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SECTION I
INTRODUCTION
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INTRODUCTION

Introduction

Scaffolding has a variety of applications. It is used in:

- ❑ *New Construction*
- ❑ *Alteration*
- ❑ *Routine Maintenance*
- ❑ *Renovation*
- ❑ *Painting*
- ❑ *Repairing*
- ❑ *Removal Activities*

Scaffolding offers a safer and more comfortable work arrangement compared to leaning over edges, stretching overhead, and working from ladders. Scaffolding provides employees safe access to:

- ❑ *Work Locations*
- ❑ *Level and Stable Working Platforms*
- ❑ *Temporary storage for tools and materials for performing immediate tasks.*

Scaffolding accidents mainly involve personnel falls and falling materials caused by:

- ❑ *Equipment Failure*
- ❑ *Incorrect Operating Procedures*
- ❑ *Environmental Conditions*
- ❑ *Scaffolding Overloading*

This safety policy and procedure provides guidelines for the safe use of scaffolds. It includes training provisions and guidelines for scaffold erection and use. Additionally, it lists the different types of scaffolds that may be used by Hilscher-Clarke Rental and details general safety requirements for all scaffolds.

This safety policy and procedures is established in accordance with OSHA Standards for General Industry (29 CFR 1910.28) and OSHA Standards for Construction Industry (29 CFR 1926.451).

NOTE: Any form of Scaffolding that is not covered in this policy and procedure will be erected, maintained, inspected, unassembled, ect... according to OSHA 1926, Subpart L.

Policy

Hilscher-Clarke works very hard to provide a work environment that is healthy, safe and free from hazards that are likely to cause death or serious physical harm to employees or the public. Therefore, scaffolds shall be erected, moved, dismantled, or altered *only under the direct supervision* of a Competent Person and will have guardrails and toeboards installed in accordance with OSHA Standard 29 CFR 1926.453 Subpart L.

When scaffolding hazards exist that cannot be eliminated, then:

- ❑ Engineering Practices;
- ❑ Administrative Practices;
- ❑ Safe Work Practices;
- ❑ Personal Protective Equipment (PPE); and
- ❑ Proper training regarding Scaffolds will be implemented.

These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

It is the responsibility of the President, Safety Manager, Supervisor and Employee to ensure the implementation of Hilscher-Clarke's safety policy and procedure on Scaffolds. It is also the responsibility of each Hilscher-Clarke employee to report immediately any unsafe act or condition to his or her immediate supervisor. Specific responsibilities are found in Section II of this policy and procedure.

Section II
Training Requirements
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Training Requirements
Specific Responsibilities
&
Specific Responsibilities

Specific Responsibilities

- **The President** shall be responsible for the following:
 - Review and update of Hilscher-Clarke's, Scaffolding Safety Program to conform to current CFR standards.
 - Ensuring compliance with this safety policy and procedure through the auditing process as described in Hilscher-Clarke's Disciplinary Program.
 - The President may delegate the responsibility of various aspects of the Scaffolding Safety Program to a Qualified Organization. However, the President's ultimate responsibility for his/her aspects of the program cannot be delegated.

- **The Safety Manager** shall be responsible for the following:
 - Ensuring that standard operating procedures, described in this supplement, are included in specifications and contract documentation for work to be performed by subcontractors.
 - Work with the Purchasing Department to ensure that all newly purchased scaffolds comply with this policy and procedure and current safety regulations.
 - Provide prompt assistance to Supervisors, Competent Persons or others on any matter concerning this policy.
 - Identifying the employees affected by this safety policy and procedure.
 - Obtaining and coordinating training, for the Affected Employees with the Supervisor, and enrolling employees as required in this program.
 - Ensuring that employees are provided with approved PPE as required in Hilscher-Clarke's Personal Protective Equipment Policy and Procedure and Hilscher-Clarke's Fall Protection Policy and Procedure
 - With the approval of the President, the Safety Manager may delegate the responsibility of various aspects of the Scaffolding Safety Program to a Qualified Organization. However, the Safety Manager's ultimate responsibility for his/her aspects of the program cannot be delegated.

- **Supervisory Personnel** shall be responsible for the following:
 - Supervisors will not allow any employee who has not received the required training to perform any of the tasks or activities related to scaffold erection and/or dismantling.
 - Ensuring that all employees wear and utilize PPE as assigned and trained.
 - Ensuring that a "Competent Person" is in charge of scaffold erection, dismantling, and altering work according to the manufacturer's specifications.
 - With the approval of the Safety Manager, the Supervisor may delegate the responsibility of various aspects of the Scaffolding Safety Program to another Qualified Person, Competent Person, or Qualified Organization (as approved by the Safety Manager). However, the Supervisor's ultimate responsibility for his/her aspects of the program cannot be delegated.

- **All Employees**, regardless of status, shall be responsible for the following:
 - Complying with all applicable guidelines contained in this safety policy and procedure.
 - Reporting immediately damaged scaffolds, accessories, and missing or lost components to the Supervisor and/or Competent Person.
 - Employees will assist with inspections as requested.

Specific Responsibilities (cont.)

- **The Competent Person** will have primary responsibility for supervising and directing all scaffolding erection, dismantling, and altering work. The Competent Person will...
 - Be able to identify and correct hazards encountered in all scaffold work.
 - Be trained in the structural integrity of the types of scaffolds used by Hilscher-Clarke and its sub-contractors.
 - **Have complete authority to promptly abate any hazardous worksite conditions.**

The Competent Person's duties can be shared as long as each person is qualified to perform the duty and has authority to promptly abate hazards. However, **only a Competent Person can...**

- Determine feasible safe access for persons erecting and dismantling scaffolds;
 - Inspect scaffolds and components for hazards before each work shift and after any event that could affect the scaffolds' structural integrity.
 - Supervise and direct all scaffold erection, dismantling, and altering work.
 - Determine the feasibility of providing fall protection for each scaffold erection and dismantling operation.
 - Determine whether it is safe to work on scaffolds during storms or high winds.
 - Determine whether scaffold components made by different manufacturers can be used together.
 - Identify the cause and significance of a deteriorated scaffold component and correct the hazard.
 - Inspect ropes used in suspension scaffolds and identify defects.
 - Determine if multi-point suspension scaffolds need to be secured to prevent swaying.
 - Inspect manila or synthetic rope used for top rails or mid rails to make sure it meets the 3200-pound capacity requirements.
- **The Qualified Person:**
 - Has a recognized degree, certificate, or professional standing – or by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems related to the subject, the work, or the project.
 - Scaffolds must be designed by a qualified person but not necessarily by an engineer. Exceptions:
 - Connections for mason's adjustable multi-point suspension scaffolds;
 - Pole scaffolds more than 60 feet high;
 - Coupler and fabricated-frame scaffolds more than 125 feet high; and
 - Outrigger scaffolds.Must be designed by a registered professional engineer.

Training

Hilscher-Clarke employees and subcontractors shall receive, at a minimum, training as outlined in Table 1:

Summary of Training Requirements For Scaffold Users		
	Those who work from scaffolds	Those Who Erect and Dismantle scaffolds
Critical Scaffold Issues	<ul style="list-style-type: none"> ▪ Falling objects ▪ Fall protection ▪ Material handling on scaffolds ▪ Scaffold load capacities 	<ul style="list-style-type: none"> ▪ Scaffold design criteria ▪ Scaffold erecting disassembling, moving, and maintenance procedures ▪ Scaffold erecting, disassembling and, moving hazards ▪ Scaffold load capacities
What they Need to know	<ul style="list-style-type: none"> ▪ How to use appropriate fall protection systems. ▪ How to control scaffold hazards. ▪ How to use scaffold walkways, platform components, and access areas. ▪ Maximum-intended and load-carrying capacities of scaffolds 	<ul style="list-style-type: none"> ▪ Hazards involved in erecting/dismantling. ▪ Erection/dismantling procedures. ▪ How to deal with electrical hazards. ▪ How to inspect components. ▪ Appropriate design criteria. ▪ Maximum-intended and load-carrying capacities of scaffolds.
Who can Train them	<ul style="list-style-type: none"> ▪ Any person who has training and experience in the critical scaffold issues (above) and who can teach the issues to scaffold users. ▪ Any "Qualified Person" as described in this policy and procedure. 	<ul style="list-style-type: none"> ▪ Any person who has training and experience in the critical scaffold issues (above), who can teach the issues to erectors/dismantlers, and who has authority to control scaffold hazards. ▪ Any "Competent Person" as described in this policy and procedure.
How often to train them	<ul style="list-style-type: none"> ▪ Before they begin a new job. ▪ Whenever changes at the worksite present new hazards. ▪ Whenever they fail to demonstrate skills related to any of the critical scaffold issues. 	<ul style="list-style-type: none"> ▪ Before they begin a new job. ▪ Whenever changes at the worksite present new hazards. ▪ Whenever they fail to demonstrate skills related to any of the critical scaffold issues.

