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Subchapter 4. Construction Safety Orders
Article 21. Scaffolds--General Requirements

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§1637. General Requirements.

(a) Scaffolds shall be provided for all work that cannot be done safely by employees standing on permanent or solid construction at least 20 inches wide, except where such work can be safely done from ladders.

Exceptions:

1. Work of a limited nature and of short duration when the permanent or solid construction is less than 20 inches in width and the fall distance does not exceed 15 feet in height and provided adequate risk control is recognized and maintained under competent supervision.
2. Work of a short duration from joists or similar members at 2 feet or closer centers, planks resting on these members forming a plank platform 12 inches wide or equivalent protection.

(b) Scaffold Design and Construction.

(1) Scaffolds shall be constructed of wood or other suitable materials such as steel or aluminum members of known strength characteristics. Where materials other than wood are used, or where scaffold designs differ from those specified in these Orders, the scaffold and its parts must provide a degree of strength, rigidity and safety equivalent to that provided by the described scaffold it replaces.

(2) Each scaffold shall be designed and constructed using a dead load safety factor that will ensure the scaffold supports, without failure, its own weight and 4 times the maximum intended working (live) load applied or transmitted to it. Maximum intended working loads shall be as follows:

(A) Light-duty scaffolds: 25 pounds per square foot of work platform.

Exception: Light-duty interior scaffolds shall adhere to the loading requirements contained in Section 1640(c) (1).

(B) Medium-duty scaffolds: 50 pounds per square foot of work platform.

(C) Heavy-duty scaffolds: 75 pounds per square foot of work platform.

(D) Special-duty scaffolds: exceeding 75 pounds per square foot of work platform as determined by a qualified person or a Civil Engineer currently registered in the State of California and experienced in scaffold design.

(E) Engineered scaffolds: as determined by a Civil Engineer currently registered in the State of California and experienced in scaffold design.

(3) A scaffold shall not be subjected to loads greater than its maximum intended working load (see 1637(b)(2)).

(4) Manufactured scaffolds shall be used in accordance with the manufacturer's recommendations.

Exception: Where specific requirements that address riding on a rolling scaffold in Section 1646(i) and (j) may conflict with the manufacturer's recommendations, the provisions in Section 1646(i) and (j) take precedence.

(5) A qualified person shall determine the maximum intended working loads for scaffolds that are neither manufactured nor engineered.

(6) The maximum intended working load for each scaffold shall be posted at a conspicuous location at each jobsite or be provided to each supervisory employee who shall have it readily available at the jobsite.

(c) Anchorage and bracing shall be such that scaffolds and falsework will be prevented from swaying, tipping, or collapsing.

(d) Scaffold lumber, except for planks, used on suspended or ladder-jack scaffolds, shall be the equivalent of "selected lumber," free from damage that affects its strength. (See definitions for lumber specifications.)

(e)(1) Extension planking of the finger type shall be made with at least 5 fingers on each side. These fingers shall be at least 1-inch by 2 1/8-inch selected straight-grained Douglas fir or material of equal strength. All metal fittings shall be adequate to maintain the structural qualities of the device.

(2) The length of the extended planking shall not exceed 12 feet 6 inches, and the actual mechanical overlap between the 2 halves shall be not less than 1/8 of the length of the extended planking. A substantial stop shall be provided to maintain this overlap.

(3) Not more than one employee shall be permitted at one time on any extension planking that is more than 3 feet in height.

(4) Extension planking shall not be used as a platform on ladder-jack, suspended, or other unstable scaffolds.

(f) This subsection provides minimum labeling, design and construction requirements for scaffold planking, such as solid sawn planks, manufactured platforms of wood (including laminated planks), metal planking, and planking manufactured from other materials.

(1) Except as specified in other Orders, all solid sawn planking shall be at least equivalent to 2-inch x 10-inch (nominal) lumber selected for scaffold grade plank as defined in Section 1504, Lumber - "Structural Plank."

(2)(A) The maximum permissible spans for Douglas Fir and Southern Pine planking for 2 x 10-inch (nominal) or 2 x 9-inch (rough) planks shall be as shown in the following Table:

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Working (Live) Load (psf)	25	50	75
Permissible Span (ft.)	10	8	7

(B) The maximum permissible spans allowed for other wood species of scaffold planking shall not exceed 10 feet and shall be determined by a licensed professional engineer.

(3)(A) All manufactured scaffold planking including, but not limited to, engineered wood products, laminated veneer lumber, metal, composite, plastic, or any other manufactured planks shall be capable of supporting, without failure, its own weight and 4 times the maximum intended working (live) load.

(B) Manufactured planks with spans in excess of 10 feet shall be labeled to indicate the maximum intended working (live) load.

