



SCAFFOLDS

Design, Build, Inspect and Use from a Stable Platform

POLICY STANDARD

Scaffolds shall be designed by a qualified person and erected, moved, altered and dismantled under the supervision of a competent person by trained employees. A competent person shall inspect each scaffold before every work shift and after any event that could affect its structural integrity.

PHEIFER BROTHERS CONSTRUCTION CO., INC.

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IMPORTANT DISTINCTION

Scaffolds are temporary elevated work platforms under OSHA Subpart L. Aerial lifts, boom lifts and scissor lifts are governed by the Aerial Work Policy. Shoring, formwork, falsework and temporary support systems are not automatically scaffolds and require their applicable engineered plans.

Primary Regulatory References

- 29 CFR 1926.450 - scope, definitions and application
- 29 CFR 1926.451 - general scaffold requirements
- 29 CFR 1926.452 - requirements for specific scaffold types
- 29 CFR 1926.454 - scaffold training requirements
- 29 CFR 1926 Subpart L Appendices A-E
- 29 CFR 1926.502 where personal fall-arrest systems are used
- Manufacturer instructions and applicable scaffold drawings/designs

1. Purpose, Scope, Definitions and Responsibilities

Purpose and Scope

- Prevent scaffold collapse, falls, falling-object incidents, electrocution, overloading and unsafe access during bridge, highway, marine, shop and yard work.
- Applies to supported, mobile, bracket, form, pump-jack, ladder-jack and suspended/hanging scaffolds used by employees or affecting their work. More protective project/manufacturer requirements govern.

Key Definitions

- Competent person: employee capable of identifying existing/predictable scaffold hazards and authorized to take prompt corrective action.
- Qualified person: person with recognized knowledge, training and experience who has demonstrated ability to solve scaffold design and technical problems.
- Maximum intended load: total reasonably anticipated people, tools, equipment, materials and transmitted loads applied at one time.
- Supported scaffold: platform supported by rigid legs, posts, frames, brackets or similar members. Suspension scaffold: platform suspended by ropes or other nonrigid means.
- Scaffold user: trained employee who works from a scaffold but is not authorized to erect, alter, move or dismantle it unless separately trained/assigned.

Management / Program Administrator

- Provide compliant components, qualified designs, competent persons, training, inspections, fall protection and resources. Control rented/subcontractor scaffolds and records.

Competent Person

- Direct erection/alteration/movement/dismantling; select and inspect components; determine access/fall-protection feasibility for erectors; inspect before each shift and after affecting events; tag/release or remove from service.

Qualified Person / Engineer

- Design scaffold and loading. Provide registered-professional-engineer design where the standard, height, special configuration or project requires it.

Foreman / Users

- Foreman verifies release, load/use and changing conditions. Users inspect their work area/PPE, follow access and load limits, and report changes; they shall not alter scaffold components.

2. Planning, Design, Capacity and Foundations

Pre-Planning

- Identify work, scaffold type, dimensions, elevation, users, materials, access, fall/falling-object exposure, support surface, ties, wind, utilities, traffic, water, rescue and adjacent operations.
- Use manufacturer instructions and scaffold drawings. Do not mix components from different manufacturers unless a competent person determines they fit without force and structural integrity is maintained; do not modify components without qualified approval.

Capacity

- Each scaffold and component shall support its own weight and at least four times the maximum intended load applied or transmitted, except suspension ropes and other specifically regulated components.
- Direct connections for suspension scaffolds shall support four times the imposed tipping moment at rated load or 1.5 times the tipping moment at stall load, whichever is greater. Suspension ropes shall support at least six times maximum intended load.
- Never exceed the rated capacity or maximum intended load. Include workers, tools, stored material, hoists, containment, ice/snow, wind and transferred loads.