This training shall be done upon initial job assignment. Refresher training shall be provided when job conditions change. Periodic refresher training shall be done at the discretion of the Safety Manager and/or Supervisor.

Training for the Competent Person will consist of:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ OSHA Regulations/General Safety ▪ Frame Scaffolding Components ▪ Frame Scaffolding Erection ▪ Rolling Tower Scaffold Erection ▪ Scaffold Planking | <ul style="list-style-type: none"> ▪ Tube & Clamp Scaffolding ▪ Systems Scaffolding ▪ Scaffold Inspections ▪ Electrical Hazards ▪ Material Handling Hazards |
|---|--|

Section III
Definitions
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Definitions

Definitions

Adjustable Suspension Scaffold – A suspension scaffold with a hoist (or hoists) operated by workers on the scaffold.

Bearer – A horizontal transverse scaffold member, upon which the scaffold platform rests, that joins scaffold uprights, posts, and poles.

Boatswain's Chair – A single-point adjustable suspension scaffold consisting of a seat or sling that supports one person in a sitting position.

Body Harness – Straps that can be secured about the worker to distribute fall-arrest forces over the thighs, pelvis, waist, chest, and shoulders.

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

Bricklayer's Square Scaffold – A supported scaffold made of framed squares that supports a platform.

Carpenter's Bracket Scaffold – A supported scaffold consisting of a platform supported by brackets attached to a building or structural walls.

Catenary Scaffold – A suspension scaffold consisting of a platform supported by two horizontal and parallel ropes attached to structural members of a building or other structure.

Chimney Hoist – A multi-point adjustable suspension scaffold that provides access for working inside chimneys. See “multi-point adjustable suspension scaffold.”

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

Competent Person – One who can identify hazardous working conditions and who has authorization to take prompt corrective measures to eliminate them.

Continuous-Run Scaffold (Run Scaffold) – A two-point or multi-point adjustable suspension scaffold made from braced scaffold members or supporting structures that form a continuous scaffold.

Coupler – A device that locks together the tubes of a tube-and-coupler scaffold.

Crawling Board (Chicken Ladder) – A supported scaffold consisting of a plank with cleats spaced and secured to provide footing.

Deceleration Device – Any mechanism that dissipates energy during a fall arrest or limits the energy imposed on a worker during fall arrest.

Double Pole (Independent Pole) Scaffold – A supported scaffold consisting of a platform resting on bearers supported by ledgers and a double row of uprights not supported (except with ties, guys, braces) by any other structure.

Equivalent – Alternative designs, materials, or methods that the employer can demonstrate will provide an equal or greater degree of safety for workers than the methods, materials, or designs specified in a standard.

Exposed Power Lines – Unshielded electrical power lines that could contact workers. Exposed power lines do not include extension cords or power tool cords.

Eye or Eye Splice – A loop with or without a thimble at the end of a wire rope.

Fabricated Decking and Planking – Manufactured platforms made of wood (including laminated wood and solid sawn-wood planks), metal, or other materials.

Fabricated Frame Scaffold (Tubular-Welded Frame Scaffold) – A scaffold consisting of a platform supported on fabricated end-frames with integral posts, horizontal bearers, and intermediate members.

Failure – Breakage or separation of component parts.

Float (Ship) Scaffold – A suspension scaffold consisting of a braced platform resting on two parallel bearers and hung from overhead supports by fixed-length ropes.

Form Scaffold – A supported scaffold consisting of a platform supported by brackets attached to formwork.

Definitions

Guardrail System – A vertical barrier consisting of top rails, midrails, and posts. Prevents workers from falling to lower levels.

Hoist – A manual or power-operated mechanical device that raises or lowers a suspended scaffold.

Horse Scaffold – A supported scaffold consisting of a platform supported by construction horses (sawhorses). Horse scaffolds made of metal are also called trestle scaffolds.

Independent Pole Scaffold – See “Double Pole Scaffold.”

Interior Hung Scaffold – A suspension scaffold consisting of a platform suspended from a ceiling or roof structure by fixed length supports.

Ladder Jack Scaffold – A supported scaffold consisting of a platform resting on brackets attached to ladders.

Ladder Stand – A mobile, fixed-size, self-supporting ladder consisting of a wide, flat tread ladder in the form of stairs.

Landing – A platform at the end of a flight of stairs.

Large Area Scaffold – A pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over an entire work area.

Lean-To Scaffold – A supported scaffold that is kept erect by tilting toward and resting against a building or structure.

Lifeline – A flexible line that connects to an anchorage at one end and hangs vertically (vertical lifeline), or that connects to anchorages at both ends and stretches horizontally (horizontal lifeline); it connects other components of a personal fall arrest system to the anchorage.

Lower Levels – Areas below the working level. Examples

Mason’s Adjustable Supported Scaffold – See “Self-Contained Adjustable Scaffold.”

Mason’s Multi-Point Adjustable Suspension Scaffold – A continuous-run suspension scaffold designed and used for masonry work.

Maximum Intended Load – The total load of all persons, equipment, tools, materials, transmitted loads, and other loads applied to a scaffold or scaffold component.

Mobile Scaffold – A portable caster or wheel-mounted supported scaffold.

Multi-Level Suspended Scaffold – A two-point or multi-point adjustable suspension scaffold with platforms at various levels that rest on common stirrups.

Multi-Point Adjustable Suspension Scaffold – A suspension scaffold consisting of a platform suspended by more than two ropes from overhead supports that can be raised and lowered to desired work levels. Includes chimney hoists.

Needle Beam Scaffold – A platform suspended from needle beams.

Open Sides & Ends – The edges of a platform that are more than 14 inches away from a sturdy, continuous, vertical surface (such as a building or a wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations, the horizontal distance is 18 inches.

Outrigger – The structural member of a supported scaffold that increases the scaffold’s base width, increasing support and stability.

Outrigger Beam (Thrustout) – The structural member of a suspension scaffold or outrigger scaffold that supports the scaffold by extending the attachment point out and away from a structure.

Outrigger Scaffold – A supported scaffold consisting of a platform resting on outrigger beams projecting beyond the wall or face of a structure; the inboard ends are secured inside the structure.

Overhand Bricklaying – Laying bricks and masonry units so that the surface of the wall to be jointed requires the mason to lean over the wall to complete the work.

Personal Fall Arrest System – An anchorage, connectors, and a body harness used to arrest a worker’s fall. May also include a lanyard, deceleration device, or lifeline.

Definitions

Platform – A work surface raised above lower levels. Platforms are made of individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

Pole Scaffold – See “Single-Pole Scaffold” and “Double (Independent) Pole Scaffold.”

Power-Operated Hoist – A hoist powered by other than human energy.

Pump Jack Scaffold – A supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

Qualified Person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems related to the subject, the work, or the project.

Rated Load – 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 – A supported scaffold consisting of a platform supported by brackets secured around the circumference or perimeter of a chimney, stack, tank, or other supporting structure.

Roof Bracket Scaffold – A rooftop-supported scaffold consisting of a platform resting on angular-shaped supports.

Runner (ledger or ribbon) – The lengthwise horizontal spacing or bracing member that supports the bearers.

Scaffold – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), that supports workers and materials.

Self-Contained Adjustable Scaffold – A combination supported and suspension scaffold consisting of an adjustable platform mounted on an independent supporting frame not a part of the object worked on. Examples: Rolling roof rigs, rolling outrigger systems, and some mason’s adjustable supported scaffolds.

Shore Scaffold – A supported scaffold placed against a structure and held in place with props.