(C) Manufactured scaffold planks shall be used in accordance with the manufacturer's specifications.

(4) Prior to being placed in service, all laminated veneer lumber scaffold planks, manufactured after December 2, 2010 shall be labeled with the seal of an independent, nationally recognized, inspection agency approved by the International Accreditation Services (IAS) certifying compliance with ASTM D 5456-09a and ANSI/ASSE A10.8-2001, Section 5.2.10.

Note: ASTM D 5456-09a is the standard for the evaluation of structural composite lumber products. ANSI/ASSE A10.8-2001, Section 5.2.10. requires the inspection agency to certify that laminated veneer lumber scaffold planks are compliant with the design criteria in the ANSI/ASSE A10.8 standard.

(5) Prior to being placed into service, all solid sawn wood scaffold planks shall be certified by, or bear the grade stamp of, a grading agency approved by the American Lumber Standards Committee.

(6) All scaffold planks shall be visually inspected for defects before use each day.

(7) Defective or damaged scaffold planks shall not be used and shall be removed from service.

(g) Except as specified in other Orders, a scaffold plank shall not overhang its support by more than 18 inches, unless access to this overhanging portion is prevented by a guardrail, or other barrier, or unless the other plank end is securely anchored.

(h) Inspection of Lumber. All scaffold lumber shall be visually inspected for defects before and during use. Defective lumber shall not be used.

(i)(1) Nailing. All nailed joints in scaffolds and wooden falsework must contain enough properly placed nails of ample size to carry the loads they are intended to support.

(2) Nailed joints or connections shall not be used to support concrete hoppers with a capacity in excess of 1/2 cubic yard.

(3) Double-headed nails shall not be used for attaching railings or in other service where the projections might catch on the clothing of workers or create similar hazards.

(4) No nail smaller than 8-penny shall be used in the construction of scaffolding.

(5) All nails shall be driven full length or to the first head when double-headed nails are used.

(6) The minimum number of nails per connection shall be in accordance with the following table:

	<i>1" x 6" Material</i>	<i>1" x 8" Material</i>	<i>2" Material</i>
Ledgers	4-8d	5-8d	2-16d
Ribbons	3-8d	3-8d	
Braces	3-8d	3-8d	2-16d
Guardrails	2-8d	2-8d	2-16d

(7) Lubricated or wax-coated nails shall not be used in the construction of scaffolds, falsework, or other temporary installations.

(j) Prohibited Types of Scaffolds. Lean-to or jack scaffolds, shore scaffolds, nailed brackets, loose tile, loose brick, loose blocks, stilts, or other similar unstable objects shall not be used as working platforms, or for the support of such platforms. See Plate B-40, Appendix.

Exception: Bricklayer's "jump boards" no higher than 20 inches above the regular scaffold platform are acceptable for such service when supported by piers of carefully piled bricks or concrete blocks.

(k) Erection and Dismantling.

(1) The erection and dismantling of scaffolds or falsework shall be performed under the supervision and direction of a qualified person.

Note: In addition to persons meeting the requirements of "qualified persons" as defined in Section 1504, person(s) possessing a certification of competence in scaffold erection, dismantling and use issued by trade associations, State-approved apprenticeship or training programs or other similar training programs shall be considered a "qualified person(s)."

(2) Erection and dismantling of scaffolds shall be performed in accordance with good engineering practice. Where engineering design is required by these orders, the engineering drawings shall be made available at the job site during erection or upon request by the Division.

(3) All required ties to the structure shall be installed as soon as the scaffold has been completed to the tie-in area during erection.

(4) Ties shall only be removed during dismantling as the work progresses downward unless other methods are used to prevent the scaffold from falling over.

(5) No structural members shall be removed from scaffolds during dismantling operations below the level being dismantled.

(6) Where work platforms are proposed, guardrails shall be installed before other work not directly related to scaffold erection is permitted to begin.

(7) The requirements of Section 1637(k) (2) through (6), inclusive, may be temporarily suspended for short durations, provided adequate risk control is recognized and maintained under immediate, competent supervision.

(l) Removal of Braces. Scaffolds or falsework installations shall not be altered by removing uprights, braces, or supports unless other members providing equivalent strength are substituted.

(m) Loading. Scaffolds shall not be overloaded. Material shall not be allowed to accumulate to the extent that a scaffold is subjected to loading it is not designed to support.

(n) Access.

(1) A safe and unobstructed means of access, such as a walkway, stair, or ladder shall be provided to all scaffold platforms.

(2) Climbing ladders or stairways on scaffolds used for access and egress shall be affixed or built into the scaffold by proper design and engineering, and shall be so located that their use will not disturb the stability of the scaffold.

