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of the trailer. The ABS malfunction circuit and signal shall meet the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.2).

(e) *Exterior ABS malfunction indicator lamps for trailers.* Each trailer (including a trailer converter dolly) manufactured on or after March 1, 1998 and before March 1, 2009, and subject to the requirements of paragraph (c)(2) of this section, shall be equipped with an ABS malfunction indicator lamp which meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.3).

[63 FR 24465, May 4, 1998]

Subpart D—Glazing and Window Construction

§ 393.60 Glazing in specified openings.

(a) *Glazing material.* Glazing material used in windshields, windows, and doors on a motor vehicle manufactured on or after December 25, 1968, shall at a minimum meet the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 205 in effect on the date of manufacture of the motor vehicle. The glazing material shall be marked in accordance with FMVSS No. 205 (49 CFR 571.205, S6).

(b) *Windshields required.* Each bus, truck and truck-tractor shall be equipped with a windshield. Each windshield or portion of a multi-piece windshield shall be mounted using the full periphery of the glazing material.

(c) *Windshield condition.* With the exception of the conditions listed in paragraphs (c)(1), (c)(2), and (c)(3) of this section, each windshield shall be free of discoloration or damage in the area extending upward from the height of the top of the steering wheel (excluding a 51 mm (2 inch) border at the top of the windshield) and extending from a 25 mm (1 inch) border at each side of the windshield or windshield panel. *Exceptions:*

(1) Coloring or tinting which meets the requirements of paragraph (d) of this section;

(2) Any crack that is not intersected by any other cracks;

(3) Any damaged area which can be covered by a disc 19 mm (¾ inch) in diameter if not closer than 76 mm (3 inches) to any other similarly damaged area.

(d) *Coloring or tinting of windshields and windows.* Coloring or tinting of windshields and the windows to the immediate right and left of the driver is allowed, provided the parallel luminous transmittance through the colored or tinted glazing is not less than 70 percent of the light at normal incidence in those portions of the windshield or windows which are marked as having a parallel luminous transmittance of not less than 70 percent. The transmittance restriction does not apply to other windows on the commercial motor vehicle.

(e) *Prohibition on obstructions to the driver's field of view*—(1) *Devices mounted at the top of the windshield.* Antennas, transponders, and similar devices must not be mounted more than 152 mm (6 inches) below the upper edge of the windshield. These devices must be located outside the area swept by the windshield wipers, and outside the driver's sight lines to the road and highway signs and signals.

(2) *Decals and stickers mounted on the windshield.* Commercial Vehicle Safety Alliance (CVSA) inspection decals, and stickers and/or decals required under Federal or State laws may be placed at the bottom or sides of the windshield provided such decals or stickers do not extend more than 115 mm (4½ inches) from the bottom of the windshield and are located outside the area swept by the windshield wipers, and outside the driver's sight lines to the road and highway signs or signals.

[63 FR 1387, Jan. 9, 1998]

§ 393.61 Window construction.

(a) *Windows in trucks and truck tractors.* Every truck and truck tractor, except vehicles engaged in armored car service, shall have, in addition to the area provided by the windshield, at least one window on each side of the driver's compartment, which window shall have sufficient area to contain either an ellipse having a major axis of 18 inches and a minor axis of 13 inches or an opening containing 200 square inches formed by a rectangle 13 inches by 17¾ inches with corner arcs of 6-inch maximum radius. The major axis of the ellipse and the long axis of the rectangle shall not make an angle of

more than 45 degrees with the surface on which the unladen vehicle stands; however, if the cab is designed with a folding door or doors or with clear openings where doors or windows are customarily located, then no windows shall be required in such locations.

(b) *Bus windows.* (1) Except as provided in paragraph (b)(3) of this section a bus manufactured before September 1, 1973, having a seating capacity of more than eight persons shall have, in addition to the area provided by the windshield, adequate means of escape for passengers through windows. The adequacy of such means shall be determined in accordance with the following standards: For each seated passenger space provided, inclusive of the driver there shall be at least 67 square inches of glazing if such glazing is not contained in a push-out window; or at least 67 square inches of free opening resulting from opening of a push-out type window. No area shall be included in this minimum prescribed area unless it will provide an unobstructed opening sufficient to contain an ellipse having a major axis of 18 inches and a minor axis of 13 inches or an opening containing 200 square inches formed by a rectangle 13 inches by 17¾ inches with corner arcs of 6-inch maximum radius. The major axis of the elipse and the long axis of the rectangle shall make an angle of not more than 45° with the surface on which the unladen vehicle stands. The area shall be measured either by removal of the glazing if not of the push-out type or of the movable sash if of the push-out type, and it shall be either glazed with laminated safety glass or comply with paragraph (c) of this section. No less than 40 percent of such prescribed glazing or opening shall be on one side of any bus.

(2) A bus, including a school bus, manufactured on and after September 1, 1973, having a seating capacity of more than 10 persons shall have emergency exits in conformity with Federal Motor Vehicle Safety Standard No. 217, part 571 of this title.

(3) A bus manufactured before September 1, 1973, may conform to Federal Motor Vehicle Safety Standard No. 217, part 571 of this title, in lieu of conforming to paragraph (b)(1) of this section.