Qualified Design

- A qualified person designs the scaffold and it is constructed/loaded according to that design. Scaffolds beyond OSHA type-specific height thresholds or nonstandard/complex systems require registered-professional-engineer design.
- Bridge brackets, hangers, anchorage, drilled/adhesive anchors, cantilevers, enclosures and unusual tie patterns require documented capacity/installation requirements.

Base and Foundation

- Set supported scaffolds plumb and level on base plates and mudsills or another adequate firm foundation. Do not use unstable objects, masonry units, scrap lumber stacks or loose material.
- Evaluate soil, backfill, slope, drainage, erosion, frost/ice, deck/falsework capacity and proximity to excavations. Protect against vehicles and equipment.

Ties, Guys and Braces

- When height exceeds four times the minimum base dimension, restrain against tipping with guys, ties or braces per 1926.451(c)(1) and manufacturer/design spacing.
- Secure braces, coupling/stacking pins and connections. Do not remove a tie or brace without competent-person direction and an alternate-control sequence.

3. Erection, Alteration, Dismantling and Inspection

Authorized Work

- Only employees trained by a competent person and assigned to the task may erect, move, alter, repair, maintain, inspect or dismantle scaffolds.
- Erection/dismantling shall follow manufacturer/design sequence. Maintain stability at every stage; install bracing, ties and platforms as construction progresses.

Component Inspection

- Before assembly, inspect frames, tubes, couplers, pins, braces, brackets, planks, decks, ladders, casters, hoists, ropes, anchorages, guardrails and fall-protection components.
- Reject cracked, bent, corroded, split, burned, chemically damaged, excessively worn, field-modified, incompatible or unidentified components. Do not straighten, weld or repair without qualified/manufacture authorization.

Competent-Person Release

- Inspect before each work shift and after storm, high wind, impact, vehicle contact, movement, alteration, tie/anchor change, load change, foundation settlement, freeze/thaw, prolonged shutdown or any event affecting integrity.
- Verify foundation, plumb/level/square, connections, ties/bracing, platforms, access, guardrails/toeboards, load, clearance, tags and site conditions.
- Use the company tag/status system: GREEN or documented release for approved use; YELLOW for defined restrictions; RED/DO NOT USE for incomplete, damaged or unsafe scaffold. A tag does not replace inspection.

During Assembly / Dismantling

- Barricade below, control dropped components, use hand lines/hoists and maintain communication. Never throw components.
- The competent person determines feasible/safe access and fall protection for erectors/dismantlers as required by Subpart L. Document alternative measures when conventional protection is infeasible or creates a greater hazard.

Stop Work

- Stop for missing/loose tie or brace, settlement, damaged plank/component, unauthorized alteration, incomplete platform/guardrail, overload, unsafe access, electrical conflict or weather affecting control.

4. Platforms, Planking, Guardrails and Falling Objects

Platforms and Planking

- Fully plank or deck each work level between front uprights and guardrail supports. Keep gaps no more than 1 inch except where a wider gap is necessary around uprights; then keep the opening as small as possible and within OSHA limits.
- Use scaffold-grade lumber or manufacturer platforms of correct span/capacity. Inspect for splits, saw cuts, rot, burns, deflection, contamination and damaged hooks/locks.
- Platform units generally extend at least 6 inches over support unless restrained; limit overhang to OSHA requirements to prevent tipping. Do not paint wood planks with opaque coatings that hide defects.

Platform Position

- Keep the front edge no more than 14 inches from the work face unless guardrails or personal fall protection protects the gap. Outrigger scaffolds generally use a 3-inch maximum; plastering/lathing may use 18 inches as allowed.
- Do not bridge separate scaffold towers with planks unless designed; differential movement can dislodge the platform.

Guardrails

- Install complete guardrail systems on open sides/ends before release when required. For current company scaffolds, top edge is 38-45 inches above platform, with midrail/screen/intermediate protection and smooth, secured members.
- Cross-bracing may serve as a toprail or midrail only when its crossing height meets OSHA criteria and the remainder of the system is complete. Do not climb or sit on guardrails.