Single-Point Adjustable Suspension Scaffold – A suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped to move the platform to desired work levels.

Single-Pole Scaffold – A supported scaffold consisting of a platform resting on bearers. The outside ends are supported on runners secured to a single row of posts or uprights and the inner ends are supported by a structure.

Stair Tower (Scaffold Stairway/Tower) – A tower that contains internal stairways and rest platforms. Used to provide access to scaffold platforms and other elevated points such as floors and roofs.

Stall Load – The load at which a power-operated hoist stalls or the power is automatically disconnected.

Step, Platform, and Trestle Ladder Scaffold – A platform resting directly on the rungs of stepladders or trestle ladders.

Stilts – A pair of poles or supports with raised footrests, used to walk above the ground or working surface.

Stonesetter’s Multi-Point Adjustable Suspension Scaffold – A continuous-run suspension scaffold designed and used for stonemason’s work.

Supported Scaffold – One or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Suspension Scaffold – One or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

System Scaffold – A scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals interconnected at predetermined levels.

Tank Builder’s Scaffold – A supported scaffold consisting of a platform resting on brackets directly attached to a cylindrical tank or attached to devices that are attached to a tank.

Definitions

Top-Plate Bracket Scaffold – A scaffold supported by brackets that hook over or are attached to the top of a wall. Similar to carpenter’s bracket scaffolds and form scaffolds and used in residential construction for setting trusses.

Tube and Coupler Scaffolds – 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) – A suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two

ropes from overhead supports and equipped to raise and lower the platform to desired work levels.

Unstable Objects – Objects that could become dislocated, shift, and not support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or workers. Examples: barrels, boxes, loose brick, and concrete blocks.

Vertical Pickup – A rope used to support the horizontal rope in catenary scaffolds.

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

Window Jack Scaffold – A platform resting on a bracket or jack that projects through a window opening.

Section IV
General Policies
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Procedures

1.0 General Requirements For All Scaffolds

- 1.1** The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying four times the maximum rated load without settling or displacement. Unstable or loose objects shall not be used to support scaffolds.
- 1.2** Scaffolds and their components shall be capable of supporting without failure no less than four times the maximum rated load.
- 1.3** Any scaffold including accessories, such as braces, brackets, trusses, screw legs, ladders, etc., damaged or weakened from any cause shall be immediately repaired or replaced.
- 1.4 Guardrails and Toeboards:**
 - 1.4.1** Scaffolds having one horizontal dimension of less than 45 inches, shall have standard guardrails installed on all open sides and ends of the platform when more than 4 feet above the ground or floor.
 - 1.4.2** Standard guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except on needle beam scaffolds and floats.
- 1.5** Where employees are required to work or pass under the scaffold, the scaffold shall be provided with a screen between the toeboard and guardrail, extending along the entire opening, consisting of No. 18 Gauge, U.S. Standard wire ½ inch mesh, or the equivalent.
- 1.6** Nails provided for the construction of scaffolds shall be no less than eight-penny common.
- 1.7** All planking shall be Scaffold Grade, or equivalent, as recognized by approved grading rules for the species of wood use.
- 1.8** All planking of platforms shall be overlapped a minimum of 12 inches or secured from movement.
- 1.9** An access ladder or equivalent safe access shall be provided for all scaffolds (see Hilscher-Clarke's Ladder Safety Policy and Procedure).
- 1.10** Scaffold planks shall extend over end supports no less than 6 inches and no more than 12 inches, unless, cleated to prevent movement; or employees are blocked from entering the cantilevered area.
- 1.11** The poles, legs, or uprights of scaffolds shall be plumb and securely and rigidly braced to prevent swaying and displacement.
- 1.12** Overhead protection shall be provided for employees on a scaffold exposed to hazards from overhead.
- 1.13** Reasonable care shall be taken to maintain all scaffold surfaces free of debris and slippery substances.
- 1.14** No welding, burning, riveting, or open flame work shall be performed on any scaffolding suspended by means of fiber or synthetic rope. Only fiber or synthetic ropes, properly treated or protected, shall be used for or near any work involving the use of corrosive substances or chemicals.
- 1.15** Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting no less than six times the maximum rated load.
- 1.16** The use of shore or lean-to scaffolds is prohibited.
- 1.17** When there is danger of material being hoisted striking against the scaffold, a tag line shall be provided.
- 1.18** The free ends of fall lines from scaffolds shall be guarded.

2.0 Wood Pole Scaffolds

- 2.1 **Scaffold poles** shall bear on a foundation of sufficient size and strength to spread the load from the pole over a sufficient area to prevent settlement. All poles shall be set plumb.
- 2.2 **Where poles are spliced**, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on no less than two adjacent sides and shall be no less than 4 feet in length, overlapping the abutted ends equally, and have the same width and no less than the cross-sectional area of the pole. Splice plates or other materials or equivalent strength may be used.
- 2.3 **Independent pole scaffolds** shall be set as near to the wall of the building as practicable.
- 2.4 All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height of length exceeds 25 feet, the scaffold shall be secured at intervals no greater than 25 feet vertically and horizontally.
- 2.5 **Putlogs or bearers** shall be set with the greater dimension vertical, long enough to project over the ledgers of the inner and outer rows of poles no less than 3 inches for proper support.
- 2.6 Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16" x 2" steel strip, or equivalent, secured to its lower edge throughout its entire length.
- 2.7 **Ledgers** shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely fastened to the side of the pole to form a support for the ledger.
- 2.8 **Diagonal bracing** shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, and from buckling.
- 2.9 **Cross bracing** shall be provided between the inner and outer sets of poles in independent pole and scaffolds. The free ends of pole scaffolds shall be cross-braced.
- 2.10 **Full diagonal face bracing** shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced only at the poles. The inner row of poles on medium and heavy-duty scaffolds shall be braced in a similar manner.
- 2.11 **Platform planks** shall be laid with their edges butted together so the platform shall be tight with no spaces through which tools or fragments of material can fall.
- 2.12 **Where planking is lapped**, each plank shall lap its end supports no less than 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgment of planks due to deflection, and the ends shall be secured to prevent their dislodgment.
- 2.13 When a scaffold materially changes its direction, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but no far enough to involve any danger from tipping. The planking running in the opposite direction at an angle shall be laid so as to extend over and rest on the first layer of planking.
- 2.14 When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks.
- 2.15 All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables 1 thru 6 (in this section). If they are over 60 feet in height, they shall be designed by a professional engineer competent in this field and shall be constructed and erected in accordance with such design.

2.0 Wood Pole Scaffolds (cont.)

Minimum nominal size & maximum spacing of members of **independent-pole-scaffolds** Light Duty

Description	Maximum Height of Scaffold	
	20 Feet	60 Feet
Uniformly distributed load	Not to exceed 25 p.s.f.	
Poles or uprights	2 x 4 in.	4 x 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Pole spacing (transverse)	6 ft. 0 in.	10 ft. 0 in.
Ledgers	1¼ x 4 in.	1¼ x 9 in.
Bearers to 3 ft. 0 in. span	2 x 4 in.	2 x 4 in.
Bearers to 10 ft. 0 in. span	2 x 6 in. or 3 x 4 in.	2 x 10 (rough) or 3 x 8 in.
Planking	1¼ x 9 in.	2 x 10 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 x 4 in.	1 x 4 in.
Tie-ins	1 x 4 in.	1 x 4 in.
Toeboards	4 in. high	4 in. high (minimum)
Guardrails	2 x 4 in.	2 x 4 in.

All members except planking shall be used on edge.

Table 5.

Minimum nominal size & maximum spacing of members of **independent pole scaffolds** Medium Duty

Uniformly distributed load.	Not to exceed 50 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole Spacing (longitudinal)	8 ft. 0 in.
Pole Spacing (transverse)	8 ft. 0 in.
Ledgers	2 x 10 in.
Vertical spacing of horizontal members.	6 ft. 0 in.
Spacing of bearers	8 ft. 0 in.
Bearers	2 x 10 in.
Bracing, Horizontal	1 x 6 in. or 1¼ x 4 in.
Bracing, Diagonal	1 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 10 in.
Toeboards	4 in. high (minimum)
Guardrail	2 x 4 in.

