

**CHAPTER 20  
ENFORCEMENT SERVICE**

**Authority**

N.J.S.A. 39:2-3, 39:3-10, 39:3-11, 39:3-27.14, 39:3-27.39, 39:3-27.44, 39:3-27.45, 39:3-33.3, 39:3-33.7, 39:3-43, 39:3-63, 39:3-75, 39:3-75.2, 39:3-76.6, 39:3-77, 39:3-81, 39:3-84a(10), 39:3B-5, 39:3B-10, 39:3B-24, 39:4-208, 39:5-30, 39:5B-29a, 39:8-1, 39:8-2, 39:8-4, 39:8-4.1, 39:8-10, 39:8-57, 39:8-60, 39:8-64, 39:8-77, and 39:10-4; and Reorganization Plan No. 005-1998.

**Source and Effective Date**

R.2006 d.249, effective June 8, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

**Chapter Expiration Date**

In accordance with N.J.S.A. 52:14B-5.1b, Chapter 20, Enforcement Service, expires on June 8, 2013. See: 43 N.J.R. 1203(a).

**Chapter Historical Note**

Chapter 20, Enforcement Service, was adopted and became effective prior to September 1, 1969.

Subchapter 26, Self-Inspection of Certain Classes of Motor Vehicles, was adopted as new rules by R.1970 d.132, effective November 2, 1970. See: 2 N.J.R. 85(d), 2 N.J.R. 101(d).

Subchapter 27 was adopted as new rules by R.1971 d.86, effective June 1, 1971. See: 3 N.J.R. 84(a), 3 N.J.R. 136(d).

Subchapter 28, Inspection of New Motor Vehicles, was adopted as new rules by R.1971 d.144, effective October 1, 1971. See: 3 N.J.R. 112(a), 3 N.J.R. 181(a). Subchapter 28 was amended by R.1971 d.222, effective December 10, 1971. See: 3 N.J.R. 226(a), 4 N.J.R. 10(c).

Subchapter 29, Mobile Inspection Unit, was adopted as new rules by R.1972 d.106, effective June 1, 1972. See: 4 N.J.R. 105(b), 4 N.J.R. 165(b).

Subchapter 30, Supplemental Inspection of School Buses, was adopted as new rules by R.1972 d.154, effective August 7, 1972. See: 4 N.J.R. 163(a), 4 N.J.R. 223(b).

Subchapter 31, Alcohol Countermeasures Regulations, was adopted as new rules by R.1972 d.255, effective December 15, 1972. See: 4 N.J.R. 273(a), 5 N.J.R. 18(c).

Subchapter 32, Motor Vehicle Reinspection Centers, was adopted as new rules by R.1975 d.333, effective November 3, 1975. See: 7 N.J.R. 433(b), 7 N.J.R. 570(c).

Subchapter 33, Enforcement Service: Standards and Procedures To Be Used By Licensed Reinspection Centers, was adopted as new rules by R.1975 d.334, effective November 3, 1975. See: 7 N.J.R. 469(d), 7 N.J.R. 570(d).

Subchapter 34, Identifying Marks, was adopted as new rules by R.1976 d.302, effective September 24, 1976. See: 8 N.J.R. 400(b), 8 N.J.R. 532(a).

Subchapter 35, Inspection of State-Owned Vehicles by the Central Motor Pool, was adopted as new rules by R.1977 d.480, effective December 21, 1977. See: 9 N.J.R. 486(b), 10 N.J.R. 71(c).

Subchapter 31, Alcohol Countermeasures Regulations, was amended by R.1979 d.4, effective January 8, 1979. See: 10 N.J.R. 508(a), 11 N.J.R. 78(b).

Subchapter 28, Inspection of New Motor Vehicles, was amended by R.1980 d.345, effective August 5, 1980. See: 12 N.J.R. 280(c), 12 N.J.R. 551(c).

Subchapter 36, Special National Guard Plates, was adopted as new rules by R.1981 d.31, effective January 28, 1981. See: 12 N.J.R. 427(a), 13 N.J.R. 150(e).

Pursuant to Executive Order No. 66(1978), Subchapter 31, Alcohol-Countermeasures Regulations, was readopted as R.1984 d.7, effective January 4, 1984. See: 15 N.J.R. 1923(a), 16 N.J.R. 247(b).

Pursuant to Executive Order No. 66(1978), Subchapter 33, Enforcement Service: Standards and Procedures To Be Used By Licensed Reinspection Centers, was readopted as R.1984 d.173, effective April 25, 1984. See: 16 N.J.R. 503(a), 16 N.J.R. 1280(d).

Subchapter 12, Accident Prevention Clinic, was adopted as new rules by R.1984 d.492, effective October 16, 1984. See: 16 N.J.R. 2347(a), 16 N.J.R. 3054(b).

Subchapter 28, Inspection of New Motor Vehicles, was amended by R.1984 d.622, effective January 21, 1985 (operative July 1, 1985). See: 16 N.J.R. 2500(a), 17 N.J.R. 203(a).

Subchapter 38, Dimensional Standards for Automobile Transporters, was adopted as new rules by R.1985 d.23, effective February 4, 1985. See: 16 N.J.R. 3176(a), 17 N.J.R. 313(b).

Subchapter 37, Standards for Motor Vehicles with Modified Chassis Height, was adopted as new rules by R.1985 d.100, effective March 4, 1985. See: 16 N.J.R. 2501(a), 17 N.J.R. 603(a).

Pursuant to Executive Order No. 66(1978), Subchapter 28, Inspection of New Motor Vehicles, was adopted as new rules by R.1985 d.379, effective June 27, 1985. See: 17 N.J.R. 1059(a), 17 N.J.R. 1901(a).

Pursuant to Executive Order No. 66(1978), Subchapter 36, Special National Guard Plates, was readopted as R.1985 d.678, effective December 18, 1985. See: 17 N.J.R. 2602(a), 18 N.J.R. 203(a).

Pursuant to Executive Order No. 66(1978), Subchapter 25, Safety Glazing Material; Other Equipment, expired on January 16, 1986, and Subchapter 25, Safety Glazing Material, was adopted as new rules by R.1986 d.80, effective April 7, 1986. See: 18 N.J.R. 47(a), 18 N.J.R. 703(a).

Subchapter 39, Special Registration Plates for Non-Profit Organizations, was adopted as new rules by R.1988 d.537, effective November 7, 1988. See: 20 N.J.R. 2033(a), 20 N.J.R. 2788(a).

Pursuant to P.L. 1984, c.243 (N.J.S.A. 26:2B-9.1), Subchapter 31, Alcohol Countermeasures Regulations, was recodified to N.J.A.C. 8:66-1. See: 21 N.J.R. 70(a).

Subchapter 1, Enforcement Officer, was repealed by R.1989 d.518, effective October 2, 1989. See: 21 N.J.R. 1500(b), 21 N.J.R. 3176(a).

