

(f) No part of the exhaust system shall be temporarily repaired with wrap or patches.

(g) No part of the exhaust system shall leak or discharge at a point forward of or directly below the driver/sleeper compartment. The exhaust outlet may discharge above the cab/sleeper roofline.

(h) The exhaust system must be securely fastened to the vehicle.

(i) Exhaust systems may use hangers which permit required movement due to expansion and contraction caused by heat of the exhaust and relative motion between engine and chassis of a vehicle.

[53 FR 49401, Dec. 7, 1988]

#### § 393.84 Floors.

The flooring in all motor vehicles shall be substantially constructed, free of unnecessary holes and openings, and shall be maintained so as to minimize the entrance of fumes, exhaust gases, or fire. Floors shall not be permeated with oil or other substances likely to cause injury to persons using the floor as a traction surface.

[53 FR 49401, Dec. 7, 1988]

#### § 393.85 [Reserved]

#### § 393.86 Rear impact guards and rear end protection.

(a)(1) *General requirements for trailers and semitrailers manufactured on or after January 26, 1998.* Each trailer and semitrailer with a gross vehicle weight rating of 4,536 kg (10,000 pounds) or more, and manufactured on or after January 26, 1998, must be equipped with a rear impact guard that meets the requirements of Federal Motor Vehicle Safety Standard No. 223 (49 CFR 571.223) in effect at the time the vehicle was manufactured. When the rear impact guard is installed on the trailer or semitrailer, the vehicle must, at a minimum, meet the requirements of FMVSS No. 224 (49 CFR 571.224) in effect at the time the vehicle was manufactured. The requirements of paragraph (a) of this section do not apply to pole trailers (as defined in § 390.5 of this chapter); pulpwood trailers, low chassis vehicles, special purpose vehicles, wheels back vehicles (as defined in

§ 393.5); and trailers towed in driveaway-towaway operations (as defined in § 390.5).

(2) *Impact guard width.* The outermost surfaces of the horizontal member of the guard must extend to within 100 mm (4 inches) of the side extremities of the vehicle. The outermost surface of the horizontal member shall not extend beyond the side extremity of the vehicle.

(3) *Guard height.* The vertical distance between the bottom edge of the horizontal member of the guard and the ground shall not exceed 560 mm (22 inches) at any point across the full width of the member. Guards with rounded corners may curve upward within 255 mm (10 inches) of the longitudinal vertical planes that are tangent to the side extremities of the vehicle.

(4) *Guard rear surface.* At any height 560 mm (22 inches) or more above the ground, the rearmost surface of the horizontal member of the guard must be within 305 mm (12 inches) of the rear extremity of the vehicle. This paragraph shall not be construed to prohibit the rear surface of the guard from extending beyond the rear extremity of the vehicle. Guards with rounded corners may curve forward within 255 mm (10 inches) of the side extremity.

(5) *Cross-sectional vertical height.* The horizontal member of each guard must have a cross sectional vertical height of at least 100 mm (3.94 inches) at any point across the guard width.

(6) *Certification and labeling requirements for rear impact protection guards.* Each rear impact guard used to satisfy the requirements of paragraph (a)(1) of this section must be permanently marked or labeled as required by FMVSS No. 223 (49 CFR 571.223, S5.3). The label must be on the forward-facing surface of the horizontal member of the guard, 305 mm (12 inches) inboard of the right end of the guard. The certification label must contain the following information:

(i) The impact guard manufacturer's name and address;

(ii) The statement "Manufactured in \_\_\_\_" (inserting the month and year that the guard was manufactured); and,

**§ 393.87**

(iii) The letters “DOT”, constituting a certification by the guard manufacturer that the guard conforms to all requirements of FMVSS No. 223.

(b)(1) *Requirements for motor vehicles manufactured after December 31, 1952 (except trailers or semitrailers manufactured on or after January 26, 1998).* Each motor vehicle manufactured after December 31, 1952, (except truck tractors, pole trailers, pulpwood trailers, or vehicles in driveaway-towaway operations) in which the vertical distance between the rear bottom edge of the body (or the chassis assembly if the chassis is the rearmost part of the vehicle) and the ground is greater than 76.2 cm (30 inches) when the motor vehicle is empty, shall be equipped with a rear impact guard(s). The rear impact guard(s) must be installed and maintained in such a manner that:

(i) The vertical distance between the bottom of the guard(s) and the ground does not exceed 76.2 cm (30 inches) when the motor vehicle is empty;

(ii) The maximum lateral distance between the closest points between guards, if more than one is used, does not exceed 61 cm (24 inches);

(iii) The outermost surfaces of the horizontal member of the guard are no more than 45.7 cm (18 inches) from each side extremity of the motor vehicle;

(iv) The impact guard(s) are no more than 61 cm (24 inches) forward of the rear extremity of the motor vehicle.

(2) *Construction and attachment.* The rear impact guard(s) must be substantially constructed and attached by means of bolts, welding, or other comparable means.

(3) *Vehicle components and structures that may be used to satisfy the requirements of paragraph (b) of this section.* Low chassis vehicles, special purpose vehicles, or wheels back vehicles constructed and maintained so that the body, chassis, or other parts of the vehicle provide the rear end protection comparable to impact guard(s) conforming to the requirements of paragraph (b)(1) of this section shall be considered to be in compliance with those requirements.

[64 FR 47708, Sept. 1, 1999, as amended at 67 FR 61824, Oct. 2, 2002]

**49 CFR Ch. III (10–1–10 Edition)**

**§ 393.87 Warning flags on projecting loads.**

(a) Any commercial motor vehicle transporting a load which extends beyond the sides by more than 102 mm (4 inches) or more than 1,219 mm (4 feet) beyond the rear must have the extremities of the load marked with red or orange fluorescent warning flags. Each warning flag must be at least 457 mm (18 inches) square.

(b) *Position of flags.* There must be a single flag at the extreme rear if the projecting load is two feet wide or less. Two warning flags are required if the projecting load is wider than two feet. Flags must be located to indicate maximum width of loads which extend beyond the sides and/or rear of the vehicle.

[70 FR 48054, Aug. 15, 2005]

**§ 393.88 Television receivers.**

Any motor vehicle equipped with a television viewer, screen or other means of visually receiving a television broadcast shall have the viewer or screen located in the motor vehicle at a point to the rear of the back of the driver’s seat if such viewer or screen is in the same compartment as the driver and the viewer or screen shall be so located as not to be visible to the driver, while he/she is driving the motor vehicle. The operating controls for the television receiver shall be so located that the driver cannot operate them without leaving the driver’s seat.

**§ 393.89 Buses, driveshaft protection.**

Any driveshaft extending lengthways under the floor of the passenger compartment of a bus shall be protected by means of at least one guard or bracket at that end of the shaft which is provided with a sliding connection (spline or other such device) to prevent the whipping of the shaft in the event of failure thereof or of any of its component parts. A shaft contained within a torque tube shall not require any such device.

[33 FR 19735, Dec. 25, 1968, as amended at 53 FR 49402, Dec. 7, 1988]

**§ 393.90 Buses, standee line or bar.**

Except as provided below, every bus, which is designed and constructed so as