Falling-Object Protection

- Provide toeboards, screens/panels, debris nets, canopies, barricades or equivalent protection based on the objects and exposure below.
- Keep materials away from edges and secure tools/materials against displacement. Toeboards shall meet scaffold criteria; stack material above them only with screening/paneling.
- Barricade below and prohibit entry where overhead protection is not fully effective. Hard hats do not replace falling-object controls.

Openings

- Cover or guard access openings, hoist areas and gaps. Use gates/chains or offset access that maintains protection without creating a trip or pinch hazard.

5. Access and Safe Use

Access

- Provide safe scaffold access whenever the platform is more than 2 feet above or below the point of access. Use attached/portable ladders, stair towers, ramps/walkways or integral prefabricated access designed for the scaffold.
- Do not use cross braces as access. Do not climb frames unless specifically designed as ladders, with required rung dimensions, spacing and access clearances.
- Position the first rung/step within 24 inches of the supporting level unless the applicable access system requires otherwise. Keep access clear and landing transitions protected.

Portable Ladders

- Do not place ladders on scaffold platforms to gain height except under the narrow conditions allowed by 1926.451(f)(15), with competent-person controls. Improvised boxes, buckets and stilts are prohibited unless specifically compliant.
- Secure access ladders and extend/protect the landing as required. Climb facing the ladder with three-point contact; hoist tools/materials separately.

Safe Work Practices

- Use only after competent-person release. Inspect the work level and tag before entry. Stay within guardrails; do not climb outside, stand on rails or overreach.
- Keep platform orderly, evenly distribute loads and prevent slips from mud, ice, oil, concrete, blast media, hoses and cords.
- Do not work on scaffolds covered with snow, ice or slippery material except to remove it under a controlled plan.

Loading and Hoisting

- Do not load beyond rating/design or concentrate material without approval. Do not attach hoists, chutes, tarps, enclosures or equipment unless the design includes resulting forces.
- Use controlled lifting zones and rated material hoists. Do not swing crane loads into or over occupied scaffolds; coordinate landing and scaffold capacity.

Prohibited Actions

- No unauthorized alteration, missing pins, makeshift planks, moving while occupied unless mobile-scaffold rules are met, riding suspended material hoists or using scaffold as crane/rigging anchorage unless designed.

6. Supported and Mobile Scaffolds

Supported Scaffold Setup

- Frames/posts shall be plumb, level, square, fully braced and joined with coupling/stacking pins or equivalent. Lock all brace and platform connections.
- Base plates, screw jacks and casters shall be within manufacturer adjustment limits. Forklifts, loaders, cranes or earthmoving equipment shall not support a scaffold unless specifically designed/approved for that use.

Ties and Stability

- Install ties/guys/braces at the 4:1 point and repeat per OSHA/manufacturer/design. For typical scaffolds, vertical spacing after the first tie is no more than 20 feet for scaffolds 3 feet wide or less and 26 feet for wider scaffolds; horizontal spacing does not exceed 30 feet.
- Additional ties are required at ends and where eccentric loads, hoists, wind screens, tarps or brackets create overturning forces.

Mobile Scaffolds

- Brace to remain plumb, level and square. Casters shall be compatible, secured to legs and locked before anyone climbs or works.
- Use on firm, level surfaces within manufacturer height/base and outrigger requirements. Keep holes, slopes, drop-offs, overhead obstructions and power lines out of the route.
- Do not move while occupied unless every condition of 1926.452(w) is met, including surface, height/base ratio, outriggers, power application and employee awareness. Company preference is to have employees descend before movement.
- Apply force near the base; do not pull from above, use a vehicle to tow or move from the platform unless the system is designed for powered movement.

Pump-Jack / Ladder-Jack / Specialty

- Use only manufacturer-compatible components and type-specific 1926.452 requirements. Respect height, span, occupancy, load and bracing limits.
- Ladder-jack scaffolds use heavy-duty ladders and are limited by OSHA requirements; they are not a substitute for a properly designed bridge scaffold.