Subchapter 3, Identification Lights, was repealed and recodified as new rules at N.J.A.C. 13:24-5 by R.1989 d.542, effective October 16, 1989. See: 21 N.J.R. 2460(a), 21 N.J.R. 3299(c).

Subchapter 40, Reflectorized Registration Plates, was adopted as new rules by R.1990 d.322, effective June 18, 1990. See: 22 N.J.R. 1230(b), 22 N.J.R. 1940(b).

Pursuant to Executive Order No. 66(1978), Subchapter 10, Automatic Vehicle Identification Systems, was readopted as R.1990 d.491, effective October 1, 1990. See: 22 N.J.R. 2133(a), 22 N.J.R. 3151(b).

Pursuant to Executive Order No. 66(1978), Chapter 20, Enforcement Service, was readopted as R.1991 d.20, effective December 13, 1990. See: 22 N.J.R. 3307(a), 23 N.J.R. 207(b).

Subchapter 31, Private Inspection Center Licensing, was adopted as new rules by R.1991 d.253, effective May 6, 1991. See: 23 N.J.R. 387(a), 23 N.J.R. 1417(b).

Subchapter 41, Persian Gulf War Commemorative License Plates, was adopted as new rules by R.1992 d.20, effective January 6, 1992. See: 23 N.J.R. 2916(a), 24 N.J.R. 108(a).

Subchapter 42, Purple Heart Emblems on License Plates, was adopted as new rules by R.1992 d.168, effective April 6, 1992. See: 24 N.J.R. 219(a), 24 N.J.R. 1365(a).

Subchapter 43, Enhanced Motor Vehicle Inspection and Maintenance Program, Subchapter 44, Private Inspection Facility Licensing, and Subchapter 45, Motor Vehicle Emission Repair Facility Registration, were adopted as emergency new rules by R.1995 d.410, effective June 29, 1995 (expires August 28, 1995). See: 27 N.J.R. 2777(a). The concurrent proposal of Subchapters 43, 44 and 45 was adopted as R.1995 d.528, effective August 28, 1995. See: 27 N.J.R. 3820(a).

Subchapter 31, Private Inspection Center Licensing, was repealed by R.1995 d.664, effective December 18, 1995. See: 27 N.J.R. 3911(a), 27 N.J.R. 5033(a).

Pursuant to Executive Order No. 66(1978), Chapter 20, Enforcement Service, was readopted effective December 13, 1995, and Subchapter 2, Vehicle Construction, Subchapter 8, Motor Vehicles Transporting Flammable Liquids, Subchapter 11, School Bus Warning Lamps, Subchapter 16, Concrete Ready-Mix Transit Vehicles, Subchapter 18, Flashing Warning Signals, Subchapter 19, Seat Belts, Subchapter 20, New Tires, Subchapter 21, Retread Tires, Subchapter 23, Fastening Loads on Commercial Flat Bed Vehicles, and Subchapter 41, Persian Gulf War Commemorative License Plates, were repealed effective January 16, 1996 by R.1996 d.28. See: 27 N.J.R. 4140(a), 28 N.J.R. 272(a).

Subchapter 46, Diesel Emission Inspection and Maintenance Program, was adopted as new rules, and Subchapter 47, Diesel Emission Inspection Center Licensing, was adopted as new rules by R.1997 d.392, effective September 15, 1997. See: 29 N.J.R. 1264(a), 29 N.J.R. 4149(a).

Subchapter 48, Inspection Standards and Test Procedures to be Used by Licensed Diesel Emission Inspection Centers, was adopted as new rules by R.1998 d.310, effective June 15, 1998. See: 30 N.J.R. 990(a), 30 N.J.R. 2262(b).

Subchapter 32, Motor Vehicle Reinspection Centers, was repealed and Subchapter 32, Inspection Standards and Test Procedures to be Used by Official Inspection Facilities, was adopted as new rules, Subchapter 33, Enforcement Service: Standards and Procedures to be Used by Licensed Reinspection Centers, was repealed and Subchapter 33, Inspection Standards and Test Procedures to be Used by Licensed Private Inspection Facilities, was adopted as new rules by R.1999 d.422, effective December 6, 1999. See: 31 N.J.R. 2466(a), 31 N.J.R. 4078(a).

Subchapter 41, Silver Star Insignias on License Plates, was adopted as new rules by R.2000 d.72, effective February 22, 2000. See: 31 N.J.R. 4223(b), 32 N.J.R. 711(b).

N.J.A.C. 13:20-49C.5, Capacity, Subchapter 49, Standards for School Buses Manufactured July 1985 through May 1993, Subchapter 49 Appendix, Subchapter 49A, Standards for Buses Used for Pupil Transportation Manufactured June, 1993 or Thereafter, Subchapter 49B, Chassis Standards, Subchapter 49C, Body Standards, Subchapter 49D, Specially Equipped School Bus Standards, 13:20-49E, Use of Vehicles as School Buses under the Jurisdiction of the Department of Transportation, Subchapter 49F, Small Vehicle Standards, Subchapter 49G, Inspection, Subchapter 49H, Insurance, were recodified from N.J.A.C. 6:21-4.1, Capacity, N.J.A.C. 6:21-5, Standards for School Buses Manufactured July 1985 through May 1993, N.J.A.C. 6:21 Appendix, N.J.A.C. 6:21-6, Standards for Buses used For Pupil Transportation Manufactured June, 1993 or Thereafter, N.J.A.C. 6:21-6A, Chassis Standards, N.J.A.C. 6:21-6B, Body Standards, N.J.A.C. 6:21-6C, Specially Equipped School Bus Standards, N.J.A.C. 6:21-8, Use of Vehicles as School Buses under the Jurisdiction of the Department of Transportation, N.J.A.C. 6:21-9, Small Vehicle Standards, N.J.A.C. 6:21-18, Inspection, and N.J.A.C. 6:21-17, Insurance, respectively, by administrative change. See: 32 N.J.R. 3090(a).

Pursuant to Executive Order No. 66(1978), Chapter 20, Enforcement Service, was readopted as R. 2001 d.20, effective December 13, 2000, and Subchapter 40, ReflectORIZED Registration Plates, was repealed by R.2001 d.20, effective January 16, 2001. See: 32 N.J.R. 3720(a), 33 N.J.R. 269(a).

Subchapter 1, Standards and Specifications Governing the Types of Sun-Screening Materials and Products that May Be Installed or Applied to Windshields and Front Side Windows of Motor Vehicles for which Medical Exemption Certificates have been Issued; Standards Governing the Issuance of Medical Exemption Certificates; and Subchapter 2, Registration of Facilities that Install or Apply Approved Sun-Screening Materials and Products to Windshields and Front Side Windows of Motor Vehicles for which Medical Exemption Certificates have been Issued, were adopted as new rules by R.2001 d.341, effective September 17, 2001. See: 33 N.J.R. 2450(a), 33 N.J.R. 3343(a).