All members except planking shall be used on edge.

2.0 Wood Pole Scaffolds (cont.)

Minimum nominal size & maximum spacing of members of **independent pole scaffolds** **Heavy Duty**

Uniformly distributed load.	Not to exceed 75 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole Spacing (longitudinal)	6 ft. 0 in.
Pole Spacing (transverse)	8 ft. 0 in.
Ledgers	2 x 10 in.
Vertical spacing of horizontal members.	6 ft. 0 in.
Bearers	2 x 10 in. (rough)
Bracing, horizontal & diagonal	2 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 10 in.
Toeboards	4 in. high (minimum)
Guardrail	2 x 4 in.

All members except planking shall be used on edge.

Minimum nominal size & maximum spacing of members of **single-pole-scaffolds** **Light Duty**

Description	Maximum Height of Scaffold	
	20 Feet	60 Feet
Uniformly distributed load	Not to exceed 25 p.s.f.	
Poles or uprights	2 x 4 in.	4 x 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.	5 ft. 0 in.
Bearers or putlogs to 3 ft. 0 in. width	2 x 4 in.	2 x 4 in.
Bearers or putlogs to 5 ft. 0 in. width	2 x 6 in. or 3 x 4 in.	2 x 6 in. or 3 x 4 in. (rough)
Ledgers	1 x 4 in.	1¼ in. x 9 in.
Planking	1¼ in. x 9 in. (rough)	2 x 10 in.
Vertical spacing of horizontal members	7 ft. 0 in.	9 ft. 0 in.
Bracing, horizontal and diagonal	1 x 4 in.	1 x 4 in.
Tie-ins	1 x 4 in.	1 x 4 in.
Toeboards	4 in. high (minimum)	4 in. high (minimum)
Guardrails	2 x 4 in.	2 x 4 in.

All members except planking shall be used on edge.

2.0 Wood Pole Scaffolds (cont.)

Minimum nominal size & maximum spacing of members of **single-pole-scaffolds** Medium Duty

Uniformly distributed load.	Not to exceed 50 p.s.f.
Maximum height of scaffolds.	60 ft.
Poles or uprights	4 x 4 in.
Pole Spacing (longitudinal)	8 ft. 0 in.
Maximum width of scaffold.	5 ft. 0 in.
Bearers or Putlogs	2 x 10 in. or 3 x 4 in.
Spacing of bearers or putlogs.	8 ft. 0 in.
Ledgers	2 x 10 in.
Vertical spacing of horizontal members.	7 ft. 0 in.
Bracing, Horizontal	1 x 6 in. or 1¼ in. x 4 in.
Bracing, Diagonal	1 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 10 in.
Toeboards	4 in. high (minimum)
Guardrail	2 x 4 in.

All members except planking shall be used on edge.

Minimum nominal size & maximum spacing of members of **single-pole-scaffolds** Heavy Duty

Uniformly distributed load.	Not to exceed 75 p.s.f.
Maximum height of scaffolds.	60 ft.
Poles or uprights	4 x 6 in.
Pole Spacing (longitudinal)	6 ft. 0 in.
Maximum width of scaffold.	5 ft. 0 in.
Bearers or Putlogs	2 x 10 in. or 3 x 5 in.
Spacing of bearers or putlogs.	6 ft. 0 in.
Ledgers	2 x 10 in.
Vertical spacing of horizontal members.	6 ft. 6 in.
Bracing, Horizontal & Diagonal	2 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 10 in.
Toeboards	4 in. high (minimum)
Guardrail	2 x 4 in.

All members except planking shall be used on edge.

3.0 Tube and Coupler Scaffolds

- 3.1** The material used for couplers shall be of a structural type, such as dropforged steel, malleable iron, or structural grade aluminum.
- 3.2** A **light duty tube and coupler scaffold** shall have all posts, bearers, runners, and bracing of nominal 2 inch outside diameter (O.D.) steel tubing. The posts shall be spaced no more than 6 feet apart in width and 10 feet apart in length. Other structural metals when used must be designed to carry an equivalent load. No dissimilar metals shall be used together.
- 3.3** A **medium duty tube and coupler scaffold** shall consist of no less than nominal 2 inch O.D. steel tubing in all posts, runners, and bracing. Where the posts are spaced no farther apart than 5 feet by 8 feet, the bearers shall also be no less than nominal 2 inch O.D. steel tubing. Where the posts are spaced at greater distance apart than 5 feet by 8 feet, the bearers shall be of no less than nominal 2½ inch O.D. steel tubing but, in no event, may the posts of a medium duty tube and coupler scaffold be spaced farther apart than 5 feet by 8 feet. Other structural metals, when used, must be capable of carrying a load equivalent to the load supportable by the prescribed tube and coupler scaffold. No dissimilar metals shall be used together.
- 3.4** A **heavy duty tube and coupler scaffold** shall have all posts, runners, and bracing of nominal 2 inch O.D. steel tubing, with the posts spaced no more than 6 feet by 6 feet 6 in. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.
- 3.5** **Tube and coupler scaffolds shall be limited in heights and working levels** to those permitted in Tables 7 through 9 (see this section). Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables 7 through 9 shall be designed by a qualified engineer competent in this field.
- 3.6** **Posts** shall be accurately spaced, erected on suitable bases, and maintained plumb.
- 3.7** **Runners** shall be erected along the length of the scaffold, located on both the inside and the outside posts at even heights. Runners shall be interlocked to the inside and the outside posts at even heights. 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 no more than 6 feet 6 inches on centers.
- 3.8** **Bearers** shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.
- 3.8.1** Bearers shall be no less than 4 inches and no more than 12 inches longer than the post spacing or runner spacing.
- 3.9** **Cross bracing** shall be installed across the width of the scaffold no less than every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.
- 3.10** **Longitudinal diagonal bracing** on the inner and outer rows of poles shall be installed at approximately a 45-degree angle from near the base of the first outer post upward to the extreme top of the scaffold.
- 3.10.1** Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post.
- 3.10.2** In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

3.0 Tube and Coupler Scaffolds (cont.)

3.11 The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

Tube and Coupler Scaffolds Light Duty

Uniformly distributed load		Not to exceed 25 p.s.f.
Post spacing (longitudinal)		10 ft. 0 in.
Post spacing (transverse)		6 ft. 0 in.
Working Levels	Additional Planked Levels	Maximum Height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

Tube and Coupler Scaffolds Medium Duty

Uniformly distributed load		Not to exceed 50 p.s.f.
Post spacing (longitudinal)		8 ft. 0 in.
Post spacing (transverse)		6 ft. 0 in.
Working Levels	Additional Planked Levels	Maximum Height
1	6	125 ft.
2	0	78 ft. 0 in.

Tube and Coupler Scaffolds Heavy Duty

Uniformly distributed load		Not to exceed 75 p.s.f.
Post spacing (longitudinal)		6 ft. 6 in.
Post spacing (transverse)		6 ft. 0 in.
Working Levels	Additional Planked Levels	Maximum Height
1	6	125 ft.

4.0 Tubular Welded Frame Scaffolds

- 4.1 Scaffolds shall be properly braced by diagonal braces for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.
- 4.2 **Scaffold legs** shall be set on adjustable bases or plain bases placed on mud-sills or other foundations adequate to support four times the maximum rated load.
- 4.3 **The frames** shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs.
- 4.4 **Where uplift** may occur, panels shall be locked together vertically by pins or other equivalent suitable means.
- 4.5 **To prevent movement**, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.
- 4.6 **Maximum permissible spans or planking** shall be in conformity with section 1.7 of this policy and procedure.

5.0 Manually Propelled Mobile Scaffolds

- 5.1 When free-standing mobile scaffold towers are used, the height of the work platform shall be:
4 x minimum base.
- 5.2 **Casters** shall be properly designed for strength and dimensions to support four times the maximum rated load. All casters shall be provided with a locking device to hold the scaffold in position.
- 5.3 **Scaffolds** shall be properly braced by cross bracing and horizontal bracing conforming to section 4.1 of this policy and procedure.
- 5.4 Platforms shall be tightly planked for the full width of the scaffold except for necessary entrance opening.
 - 5.4.1 Platforms shall be secured in place.
- 5.5 **A ladder or stairway** shall be provided for proper access and exit and shall be affixed or built into the scaffold and so located that when in use it will not have a tendency to tip the scaffold.
 - 5.5.1 A landing platform must be provided at intervals not to exceed 35 feet.
- 5.6 Provisions shall be made to stabilize the tower during movement from one location to another.
 - 5.6.1 **Hilscher-Clarke does not allow** employees to ride on manually propelled scaffolds.

