

less than its rough cut size. An example of nominal size would be a 2 x 4 inch (51 x 102 mm) piece of lumber. Traditionally, the lumber would be rough cut to 2 x 4 inches (51 x 102 mm). After dressing, the actual size is appropriately 1½ x 3½ inches (38 x 89 mm). Both the rough 2 x 4 inches (51 x 102 mm) and the dressed 1½ x 3½ inches (38 x 89 mm) lumber would be considered a nominal 2 x 4 inches (51 x 102 mm) size. Lumber References to lumber are not meant to limit the employer to the use of wood. The use of any material of equal or greater strength and durability is acceptable.

4. *Suspension rope.* Suspension ropes need to be visually inspected each day or each shift before use, and also when the rope has not been in use for prolonged periods, or after exposure to detrimental elements such as open flames, hot work, and corrosive chemicals. Proper service such as washing and treating rope after being exposed to adverse conditions, lubricating wire rope, and removing defective sections of rope, may be necessary to keep the rope in safe operating condition. Examples of defective rope include rope where there is severe localized abrasion or scraping; where there is evidence of heat damage; where there is a loss of more than one-third of the original diameter of the outside individual wires; or where there is kinking, crushing, bird caging, or other damage resulting in distortion of the rope structure.

5. *Nails used on scaffolds.* Nails used to construct scaffolds should be driven full length, and should not be subjected to straight pulls.

6. *Snow and ice removal.* OSHA recommends that employees involved in removing snow and ice from scaffolds be protected from falls with body belts or harnesses and lanyards even though guardrails may be provided.

7. *Protecting employees below scaffolds.* Acceptable means of protecting employees below scaffolds from falling objects would include the installation of toeboards or the installation of a screen extending along the entire platform opening between the platform and the guardrail. The screen should consist of No. 19 gauge or heavier U.S. Standard wire, with one-half inch (1.2 cm) or smaller mesh or the equivalent. The use of other types of material such as plywood or expanded metal would also be acceptable.

8. *Tables.* The tables in this appendix relative to scaffolds are based on all load carrying timber members of the scaffold being a minimum of 1,500 lb-f/in² (1.03 kN/cm²) stress or construction grade lumber. All dimensions are nominal sizes as provided in the American Softwood Lumber Standards, dated January 1970. Except where otherwise noted, only rough or undressed lumber of the size specified will satisfy the minimum requirements of this standard.

9. *Wood planking.* All wood planking selected for scaffold plank use should be graded by rules established by the recognized independent inspection agency for the species of wood used. The maximum permissible spans for 2 x 10 inch (nominal) or 2 x 9 inch (rough) solid sawn wood planks should be as shown in the following table:

| Maximum intended load (lb/ft ²) | Maximum permissible span using full thickness undressed lumber (ft) | Maximum permissible span using nominal thickness lumber (ft) |
|---|---|--|
| 25 (122 kg/m ²) | 10 (3 m) | 8 (2.4 m) |
| 50 (244 kg/m ²) | 8 (2.4 m) | 6 (1.8 m) |
| 75 (366 kg/m ²) | 6 (1.8 m). | |

The minimum permissible span for 1¼ x 9 inch (3.2 x 22.9 cm) or wider wood plank of full thickness with a maximum intended load of 50 lb/ft² (244 kg/m²) should not exceed four feet (1.2 m).

10. *Fabricated planks and platforms.* Fabricated planks and platforms may be used in lieu of solid sawn wood planks. Maximum spans for such units should be as recommended by the manufacturer based on the maximum intended load being calculated as follows:

| Rated load capacity | Maximum intended load |
|---------------------|--|
| Light-duty | 25 lb/ft ² (122 kg/m ²) applied uniformly over the entire span area. |
| Medium-duty | 50 lb/ft ² (244 kg/m ²) applied uniformly over the entire span area. |
| Heavy-duty | 75 lb/ft ² (366 kg/m ²) applied uniformly over the entire span area. |
| One-person | 250 pounds (113 kg) placed at the center of the span [total 250 pounds (113 kg)]. |
| Two-person | 250 pounds (113 kg) placed 18 inches (46 cm) to the left and right of the center of the span [total 500 pounds (227 kg)]. |
| Three-person | 250 pounds (113 kg) placed at the center of the span and 250 pounds (113 kg) placed 18 inches (46 cm) to the left and right of center of the span [total 750 pounds (340 kg)]. |

Note: Platform units used to make scaffold platforms intended for light-duty use should be capable of supporting at least 25 lb/ft² (122 kg/m²) applied uniformly over the entire unit-span area, or a 250 pound (114 kg) point load placed on the unit at the center of the span, whichever load produces the greater shear force.

11. *Plank-type platform.* An example of an acceptable plank-type scaffold platform would be a platform composed of not less than nominal 2 x 8 inch (7.6 x 20 cm) unsplined planks, properly cleated together on the underside, starting six inches (15.2 cm) from each end. Intervals between each cleat should not exceed 4 feet (1.2 m).

12. *Access.* Acceptable safe access to scaffold platforms could include one or more of the following:

(i) Ladders conforming to the requirements of § 1910.23. The ladders should not be placed in a manner to endanger employees on the scaffold.

(ii) Hook-on or attachable metal ladders specifically designed for use in conjunction with manufactured types of scaffolds.

(iii) Direct access from adjacent scaffolds, structures or personal hoists.

(iv) Ramps or runways and appropriate fall protection systems where applicable.

(v) Internal prefabricated scaffold rungs specifically designed by the manufacturer for use as a ladder.

(vi) Step or stair-type accessories such as ladder stands specifically designed for use with scaffolds.

13. *Counterweights.* The counterweights for suspension scaffolds should be solid, dead weight objects designed so that they will not lose their mass. Examples that may be used are: concrete blocks, steel plates or other non-flowable material.

14. *Body harnesses.* OSHA recommends that full body harnesses be used by employees instead of body belts. When subjected to an actual drop, the body harness distributes the shock more evenly over the body than does the body belt.

15. *Supplementary platform support lines.* Supplementary platform support lines may be used as points of attachments for personal fall protection systems on suspension scaffolds since they act as backups for the primary support lines. In effect, the supplementary platform support lines serve as lifelines for the employees and do not make it necessary to require additional lifelines.

16. *Securing two-point suspension scaffolds.* In addition to direct connection to structures or buildings (except window cleaners' anchors) acceptable ways to prevent scaffold sway would include the use of angulated roping or static lines. Angulated roping is a system of platform suspension in which the upper wire rope sheaves or suspension points are closer to the plane of the structure or building face than the corresponding attachment points on the platform, thus causing the platform to press against the face of the structure or building. Static lines are independent lines secured at their top and bottom ends which are closer to the plane of the structure or building face than the outermost edge of the platform. By drawing the static lines taut, the platform is pushed against the face of the structure or building.

17. *Boatswains' chairs.* An acceptable size and strength for a boatswains' chair would be one made out of one inch (2.5 cm) or thicker wood with a 9 by 17 inch (22.9 by 43.2 cm) seat reinforced by cleats, and with bridle ropes passing through the seat and cleats and crossing diagonally beneath the seat. Seats smaller than 9 by 17 inches (22.9 by 43.2 cm) may be used when access to the work area or the work area itself necessitates a smaller boatswains' chair. Chairs may be made of materials other than wood provided they provide at least the same amount of safety as the wood chairs.

18. *Boatswains' chair rope.* An acceptable rope to be used with a boatswains' chair would be one-half inch (1.2 cm) nylon or