Subchapter 31, School Bus Enhanced Safety Inspection Out-of-Service Criteria; Subchapter 51, Standards for Type S School Buses; Subchapter 52, Insurance; Subchapter 53, Standards for Alternatively Fueled School Buses; Subchapter 53A, Standards for School Buses Having Fuel Systems Using Liquefied Petroleum Gas; Subchapter 53B, Standards for School Buses Having Fuel Systems Using Compressed Natural Gas; and Subchapter 53C, Standards for School Buses Having Fuel Systems Using Liquefied Natural Gas, were adopted as new rules by R.2003 d.36, effective January 21, 2003. See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Subchapter 49F, Small Vehicle Standards, was repealed by R.2003 d.36, effective January 21, 2003. See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Subchapter 27, Inspection of New Heavy-Duty Diesel Trucks, was adopted as new rules by R.2004 d.133, effective April 5, 2004. See: 35 N.J.R. 2575(a), 36 N.J.R. 1821(a).

Subchapter 8, Penalty Reduction for Non-Out-Of-Service Equipment Violations, was adopted as new rules by R.2004 d.207, effective June 7, 2004. See: 36 N.J.R. 2789(b).

Subchapter 50, Standards for School Buses Manufactured January 2006 and Thereafter; Subchapter 50A, Chassis Standards for School Buses Manufactured January 2006 and Thereafter; Subchapter 50B, Body Standards for School Buses Manufactured January 2006 and Thereafter; and Subchapter 50C, Standards for Specially Equipped School Buses Manufactured January 2006 and Thereafter, were adopted as new rules by R.2005 d.24, effective January 18, 2005. See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Subchapter 49G, Inspection, was repealed by R.2005 d.24, effective January 18, 2005. See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Chapter 20, Enforcement Service, was readopted as R.2006 d.249, effective June 8, 2006. See: Source and Effective Date. See, also, section annotations.

Subchapter 26, Compliance with Diesel Emission Standards and Equipment, Periodic Inspection Program for Diesel Emissions, and Self-Inspection of Certain Classes of Motor Vehicles, was renamed Compliance with Diesel Emission Standards and Equipment, Periodic Inspection Program for Diesel Emissions and Self-Inspection of Certain Classes of Motor Vehicles by R.2009 d.312, effective October 19, 2009. See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

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### 13:20-28.11 Determination of compliance by Chief Administrator

The Chief Administrator or his or her designee may enter upon the premises of a new motor vehicle dealer or a motor vehicle leasing company to determine compliance with the requirements of this subchapter.

Amended by R.2001 d.20, effective January 16, 2001.  
See: 32 N.J.R. 3720(a), 33 N.J.R. 269(a).

Inserted "or her" preceding "designees" and deleted "any section of" preceding "this subchapter".

Amended by R.2001 d.358, effective October 15, 2001.  
See: 33 N.J.R. 1894(a), 33 N.J.R. 3651(b).

Rewrote the section.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Section was "Determination of compliance by Director". Substituted "Chief Administrator" for "Director".

### 13:20-28.12 Violations; suspension or revocation of motor vehicle dealer license; suspension or revocation of privilege of performing inspections of new motor vehicles

(a) A new motor vehicle dealer that violates any provision of this subchapter shall be subject, upon notice and an opportunity to be heard, to the suspension or revocation of its New Jersey motor vehicle dealer license and/or its privilege of performing inspections of new motor vehicles pursuant to this subchapter.

(b) A motor vehicle leasing company that violates any provision of this subchapter shall be subject, upon notice and an opportunity to be heard, to the suspension or revocation of its privilege of performing inspections of new motor vehicles pursuant to this subchapter.

Amended by R.2001 d.20, effective January 16, 2001.  
See: 32 N.J.R. 3720(a), 33 N.J.R. 269(a).

Substituted "opportunity to be heard" for "hearing" preceding "to the suspension" and inserted "or her" preceding "New Jersey dealer license".

Amended by R.2001 d.358, effective October 15, 2001.  
See: 33 N.J.R. 1894(a), 33 N.J.R. 3651(b).

Designated existing paragraph as (a) and rewrote; and added (b).

## SUBCHAPTER 29. MOBILE INSPECTION UNIT

### 13:20-29.1 Mobile Inspection Unit

There is hereby created in the Motor Vehicle Commission a Mobile Inspection Unit that is authorized to conduct on-road inspections of motor vehicles registered in New Jersey in accordance with the procedures set forth at N.J.A.C. 13:20-43.14 for the purpose of fostering highway safety.

Amended by R.1996 d.28, effective January 16, 1996.  
See: 27 N.J.R. 4140(a), 28 N.J.R. 272(a).

Substituted "conduct on-road inspections of vehicles registered in New Jersey in accordance with the procedures set forth at N.J.A.C. 13:20-43.14" for "set-up and conduct random roadside".

Amended by R.1999 d.422, effective December 6, 1999.

See: 31 N.J.R. 2466(a), 31 N.J.R. 4078(a).

Deleted a reference to the Bureau of Vehicle Inspection, and substituted a reference to motor vehicles for a reference to vehicles.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division of Motor Vehicles" and substituted "that" for "which" following "Unit".

### Case Notes

Record was insufficient to properly address constitutionality of random roadside examination of vehicles for safety violations. *State v. Kadelak*, 258 N.J. Super. 599, 610 A.2d 916 (A.D.1992).

### 13:20-29.2 Procedures

(a) Motor vehicles inspected pursuant to N.J.S.A. 39:8-2g, this subchapter and N.J.A.C. 13:20-43.14 that are found to be in proper operating condition shall retain the existing inspection certificate of approval or inspection decal issued therefor. If a motor vehicle passes an on-road inspection, including the emission or on-board diagnostic test(s) applicable to such motor vehicle pursuant to N.J.A.C. 13:20-43.8 and/or 32.21, and such motor vehicle is due for inspection pursuant to N.J.S.A. 39:8-1 within the two-month period following the calendar month of the on-road inspection approval, such motor vehicle may be issued a certificate of approval for the inspection cycle applicable to such motor vehicle.

(b) Motor vehicles inspected pursuant to N.J.S.A. 39:8-2g, this subchapter and N.J.A.C. 13:20-43.14 that are found to be defective shall have the existing inspection certificate of approval or inspection decal issued therefor, if any, removed and an inspection rejection sticker shall be affixed to the lower left corner of the windshield inside the passenger compartment of the motor vehicle. Motor vehicles that are found to be defective shall be repaired and presented for reinspection within 30 days of the date of the on-road inspection rejection, except as otherwise provided at N.J.A.C. 13:20-7.6(a).

Amended by R.1996 d.28, effective January 16, 1996.  
See: 27 N.J.R. 4140(a), 28 N.J.R. 272(a).

