

WAC 296-304-05001 Scaffolds or staging. (1) General requirements.

(a) All scaffolds and their supports whether of lumber, steel or other material, must be capable of supporting the load they are designed to carry with a safety factor of not less than four.

(b) All lumber used in the construction of scaffolds must be spruce, fir, long leaf yellow pine, Oregon pine or wood of equal strength. The use of hemlock, short leaf yellow pine, or short fiber lumber is prohibited.

(c) Lumber dimensions as given are nominal except where given in fractions of an inch.

(d) All lumber used in the construction of scaffolds must be sound, straight-grained, free from cross grain, shakes and large, loose or dead knots. It must also be free from dry rot, large checks, worm holes or other defects which impair its strength or durability.

(e) Scaffolds must be maintained in a safe and secure condition. Any component of the scaffold which is broken, burned or otherwise defective must be replaced.

(f) Barrels, boxes, cans, loose bricks, or other unstable objects must not be used as working platforms or for the support of planking intended as scaffolds or working platforms.

(g) No scaffold must be erected, moved, dismantled or altered except under the supervision of competent persons.

(h) No welding, burning, riveting or open flame work must be performed on any staging suspended by means of fiber rope.

(i) Lifting bridles on working platforms suspended from cranes must consist of four legs so attached that the stability of the platform is assured.

(j) Unless the crane hook has a safety latch or is moused, the lifting bridles on working platforms suspended from cranes must be attached by shackles to the lower lifting block or other positive means must be taken to prevent them from becoming accidentally disengaged from the crane hook.

(2) Independent pole wood scaffolds.

(a) All pole uprights must be set plumb. Poles must rest on a foundation of sufficient size and strength to distribute the load and to prevent displacement.

(b) In light-duty scaffolds not more than 24 feet in height, poles may be spliced by overlapping the ends not less than four feet and securely nailing them together. A substantial cleat must be nailed to the lower section to form a support for the upper section except when bolted connections are used.

(c) All other poles to be spliced must be squared at the ends of each splice, abutted, and rigidly fastened together by not less than two cleats securely nailed or bolted thereto. Each cleat must overlap each pole end by at least 24 inches and must have a width equal to the face of the pole to which it is attached. The combined cross sectional area of the cleats must be not less than the cross sectional area of the pole.

(d) Ledgers must extend over two consecutive pole spaces and must overlap the poles at each end by not less than four inches. They must be left in position to brace the poles as the platform is raised with the progress of the work. Ledgers must be level and must be securely nailed or bolted to each pole and must be placed against the inside face of each pole.

(e) All bearers must be set with their greater dimension vertical and must extend beyond the ledgers upon which they rest.

(f) Diagonal bracing must be provided between the parallel poles, and cross bracing must be provided between the inner and outer poles or from the outer poles to the ground.

(g) Minimum dimensions and spacing of members must be in accordance with Table E-1 in WAC 296-304-07011.

(h) Platform planking must be in accordance with the requirements of subsection (8) of this section.

(i) Backrails and toeboards must be in accordance with the requirements of subsection (9) of this section.

(3) Independent pole metal scaffolds.

(a) Metal scaffold members must be maintained in good repair and free of corrosion.

(b) All vertical and horizontal members must be fastened together with a coupler or locking device which will form a positive connection. The locking device must be of a type which has no loose parts.

(c) Posts must be kept plumb during erection and the scaffold must be subsequently kept plumb and rigid by means of adequate bracing.

(d) Posts must be fitted with bases supported on a firm foundation to distribute the load. When wooden sills are used, the bases must be fastened thereto.

(e) Bearers must be located at each set of posts, at each level, and at each intermediate level where working platforms are installed.

(f) Tubular bracing must be applied both lengthwise and crosswise as required.

(g) Platform planking must be in accordance with the requirements of subsection (8) of this section.

(h) Backrails and toeboards must be in accordance with the requirements of subsection (9) of this section.

(4) Wood trestle and extension trestle ladders.

(a) The use of trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet is prohibited. The total height of base and extension may, however, be more than 20 feet.

(b) The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, must be as follows:

(i) Ladders up to and including those 16 feet long must have side rails of not less than 1 5/16 x 2 3/4 inch lumber.

(ii) Ladders over 16 feet long and up to and including those 20 feet long must have side rails of not less than 1 5/16 x 3 inch lumber.

(c) The side rails of the extension section of the extension trestle ladder must be parallel and must have minimum dimensions as follows:

(i) Ladders up to and including 12 feet long must have side rails of not less than 1 5/16 x 2 1/4 inch lumber.

(ii) Ladders over 12 feet long and up to and including those 16 feet long must have side rails of not less than 1 5/16 x 2 1/2 inch lumber.

