

load may be used to determine the weight of the cargo.

(i) *Tractors.* Tractors used in Ro-Ro operations shall have:

(1) Sufficient power to ascend ramp inclines safely; and

(2) Sufficient braking capacity to descend ramp inclines safely.

(j) *Safe speeds.* Power driven vehicles used in Ro-Ro operations shall be operated at speeds that are safe for prevailing conditions.

(k) *Ventilation.* Internal combustion engine-driven vehicles shall be operated only where adequate ventilation exists or is provided. (Air contaminant requirements are found in §1918.94 and part 1910, subpart Z, of this chapter.)

(l) *Securing cargo.* Cargo loaded or discharged during Ro-Ro operations shall be secured to prevent sliding loads.

(m) *Authorized personnel.* Only authorized persons shall be permitted on any deck while loading or discharging operations are being conducted. Such authorized persons shall be equipped with high visibility vests (or equivalent protection<sup>10</sup>).

NOTE TO PARAGRAPH (m): High visibility vests or equivalent protection means high visibility/retro-reflective materials which are intended to make the user clearly visible by day through the use of high visibility (fluorescent) material and in the dark by vehicle headlights through the use of retro-reflective material. For example, an acceptable area of material for a vest or equivalent protection is .5 m<sup>2</sup> (760 in.<sup>2</sup>) for fluorescent (background) material and .13m<sup>2</sup> (197 in.<sup>2</sup>) for retro-reflective material. Vests or equivalent protection, such as high visibility/retro-reflective coveralls, that are available for industrial use, may also be acceptable.

(n) *Vehicle stowage positioning.* Drivers shall not drive vehicles, either forward or backward, while any personnel are in positions where they could be struck.

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#### § 1918.87 Ship's cargo elevators.

(a) *Safe working load.* The safe working loads of ship's cargo elevators shall be determined and followed.

<sup>10</sup>Decals on hard hats will not be considered equivalent protection for the purposes of this paragraph.

(b) *Load distribution.* Loads shall be evenly distributed and maintained on the elevator's platform.

(c) *Elevator personnel restrictions.* Personnel shall not be permitted to ride on the elevator's platform if a fall hazard exists. (See §1918.2.)

(d) *Open deck barricades.* During elevator operation, each open deck that presents a fall hazard to employees shall be effectively barricaded.

#### § 1918.88 Log operations.

(a) *Working in holds.* When loading logs into the holds of vessels and using dumper devices to roll logs into the wings, the employer shall ensure that employees remain clear of areas where logs being dumped could strike, roll upon, or pin them.

(b) *Personal flotation devices.* Each employee working on a log boom shall be protected by a personal flotation device meeting the requirements of §1918.105(b)(2).

(c) *Footwear.* The employer shall provide each employee that is working logs with appropriate footwear, such as spiked shoes or caulked sandals, and shall ensure that each employee wears appropriate footwear to climb or walk on logs.

(d) *Lifelines.* When employees are working on log booms or cribs, lifelines shall be furnished and hung overside to the water's edge.

(e) *Jacob's ladder.* When a log boom is being worked, a Jacob's ladder meeting the requirements of §1918.23 shall be provided for each gang working alongside unless other safe means of access (such as the vessel's gangway) is provided. However, no more than two Jacob's ladders are required for any single log boom being worked.

(f) *Life-ring.* When working a log boom alongside a ship, a U.S. Coast Guard approved 30-inch (76.2 cm) life-ring, with no less than 90 feet (27.4 m) of line, shall be provided either on the floating unit itself or aboard the ship close to each floating unit being worked.

(g) *Rescue boat.* When employees are working on rafts or booms, a rescue boat capable of effecting an immediate rescue shall be available. Powered rescue boats are required when the current exceeds one knot.