In (b) replaced inspection stickers with rejection stickers and added licensed private inspection centers and facilities.

Amended by R.1999 d.422, effective December 6, 1999.

See: 31 N.J.R. 2466(a), 31 N.J.R. 4078(a).

Rewrote the section.

Amended by R.2001 d.358, effective October 15, 2001.

See: 33 N.J.R. 1894(a), 33 N.J.R. 3651(b).

In (a), added the second sentence.

Amended by R.2003 d.206, effective May 19, 2003.

See: 34 N.J.R. 2523(a), 35 N.J.R. 2251(b).

In (a), inserted "or on-board diagnostic" preceding "test(s)" in the second sentence.

Amended by R.2009 d.312, effective October 19, 2009.

See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

In (a) and (b), substituted "inspection decal" for "certificate of waiver"; in (a), deleted a comma following "subchapter" and "biennial" following "approval for the", inserted "and/or 32.21", and substituted the second occurrence of "issued" for "presented at the exit end of an official inspection facility for the issuance of"; and in (b), deleted a comma following "subchapter", and substituted "that" for "which" twice.

**Case Notes**

Record was insufficient to properly address constitutionality of random roadside examination of vehicles for safety violations. *State v. Kadelak*, 258 N.J.Super. 599, 610 A.2d 916 (A.D.1992).

**13:20-29.3 Penalty**

Motor vehicles inspected pursuant to N.J.S.A. 39:8-2g, this subchapter, and N.J.A.C. 13:20-43.14 which are found to be defective and which have not been presented for reinspection in accordance with N.J.A.C. 13:20-29.2(b) shall be subject to the penalties provided in N.J.S.A. 39:8-1 et seq. and N.J.A.C. 13:20-43.16(b).

Amended by R.1999 d.422, effective December 6, 1999.  
See: 31 N.J.R. 2466(a), 31 N.J.R. 4078(a).

Rewrote the section.

**Case Notes**

Record was insufficient to properly address constitutionality of random roadside examination of vehicles for safety violations. *State v. Kadelak*, 258 N.J.Super. 599, 610 A.2d 916 (A.D.1992).

**SUBCHAPTER 30. INSPECTION OF SCHOOL BUSES****13:20-30.1 Scope**

(a) This subchapter shall apply to all school buses registered in this State, except buses that are also used for the transportation of passengers for hire and that are subject to inspection by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit.

(b) Children shall not be transported in a school bus unless the school bus has been subjected to an in-terminal inspection by the Motor Vehicle Commission's School Bus Inspection Unit pursuant to N.J.A.C. 13:20-30.15 and has been determined to be in compliance with all applicable inspection standards set forth for school buses in N.J.A.C. 13:20-49 through 53C.

(c) A school bus inspection certificate of approval that has been issued to a school bus shall be deemed void upon the transfer of ownership of the school bus, and such school bus shall not be used for the transportation of children unless the school bus has been subjected to an in-terminal inspection by the Motor Vehicle Commission's School Bus Inspection Unit pursuant to N.J.A.C. 13:20-30.15 and has been determined to be in compliance with all applicable inspection standards set forth for school buses in N.J.A.C. 13:20-49 through 53C.

(d) A school bus shall not be used for the transportation of children when the school bus displays an inspection decal issued by a new motor vehicle dealer pursuant to N.J.A.C. 13:20-28.6 or when the school bus displays a temporary authorization certificate issued pursuant to N.J.A.C. 13:20-7.4.

Amended by R.2003 d.36, effective January 21, 2003.  
See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Added designation (a); in (a), substituted "Motor Vehicle Commission's" for "Division's"; and added (b) through (d).

**13:20-30.2 Definitions**

The following words and terms, when used in this subchapter and in N.J.A.C. 13:20-31, shall have the following meanings unless the context clearly indicates otherwise.

"Chief Administrator" means the Chief Administrator of the New Jersey Motor Vehicle Commission.

"Driver" means the authorized licensed operator of a school bus.

"FMVSS" means the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations (49 CFR Part 571). Copies of the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

"Gross vehicle weight rating" or "GVWR" means the value specified by the manufacturer as the maximum loaded weight of a single vehicle.

"In-terminal inspection" means an inspection conducted by the Motor Vehicle Commission at the operator's terminal or at a location designated by the Chief Administrator of any motor vehicle required to meet the safety regulations for school buses adopted by the Motor Vehicle Commission pursuant to N.J.S.A. 39:3B-5 and 39:3B-5.4 and vehicle emission standards established for engine type pursuant to N.J.S.A. 39:8-2 and 39:8-61.

"Motor Vehicle Commission" or "Commission" means the New Jersey Motor Vehicle Commission established by section 4 of P.L. 2003, c. 13 (N.J.S.A. 39:2A-4).

"On-board diagnostics" or "OBD" means an automotive diagnostic system complying with California Air Resources Board OBD regulations or EPA OBD regulations effective for model year 1996 and newer gasoline-fueled and bi-fueled motor vehicles and for model year 1997 and newer diesel-fueled motor vehicles.

"Operator" means the owner or person responsible for the day-to-day operation and maintenance of a school bus.

"SAE" means the Society of Automotive Engineers, Inc. Copies of the Standards and Recommended Practices of the Society of Automotive Engineers may be purchased from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096, (724) 776-4841.

"School bus" or "bus" means every motor vehicle operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of

children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child-care center, preschool center or other similar places of education and shall be classified in the following manner:

1. A "Type A" school bus is a conversion or body constructed and installed upon a van-type compact truck or a front-section vehicle chassis, with a GVWR of 10,000 pounds or less, originally designed by the manufacturer for carrying 10 to 16 passengers;

2. A "Type B" school bus is constructed utilizing a stripped or cutaway chassis with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carrying 10 to 54 passengers. Part of the engine is beneath and/or behind the windshield and beside the driver's seat. The service door is behind the front wheels;

3. A "Type C" school bus is a body installed upon a flat back cowl chassis with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carrying 10 to 54 passengers. The engine is in front of the windshield, or part of the engine is beneath and/or behind the windshield and beside the driver's seat. The service door is behind the front wheels;

4. A "Type D" school bus is a body installed upon a chassis, with the engine mounted in the front, middle, or rear, with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carrying 10 to 54 passengers. The engine may be behind the windshield and beside the driver's seat; it may be at the rear of the school bus, behind the rear wheels; or it may be in the middle of the school bus between the front and rear axles. The service door is ahead of the front wheels; and

5. A "Type S" school bus is a motor vehicle with a GVWR of 3,000 pounds or more, originally designed by the manufacturer with a maximum seating capacity of nine passengers or less excluding the driver.

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2005 d.24, effective January 18, 2005.

See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Added "Chief Administrator" and "Commission"; in "School bus" or "bus" added 1 through 5.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Deleted definitions "Commission", "Director" and "Division"; in definition "In-terminal inspection", substituted "Motor Vehicle Commission" for "Division" and "Chief Administrator" for "Director"; and added definition "Motor Vehicle Commission".

