

system. The openings shall be suitable for attaching ¼-inch pipe thread/hose connectors. The engine shall be capable of supplying water at a temperature in accordance with the engine manufacturer's specifications. The heating system on Type A school buses and Type B school buses constructed on a cutaway chassis may be in accordance with the chassis manufacturer's specifications.

13:20-50A.15 Horn

School buses shall be equipped with dual horns of a standard make. Type A school buses and Type B school buses constructed on a cutaway chassis may be equipped with the chassis manufacturer's standard horn system. Each horn shall be capable of emitting a sound audible under normal conditions at a distance of 200 feet.

13:20-50A.16 Instruments and instrument panel

(a) The chassis shall be equipped with the following instruments and gauges:

1. Speedometer;
2. Odometer;
3. Ammeter with graduated charge and discharge indications or alternator light. An ammeter and its wiring shall be compatible with the generating capacities of the system. A voltmeter may be provided in lieu of an ammeter;
4. Oil pressure gauge;
5. Water temperature gauge;
6. Fuel gauge;
7. Upper beam headlight indicator light;
8. Air brake indicator gauge equipped with a warning buzzer or light indicating when air pressure is depleted below one-half of its capacity. A telltale warning light indicator shall be permitted in lieu of a gauge on school buses equipped with a hydraulic-over-hydraulic brake system;
9. Turn signal indicator lights;
10. Glow plug indicator light, where appropriate; and
11. Stoplight indicator light.

(b) Lights shall not be permitted in lieu of gauges except as otherwise provided in (a) above.

(c) All instruments shall be easily accessible for maintenance and repair.

(d) Instruments and gauges shall be mounted on an instrument panel in such a manner that each is clearly visible to the driver while he or she is seated in the driver's seat with the seat belt engaged.

(e) The instrument panel shall have lamps of sufficient candlepower to illuminate all instruments, gauges, and the gearshift selector indicator for an automatic transmission.

(f) Instruments and gauges shall be appropriately identified.

13:20-50A.17 Oil filter

An oil filter with a replaceable element shall be provided and shall be connected by flexible oil lines if the oil filter is not of a built-in or engine-mounted design. The oil filter shall have a capacity of at least one quart.

13:20-50A.18 Openings

All openings in the floorboard or fire wall between the chassis and the passenger compartment including, but not limited to, the gearshift selector/lever and the parking brake control shall be sealed. Hoses, electrical lines, cables, and other equipment that pass through the fire wall shall be sealed with a rubber grommet and/or suitable compound designed for such use to prevent chafing and to prevent fumes from entering the passenger compartment of the school bus.

13:20-50A.19 Passenger load

(a) The GVW is the sum of the chassis weight, plus the body weight, plus the driver's weight, plus the seated passengers' weight.

(b) For purposes of this section:

1. The driver's weight is 150 pounds; and
2. The passengers' weight is 120 pounds per student.

(c) The GVW shall not exceed the chassis manufacturer's GVWR for the chassis.

(d) School buses having a GVWR of 26,001 or more pounds shall display the GVWR on each side of the school bus in black letters and numbers at least three inches but not more than six inches in height.

13:20-50A.20 Power and gradeability

The GVWR shall not exceed 185 pounds per published net horsepower of the engine at the manufacturer's recommended maximum number of revolutions per minute.

13:20-50A.21 Retarder system

A retarder system may be used that shall maintain the speed of the fully-loaded school bus at 19 miles per hour on a seven percent grade for 3.6 miles.

13:20-50A.22 Shock absorbers

School buses shall be equipped with double-action shock absorbers compatible with the manufacturer's rated axle capacity at each wheel location.

13:20-50A.23 Springs and shackles

(a) The capacity of the springs or suspension assemblies shall be commensurate with the chassis manufacturer's GVWR.

(b) If leaf-type rear springs are used, they shall be of a progressive-type.

(c) Springs shall be aligned by a centering pin.

(d) U-bolts shall be secured by nuts.

13:20-50A.24 Steering gear

(a) The steering gear shall conform to the chassis manufacturer's standard and shall be designed to ensure proper performance when the school bus is operated with maximum load and at maximum speed.

(b) The steering mechanism shall be accessible for external adjustment.

(c) No changes shall be made to the steering apparatus that are not approved by the chassis manufacturer.

(d) There shall be a clearance of at least two inches between the steering wheel and the cowl, instrument panel, windshield, or any other surface.

(e) Power steering is required and shall be of the integral-type with integral valves.

(f) The steering system shall be designed to provide a means of lubrication for all wear points, if wear points are not permanently lubricated.

13:20-50A.25 Tires and rims

(a) Tires and rims of proper size and tires with a load-rating commensurate with the chassis manufacturer's GVWR shall be provided.

(b) Tubeless tires mounted on one-piece drop center rims may be used.

(c) All tires shall be of the same size, type, construction, and load-rating. The load-rating shall meet or exceed the GVWR, as required by FMVSS No. 120 (49 CFR § 571.120), incorporated herein by reference, as amended and supplemented. Tires on Type B, C, and D school buses may be of more than one type of construction provided all tires on the same axle are the same type of construction.

(d) A school bus may be equipped with a spare tire and rim assembly of the same size as those mounted on the school bus. A spare tire shall not be stored inside the passenger compartment of the school bus.

(e) A school bus may be equipped with a spare tire carrier properly mounted under the floor in an area accessible to the driver.

(f) The tire tread depth shall at no time be less than 4/32 of an inch on the front tires and 2/32 of an inch on the rear tires as measured on two adjacent treads by a Dill gauge or its equivalent.

(g) Regrooved or recapped tires shall not be used on the front axle of a school bus.

(h) Dual rear tires shall be provided on Type B, C, and D school buses.

(i) Tire chains, snow tires, all-weather tires, or tires marked with "M & S" shall be used for the drive wheels to enhance the safe operation of the school bus during adverse weather conditions. The "M & S" marking is not necessary if a rear tire has a retread that is a snow/mud-type tread and meets the minimum tire tread depth standards of (f) above.

(j) Spacers shall be as specified by the manufacturer and shall not be altered.

Amended by R.2012 d.023, effective February 6, 2012.

See: 43 N.J.R. 1831(a), 44 N.J.R. 287(b).

In (f), substituted "2/32" for "n2 /32".

13:20-50A.26 Transmission

(a) When an automatic transmission is used, it shall provide at least three forward speeds and one reverse speed.

(b) When a manual transmission is used, second gear and higher shall be synchronized except when incompatible with engine power. A minimum of three forward speeds and one reverse speed shall be provided.

(c) A diagram of the shifting control pattern shall be located in a position easily visible to the driver.

(d) The automatic transmission shift lever shall be equipped with a detent mechanism to ensure that the transmission cannot accidentally move from "neutral" to a drive gear without driver effort.

(e) School buses that are not equipped with a "park" position on the shift control selector for automatic transmissions shall be equipped with a heavy-duty parking brake.

(f) The transmission shift control lever/mechanism shall be mounted to the right of the steering column.

(g) The shift indicator shall align with the corresponding gear.

13:20-50A.27 Turning radius

(a) A chassis with a wheelbase of 264 inches or less shall have a right and left turning radius of not more than 42½ feet, curb-to-curb measurement.

(b) A chassis with a wheelbase of more than 264 inches shall have a right and left turning radius of not more than 44½ feet, curb-to-curb measurement.