

and other deterioration. Defective components shall be removed permanently from service.

(9) Safety nets shall be inspected after any occurrence that could affect the integrity of the safety net system.

(10) Tools, scraps, or other materials that have fallen into the safety net shall be removed as soon as possible, and at least before the next work shift.

(11) Each safety net shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

(12) The maximum size of each safety net mesh opening shall not exceed 36 square inches and shall not be longer than 6 inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossing shall be secured to prevent enlargement of the mesh opening.

(13) Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

[67 FR 1906, Jan. 15, 2002; 67 FR 11055, Mar. 12, 2002]

§ 214.107 Working over or adjacent to water.

(a) Bridge workers working over or adjacent to water with a depth of four feet or more, or where the danger of drowning exists, shall be provided and shall use life vests or buoyant work vests in compliance with U.S. Coast Guard requirements in 46 CFR 160.047, 160.052, and 160.053. Life preservers in compliance with U.S. Coast Guard requirements in 46 CFR 160.055 shall also be within ready access. This section shall not apply to bridge workers using personal fall arrest systems or safety nets that comply with this subpart.

(b) Life vests or buoyant work vests shall not be required when bridge workers are conducting inspections that involve climbing structures above or below the bridge deck.

(c) Prior to each use, all flotation devices shall be inspected for defects that reduce their strength or buoyancy by designated individuals trained by the railroad or railroad contractor. Defective units shall not be used.

(d) Where life vests are required by paragraph (a) of this section, ring buoys with at least 90 feet of line shall be provided and readily available for

emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

(e) Where life vests are required, at least one lifesaving skiff, inflatable boat, or equivalent device shall be immediately available. If it is determined by a competent person that environmental conditions, including weather, water speed, and terrain, merit additional protection, the skiff or boat shall be manned.

[57 FR 28127, June 24, 1992, as amended at 67 FR 1908, Jan. 15, 2002]

§ 214.109 Scaffolding.

(a) Scaffolding used in connection with railroad bridge maintenance, inspection, testing, and construction shall be constructed and maintained in a safe condition and meet the following minimum requirements:

(1) Each scaffold and scaffold component, except suspension ropes and guardrail systems, but including footings and anchorage, shall be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to that scaffold or scaffold component.

(2) Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within two inches of the top edge, in any outward or downward direction, at any point along the top edge.

(3) Top edge height of top rails, or equivalent guardrail system member, shall be 42 inches, plus or minus three inches. Supports shall be at intervals not to exceed eight feet. Toeboards shall be a minimum of four inches in height.

(4) Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

(5) Midrails shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.

(b) Scaffolds shall not be altered or moved while they are occupied. This paragraph does not apply to vertical

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movements of mobile scaffolds that are designed to move vertically while occupied.

(c) An access ladder or equivalent safe access shall be provided.

(d) All exposed surfaces shall be prepared and cleared to prevent injury due to laceration, puncture, tripping, or falling hazard.

(e) All scaffold design, construction, and repair shall be completed by competent individuals trained and knowledgeable about design criteria, intended use, structural limitations, and procedures for proper repair.

(f) Manually propelled mobile ladder stands and scaffolds shall conform to the following:

(1) All manually propelled mobile ladder stands and scaffolds shall be capable of carrying the design load.

(2) All ladder stands, scaffolds, and scaffold components shall be capable of supporting, without failure, displacement, or settlement, its own weight and at least four times the maximum intended load applied or transmitted to that ladder stand, scaffold, or scaffold component.

(3) All exposed surfaces shall be free from sharp edges or burrs.

(4) The maximum work level height shall not exceed four times the minimum or least base dimensions of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or equivalent provisions shall be made to guy or brace the unit against tipping.

(5) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches. The steps of ladder stands shall be fabricated from slip resistant treads.

(6) Guardrails and midrails shall conform to the requirements listed in paragraph (a) of this section.

(7) A climbing ladder or stairway shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that in its use it will not have a tendency to tip the scaffold.

(8) Wheels or casters shall be capable of supporting, without failure, at least

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four times the maximum intended load applied or transmitted to that component. All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two of the four casters and shall be of the swivel type.

§214.111 Personal protective equipment, generally.

With the exception of foot protection, the railroad or railroad contractor shall provide and the bridge worker shall use appropriate personal protective equipment described in this subpart in all operations where there is exposure to hazardous conditions, or where this subpart indicates the need for using such equipment to reduce the hazards to railroad bridge workers. The railroad or railroad contractor shall require the use of foot protection when the potential for foot injury exists.

[67 FR 1908, Jan. 15, 2002]

§214.113 Head protection.

(a) Railroad bridge workers working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be provided and shall wear protective helmets.

(b) Helmets for the protection of railroad bridge workers against impact and penetration of falling and flying objects, or from high voltage electrical shock and burns shall conform to the national consensus standards for industrial head protection (American National Standards Institute, Z89.1-1986, Protective Headwear for Industrial Workers). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American National Standards Institute, 25 West 43rd Street, New York, NY 10036. Copies may be inspected at the Federal Railroad Administration, Docket Clerk, 1120 Vermont Avenue NW., Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/