Amended by R.2009 d.312, effective October 19, 2009.

See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

Added definition "On-board diagnostics".

### 13:20-30.3 Inspection and maintenance

(a) Every school bus that is registered in this State shall be systematically inspected and maintained by the operator to

insure that such school bus is in safe and proper operating condition.

(b) An operator of a school bus shall maintain a systematic inspection and maintenance record for each school bus owned or leased by such operator.

(c) An operator shall inspect each school bus owned or leased by such operator in accordance with the vehicle manufacturer's maintenance requirements.

(d) The inspection and maintenance records shall include the following:

1. An identification of the school bus including the New Jersey registration plate number, make, model, model year, vehicle identification number, number of tires, tire size, and number of tire ply;

2. A record of inspection and repairs indicating the nature of the repairs and the date of completion;

3. A lubrication record;

4. A systematic means for indicating for each school bus the nature and due date of the next inspection and maintenance operations to be performed for all systems;

5. The name of the lessor or contractor furnishing the school bus if a school bus is leased or otherwise contracted for; and

6. A daily school bus condition report by the driver.

(e) The inspection and maintenance records shall be maintained by the operator for the life of the school bus; provided, however, that the daily school bus condition reports by the driver shall be maintained by the operator for a period of one year. The inspection and maintenance records shall be available for inspection by the Commission or the Office of Student Transportation in the Department of Education.

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2005 d.24, effective January 18, 2005.

See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

In (d)6, substituted "school bus" for "vehicle"; rewrote (e).

### 13:20-30.4 Unsafe operation prohibited

An operator shall not operate or permit or require a driver to operate any school bus determined by the inspection or operation thereof to be in such condition that its operation would be hazardous or likely to result in the breakdown of the vehicle, nor shall any driver operate a school bus which by reason of its mechanical condition is so imminently hazardous to operate as to be likely to cause an accident, a breakdown of the vehicle, or an unsafe condition for the occupants thereof.

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

**13:20-30.5 Inspection of school buses in operation**

(a) Every State Police officer and every school bus inspector of the Motor Vehicle Commission, at the direction of the Chief Administrator, or at the request of the Office of Student Transportation in the Department of Education, may enter upon and perform inspections of school buses in operation upon the highways of this State or at the premises or places of business of the operator of such vehicles provided, however, that such State Police officer or Motor Vehicle Commission school bus inspector has been authorized so to inspect by the Chief Administrator and has been trained with regard to school bus inspection standards and test procedures.

(b) Reports of the inspection described in (a) above shall be submitted to the Chief Administrator or his or her designee. Such reports shall remain on file at the Motor Vehicle Commission for two years from the date of the inspection. The right of examination of such reports may be denied pursuant to N.J.S.A. 47:1A-3 in cases where the reports being sought for examination pertain to any investigation in progress, if the inspection, copying, or publication of the reports is not in the public interest.

(c) Any authorized State Police officer or Motor Vehicle Commission school bus inspector shall declare and mark "out-of-service" any school bus which by reason of its mechanical condition may cause a breakdown, accident, or unsafe condition for the occupants thereof.

(d) Any school bus that has been declared and marked "out-of-service" shall not be operated until all "out-of-service" repairs have been satisfactorily completed. The term "operate" as used in this section shall include towing the vehicle; provided, however, that vehicles marked "out-of-service" may be towed by means of a vehicle using a crane or hoist; and provided further, that the vehicle combination consisting of the emergency towing vehicle and the "out-of-service" vehicle meets the performance requirements of N.J.S.A. 39:3-68.

(e) No person shall remove any marking indicating that a school bus has been declared "out-of-service" prior to the completion of all "out-of-service" repairs.

(f) The person or persons completing the repairs required by the "out-of-service" notice shall certify to the Chief Administrator the date and the time the required repairs were completed.

(g) No persons may be transported in a school bus that has been declared "out-of-service" prior to the completion of all "out-of-service" repairs and the Motor Vehicle Commission's inspection and certification of all "out-of-service" repairs.

(h) The driver of any school bus who receives notice that the vehicle is "out-of-service" shall deliver such notice to the operator upon his or her arrival at the next terminal, maintenance facility, or place of business of the operator.

(i) Any and all defects and deficiencies noted on the "out-of-service" notice shall be corrected. The driver's failure to comply with (h) above shall not excuse the operator from taking appropriate action to correct defects and deficiencies which come to his or her attention by any means whatsoever.

Amended by R.1996 d.28, effective January 16, 1996.

See: 27 N.J.R. 4140(a), 28 N.J.R. 272(a).

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division" and "Chief Administrator" for "Director" throughout; and in (g), substituted "Motor Vehicle Commission's" for "Division's".

**13:20-30.6 Inspection of damaged school buses**

(a) An operator shall not permit or require a driver to operate, nor shall any driver operate a school bus that has been damaged in an accident or by any other cause until an inspection has been performed by a person qualified to ascertain the nature and extent of the damage and such person has determined that the school bus is in safe and proper operating condition.

(b) An operator shall notify the Motor Vehicle Commission's School Bus Inspection Unit within 72 hours of any accident involving a school bus that has resulted in mechanical damage to such school bus sufficient to require the school bus to be towed from the scene of the accident.

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission's" for "Division's" in (b).

**13:20-30.7 Daily school bus condition report by driver**

(a) Every operator shall require his or her drivers to report, and every driver shall prepare such a report in writing at the beginning of his or her workday or tour of duty, which report shall list any defects or deficiencies of the school bus discovered by said driver as would be likely to affect the safe operation of the school bus or result in its mechanical breakdown, or shall indicate that no such defects or deficiencies were discovered by him or her.

(b) The daily school bus condition report shall include, but not be limited to, the following:

1. The driver's name, date, school bus registration plate number, school bus number assigned by the operator, and mileage;
2. Mirror system, including the proper adjustment thereof;
3. Service brakes;
4. Parking brake;

5. Gauges and warning devices;
6. Steering mechanism;
7. Lights and reflectors;
8. Tires;
9. Wheels, rims, and lug nuts;
10. Glazing;
11. Windshield wipers and washer;
12. Fluid leaks;
13. Visible damage;
14. Horn;
15. Exhaust system;
16. Emergency equipment;
17. Emergency exits, windows, and roof hatches;
18. Seats, including seat belts, seat mounting, and the condition thereof; and
19. Special transportation equipment.

(c) An operator shall examine such reports and shall repair the defects or deficiencies noted therein. An operator shall certify on the report that the defects or the deficiencies have been repaired. The driver shall sign the report to acknowledge that he or she has reviewed the report and that there is a certification that the required repairs have been performed.

Amended by R.2003 d.36, effective January 21, 2003.  
See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote (a); added a new (b); recodified former (b) as (c) and rewrote the paragraph.