(c) *Push-out window requirements.* (1) Except as provided in paragraph (c)(3) of this section, every glazed opening in a bus manufactured before September 1, 1973, and having a seating capacity of more than eight persons, used to satisfy the requirements of paragraph (b)(1) of this section, if not glazed with laminated safety glass, shall have a frame or sash so designed, constructed, and maintained that it will yield outwardly to provide the required free opening when subjected to the drop test specified in Test 25 of the American Standard Safety Code referred to in §393.60. The height of drop required to open such push-out windows shall not exceed the height of drop required to break the glass in the same window when glazed with the type of laminated glass specified in Test 25 of the Code. The sash for such windows shall be constructed of such material and be of such design and construction as to be continuously capable of complying with the above requirement.

(2) On a bus manufactured on and after September 1, 1973, having a seating capacity of more than 10 persons, each push-out window shall conform to Federal Motor Vehicle Safety Standard No. 217, (§571.217) of this title.

(3) A bus manufactured before September 1, 1973, may conform to Federal Motor Vehicle Safety Standard No. 217 (§571.217) of this title, in lieu of conforming to paragraph (c)(1) of this section.

[33 FR 19735, Dec. 25, 1968, as amended at 37 FR 11677, June 10, 1972]

§393.62 Window obstructions.

Windows, if otherwise capable of complying with §393.61 (a) and (b), shall not be obstructed by bars or other such means located either inside or outside such windows such as would hinder the escape of occupants unless such bars or other such means are so constructed as to provide a clear opening, at least equal to the opening provided by the window to which it is adjacent, when subjected to the same test specified in §393.61(c). The point of application of such test force shall be such as will be most likely to result in the removal of the obstruction.

§ 393.63 Windows, markings.

(a) On a bus manufactured before September 1, 1973, each bus push-out window and any other bus escape window glazed with laminated safety glass required in § 393.61 shall be identified as such by clearly legible and visible signs, lettering, or decalcomania. Such marking shall include appropriate wording to indicate that it is an escape window and also the method to be used for obtaining emergency exit.

(b) On a bus manufactured on and after September 1, 1973, emergency exits required in § 393.61 shall be marked to conform to Federal Motor Vehicle Safety Standard No. 217 (§ 571.217), of this title.

(c) A bus manufactured before September 1, 1973, may mark emergency exits to conform to Federal Motor Vehicle Safety Standard No. 217 (§ 571.217), of this title in lieu of conforming to paragraph (a) of this section.

[37 FR 11678, June 10, 1972]

Subpart E—Fuel Systems

AUTHORITY: Sec. 204, Interstate Commerce Act, as amended, 49 U.S.C. 304; sec. 6, Department of Transportation Act, 49 U.S.C. 1655; delegation of authority at 49 CFR 1.48 and 389.4.

§ 393.65 All fuel systems.

(a) *Application of the rules in this section.* The rules in this section apply to systems for containing and supplying fuel for the operation of motor vehicles or for the operation of auxiliary equipment installed on, or used in connection with, motor vehicles.

(b) *Location.* Each fuel system must be located on the motor vehicle so that—

(1) No part of the system extends beyond the widest part of the vehicle;

(2) No part of a fuel tank is forward of the front axle of a power unit;

(3) Fuel spilled vertically from a fuel tank while it is being filled will not contact any part of the exhaust or electrical systems of the vehicle, except the fuel level indicator assembly;

(4) Fill pipe openings are located outside the vehicle's passenger compartment and its cargo compartment;

(5) A fuel line does not extend between a towed vehicle and the vehicle that is towing it while the combination of vehicles is in motion; and

(6) No part of the fuel system of a bus manufactured on or after January 1, 1973, is located within or above the passenger compartment.

(c) *Fuel tank installation.* Each fuel tank must be securely attached to the motor vehicle in a workmanlike manner.

(d) *Gravity or syphon feed prohibited.* A fuel system must not supply fuel by gravity or syphon feed directly to the carburetor or injector.

(e) *Selection control valve location.* If a fuel system includes a selection control valve which is operable by the driver to regulate the flow of fuel from two or more fuel tanks, the valve must be installed so that either—

(1) The driver may operate it while watching the roadway and without leaving his/her driving position; or

(2) The driver must stop the vehicle and leave his/her seat in order to operate the valve.

(f) *Fuel lines.* A fuel line which is not completely enclosed in a protective housing must not extend more than 2 inches below the fuel tank or its sump. Diesel fuel crossover, return, and withdrawal lines which extend below the bottom of the tank or sump must be protected against damage from impact. Every fuel line must be—

(1) Long enough and flexible enough to accommodate normal movements of the parts to which it is attached without incurring damage; and

(2) Secured against chafing, kinking, or other causes of mechanical damage.

(g) *Excess flow valve.* When pressure devices are used to force fuel from a fuel tank, a device which prevents the flow of fuel from the fuel tank if the fuel feed line is broken must be installed in the fuel system.

[36 FR 15445, Aug. 14, 1971, as amended at 37 FR 4341, Mar. 2, 1972; 37 FR 28752, Dec. 29, 1972]

§ 393.67 Liquid fuel tanks.

(a) *Application of the rules in this section.* (1) A liquid fuel tank manufactured on or after January 1, 1973, and a side-mounted gasoline tank must conform to all the rules in this section.