

scaffold support devices such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting the reaction forces imposed by the scaffold hoist operating at its maximum rated load.

(23) *Evaluating decks to support intended loads.* When an employer chooses to use outrigger beams in conjunction with a suspended scaffold, a qualified person shall evaluate the direct connections to roof and floor decks before suspension scaffold outrigger beams are used, in order to ensure that such decks are capable of supporting the loads to be imposed.

(24) *Inboard ends of outrigger beams.* The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights.

(i) Direct connections shall be evaluated before use by a qualified person who shall affirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed.

(ii) Counterweights shall be made of non-flowable solid material.

(iii) Counterweights shall be secured by mechanical means to the outrigger beams.

(iv) Counterweights shall not be removed from a scaffold until the scaffold is disassembled.

(v) Outrigger beams shall be secured by tiebacks equivalent in strength to the suspension ropes.

(vi) Tiebacks shall be secured to a structurally sound portion of the building or structure.

(vii) Tiebacks shall be installed parallel to the centerline of the beam.

(25) *Outrigger beams.* Scaffold outrigger beams:

(i) Shall be provided with stop bolts or shackles at both ends;

(ii) Shall be securely fastened together, with the flanges turned out when channel iron beams are used in place of I-beams;

(iii) Shall be installed with all bearing supports perpendicular to the beam centerline;

(iv) Shall be set and maintained with the web in a vertical position;

(v) Where a single outrigger beam is used, shall have the steel shackles or clevises with which the wire ropes are attached to the outrigger beam placed directly over the hoisting machine;

(vi) Shall be made of structural metal or equivalent material; and,

(vii) Shall be restrained to prevent movement.

(26) *Suspension scaffold support devices.* Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps or similar devices shall be:

(i) Made of mild steel, wrought iron, or materials of equivalent strength;

(ii) Supported by bearing blocks; and

(iii) Secured against movement by tiebacks installed at right angles to the face of the structure whenever possible, and secured to a structurally sound portion of the structure. Vents, standpipes, other piping systems, and electrical conduit shall not be used as points of tie-off for tiebacks. Tiebacks shall be equivalent in strength to the hoisting rope.

(27) *Fall protection for suspension scaffolds.* Employees working on single-point suspension scaffolds and two-point suspension scaffolds shall be protected from falls in the following manner:

(i) All open sides and ends of the scaffolds shall be protected by barriers that meet the following:

(a) At least 36 inches (91 cm) in height;

(b) The top member of barrier shall withstand at least a 100 pound (444 N) force in any downward or outward direction;

(c) The midrails shall withstand at least a 75 pound (333 N) force in any downward or outward direction; and

(d) A standard toeboard meeting the requirements of § 1910.28 is also required when employees below are exposed to hazards from tools, equipment or other objects falling from the scaffold edges;

(ii) Employees on single level scaffolds (one working level) or the top surface of multilevel scaffolds shall be protected by a personal fall protection system meeting the requirements of subpart I, which is attached to either:

(a) a structure (anchorage point) not to the scaffold or the scaffold suspension means; or:

(b) A supplementary platform support line, or a scaffold member which can withstand an impact force of 5,000 pounds (22.2 kN) if supplementary platform support lines are used in conjunction with automatic safety locking devices capable of stopping the fall of the scaffold in the event any of the main suspension lines fail.

(iii) Multilevel platforms and scaffolds with overhead protection shall be provided with supplementary platform support lines and automatic safety locking devices capable of stopping the fall of the loaded platform in the event any of the main suspension lines fail. Employees shall be provided with a personal fall protection system meeting the requirements of subpart I of this part. Employees working below an obstruction shall be attached to a scaffold member capable of withstanding an impact force of 5,000 pounds (22.2 kN) or greater.

(d) *Two-point adjustable suspension scaffolds (swing stages).* (1) *Platform unit width.* Platform units shall be no more than 36 inches (91 cm) wide, unless designed by a qualified person to be stable under the conditions of use.

(2) *Platform units.* Platform units shall be securely fastened to hangers (stirrups) by U-bolts or by other equivalent means. Light-metal type platforms shall be tested and listed by a nationally recognized testing laboratory.

(3) *Securing scaffolds.* Two-point adjustable suspension scaffolds shall be secured to prevent them from swaying. Window cleaners' anchorages shall not be used for this purpose.

(4) *Bridging scaffolds.* Scaffolds designed for use as two-point suspension scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations. Two-point suspension scaffolds designed for use in multi-point suspension systems may be bridged one to another if the bridge connections are articulated and the hoists properly sized.

(5) *Passage between scaffolds.* Passage may be made from one platform unit to another

only when the platform units are at the same height, are abutted, and have walk-through stirrups specifically designed for this purpose.

(e) *Single-point adjustable suspension scaffolds.* (1) *Testing and listing.* Single-point adjustable suspension scaffolds including hoists, shall be of a type that is tested and listed by a nationally recognized testing laboratory.

(2) *Combining single-point adjustable suspension scaffolds.* When two single-point adjustable suspension scaffolds are combined to form a two-point suspension scaffolds, the resulting scaffold shall meet the requirements for two-point adjustable suspension scaffolds.

(f) *Mobile manually propelled scaffolds.* (1) *Guarding against falls.* Employees on mobile scaffolds more than 10 feet (3 m) above lower levels shall be protected from falling to lower levels along all open sides and ends of the platform unit by a fall protection system meeting the requirements of § 1910.28.

(2) *Casters and wheels.* Caster stems and wheel stems shall be secured to prevent them from accidentally falling out of their mountings.

(3) *Supporting surfaces.* Mobile scaffolds shall only be used on surfaces that are rigid and capable of supporting the scaffold in a loaded condition. Unstable objects, such as barrels, boxes, loose bricks, or concrete blocks shall not be used to support the scaffolds.

(4) *Leveling.* Screw jacks or equivalent means shall be used when leveling of the scaffold is necessary.

(5) *Securing mobile scaffolds.* Mobile scaffolds being used in a stationary manner shall be secured against unintentional movement.

(6) *Moving mobile scaffolds.* The force used to move a mobile scaffold shall be applied as close to the base as practicable, but no more than five feet (1.5 m) above the supporting surface, and provisions shall be made to stabilize the scaffold to prevent tipping during movement. Surfaces over which the scaffold is to pass shall be free of obstructions and openings that may cause the scaffold to tip.

(7) *Riding mobile scaffolds.* Employees shall not be allowed to ride on scaffolds unless the following conditions are met:

(i) The surface over which the scaffold will pass shall be within three degrees of level, and free of pits, holes, and obstructions;

(ii) The maximum height to base width ratio of the scaffold during movement shall be two to one or less. Outrigger frames may be included as part of the base width dimension;

(iii) Outrigger frames, when used, shall be installed on opposite sides of the scaffold;

(iv) Tools and materials shall be secured to prevent movement or removed from the platform unit, or toeboards shall be installed on all sides of the scaffold;

(v) Employees shall not be on any part of the scaffold which extends outward beyond the wheels, casters, or other supports; and

(vi) Employees on the scaffold shall have advance knowledge of the movement.

(8) *Height to base ratios.* Scaffolds with height to base width ratios more than four to