Amended by R.2005 d.24, effective January 18, 2005.  
See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

In (c), deleted the last sentence.

### 13:20-30.8 Required practices

(a) The following items of equipment shall be inspected and maintained at least once every three months, or every 3,000 miles, or as set forth in the manufacturer's recommended maintenance schedule, whichever occurs first:

1. All brakelines, linings and components;
2. Drive lines;
3. Doors, aisles and seats;
4. Tires, wheels and flaps;
5. Springs;
6. Emergency equipment;
7. Fuel system;
8. Cooling system;
9. Lighting devices, horns and mirrors;

10. Transmission;
11. Steering equipment;
12. Axles and steering assemblies;
13. Clutch;
14. Exhaust system;
15. Glazing and wipers;

16. Mirror system adjustment, including the proper adjustment thereof in accordance with the school bus mirror test procedure set forth in FMVSS No. 111 (49 CFR § 571.111), incorporated herein by reference, as amended and supplemented; and

17. Safety equipment required by Federal law or rule, New Jersey statute, or Motor Vehicle Commission rule.

Amended by R.2003 d.36, effective January 21, 2003.  
See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

In (a), rewrote the introductory paragraph, substituted "linings and components" for "lining" in 1, deleted "system" in 10, substituted "steering" for "the tie rod" in 12, added a new 16, recodified former 16 as 17 and rewrote the paragraph.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division" in (a)17.

### 13:20-30.9 Standards

All equipment subject to inspection shall meet the standards now or hereafter prescribed by Federal law or rule, New Jersey statute, or Motor Vehicle Commission rule.

Amended by R.2003 d.36, effective January 21, 2003.  
See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote the section.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division".

### 13:20-30.10 Certification

(a) Every operator shall certify to the Chief Administrator, on a form prescribed by the Chief Administrator, that he or she has inspected and maintained his or her school buses in conformity with this subchapter.

(b) Such certification shall be made once every 12 months.

Amended by R.2003 d.36, effective January 21, 2003.  
See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

In (a), substituted "operator shall" for "owner or lessee must" preceding "certify", "prescribed by the Director, that he or she has" for "prescribed that he has" preceding "inspected" and "his or her school buses in conformity with" for "his vehicles in conformity to".

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Chief Administrator" for "Director" two times in (a).

### 13:20-30.11 Penalties

Any operator who violates any provision of this subchapter may be subject to the suspension or revocation of his or her New Jersey school bus registration privileges.

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Substituted "operator" for "owner or lessee" and "his or her New Jersey school bus registration privileges" for "his New Jersey registration and license privileges".

**13:20-30.12 Compliance with diesel emission and OBD inspection standards, equipment requirements and test procedures; periodic inspection; inspection and verification of closed crankcase ventilation system installation**

(a) Except as otherwise provided in P.L. 1995, c. 157, diesel-powered school buses registered in New Jersey shall be subject to applicable diesel emission or OBD inspection standards established by the Department of Environmental Protection at N.J.A.C. 7:27-14, an examination of the muffler and diesel emission control apparatus pursuant to N.J.A.C. 7:27-14, diesel test procedures set forth in N.J.A.C. 7:27B-4 and an inspection and verification of closed crankcase ventilation system installation in accordance with the procedures established by the Department of Environmental Protection at N.J.A.C. 7:27-14.5(f) and 32.6 and 7:27B-4.4(d).

(b) Diesel-powered school buses registered in New Jersey shall be subject to an annual diesel emission or OBD inspection, whichever is applicable, by the Motor Vehicle Commission's School Bus Inspection Unit in accordance with N.J.A.C. 13:20-30.5(a) at the premises or places of business of the operator of such vehicles to determine compliance with (a) above.

New Rule, R.1997 d.392, effective September 15, 1997.

See: 29 N.J.R. 1264(a), 29 N.J.R. 4149(a).

Amended by R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Rewrote (b).

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission's" for "Division's" in (b).

Amended by R.2007 d.233, effective August 6, 2007.

See: 38 N.J.R. 5318(a), 39 N.J.R. 3387(a).

Section was "Compliance with diesel emission standards, equipment requirements, and test procedures; periodic inspection". Rewrote (a).

Amended by R.2009 d.312, effective October 19, 2009.

See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

Section was "Compliance with diesel emission standards, equipment requirements, and test procedures; periodic inspection; inspection and verification of closed crankcase ventilation system installation". In (a), substituted "diesel emission or OBD inspection" for "diesel-emission" and "N.J.A.C. 7:27-14.5(f) and 32.6 and 7:27B-4.4(d)" for "N.J.A.C. 7:27-14.5(g), 7:27- 32.6, and 7:27B-4.4(d)", and deleted a comma following "N.J.A.C. 7:27B-4"; and in (b), inserted "or OBD" and " , whichever is applicable,".

**13:20-30.13 Compliance with gasoline emission and OBD inspection standards, equipment requirements and test procedures; periodic inspection**

(a) Gasoline-powered school buses registered in New Jersey shall be subject to applicable gasoline emission or OBD inspection standards established by the Department of

Environmental Protection at N.J.A.C. 7:27-15, an examination of the muffler and emission control apparatus pursuant to N.J.A.C. 7:27-15 and either an idle test, a two-speed idle test or an OBD inspection, whichever is appropriate based on the model year and GVWR of the school bus, conducted in accordance with N.J.A.C. 7:27-15.5 and either N.J.A.C. 7:27B-5.3(b), 5.4 or 5.6.

(b) Gasoline-powered school buses registered in New Jersey shall be subject to an annual emission or OBD inspection, whichever is applicable, by the Motor Vehicle Commission's School Bus Inspection Unit in accordance with N.J.A.C. 13:20-30.5(a) at the premises or places of business of the operator of such vehicles to determine compliance with (a) above.

New Rule, R.2003 d.36, effective January 21, 2003.

See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission's" for "Division's" in (b).

Amended by R.2009 d.312, effective October 19, 2009.

See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

Section was "Compliance with gasoline emission standards, equipment requirements, and test procedures; periodic inspection". Rewrote (a); and in (b), substituted "an annual emission or OBD inspection, whichever is applicable," for "a semiannual emission inspection".

**13:20-30.14 Driver qualification; criminal history record information; driver qualification employment records**

(a) A person shall not operate a school bus that is registered in this State unless such person has been issued a Commercial Driver License with School Bus Endorsement by the Chief Administrator or, in the case of a nonresident, has been issued a Commercial Driver License with School Bus Endorsement by his or her state of residence.

(b) A school bus driver shall submit to a criminal history record check at the time of his or her initial application and any renewal application for a Commercial Driver License with School Bus Endorsement authorizing the driver to operate a school bus by providing to the Department of Education his or her name, address, and fingerprints taken on standard fingerprint cards by a law enforcement agency as designated by the Superintendent of the New Jersey State Police.