(iii) Ladders over 16 feet long and up to and including those 20 feet long must have side rails of not less than 1 5/16 x 3 inch lumber. (Rev. 2-17-76)

(d) Trestle ladders and base sections of extension trestle ladders must be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, must not be less than 5 1/2 inches per foot of the length of the ladder.

(e) The width between the side rails at the bottom of the trestle ladder or of the base section of the extension trestle ladder must not be less than 21 inches for all ladders and sections six feet or less in length. For longer lengths of ladder the width must be increased at least one inch for each additional foot of length. The width between the side rails of the extension section of the trestle ladder must be not less than 12 inches.

(f) In order to limit spreading, the top ends of the side rails of both the trestle ladder and of the base section of the extension trestle ladder must be beveled, or of equivalent construction, and must be provided with a metal hinge.

(g) A metal spreader or locking device to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, must be a component of each trestle ladder or extension trestle ladder.

(h) Rungs must be parallel and level. On the trestle ladder, or on the base section of the extension trestle ladder, rungs must be spaced not less than eight inches nor more than 18 inches apart; on the extension section of the extension trestle ladder, rungs must be spaced not less than six inches nor more than 12 inches apart.

(i) Platform planking must be in accordance with the requirements of subsection (8) of this section, except that the width of the platform planking must not exceed the distance between the side rails.

(j) Backrails and toeboards must be in accordance with the requirements of subsection (9) of this section.

(5) Painters' suspended scaffolds.

(a) The supporting hooks of swinging scaffolds must be constructed to be equivalent in strength to mild steel or wrought iron, must be forged with care, must not be less than 7/8 inch in diameter, and must be secured to a safe anchorage at all times.

(b) The ropes supporting a swinging scaffold must be equivalent in strength to first-grade 3/4 inch diameter manila rope properly rigged into a set of standard six inch blocks consisting of at least one double and one single block.

(c) Manila and wire ropes must be carefully examined before each operation and thereafter as frequently as may be necessary to ensure their safe condition.

(d) Each end of the scaffold platform must be supported by a wrought iron or mild steel stirrup or hanger, which in turn is supported by the suspension ropes.

(e) Stirrups must be constructed so as to be equivalent in strength to wrought iron 3/4 inch in diameter.

(f) The stirrups must be formed with a horizontal bottom member to support the platform, must be provided with means to support the guardrail and midrail and must have a loop or eye at the top for securing the supporting hook on the block.

(g) Two or more swinging scaffolds must not at any time be combined into one by bridging the distance between them with planks or any other form of platform.

(h) No more than two persons must be permitted to work at one time on a swinging scaffold built to the minimum specifications contained in this section. Where heavier construction is used, the number of persons permitted to work on the scaffold must be determined by the size and the safe working load of the scaffold.

(i) Backrails and toeboards must be in accordance with the requirements of subsection (9) of this section.

(j) The swinging scaffold platform must be one of the three types described in (k), (l), and (m) of this subsection.

(k) The ladder-type platform consists of boards upon a horizontal ladder-like structure, referred to herein as the ladder, the side rails of which are parallel. If this type of platform is used the following requirements must be met:

(i) The width between the side rails must be no more than 20 inches.

(ii) The side rails of ladders in ladder-type platforms must be equivalent in strength to a beam of clear straight-grained spruce of the dimensions contained in Table E-2 in WAC 296-304-07011.

(iii) The side rails must be tied together with tie rods. The tie rods must not be less than 5/16 inch in diameter, located no more than five feet apart, pass through the rails, and be riveted up tight against washers at both ends.

(iv) The rungs must be of straight-grained oak, ash, or hickory, not less than 1 1/8 inches diameter, with 7/8 inch tenons mortised into the side rails not less than 7/8 inch and must be spaced no more than 18 inches on centers.

(v) Flooring strips must be spaced no more than 5/8 inch apart except at the side rails, where one inch spacing is permissible.

(vi) Flooring strips must be cleated on their undersides.

(l) The plank-type platform consists of planks supported on the stirrups or hangers. If this type of platform is used, the following requirements must be met:

(i) The planks of plank-type platforms must not be less than 2 x 10 inch lumber.

(ii) The platform must not be more than 24 inches in width.

(iii) The planks must be tied together by cleats of not less than 1 x 6 inch lumber, nailed on their undersides at intervals of not more than four feet.

(iv) The planks must extend not less than six inches nor more than 18 inches beyond the supporting stirrups.

(v) A cleat must be nailed across the platform on the underside at each end outside the stirrup to prevent the platform from slipping off the stirrup.

(vi) Stirrup supports must not be more than 10 feet apart.