- 6.1** The **minimum rated work load** of a platform shall be no less than 250 pounds. The work platform and all structural components shall have a factor of safety of no less than four.
- 6.2** Any work platform when raised to its **maximum working height** shall be capable of sustaining without reaching instability, a horizontal force of 50 pounds applied to any point on the platform while the platform is carrying the working load.
- 6.3** The **base** shall not be used or placed on an inclined surface unless leveled by a device that is part of the unit.
- 6.4 Work platform elevating assemblies:**
- 6.4.1 Factors of safety of elevating assembly** – Where the platform is supporting its working load by a system of wire ropes or lift, chains, or both, the factor of safety of the rope or chain shall be no less than six.
- 6.4.2 All critical components** of a hydraulic or pneumatic system used in a work platform shall have a bursting strength that exceeds the pressure attained when the system is subjected to the equivalent of four times the maximum rated load. Critical components are those in which a failure would result in a free fall. All noncritical hydraulic components shall have a bursting factor of safety of no less than two.
- 6.5 Systems Protection:**
- 6.5.1** Where the elevation of the platform is accomplished by an electromechanical assembly, or a hydraulic or pneumatic cylinder assembly, the system shall be so equipped as to prevent free fall in the event of a power failure.
- 6.5.2** Where the elevation of the platform is accomplished by a hydraulic or pneumatic cylinder assembly, the system shall be so equipped as to prevent free fall in the event of a hydraulic or pneumatic line failure.
- 6.5.3** Where the elevation of the platform is accomplished by a single hoist cable, the system shall be protected by a broken-cable safety device.
- 6.5.4** Where the elevation of the platform is accomplished by manual-mechanical or manual-hydraulic assembly, the assembly shall be equipped to prevent free fall in case of failure.
- 6.6 Controls:**
- 6.6.1** Any powered work platform shall have both upper and lower control devices. Controls shall be plainly marked as to their function and guarded to prevent accidental operation. The upper control device shall be in or beside the platform, within easy reach of the operator. The lower control device shall have the capability to lower the platform where the operator's safety is in jeopardy.
- 6.6.2** All self-propelled platforms shall be equipped with a device that will not allow them to travel unless the platform is lowered to no more than two times the width of the wheel base.
- 6.6.3** Each elevated work platform shall be equipped with a clear visible instruction plate stating:
- Rated Capacity;
 - Maximum Platform Height; and
 - Special Warning or Restrictions Necessary for Safe Operations

6.6.4 Protection to Personnel:

- Pinch points and shear points shall be guarded with a barrier to prevent accidental or inadvertent entrapment of personnel while the work platform is being operated.
- All rotating shafts, gearing, and other moving parts shall be guarded.

7.0 Outrigger Scaffolds

- 7.1 Outrigger beams** shall extend no more than 6 feet beyond the face of the building. The inboard end of the outrigger beams, measured from the fulcrum point to anchorage point, shall be no less than 1½ times the outboard end in length. The beams shall rest on edge, the sides shall be plumb, and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing no less than 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.
- 7.2 The inboard ends of outrigger beams** shall be securely anchored either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary. The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.
- 7.3 Unless outrigger scaffolds are designed by a professional engineer**, competent in this field, they shall be constructed and erected in accordance with Table 10. Outrigger scaffolds, designed by a professional engineer, shall provide equivalent or greater safeguards than those required herein.
- 7.4 Planking** shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be secured to the beams.

Minimum nominal size & maximum spacing of members of outrigger scaffolds

Maximum Scaffold Load	Light Duty	Medium Duty
	25 p.s.f.	50 p.s.f.
Outrigger Size	2 x 10 in.	3 x 10 in.
Maximum Outrigger Spacing	10 ft. 0 in.	6 ft. 0 in.
Planking	2 x 10 in.	2 x 10 in.
Guardrail	2 x 4 in.	2 x 4 in.
Guardrail Uprights	2 x 4 in.	2 x 4 in.
Toeboards	4 in. (minimum)	4 in. (minimum)

8.0 Mason's Adjustable Multiple-Point Suspension Scaffolds

- 8.1 The scaffold shall be capable of sustaining a working load of 50 pounds per square foot and shall not be loaded in excess of that figure.
- 8.2 The scaffold shall be provided with hoisting machines that meet the requirements of Underwriters' Laboratories or Factory Mutual Engineering Corporation.
- 8.3 The platform shall be supported by wire ropes, capable of supporting no less than six times the intended load, suspended from overhead outrigger beams.
- 8.4 **The scaffold outrigger beams** shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.
- 8.5 **Where an outrigger beam does not project more than 6 feet 6 inches** beyond the bearing point, it shall be equivalent in strength to no less than a standard 7 inch, fifteen and three-tenths-pound steel I-beam no less than 15 feet long.
- 8.6 **Where the overhang exceeds 6 feet 6 inches**, outrigger beams shall be composed of stronger beams or multiple beams, providing proportionally greater strength than that required in section 8.5 of this policy and procedure.
- 8.7 **All outrigger beams shall be set and maintained** with their webs in a vertical position.
- 8.8 A stop bolt shall be placed at each end of every outrigger beam.
- 8.9 **The outrigger beam** shall rest on suitable wood bearing blocks.
- 8.10 The free end of the suspension wire ropes shall be equipped with proper size thimbles and secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and no less than four turns of wire rope shall at all times remain on the drum. **The use of fiber rope is prohibited.**
- 8.11 Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drum.
- 8.12 The scaffold platform shall be equivalent in strength to no less than 2 inch planking.
- 8.13 When employees are at work on the scaffold and a hazard exists from overhead, overhead protection shall be provided on the scaffold, no more than 9 feet above the platform, consisting of 2 inch planking, or material of equivalent strength, laid tight, and extending no less than the width of the scaffold.

9.0 Carpenter's Bracket Scaffolds

- 9.1** The brackets shall consist of a triangular wood frame no less than 2 inches by 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.
- 9.2** Each bracket shall be secured to the structure by a means that shall provide a factor of safety of no less than four.
- 9.3** The brackets shall be spaced no more than 8 feet apart.
- 9.4** The platform shall consist of no less than two 2 inch by 10 inch Scaffold Grade planks extending
- 9.5** No more than 12 inches, unless employees are blocked from entering the cantilevered portion, or less than 6 inches (unless secured against displacement) beyond each end support.

10.0 Foot Scaffolds

- 10.1** Foot scaffolds shall not exceed 18 inches in height, measured from the level upon which the supports are placed.
- 10.2** Foot scaffolds imposed on other scaffolds when supported on brick or tile shall be limited to 18 inches in height and have a bearing surface of no less than 96 square inches. Supports shall be no more than 7 feet center to center.

11.0 Chimney, Stack, or Tank Bracket Scaffolds

- 11.1 Minimum Width** –The minimum width of platform shall be no less than 18 inches.
- 11.2 Spacer Blocks** – Spacer blocks, large enough to hold the suspending cable away from the structure, shall be provided.
- 11.3 Ascending & Descending** – For ascending to and descending from a chimney, stack, or tank bracket scaffold, a scaling ladder or boatswain’s chair shall be provided.
- 11.4 Platforms on masonry chimneys or stacks** – Platforms supported on the rim of masonry chimneys or stacks are prohibited.
- 11.5 Inside Scaffolds** – In construction of chimneys or stacks where an inside scaffold is being used, the working platform shall be no less than 18 inches below the top of the wall.
- 11.6 Guardrails** – Chimney, stack, or tank bracket scaffolds shall be provided with standard guardrails, but no guardrail is required when safety belts with lifelines are provided.

