

§ 393.130

the mounting points on those vehicles that have been specifically designed for that purpose.

(3) Tiedowns that are designed to fit over or around the wheels of an automobile, light truck, or van must provide restraint in the lateral, longitudinal and vertical directions.

(4) Edge protectors are not required for synthetic webbing at points where the webbing comes in contact with the tires.

§ 393.130 What are the rules for securing heavy vehicles, equipment and machinery?

(a) *Applicability.* The rules in this section apply to the transportation of heavy vehicles, equipment and machinery which operate on wheels or tracks, such as front end loaders, bulldozers, tractors, and power shovels and which individually weigh 4,536 kg (10,000 lb.) or more. Vehicles, equipment and machinery which is lighter than 4,536 kg (10,000 lb.) may also be secured in accordance with the provisions of this section, with § 393.128, or in accordance with the provisions of §§ 393.100 through 393.114.

(b) *Preparation of equipment being transported.* (1) Accessory equipment, such as hydraulic shovels, must be completely lowered and secured to the vehicle.

(2) Articulated vehicles shall be restrained in a manner that prevents articulation while in transit.

(c) *Securement of heavy vehicles, equipment or machinery with crawler tracks or wheels.* (1) In addition to the requirements of paragraph (b) of this section, heavy equipment or machinery with crawler tracks or wheels must be restrained against movement in the lateral, forward, rearward, and vertical direction using a minimum of four tiedowns.

(2) Each of the tiedowns must be affixed as close as practicable to the front and rear of the vehicle, or mounting points on the vehicle that have been specifically designed for that purpose.

§ 393.132 What are the rules for securing flattened or crushed vehicles?

(a) *Applicability.* The rules in this section apply to the transportation of ve-

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hicles such as automobiles, light trucks, and vans that have been flattened or crushed.

(b) *Prohibition on the use of synthetic webbing.* The use of synthetic webbing to secure flattened or crushed vehicles is prohibited except that such webbing may be used to connect wire rope or chain to anchor points on the commercial motor vehicle. However, the webbing (regardless of whether edge protection is used) must not come into contact with the flattened or crushed cars.

(c) *Securement of flattened or crushed vehicles.* Flattened or crushed vehicles must be transported on vehicles which have:

(1) Containment walls or comparable means on four sides which extend to the full height of the load and which block against movement of the cargo in the forward, rearward and lateral directions; or

(2)(i) Containment walls or comparable means on three sides which extend to the full height of the load and which block against movement of the cargo in the direction for which there is a containment wall or comparable means, and

(ii) A minimum of two tiedowns are required per vehicle stack; or

(3)(i) Containment walls on two sides which extend to the full height of the load and which block against movement of the cargo in the forward and rearward directions, and

(ii) A minimum of three tiedowns are required per vehicle stack; or

(4) A minimum of four tiedowns per vehicle stack.

(5) In addition to the requirements of paragraphs (c)(2), (3), and (4), the following rules must be satisfied:

(i) Vehicles used to transport flattened or crushed vehicles must be equipped with a means to prevent liquids from leaking from the bottom of the vehicle, and loose parts from falling from the bottom and all four sides of the vehicle extending to the full height of the cargo.

(ii) The means used to contain loose parts may consist of structural walls, sides or sideboards, or suitable covering material, alone or in combinations.

(iii) The use of synthetic material for containment of loose parts is permitted.

[67 FR 61225, Sept. 27, 2002, as amended at 71 FR 35834, June 22, 2006]

§ 393.134 What are the rules for securing roll-on/roll-off or hook lift containers?

(a) *Applicability.* The rules in this section apply to the transportation of roll-on/roll-off or hook lift containers.

(b) *Securement of a roll-on/roll-off and hook lift container.* Each roll-on/roll-off and hook lift container carried on a vehicle which is not equipped with an integral securement system must be:

(1) Blocked against forward movement by the lifting device, stops, a combination of both or other suitable restraint mechanism;

(2) Secured to the front of the vehicle by the lifting device or other suitable restraint against lateral and vertical movement;

(3) Secured to the rear of the vehicle with at least one of the following mechanisms:

(i) One tiedown attached to both the vehicle chassis and the container chassis;

(ii) Two tiedowns installed lengthwise, each securing one side of the container to one of the vehicle's side rails; or

(iii) Two hooks, or an equivalent mechanism, securing both sides of the container to the vehicle chassis at least as effectively as the tiedowns in the two previous items.

(4) The mechanisms used to secure the rear end of a roll-on/roll off or hook lift container must be installed no more than two meters (6 ft 7 in) from the rear of the container.

(5) In the event that one or more of the front stops or lifting devices are missing, damaged or not compatible, additional manually installed tiedowns must be used to secure the container to the vehicle, providing the same level of securement as the missing, damaged or incompatible components.

§ 393.136 What are the rules for securing large boulders?

(a) *Applicability.* (1) The rules in this section are applicable to the transportation of any large piece of natural, ir-

regularly shaped rock weighing in excess of 5,000 kg (11,000 lb.) or with a volume in excess of 2 cubic-meters on an open vehicle, or in a vehicle whose sides are not designed and rated to contain such cargo.

(2) Pieces of rock weighing more than 100 kg (220 lb.), but less than 5,000 kg (11,000 lb.) must be secured, either in accordance with this section, or in accordance with the provisions of §§ 393.100 through 393.114, including:

(i) Rock contained within a vehicle which is designed to carry such cargo; or

(ii) Secured individually by tiedowns, provided each piece can be stabilized and adequately secured.

(3) Rock which has been formed or cut to a shape and which provides a stable base for securement must also be secured, either in accordance with the provisions of this section, or in accordance with the provisions of §§ 393.100 through 393.114.

(b) *General requirements for the positioning of boulders on the vehicle.* (1) Each boulder must be placed with its flattest and/or largest side down.

(2) Each boulder must be supported on at least two pieces of hard wood blocking at least 10 cm × 10 cm (4 inches × 4 inches) side dimensions extending the full width of the boulder.

(3) Hardwood blocking pieces must be placed as symmetrically as possible under the boulder and should support at least three-fourths of the length of the boulder.

(4) If the flattest side of a boulder is rounded or partially rounded, so that the boulder may roll, it must be placed in a crib made of hardwood timber fixed to the deck of the vehicle so that the boulder rests on both the deck and the timber, with at least three well-separated points of contact that prevent its tendency to roll in any direction.

(5) If a boulder is tapered, the narrowest end must point towards the front of the vehicle.

(c) *General tiedown requirements.* (1) Only chain may be used as tiedowns to secure large boulders.

(2) Tiedowns which are in direct contact with the boulder should, where possible, be located in valleys or notches across the top of the boulder,