Inspection During Use

- Recheck caster locks, base settlement, ties, planks and barricades throughout the shift and after movement or load changes.

7. Suspension and Hanging Scaffolds

Design and Support

- A qualified person designs the system. A competent person evaluates direct connections, roof/bridge supports, outrigger beams, counterweights, tiebacks, suspension ropes, hoists and platform before use.
- Support structures and connections shall carry imposed loads and tipping moments. Verify bridge concrete/steel condition, anchor installation and edge protection; obtain engineering where capacity is uncertain.

Outriggers, Counterweights and Tiebacks

- Secure outrigger beams against movement and install perpendicular to the support face unless an alternate qualified design applies. Use stop bolts/cleats and bearing supports.
- Use manufacturer-approved, nonflowable counterweights secured to beams. Sand, gravel, masonry units, water or construction materials are prohibited as counterweights.
- Tie back suspension supports with rope of strength equivalent to suspension rope to a sound anchorage independent of the support. Do not tie to vents, piping, guardrails or uncertain members.

Ropes and Hoists

- Inspect wire/synthetic suspension ropes and hoists before each shift. Protect at edges and from heat, chemicals, abrasion, welding current and damage.
- Use compatible hoists with automatic brakes/secondary devices as required. Do not exceed winding, reeving, wire-rope or manufacturer limits. Retain required wraps at drums.

Fall Protection

- Employees on single- or two-point adjustable suspension scaffolds generally require both a guardrail system and personal fall-arrest system. Lifelines shall be independent of scaffold support/suspension lines and attached to approved anchorage.
- Provide separate lifeline/grab for each employee unless the applicable standard/design permits another system. Protect lifelines from edges and maintain rescue capability.

Operation

- Complete pre-use function/test lift close to the landing. Keep platform level, synchronize hoists, control sway and maintain clearance. Never bridge from the platform to another surface unless the system is designed for it.
- Stop for jammed hoist, rope damage, uneven platform, failed secondary device, wind, snagging, lost power/communication or contact with structure.

8. Personal Fall Protection and Rescue

Fall-Protection Threshold

- Each employee on a scaffold more than 10 feet above a lower level shall be protected from falling as required by 1926.451(g). The permitted system depends on scaffold type.
- Supported scaffolds generally use complete guardrails. Personal fall arrest may be required where guardrails are incomplete, for certain scaffold types or during erection/dismantling when feasible and safe.

System Selection

- A qualified/competent person selects guardrail, PFAS or combined protection based on scaffold type and task. Body belts are not permitted for fall arrest.
- PFAS anchorage shall be independent, compatible and capable under the Fall Protection Policy. Never attach to scaffold members unless specifically designed/approved as fall-arrest anchorage.

Clearance and Edges

- Calculate free-fall, deceleration, harness stretch, connector length, worker height, swing fall and lower obstructions. Use self-retracting devices or restraint when clearance is limited.
- Protect lanyards/lifelines from sharp bridge steel, concrete, welding/cutting, traffic and moving scaffold components.

Erectors and Dismantlers

- The competent person determines whether fall protection is feasible and does not create a greater hazard for each stage. Use available manufacturer anchor points, advanced guardrails and planned sequences.
- The decision shall be task- and condition-specific; cost, schedule or convenience is not a reason to omit feasible protection.

Rescue

- Before PFAS use, establish prompt rescue appropriate to location: self-rescue, ladder/aerial access, pre-rigged lowering/raising system or trained rescue service.
- Do not rely solely on 911 where prompt suspension rescue cannot be assured. Identify exact access, communication and equipment; prevent unplanned entry over water, traffic, rail, energized lines or confined spaces.

After a Fall

- Call emergency services, perform planned rescue, obtain medical evaluation and remove involved scaffold/PFAS from service pending competent/qualified inspection.