12.0 Interior Hung Scaffolds

- 12.1** An interior hung scaffold shall be hung or suspended from a structure capable of providing a factor of safety of no less than four.
- 12.2** The suspending wire or fiber rope shall be capable of supporting no less than six times the maximum rated load.
- 12.3** The scaffold shall be designed to sustain a working load with a safety factor of no less than four.
- 12.4** For wood scaffolds, the following minimum Scaffold Grade material shall be used:
 - 12.4.1** Supporting bearers, 2 inches by 10 inches on edge;
 - 12.4.2** Planking, 2 inches by 10 inches, with maximum span of 7 feet for heavy duty and 10 feet for light duty or medium duty.
- 12.5** Steel tube and coupler members may be used for such type scaffolds.

13.0 Ladder Jack Scaffolds

- 13.1** All ladder jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.
- 13.2** All ladders used in connection with ladder jack scaffolds shall be heavy duty ladders. Cleated ladders shall not be used for this purpose.
- 13.3** The ladder jack shall be so designed and constructed that it will bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area shall be no less than 10 inches on each rung.
- 13.4** Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.
- 13.5** The platform shall be Scaffold Grade, 2 inch by 10 inch plank, or material of equal strength. Planks shall overlap the bearing surface no less than 6 inches or more than 12 inches. The span between supports shall not exceed 8 feet. Platform width shall be no less than 18 inches and provide a factor of safety of no less than four.

14.0 Form Scaffolds

14.1 General Requirements for all form scaffolds:

- 14.1.1** All form scaffolds and their components shall be capable of supporting without failure no less than four times the maximum rated load.
- 14.1.2** Maximum permissible spans shall not exceed 8 feet on centers for 2 inch by 10 inch Scaffold Grade planking. Scaffold planks shall be securely fastened to the ledgers or of such length that they overlap the ledgers no less than 6 inches. Unsupported projecting ends of scaffolding planks of all form scaffolds shall be limited to a maximum overhang of 12 inches.

14.2 Figure-four scaffolds:

- 14.2.1** Figure four form scaffolds are intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot.
- 14.2.2** Frames shall be spaced no more than 8 feet on centers. For minimum design criteria:

Minimum Design Criteria for **Figure-Four Form Scaffolds**

Members	Dimensions
Uprights	2 x 4 in. or 2 x 6 in.
Outrigger ledgers (two)	1 x 6 in.
Braces	1 x 6 in.
Guardrails	2 x 4 in.
Guardrail Height	Approximately 42 in.
Intermediate Guardrails	1 x 6 in.
Toeboards	4 in. (minimum)
Maximum Length of Ledgers	3 ft. 6 in. (unsupported)
Planking	2 x 10 in.
Upright Spacing	8 ft. 0 in. (on centers)

14.3 Metal bracket form scaffolds:

- 14.3.1** Metal brackets or scaffold jacks that are an integral part of the form shall be securely bolted or welded to the form. Folding type brackets shall be either bolted or secured with a locking type pin when extended for use.
- 14.3.2** “Clip-On” or “Hook-Over” brackets may be used, provided the form walers are bolted to the form or secured by snap ties or shea-bolt extending through the form and securely anchored.
- 14.3.3** Metal brackets shall be spaced no more than 8 feet on centers.
- 14.3.4** Scaffold planks shall be either bolted to the metal brackets or of such length that they overlap the brackets at each end by no less than 6 inches. Unsupported projecting ends of scaffold planks shall be limited to maximum overhang of 20 inches.
- 14.3.5** Metal bracket form scaffolds shall be equipped with standard guardrails and toeboards, meeting the minimum dimensions shown in Table 12.

Minimum Design Criteria for **Metal Bracket Form Scaffolds**

Members	Dimensions
Uprights	2 x 4 in.
Guardrails	2 x 4 in.
Guardrail Height	Approximately 42 in.
Intermediate Guardrails	1 x 6 in.
Toeboards	4 in. (minimum)
Planking	2 x 9 in.

14.4 Wooden bracket form scaffolds:

14.4.1 Wooden bracket form scaffolds shall be in integral part of the form panel. The minimum design criteria set forth herein and in Table 13 cover scaffolding intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot, unless specifically designed for heavier loading.

Minimum Design Criteria for **Wooden Bracket Form Scaffolds**

Members	Dimensions
Uprights	2 x 4 in. or 2 x 6in.
Support Ledgers	2 x 6 in.
Maximum Scaffold Width	3 ft. 6 in.
Braces	1 x 6 in.
Guardrails	2 x 4 in.
Guardrail Height	Approximately 42 in.
Intermediate Guardrails	1 x 6 in.
Toeboards	4 in. (minimum)
Upright Spacing	8 ft. 0 in. (on centers)

15.0 Safety Requirements For Scaffolds

- 15.1** The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- 15.2** No scaffold shall be erected, moved, dismantled, or altered except under the supervision of the Competent Persons.
- 15.3** Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet in height having a minimum horizontal dimension in either direction of less than 45 inches shall have standard guardrails installed on all open sides and ends of the platform.
- 15.4** Guardrails must be 2 x 4 inches, or the equivalent, not less than 36 inches or more than approximately 43 inches high, with a midrail, when required, of 1 x 4 inch lumber, or the equivalent. Supports must be at intervals not to exceed 8 feet. Toeboard and the guardrail shall extend along the entire opening.
- 15.5** Scaffolds and their components must be capable of supporting without failure at least 4 times the maximum intended load.
- 15.6** Any scaffold, including accessories such as braces, brackets, trusses, screw legs, ladders, couplers, etc., damaged or weakened from any cause must be repaired or replaced immediately, and shall not be used until repairs have been completed.
- 15.7** All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber.
- 15.8** All planking must be Scaffold Grades, or equivalent, as recognized by approved grading rules for the species of wood used. The maximum permissible span for 2 x 9 inch or wider planks as shown below:

	Full Thickness Undressed Lumber			Nominal Thickness Lumber	
Working load (p.s.f.)	25	50	75	25	50
Permissible Span (ft.)	10	8	6	8	6

- 15.9** The maximum permissible span for 1¼ x 9 inch or wider plank of full thickness shall be 4 feet with medium duty loading of 50 p.s.f.
- 15.10** All planking or platforms must be overlapped (minimum 12 inches) or secured from movement.
- 15.11** As access ladder or equivalent safe access must be provided.
- 15.12** Scaffold plank must extend over their end supports not less than 6 inches or more than 12 inches.
- 15.13** The poles, legs, or uprights of scaffolds must be plumb and securely and rigidly braced to prevent swaying and displacement.
- 15.14** Overhead protection must be provided for employees on scaffolds exposed to overhead hazards.

15.0 Safety Requirements For Scaffolds (cont.)

- 15.15** Slippery conditions on scaffolds shall be eliminated immediately after they occur.
- 15.16** No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals.
- 15.17** Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the intended load.
- 15.18** Scaffold shall not be used during high wind and storms.
- 15.19** Ladders and other devices shall not be used to increase working heights on scaffold platforms.
- 15.20** Loose materials, debris, and/or tools shall not be accumulated to cause a hazard.
- 15.21** Employees working on suspended scaffolds shall employ a fall-arrest system.
- 15.22** Scaffold components shall not be mixed or forced to fit which may reduce design strength.
- 15.23** Scaffolds and components shall be inspected at the erection location. Scaffolds shall be inspected before each work shift, after changing weather conditions, or after prolonged work interruptions.
- 15.24** Casters and wheel stems shall be pinned or otherwise secured in scaffold legs. Casters and wheels must be positively locked if in a stationary position.
- 15.25** Tube and coupler scaffolds shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

16.0 Fall Protection For Scaffolds

Workers on scaffolds more than 10 feet above a lower level must use fall protection. Hilscher-Clarke may provide fall protection in the form of guardrails, or personal fall arrest systems. The Table below outlines the minimum fall protection guidelines for Hilscher-Clarke operations.