(c) A school bus driver who provides services only to a nonpublic school shall not be required to undergo a criminal history record check through the Department of Education pursuant to N.J.S.A. 18A:6-4.13 provided that the chief administrator of the nonpublic school provides written documentation indicating that the school bus driver is not required to undergo a criminal history record check as a condition of employment or service under contract.

(d) Notwithstanding (c) above, a school bus driver who provides services only to a nonpublic school and who is not required to undergo a criminal history record check through the Department of Education pursuant to N.J.S.A. 18A:6-4.13

shall submit to a criminal history record check in accordance with N.J.S.A. 39:3-10.1 at the time of his or her initial application and any renewal application for a Commercial Driver License with School Bus Endorsement authorizing the driver to operate a school bus by providing to the Motor Vehicle Commission his or her name, address, and fingerprints taken on standard fingerprint cards by a law enforcement agency as designated by the Superintendent of the New Jersey State Police.

(e) The school bus driver shall authorize the Department of Education or the Motor Vehicle Commission, whichever is the appropriate supervising agency, to request the State Bureau of Identification to attach an SBI Number Flag to the school bus driver's SBI numbers in accordance with N.J.A.C. 13:59-1.8.

(f) An operator shall maintain a driver qualification employment record for each driver employed by the operator. A driver qualification employment record shall include the following:

1. The driver's name, social security number, driver license number, driver license type, and the issuing state of the driver's commercial motor vehicle operator's license with appropriate endorsement authorizing the driver to operate a school bus;
2. A medical examiner's certificate of the driver's physical qualification to drive a school bus in the form of a satisfactory medical report completed by a licensed physician;
3. The date of the driver's criminal history record check; and
4. A Motor Vehicle Commission's driver history abstract of the driver that is updated on an annual basis.

New Rule, R.2003 d.36, effective January 21, 2003.  
 See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).  
 Amended by R.2006 d.249, effective July 3, 2006.  
 See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "School Bus" for "Passenger" throughout; in (a), substituted "Chief Administrator" for "Director"; in (d), substituted "Motor Vehicle Commission" for "Division of Motor Vehicles"; in (e), substituted "Motor Vehicle Commission" for "Division"; and in (f)4, substituted "Motor Vehicle Commission's" for "Division of Motor Vehicles".

**13:20-30.15 In-terminal inspection of school buses; inspection of retired school buses**

(a) An operator shall present each school bus for a semiannual in-terminal inspection by the Motor Vehicle Commission's School Bus Inspection Unit.

(b) An operator shall present each retired school bus with a capacity of 10 or more passengers for an annual inspection at a Motor Vehicle Commission-operated State specialty inspection facility or at a licensed private inspection facility. Such inspection shall include, but not be limited to, an inspection of the following:

1. Chassis and frame;
2. Brake system;
3. Body deterioration;
4. Lighting and electrical system; and
5. Interior seat mounting.

New Rule, R.2003 d.36, effective January 21, 2003.  
 See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).  
 Amended by R.2006 d.249, effective July 3, 2006.  
 See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (a), substituted "Motor Vehicle Commission's" for "Division's"; and in introductory paragraph of (b), substituted "Motor Vehicle Commission-operated State" for "Division".

**13:20-30.16 Inspection fees**

(a) All school buses registered in New Jersey shall be subject to the inspection fees as follows:

- |  |                     |
|--|---------------------|
| 1. School bus specification inspection   | \$50.00 per vehicle |
| 2. Each semiannual inspection  | \$25.00 per vehicle |
| 3. Each reinspection requiring an additional trip by the Motor Vehicle Commission's School Bus Inspection Unit | \$25.00 per vehicle |
| 4. Each annual inspection of retired school buses performed at a State specialty inspection facility           | \$25.00 per vehicle |

New Rule, R.2003 d.36, effective January 21, 2003.  
 See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).  
 Amended by R.2006 d.249, effective July 3, 2006.  
 See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission's" for "Division's" in (a)3.

**13:20-30.17 Schedule of fines**

(a) The following fines shall be assessed against an operator in accordance with N.J.S.A. 39:3B-22 per violation for the vehicle inspection violations set forth below:

- |  |          |
|--|----------|
| 1. Failure to present or make available a school bus for inspection                | \$500.00 |
| 2. Failure to retain proper records  | \$250.00 |
| 3. Failure to make available any record or document required at time of inspection | \$250.00 |
| 4. Falsification of any record   | \$500.00 |
| 5. Failure to comply with standards for driver employment records                  | \$250.00 |

New Rule, R.2003 d.36, effective January 21, 2003.  
 See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

**13:20-30.18 Collection of fines**

Any fine imposed pursuant to the School Bus Enhanced Safety Inspection Act, P.L. 1999, c.5, may be collected, with costs, in a summary proceeding pursuant to the Penalty Enforcement Law of 1999, N.J.S.A. 2A:58-10 et seq.

New Rule, R.2003 d.36, effective January 21, 2003.  
 See: 34 N.J.R. 829(a), 35 N.J.R. 450(a).

**SUBCHAPTER 31. SCHOOL BUS ENHANCED SAFETY  
INSPECTION OUT-OF-SERVICE CRITERIA****13:20-31.1 Scope**

(a) This subchapter establishes school bus enhanced safety inspection out-of-service criteria. The out-of-service criteria set forth in this subchapter denote critical school bus vehicle inspection items.

(b) The rules set forth in this subchapter are consistent with the Federal Motor Vehicle Safety Standards established by the National Highway Traffic Safety Administration and the National School Transportation Specifications and Procedures, 2000 Revised Edition, which have been issued by the 2000 National Conference on School Transportation.

**13:20-31.2 Brake system**

(a) The following are the out-of-service criteria pertaining to the brake system:

1. The number of defective brakes is equal to or greater than 20 percent of the brakes on the vehicle, provided, however, that on a three-axle school bus, one defective brake shall constitute an out-of-service violation. Steering axle brakes are to be included in the 20 percent criterion. A defective brake includes any brake that meets one of the following criteria:

i. Absence of effective braking action upon application of the service brakes, such as brake linings' failing to move or to contact the braking surface upon application;

ii. Missing or broken mechanical components, including shoes, linings, pads, springs, anchor pins, spiders, cam rollers, pushrods, and air chamber mounting bolts;

iii. Loose brake components, including air chambers, spiders, and cam shaft support brackets;

iv. Audible air leak at brake chamber;

v. Brake adjustment limits:

1. Any cracked, loose, sagging, or broken frame siderail permitting shifting of the school bus body onto moving parts or any other condition indicating an imminent collapse of the frame;

2. Any cracked, loose, or broken frame member adversely affecting support of functional components including, but not limited to, the steering gear, engine, transmission, body parts, or suspension;

3. A crack one and one-half inches long or longer in the frame siderail web that is directed toward the bottom flange;

4. Any crack extending from the frame siderail web around the radius and into the bottom flange;

5. A crack one inch or longer in the siderail bottom flange;

6. Any cracked, loose, sagging, or broken frame siderail resulting from rust, corrosion, or other deteriorating condition, or any improperly welded frame member that permits shifting of the school bus body onto moving parts, or any other condition indicating an imminent collapse of the frame or affecting support of functional components such as the steering gear, engine, transmission, body parts, or suspension;

7. A school bus is not equipped with body fasteners as required by N.J.A.C. 13:20-49.1, 49C.25, or 50B.26, whichever is applicable;

8. A school bus is not equipped with cross members as required by N.J.A.C. 13:20-49.1, 49C.25, or 50B.26, whichever is applicable; or

9. Any cross member, outrigger, or other structural support is missing, broken, cracked, deformed, shifted, or corroded so as to adversely affect the safe operation of the school bus.