(A) Manufactured hook-on and attachable ladders shall be securely attached to the scaffold and:

1. Shall be specifically designed for the type of scaffold used;
2. Shall have a minimum rung length of 11-1/2 inches (29 cm);
3. Shall have uniform spaced rungs with a maximum spacing between rungs of 16-3/4 inches;
4. Shall be positioned so that their bottom rung is not more than 24 inches (61 cm) above the scaffold supporting level; and
5. When hook-on and attachable ladders are used on a supported scaffold more than 35 feet (10.7 m) high, they shall have rest platforms at 35-foot (10.7 m) maximum vertical intervals.

(B) If a ladder is used as a means of access to the scaffold, it shall be securely attached and shall comply with Article 25 of the Construction Safety Orders.

(C) Permanent stairways shall comply with the applicable provisions of the General Industry Safety Orders. Prefabricated scaffold steps or stairs, manufactured on or before May 28, 2005, shall comply with the design, manufacture and installation requirements of either the American National Standard ANSI A10.8-1988, Scaffolding-Safety Requirements, or the ANSI/ASSE A10.8-2001, Safety Requirements for Scaffolding, which are hereby incorporated by reference. Prefabricated scaffold steps or stairs, manufactured after May 28, 2005, shall comply with the design, manufacture and installation requirements of ANSI/ASSE A10.8-2001, Safety Requirements for Scaffolding.

(D) Horizontal members of end frames may be designed and used as a climbing device provided that the steps are:

1. Reasonably parallel and level.
2. Arranged to form a continuous ladder as required in Section 1644(a)(8).
3. Provided with sufficient clearance to provide a good handhold and foot space.

(o) Sloped Platforms. Platforms shall not be sloped more than 2 feet vertically to 10 feet horizontally and shall be positively secured against slipping from supports.

(p) Slippery Conditions. No worker shall be permitted to work on a scaffold platform where slippery conditions exist unless such conditions are a necessary part of the work.

(q) Overhead Protection. Workers on scaffolds who are exposed to overhead hazards shall be provided with overhead protection or other means that will effectively eliminate the hazard.

(r) Bolted Connections. Bolts used in the construction of scaffolds shall be of a size and in sufficient numbers at each connection to develop the designed strength of the scaffold. (See Plate B-31, Appendix.)

(s) Hoisting of Materials. Where materials are line-hoisted onto a scaffold, a tag line shall be used where necessary to control the load.

(t) Platform Planks at Corners. When a scaffold materially changes its direction, the platform planks shall be laid to prevent tipping. The planks that meet the corner ledger at an angle shall be laid first, extending over the diagonally placed ledger far enough to have a good safe bearing, but not 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.

(u) Work on or from scaffolds is prohibited during storms or high winds unless a qualified person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system, as defined in Section 1504 of these Orders, or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

(v) Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.

(w) Platforms, including, but not limited to, those consisting of solid sawn wood planks, engineered wood products, laminated veneer lumber, metal, composite, plastic, or any other manufactured planks, shall not deflect more than 1/60 of the span when loaded to the manufacturer's recommended maximum load.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. Amendment filed 11-14-75; effective thirtieth day thereafter (Register 75, No. 46).
2. Amendment of subsections (i) and (l) filed 10-5-81; effective thirtieth day thereafter (Register 81, No. 41).
3. Amendment filed 7-24-87; operative 8-23-87 (Register 87, No. 33).
4. Amendment of subsection (n)(2)(B) filed 3-19-99; operative 4-18-99 (Register 99, No. 12).
5. New subsections (u) and (v) filed 4-6-2001; operative 5-6-2001 (Register 2001, No. 14).
6. New subsection (b), redesignation of former subsection (b) as new subsection (b)(1) and new subsections (b)(2)-(6) filed 7-11-2003; operative 8-10-2003 (Register 2003, No. 28).
7. New subsections (n)(2)(A)-(n)(2)(A)3., subsection relettering and amendment of newly designated subsections (n)(2)(C) and (n)(2)(D)2. filed 4-28-2005; operative 5-28-2005 (Register 2005, No. 17).
8. New subsection (b)(4) Exception filed 7-31-2009; operative 8-30-2009 (Register 2009, No. 31).
9. New subsection (f), amendment of subsection (f)(1), redesignation and amendment of subsection (f)(2) as subsection (f)(2)(A), new subsection (f)(2)(B), repealer of subsections (f)(3)-(4) and new subsections (f)(3)(A)-(f)(7) and (w) filed 11-2-2010; operative 12-2-2010 (Register 2010, No. 45).
10. Amendment of subsections (n)(2)(A)2.-3. and new subsections (n)(2)(A)4.-5. filed 6-5-2017; operative 6-5-2017. Submitted to OAL for printing only pursuant to Labor Code section 142.3(a)(3) (Register 2017, No. 23).