Type of Scaffold	Fall Protection Required
<ul style="list-style-type: none"> ▪ Boatswain's Chair ▪ Catenary Scaffold ▪ Float Scaffold ▪ Needle Beam Scaffold ▪ Ladder Jack Scaffold 	Personal Fall Arrest System
<ul style="list-style-type: none"> ▪ Self-Contained Adjustable Scaffold when platform is supported by the frame structure. ▪ Walkways located within a scaffold. 	Guardrails
<ul style="list-style-type: none"> ▪ Single-Point Adjustable Suspension Scaffold ▪ Two-Point Adjustable Scaffold ▪ Self-Contained Adjustable Scaffold when platform is supported by ropes. 	Personal Fall Arrest System & Guardrails
<ul style="list-style-type: none"> ▪ Crawling Board (Chicken Ladder) 	Personal Fall Arrest System, Guardrails, or Grabline
<ul style="list-style-type: none"> ▪ Overhand bricklaying on a supported scaffold. ▪ All other types of scaffolds not identified in this table. 	Personal Fall Arrest System or Guardrails

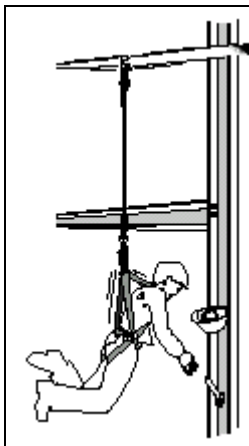
Personal Fall Arrest Systems for Erectors and Dismantlers – Workers who erect or dismantle supported scaffolds must, if feasible, use fall protection. A Competent Person, designated by the President and/or Safety Manager, must make the feasibility determination at each stage of the erecting and dismantling process.

When a lanyard is connected to a horizontal lifeline on a single-point or two-point adjustable suspension scaffold, the scaffold must have independent support lines and automatic locking devices that can stop the scaffold if the suspension ropes fail.

The following pages outline Hilscher-Clarke's basic PFAS guidelines and procedures.

17.0 Personal Fall Arrest System (PFAS)

A personal fall-arrest system (PFAS) consists of an anchor, connectors, and a body harness that work together to stop the user from falling and to minimize the arrest force. Other system components may include a lanyard, a deceleration device, and a lifeline. Due to the varying nature of PFAS equipment each employee must be educated as to the proper donning, storage and inspection of each system, and how the components work together to arrest a fall.



All fall protection devices and equipment shall meet ANSI A10.14 standards. Only the Vice President or his designated Competent Person shall be allowed to purchase or receive equipment through an authorized company vendor to insure compliance.

Personal Fall-Arrest System Components (PFAS)	
<p>The Anchor</p> <p><i>Qualified Person</i></p> <p><i>Safety Factor</i></p>	<p>An anchor provides a secure point of attachment for a lifeline, lanyard, or deceleration device and is perhaps the most important personal fall-arrest system component.</p> <ul style="list-style-type: none"> ▪ The Anchor must support a minimum load of 5,000 pounds – a challenging requirement, particularly on wood-framed and residential type structures. If you don't know how much weight an anchor will hold, a Qualified Person (as defined in this policy) must design a complete fall-protection system. The system must be installed under the supervision of the qualified person ▪ The designed fall protection system must maintain a safety factor of at least two – twice the impact force of a worker free-falling six feet. ▪ Never use hoists or guardrails as anchors. They are not built to withstand the forces generated by a fall.
<p>Connectors</p>	<p>The snap hook consists of a hook-shaped member and a keeper. It opens to receive a connecting component and when released, automatically closes. Snap hooks must also have a minimum breaking strength of 5,000 pounds.</p> <p>There are two types of snap hooks;</p> <ul style="list-style-type: none"> ▪ Locking which has a self-locking keeper that won't open until it's manually unlocked; ▪ Non-Locking which is strictly prohibited for use on any Hilscher-Clarke work site and by any Hilscher-Clarke employee regardless of status. ▪ Use only locking snap hooks as part of a personal fall-arrest system.
<p>Body Harness</p>	<p>The body harness consists of straps that distribute fall-arrest forces over the thighs, waist, chest, shoulders, and pelvis. A basic harness must include a back D-ring for attaching lifelines, lanyards, or retractable devices and a back pad for support. A body harness must exert an arresting force of no more than 1,800 pounds on a falling worker.</p> <p>Remember the following when using a body harness:</p> <ul style="list-style-type: none"> ▪ Body harnesses cannot be made from natural fibers; ▪ Body harnesses are available in different sizes. Make sure the harness fits properly. ▪ The attachment point of a body harness must be located in the center of the back, about shoulder level. ▪ Use only body harnesses approved for commercial work. Do not use recreational climbing harnesses.

Personal Fall-Arrest Systems (cont.)

Personal Fall-Arrest System (PFAS) Components	
<p>Lanyards</p>	<p>A lanyard is a specially designed rope, strap, or webbing that connects a body harness to an anchor, a deceleration device, or a lifeline. Lanyards must have a minimum breaking strength of 5,000 pounds; they come in a variety of designs including self-retracting types that make moving easier and shock-absorbing types that reduce fall-arrest forces.</p> <p>Remember the following when you use a lanyard:</p> <ul style="list-style-type: none"> ▪ Self-retracting lanyards that limit free-fall distance to two (2) feet or less must have components that will hold a minimum load of 3,000 pounds with the lanyard in the fully extended position. ▪ Self-retracting lanyards that do not limit free-fall distance to two (2) feet or less must have components that will hold a minimum load of 5,000 pounds with the lanyard in the fully extended position. ▪ When using self-retracting lanyards that do not limit free-fall distance to two feet or less, work near or directly below the anchor to avoid swing falls. ▪ Do not use rope lanyards made from natural fibers.
<p>Deceleration Devices</p> <p><i>Rope Grab</i></p>	<p>You can reduce fall-impact forces on an anchor (and the employee) by minimizing the fall distance and using a deceleration device such as a shock absorbing lanyard or self-retracting lifeline.</p> <p>A third type of deceleration device is the rope grab, a mechanism that allows you to move up and down a vertical lifeline. The rope grab automatically locks onto the lifeline if you fall.</p> <p>Always follow the manufacturer's specifications and directions for the proper inspection and use of deceleration devices.</p>
<p>Lifelines</p> <p><i>Vertical Lifelines</i></p> <p><i>Self-Retracting Lifelines</i></p> <p><i>Horizontal Lifelines</i></p>	<p>A lifeline is flexible cable or rope that connects to a body harness, lanyard, or deceleration device and at least one anchor. There are two (2) types of lifelines, vertical and horizontal.</p> <p>A vertical lifeline attaches directly to a body harness, lanyard, or deceleration device and to an anchor (and hangs vertically, hence the name).</p> <ul style="list-style-type: none"> ▪ Vertical lifelines must have a minimum breaking strength of 5,000 pounds. <p>The self-retracting lifeline is both a vertical lifeline and a deceleration device.</p> <ul style="list-style-type: none"> ▪ It consists of a drum-wound line that unwinds and retracts from the drum as a worker moves. If the worker falls, the drum automatically locks. ▪ Self-Retracting lifelines that automatically limit free-fall distance to two feet or less must have a minimum breaking strength of 3,000 pounds. ▪ Self-Retracting lifelines that do not limit free-fall distance to two feet or less must have a minimum breaking strength of 5,000 pounds. ▪ Protect all self-retracting lifelines against cuts or abrasions. ▪ Never use a self-retracting lifeline made from natural fiber; the fibers deteriorate. <p>If you need to move horizontally over an extended distance, the vertical lifeline can be hazardous because it creates the potential for a swing fall – a pendulum motion that results when you swing back under the anchor point.</p>

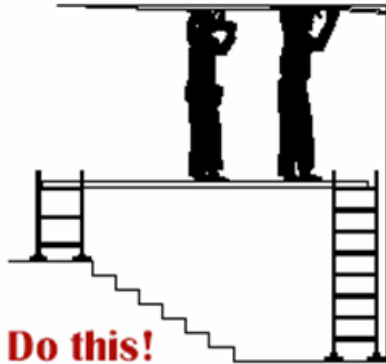
Personal Fall-Arrest Systems (cont.)