(m) The beam-type platform consists of longitudinal side stringers with cross beams set on edge and spaced not more than four feet apart on which longitudinal platform planks are laid. If this type platform is used the following requirements must be met:

(i) The side stringers must be of sound, straight-grained lumber, free from knots, and of not less than 2 x 6 inch lumber, set on edge.

(ii) The stringers must be supported on the stirrups with a clear span between stirrups of not more than 16 feet.

(iii) The stringers must be bolted to the stirrups by U-bolts passing around the stirrups and bolted through the stringers with nuts drawn up tight on the inside face.

(iv) The ends of the stringers must extend beyond the stirrups not less than six inches nor more than 12 inches at each end of the platform.

(v) The platform must be supported on cross beams of 2 x 6 inch lumber between the side stringers securely nailed thereto and spaced not more than four feet on centers.

(vi) The platform must not be more than 24 inches wide.

(vii) The platform must be formed of boards 7/8 inch in thickness by not less than six inches in width, nailed tightly together, and extending to the outside face of the stringers.

(viii) The ends of all platform boards must rest on the top of the cross beams, must be securely nailed, and at no intermediate points in the length of the platform must there be any cantilever ends.

(6) Horse scaffolds.

(a) The minimum dimensions of lumber used in the construction of horses must be in accordance with Table E-3 in WAC 296-304-07011.

(b) Horses constructed of materials other than lumber must provide the strength, rigidity and security required of horses constructed of lumber.

(c) The lateral spread of the legs must be equal to not less than one-third of the height of the horse.

(d) All horses must be kept in good repair, and must be properly secured when used in staging or in locations where they may be insecure.

(e) Platform planking must be in accordance with the requirements of subsection (8) of this section.

(f) Backrails and toeboards must be in accordance with subsection (9) of this section.

(7) Other types of scaffolds. Scaffolds of a type for which specifications are not contained in this section must meet the general requirements of subsections (1), (8) and (9) of this section, must be in accordance with recognized principles of design and must be constructed in accordance with accepted standards covering such equipment.

(8) Scaffold or platform planking.

(a) Except as otherwise provided in subsection (5)(k) and (m) of this section, platform planking must not be less than 2 x 10 inch lumber. Platform planking must be straight-grained and free from large or loose knots and may be either rough or dressed.

(b) Platforms of staging must not be less than two 10 inch planks in width except in such cases as the structure of the vessel or the width of the trestle ladders make it impossible to provide such a width.

(c) Platform planking must project beyond the supporting members at either end by at least six inches but in no case must it project more than 12 inches unless the planks are fastened to the supporting members.

(d) Table E-4 in WAC 296-304-07011 must be used as a guide in determining safe loads for scaffold planks.

(9) Backrails and toeboards.

(a) Scaffolding, staging, runways, or working platforms which are supported or suspended more than five feet above a solid surface, or at any distance above the water, must be provided with a railing which has a top rail whose upper surface is from 42 to 45 inches above the upper surface of the staging, platform, or runway and a midrail located halfway between the upper rail and the staging, platform, or runway.

(b) Rails must be of 2 x 4 inch lumber, flat bar or pipe. When used with rigid supports, taut wire or fiber rope of adequate strength may be used. If the distance between supports is more than eight feet, rails must be equivalent in strength to 2 x 4 inch lumber. Rails must be firmly secured. Where exposed to hot work or chemicals, fiber rope rails must not be used.

(c) Rails may be omitted where the structure of the vessel prevents their use. When rails are omitted employees working more than five feet above solid surfaces must be protected by safety belts and life lines meeting the requirements of chapter 296-880 WAC, Unified safety standards for fall protection, and employees working over water must be protected by personal flotation devices meeting the requirements of WAC 296-304-09017(1).

(d) Employees working from swinging scaffolds which are triced out of a vertical line below their supports or from scaffolds on paint floats subject to surging, must be protected against falling toward the vessel by a railing or a safety belt and line attached to the backrail.

(e) When necessary, to prevent tools and materials from falling on men below, toeboards of not less than 1 x 4 inch lumber must be provided.

(10) Access to staging.

(a) Access from below to staging more than five feet above a floor, deck or the ground must consist of well secured stairways, cleated ramps, fixed or portable ladders meeting the applicable requirements of WAC 296-304-05003 or rigid type noncollapsible trestles with parallel and level rungs.

(b) Ramps and stairways must be provided with 36-inch handrails with midrails.

(c) Ladders must be so located or other means must be taken so that it is not necessary for employees to step more than one foot from the ladder to any intermediate landing or platform.

(d) Ladders forming integral parts of prefabricated staging are deemed to meet the requirements of these regulations.

(e) Access from above to staging more than three feet below the point of access must consist of a straight, portable ladder meeting the applicable requirements of WAC 296-304-05003 or a Jacob's ladder properly secured, meeting the requirements of WAC 296-304-05007(4).

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