9. Electrical, Weather, Traffic, Water and Public Protection

Electrical Hazards

- Identify overhead/adjacent energized conductors before scaffold placement or movement. Maintain 1926.451(f)(6) clearances and follow the Electrical Safety Policy; obtain utility de-energization/guarding where required.
- Treat metal scaffolds, suspension ropes, tools and materials as conductive. Do not rely on a spotter to justify encroachment.

Weather

- A competent person determines when wind, lightning, ice, snow, heavy rain, flooding or poor visibility makes use unsafe. Employees shall not work during storms/high winds unless protected by PFAS or wind screens and the competent person determines it safe.
- Wind screens, tarps and containments substantially increase loads; install only when the scaffold is designed and tied for those forces.

Live Traffic and Equipment

- Separate scaffold legs, access and users from traffic using closures, positive protection, barriers or approved work-zone controls. Do not place scaffold where vehicle impact can collapse it without protection.
- Maintain equipment swing/load clearance. Coordinate backing and material delivery; never use cones alone where credible impact requires stronger protection.

Working Over/Near Water

- Apply drowning protection, lifesaving equipment and rescue requirements. Account for currents, vessel movement, debris, changing elevation and access from water.
- Do not connect fall arrest in a way that creates an unaddressed drowning/entrapment hazard. Coordinate fall and water rescue plans.

Public and Employees Below

- Use barricades, overhead protection, debris containment, tool tethering and controlled access. Maintain safe public walkways and emergency egress.
- Containments for blasting/coating require engineering for wind/debris load and coordination with respiratory, lead, abrasive blasting and fire programs.

10. Bridge-Specific and Special Scaffold Applications

Bridge Bracket / Form Scaffolds

- Use engineered bracket spacing, anchors, bolts/inserts, welds, walers, decking, ties and loading. Verify concrete strength and installation before loading.
- Adhesive anchors used for scaffold support require approved design, hole preparation, installer qualification, curing and inspection; overhead sustained-tension applications demand specific qualified approval.

Hanging / Under-Bridge Scaffolds

- Provide engineered hangers, cables/chains, beams, clamps, connections, lateral restraint, access and retrieval. Protect against loosening from vibration, traffic and erection operations.
- Inspect hidden/underside connections and ensure redundancy where required. Do not suspend from bridge components of unknown condition/capacity.

Containment Scaffolds

- Design for tarps, shrink wrap, dust collectors, blast hose, ventilation duct, debris and environmental loads. Establish load-removal procedures before storms.
- Maintain fire prevention, ventilation, illumination, emergency exits and rescue access inside containment.

Scaffolds Near Demolition

- Engineering survey and demolition sequence shall protect scaffold anchorage/support from removed or weakened structure. Control falling debris and dynamic loading.
- Do not attach to a member scheduled for removal or rely on the scaffold to stabilize demolition unless engineered.

Access from Barges / Cofferdams

- Account for relative movement and do not improvise planks between moving and fixed surfaces. Use designed gangways/access and maintain guardrails.
- Coordinate scaffold foundation/support with cofferdam bracing, excavation competent person and marine operations.

Special Types

- Pole, tube-and-coupler, system, pump-jack, ladder-jack, needle-beam, float and other scaffolds shall meet their specific 1926.452 requirements and manufacturer/design instructions.

11. Training, Emergency Actions, Records and Review

Scaffold User Training

- Before use, a qualified person trains employees to recognize electrical, fall and falling-object hazards; use fall protection; handle materials; understand load/capacity and the specific scaffold's correct use.
- Employees who erect, alter, move, repair, maintain, inspect or dismantle receive competent-person training on scaffold hazards, design criteria, load and procedures.

Retraining

- Retrain when site changes create new hazards, scaffold/PFAS types change, employee performance shows inadequate proficiency or prior training is no longer adequate.
- Toolbox talks supplement but do not replace required scaffold training.

