extension.
3. All platforms and walkways must be at least 18” wide

Capacity Requirements:

1. Scaffolding must support its own weight plus at least four times the maximum intended load
2. Scaffolding should never be loaded in excess of its maximum capacity.
3. Support devices used for scaffolding must be able to support four times the imposed load and must be secured by a direct connection, no splices or splits.

Access Requirements:

1. All platforms greater than two feet in height require a special means of access to include one of the following:
    a. Portable hook or attachable ladders
    b. Stairway type ladders
    c. Stair towers
    d. Ramps/walkways
    e. Integral prefabricated scaffold access frames
2. Cross braces must never be used for access
3. The bottom rung of any access ladder shall not be more than 24 inches in height
4. Ladders must be equipped with slip resistant rungs

5. Rest platforms are required every 35 feet
6. A maximum of 16 ¾ inches is allowed between rungs with a maximum rung length of 11 ½ inches
7. Portable hook ladders must be positioned so that they will not tip the scaffold

Fall Protection Requirements:

1. Workers operating on scaffolding with a platform work surface at or above six feet are required to have fall protection in one of the two following forms:
    a. Personal Fall Arrest Systems (PFAS):
        i. These include a body harness, a connecting device, and an anchor point
        ii. Anchor points must be rated for 5000 pounds per worker
        iii. Connecting devices (lanyards) must be force reducing (i.e. slow stop) and must not allow more than four feet of free fall
    b. Guardrails:
        i. Guardrails may be used in lieu of PFAS where scaffolding is no more than 8 inches from a solid, continuous structure.
        i. Guardrails must be 42 inches in height with a mid-rail at least 21 inches high.
    b. Where scaffold access is via portable hook or attachable ladders, stair towers, or integral prefabricated scaffold access frames, a PFAS must be used while accessing portions of the scaffolding above six feet

Inspection Requirements and Scaffolding Certification:

1. A Pre-Use Inspection must be completed by a "Competent Person" who inspects the 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.
    a. A competent person, by way of training, may perform shift safety inspections
        i. Shift safety inspections should include checks for the following:
            1. Missing or damaged planks
            2. Missing guardrails
            3. Missing toe boards
            4. Proper access
            5. Proper tie-offs
            6. Electric line clearance
            7. Overhead obstructions
            8. Ensuring that all platforms and footings are level and plumb
        ii. A green tag is attached to the scaffold for the shift if the safety inspection passes
        iii. A red "do not operate" tag is attached if any safety concerns are noted.

1. Red tagged scaffold should be roped off with red “Danger Do Not Enter” tape if it cannot be immediately removed or dismantled.

2. Scaffold Certifications (Qualified Person required for Scaffolding):
    a. A qualified individual, by way of a degree or certificate (i.e. registered professional engineer) must certify all scaffolding construction and design in the following circumstances:
        i. Suspension Scaffolds
        ii. For Design:
            1. To design scaffolds that are to be moved when employees are on them.
            2. To design pole scaffolds over 60 feet (18.3 meters) in height.
            3. To design tube and coupler scaffolds over 125 feet (38 meters) in height.
            4. To design fabricated frame scaffolds over 125 feet (38 meters) in height above their base plates.
            5. To design brackets on fabricated frame scaffolds used to support cantilevered loads in addition to workers.
            6. To design outrigger scaffolds and scaffold components.
        iii. Certified scaffolding must bear a certification tag upon inspection and approval by the qualified individual
    b. Prefabricated, mobile scaffolding units less than 6 feet in height are exempt from certification requirements but must still bear a shift inspection tag

Additional Safety Requirements

1. Brakes on rolling scaffolds shall be secure at all times except when the scaffold is being moved.
2. Any damage to scaffolding must be immediately and properly repaired or the scaffolding must be “red tagged” and removed from service.
3. No “lean to” or makeshift scaffolding is allowed on campus.
4. Mobile scaffolds must not be moved while workers are on the scaffold.
5. Work on scaffolds will not be allowed during snow, ice, rain, lightning, or high wind conditions
6. Debris and trash must not be allowed to accumulate on platforms.
    a. No items such as, but not limited to, boxes, buckets, barrels, step ladders, bricks, etc. are allowed to be used to increase the height of a worker.
    b. Modifications to scaffolding are not allowed unless included in the design and approved by the qualified individual.
    c. Mixed materials are not to be used on scaffolding.
    d. A minimum of ten feet of clearance is required between scaffolds and overhead utility lines.

e. Toe boards, barricades, canopies, or ties must be used to prevent object from falling from upper to lower levels of scaffolding.

Vertical Drop Zone:

1. Only employees essential to the operation are permitted in the vertical drop zone (VDZ).
2. Vertical drop zones must be tapped off or barricaded to control entry. Vertical drop zone should be set by using a 45-degree angle from the load, lifts, or working overhead. Ex. A load 15 feet in the air, must have an area of 15 feet in all directions tapped off.
3. No employee must be directly under the load, NO EXCEPTIONS!
4. An employee is essential to the operation if the employee is conducting one of the following operations and the employer can demonstrate it is infeasible for the employee to perform that operation from outside the fall zone:
    - Physically guide the load;
    - closely monitor and give instructions regarding the load's movement;
    - Either detach it from or initially attach it to another component or structure (such as, but not limited to, making an initial connection or installing bracing).
5. HARD HATS MUST BE WORN AT ALL TIME WHEN INSIDE THE VERTICAL DROP ZONE!

Record-Keeping

A scaffolding pre-use inspection will be completed, signed and dated by a designated member of the Environmental Health and Safety department. EH&S shall maintain the original permit on file for a minimum of three years. A copy of the scaffolding inspection will be forwarded to any department which required a permit.

Training

All employees who perform work on a scaffold shall be trained to recognize the hazards associated with the type of scaffold being used and the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:

- The nature of electrical hazards, fall hazards, and falling object hazards in the work area;
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection system and falling object protection system being used;
- The proper use of the scaffold;
- The proper handling of materials on the scaffold; and
- The maximum intended load and the load-carrying capacities of the scaffolds used.

Retraining is required in at least the following situations:

- Where changes at the worksite present a hazard about which an employee has not been previously trained; or
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or
- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

Annual Compliance Review

The Safety Organization will review the program annually to determine how the program can be improved. EH&S will strive to keep all programs up to date, with accurate information that employees, and outside contractors can rely on.

Revisions

Date	Author/Reviewer	Description/Reason for Change
6/8/2021	T Bay/ P Tate	Clarified statements regarding Inspections Requirements and Scaffolding Certifications. Removed hard hat requirement under Additional Safety Requirements.
6/14/2022	T Bay/ P Tate	Review and date.
7/7/2023	T Bay/ K Stapp	Update format, logo, and date.