Personal Fall-Arrest System (PFAS) Components	
Lifelines (cont.) <i>Horizontal Lifelines</i>	<p>Unlike vertical lifelines, the horizontal lifeline stretches between two anchors. When you connect to the line with a body harness, lanyard, or deceleration device, you can move freely across a flat surface.</p> <p>Horizontal lifelines and their anchors are subject to much greater loads than vertical lifelines. However, if not anchored correctly, horizontal lifelines can fail at the anchor points. For these reason, horizontal lifelines must be designed, installed, and used under the supervision of a qualified person as part of a complete personal fall-arrest system that maintains a safety factor of at least two (2) – twice the potential impact force of a worker free-falling six (6) feet.</p> <ul style="list-style-type: none">▪ Horizontal lifelines must support at least 5,000 pounds per attached worker.▪ Protect all self-retracting lifelines against cuts or abrasions.▪ Never use a self-retracting lifeline made from natural fiber; the fibers deteriorate.
After a fall-arrest system stops a fall, it will be removed from service immediately, destroyed, and the pieces properly disposed of.	

Appendix

Appendix

Scaffold Platform Construction



Do this!

When you're working in enclosed or tight spaces, use appropriate scaffolding frames, platforms, and connecting components. Don't improvise for the sake of convenience. To make sure your scaffold is safe, have it checked by a Competent Person.



Not this!

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Platform Gaps — Platform units must be placed so that the spaces between the units do not exceed one inch — unless more space is necessary; for example, fitting around uprights with side brackets to extend platform width. The maximum opening cannot exceed 9½ inches.

Platform & Walkway Widths — Platforms and walkways must be at least 18 inches wide. If work areas are too narrow for 18-inch platforms or walkways, workers can use narrower platforms but they must be protected from fall hazards by guardrails and/or personal fall arrest systems. OSHA allows 12-inch widths for ladder jack, top-plate bracket, roof bracket, and pump-jack scaffolds.

Front Edge of Platforms — The front edge of a scaffold platform cannot be more than 14 inches from the face of a structure unless guardrails or personal fall arrest systems are used to protect workers from falling between the structure and the platform. There are two exceptions to this requirement: (1) the front edge distance for outrigger scaffolds must be no more than three inches, and (2) scaffolds used for plastering and lathing work can be no more than 18 inches from the face of a structure.

Platform Lengths — A platform 10 feet or less in length must extend at least 6 inches, but no more than 12 inches, beyond its support unless the excess length is guarded or can support workers and material without tipping. A platform longer than 10 feet can extend no more than 18 inches beyond a support unless the excess length is guarded or has been designed, and installed, so that the cantilevered portion is able to support workers and material without tipping.

Abutted Planks — When platform planks are abutted to create a long platform, each abutted end must rest on a separate support. Abutted planks touch end to end on separate support surfaces; they do not rest on one another.

Overlapped Planks — Platform planks overlapped to create a long platform must overlap at least 12 inches over supports unless the planks are nailed together or otherwise restrained so they do not move.

Direction Changes — Any platform that rests on a bearer at an angle other than a right angle must be laid first. Platforms that rest at right angles over the same bearer must rest on top of the first platform. Make sure that all platform planks are fully bearing to eliminate potential instability.

Paint (Opaque) Finishes — Wood platforms cannot be covered with opaque finishes, because opaque finishes cover defects in wood. Wood platform edges, however, may be marked for identification. Preservatives or slip-resistant and fire-retardant finishes are acceptable as long as the finish does not cover structural defects or make them hard to spot.

Mixed or Modified Components — Scaffold components made by different manufacturers cannot be mixed unless they fit together easily and do not change the scaffold's integrity. Components made by different manufacturers cannot be modified to intermix unless Competent Person approves.

Components Made From Different Metals — Scaffold components made from different metals cannot be used together unless a Competent Person approves. If a Competent Person determines that mixing components made from different metals could reduce their strength, the employer must take corrective action. If a Competent Person can't make the determination, then different metals must not be used.

Scaffold Status Color Tag I.D. Guidelines

All scaffolding will be divided into 3 categories. These categories will be identified through the use of a color coded tagging system. The accepted system is as follows:

- **Red Tag** indicates "Unsafe Do Not Use" - This status indicates that the scaffolding has not been approved for use by any employee. Only qualified personnel involved in the erection of the structure should have access to the scaffold. This tag stays on until the scaffold has been inspected, repaired or otherwise designated "Safe" by a Competent Person.
- **Yellow Tag** indicates "Warning Hazard Exists" - This status indicates that the scaffold may be passed as usable even though a hazard may exist that cannot be engineered out or overcome. In this case the hazard will be specifically listed and defined directly on the tag by the Competent Person. At any stage of the work, should the scaffold become unsafe, the Yellow tag will be removed and a Red Tag attached. Note: Removing the Yellow Tag automatically places the scaffolding in a "Prohibited" status and should not be used until the problem has been resolved, and the equipment re-inspected by a Competent Person and declared "Safe" for use.
- **Green Tag** indicates "Ready To Use" - Once the inspection or repair has been successfully carried out a Green tag will be attached to the scaffold. The green tag will clearly list the limitations for use, if further fall protection required. Even when indicated safe, the user of the scaffold will not exceed the listed limitations for use. All users will be instructed to check, before each use, that the scaffold has been inspected and is safe for use.
- All tags, regardless of color, will clearly and legibly list the date the scaffold was erected, who erected it, the Competent Person's name, signature and a phone number they can be reached at.
- All tags, regardless of color, will be attached to all legal access points to the scaffold.

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Competent Person—A person capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them.

Upon completion of the scaffold, the structure shall be inspected by a "Competent Person" to ensure that it has been constructed in accordance with all applicable regulations, codes of practice and manufacturers guidelines.

Using Scaffolds

- Before each shift/use, inspect the scaffold and plank for defects.
- Always inspect the scaffold to ensure all pins and clips are in place. Look for any damage or parts that need repair.
- Never load a scaffold to more than its maximum intended load or rated capacity.
- Never work on scaffolds during storms or high winds.
- Avoid letting debris accumulate on your scaffold.
- Remove elements such as ice, snow water, grease, mud, and other slippery materials from your scaffold.
- Always use fall protection when working on a scaffold platform.
- Never use the crossbraces to gain access to a scaffold.
- Stationary scaffolds over 125 feet in height and rolling scaffolds over 60 feet in height must be designed by a professional engineer.
- Remove all materials and tools from scaffolding at the end of the day/shift.
- Place screen or toe boards around the scaffold to keep objects from falling off.
- Never allow vehicles or materials to bump or strike scaffolds.

Platforms

- Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means.
- The front edge of the platform must not be more than 14 inches from the face of your work unless guardrails are erected along the front edge. Note that the maximum distance from the face of work for plastering and lathing is 18 inches. *Outrigger Platforms may only be 3 inches from the face of the work.*
- The ends of your platform, unless deated or somehow restrained, must extend over the center line of its support at least 6 inches except when each end of your platform is 10 feet or less in length, and then it must not extend over its support more than 12 inches. When each end of a platform is greater than 10 feet in length, it must not extend over its support more than 18 inches, unless it's designated to support workers and/or materials without tipping, or it has guardrails to block workers' access to the platform end.
- Never drill, cut or nail into planks or allow them to be damaged by welding sparks or by throwing them.
- Wood planks should be inspected to see that it is graded for scaffold use, is sound and in good condition, straight grained, free from saw cuts, splits and holes. (Not all species and grades of lumber can be used as scaffold plank. Wood planks used for scaffolding must be specifically graded for scaffold use by an approved grading agency.

General Scaffold Inspection Checklist

Date:		Location:			
Footings		Bracing		Planking/Picks	
Soft & Uneven		Façade & Ledger		Bad Boards	
No Base Plates		Some Missing		Trap Boards	
No Mud Sills		Loose		Incomplete Boarding	
Undermined		Wrong Fittings		Insufficient Supports	
Satisfactory		Satisfactory		Satisfactory	
Standards		Couplings		Guard Rails & Toe Boards	
Not Plumb		Wrong Fittings		Wrong Height	
Joined At Same Height		Loose		Some Missing	
Wrong Spacing		Damaged		Loose	
Damaged		No Check Couplers		Damaged	
Satisfactory		Satisfactory		Satisfactory	
Ledgers		Ties/Guys & Kickers		Ladders	
Not Level		Some Missing		Insufficient Length	
Joined In Same Bays		Loose		Not Tied	
Loose		Damaged		Damaged	
Damaged		Other		Other	
Satisfactory		Satisfactory		Satisfactory	
Comments:					
Inspected By:			Position:		
Signature:			Date Of Inspection:		