Emergency Actions

- For movement, settlement, partial collapse, dropped object, electrical contact, fall-arrest event or failed suspension system: stop work, warn/barricade, call 911 as needed and use the site rescue plan.
- Do not enter under an unstable scaffold or improvise rescue. Control energy and obtain qualified stabilization/recovery.

Incident / Defect

- Red-tag and isolate affected scaffold. Preserve components, tags, drawings, inspection, weather/load information and photos. Resume only after competent/qualified evaluation, correction and release.

Records

- Maintain designs/engineering, manufacturer data, competent-person designations, inspection/release records, user/erector training, PFAS/rescue plan, repairs, incidents and corrective actions.
- Document rented/subcontractor scaffold ownership, inspection and control responsibilities. Pheifer Brothers verifies hazards affecting its employees.

Program Review / Enforcement

- Review at least annually and after incident, regulatory change or new system. Printed copies are uncontrolled unless formally issued.
- Unauthorized alteration, use of red-tagged/incomplete scaffold, overloading, climbing braces, bypassing access/fall protection or working after stop conditions is subject to corrective action.

12. Field Scaffold Inspection Checklist

VERIFY	EXPECTATION
Status / people	Competent person identified; scaffold inspected/released this shift; users trained
Design / load	Type, drawing, capacity, users/materials and special loads match actual work
Foundation	Surface sound; base plates/mudsills/jacks/casters stable, level and protected
Structure	Frames/posts plumb; braces, pins, ties, guys, anchors and connections complete
Platforms	Correct planks/decks, span, overlap/overhang, gaps, restraint and condition
Access	Safe ladder/stair/ramp; first step and landing acceptable; no brace climbing
Fall protection	Guardrails/gates and required PFAS/anchorage/clearance/rescue complete
Falling objects	Toeboards/screens/net/canopy, tool/material control and barricade adequate
Clearances	Power, traffic, crane/equipment, public, excavation, water and rail controlled
Environment	Wind, lightning, ice, water, containment and lighting acceptable
Suspended system	Supports, counterweights, tiebacks, ropes, hoists, lifelines and test checked
Changes	No unauthorized alteration; post-event/load/shift inspection completed

PROJECT / LOCATION:	DATE / SHIFT:
SCAFFOLD ID / TYPE:	COMPETENT PERSON:
DESIGN / CAPACITY / STATUS:	WEATHER / SPECIAL LOADS:
DEFECTS / RESTRICTIONS:	CORRECTIVE ACTION:
RELEASED FOR USE BY:	TIME / FOLLOW-UP:

13. Test Your Knowledge

Circle the best answer. Review missed questions with your foreman.

1. Who inspects a scaffold before each work shift? A. Any employee B. A competent person C. The delivery driver	2. What should happen to a red-tagged scaffold? A. Do not use it B. Use it for short tasks C. Add more workers
3. When is scaffold fall protection generally required? A. At 4 feet B. At 6 feet C. More than 10 feet above a lower level	4. May cross braces be used for access? A. If dry B. No C. Only with gloves
5. What is the normal scaffold component capacity factor? A. Own weight plus at least four times maximum intended load B. Twice one worker's weight C. The load used yesterday	6. What is required after a storm affects the scaffold? A. A user glance B. Continue if the tag is green C. Competent-person reinspection before use
7. What is normally required on a two-point suspension scaffold? A. Guardrail only B. Guardrail and personal fall-arrest system C. Hard hat only	8. What may be used as suspension-scaffold counterweight? A. Approved, secured, nonflowable counterweights B. Sandbags C. Concrete blocks from the job
9. Who may alter scaffold ties or platforms? A. Any scaffold user B. Anyone with a wrench C. Trained employees under competent-person supervision	10. What should happen after loss of stability or electrical clearance? A. Finish the task B. Stop work and isolate the scaffold C. Move faster

EMPLOYEE: _____

DATE: _____

ANSWER KEY: 1-B | 2-A | 3-C | 4-B | 5-A | 6-C | 7-B | 8-A | 9-C | 10-B