(b) The following is the out-of-service criterion pertaining to tire and wheel clearance:

1. Any condition, including loading, that causes the school bus body or frame to be in contact with a tire or any part of the wheel assemblies at the time of inspection.

(c) The following is the out-of-service criterion pertaining to the bumpers:

1. Any bumper is missing or not properly secured.

Amended by R.2005 d.24, effective January 18, 2005.  
See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

In (a), amended the N.J.A.C. references in 7 and 8.

### 13:20-31.6 Fuel system

(a) The following are the out-of-service criteria pertaining to the fuel system:

1. A fuel system with a fuel leak at any point, including refrigeration or heater fuel systems;

2. A fuel tank or any part of the fuel system is not properly secured or fastened to the school bus in accordance with the school bus chassis manufacturer's specifications;

3. A fuel tank improperly attached to the school bus by use of bailing wire, coat hanger-type wire, or other like material;

4. A fuel tank is not filled or vented to the outside of the school bus body so that fuel may drip or drain onto any part of the exhaust system;

5. Except for the filler tube, a portion of the fuel system that is located to the rear of the engine compartment extends above the top of the highest portion of the chassis frame rail;

6. A fuel line is not mounted in a manner so as to obtain maximum protection from the chassis frame;

7. A fuel tank installation is not in accordance with FMVSS No. 301 (49 CFR § 571.301), incorporated herein by reference, as amended and supplemented; or

8. A Type B, C, or D school bus is not equipped with a steel guard around the fuel tank; provided, however, that this paragraph shall not be applicable to a Type B school bus constructed on a cutaway chassis if the fuel tank on such a school bus is mounted between the chassis frame rails.

Amended by R.2005 d.24, effective January 18, 2005.

See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

In (a), inserted "highest portion of the" following "top of the" in 5; added 8.

### 13:20-31.7 Headlights, back-up lamps, back-up alarm, red signal warning lamps, amber signal warning lamps, tail lamps, stop lamps, and turn signals

(a) The following are the out-of-service criteria pertaining to lighting devices:

1. A school bus does not have at least one headlight operative on low beam;

2. A school bus does not have at least one steadily burning taillamp on the rear of the vehicle visible from 500 feet;

3. A school bus does not have at least one operative stoplamp on the rear of the vehicle visible from 500 feet; or

4. A school bus does not have an operative turn signal on each side of the front and rear of the vehicle.

(b) The following are the out-of-service criteria pertaining to back-up lamps and back-up alarms:

1. A school bus is not equipped with back-up lamps;

2. Either back-up lamp does not illuminate when the shift control lever for the transmission is placed in reverse gear, or the rear emergency door is unlatched, or, on a

Type D school bus that is equipped with a rear engine, a rear emergency window is unlatched;

3. A school bus is not equipped with a back-up alarm; or

4. A school bus is equipped with a back-up alarm that is not in proper operating condition.

(c) The following are the out-of-service criteria pertaining to red signal warning lamps and amber signal warning lamps:

1. A school bus is not equipped with red signal warning lamps and amber signal warning lamps in accordance with N.J.A.C. 13:20-49.1, 49C.22(e), or 50B.23(f), whichever is applicable;

2. A school bus is equipped with red signal warning lamps or amber signal warning lamps that are not in proper operating condition; or

3. A school bus is equipped with red signal warning lamps or amber signal warning lamps that do not conform to FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented.

Amended by R.2005 d.24, effective January 18, 2005.

See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

In (a)4, inserted "front end" following "each side of the" in 4; in (b)2, added ", or, on a Type D school bus that is equipped with a rear engine, a rear emergency window is unlatched" at the end; in (c)1, amended the N.J.A.C. reference.

### 13:20-31.8 Instruments and instrument panel

(a) The following is the out-of-service criterion pertaining to instruments and the instrument panel:

1. A school bus is equipped with an air or vacuum brake indicator gauge or light that is not in proper operating condition so that such gauge or light does not provide a warning to the driver when the air pressure or vacuum is depleted below one-half of its capacity.

### 13:20-31.9 Power steering belt

(a) The following is the out-of-service criterion pertaining to a power steering belt:

1. A school bus is equipped with a belt that drives a power steering pump or compressor that is not in proper operating condition.

### 13:20-31.10 Steering system

(a) The following are the out-of-service criteria pertaining to steering wheel free play:

1. When any of the values (movement in inches, centimeters, or degrees) in the chart below are met or exceeded, a school bus shall be placed out-of-service. For power steering systems, the engine must be running. The following chart shall be adhered to in determining steering wheel free play, and is incorporated herein.

### NATIONAL SCHOOL TRANSPORTATION SPECIFICATIONS AND PROCEDURES OUT-OF-SERVICE CRITERIA STEERING WHEEL FREE PLAY CHART

| Steering Wheel<br>Diameter | Manual System<br>Movement<br>30 degrees or | Power System<br>Movement<br>45 degrees or |
|----------------------------|--|---|
| 16 inches (41 cm)          | 2 inches (5.1 cm)<br>(or more)             | 4½ inches (11.5 cm)<br>(or more)          |
| 18 inches (46 cm)          | 2¼ inches (5.4 cm)<br>(or more)            | 4¾ inches (12 cm)<br>(or more)            |
| 20 inches (51 cm)          | 2½ inches (6.4 cm)<br>(or more)            | 5½ inches (13.5 cm)<br>(or more)          |
| 22 inches (56 cm)          | 2¾ inches (7 cm)<br>(or more)              | 5¾ inches (14.5 cm)<br>(or more)          |

(b) The following are the out-of-service criteria pertaining to the steering column:

1. Any absence of U-bolt(s) or positioning part(s);
2. Any looseness of U-bolt(s) or positioning part(s);
3. Worn universal joint;
4. Faulty universal joint;
5. Repair-welded universal joint; or
6. The steering wheel not properly secured.

(c) The following are the out-of-service criteria pertaining to the front axle beam and all steering components other than the steering column, including the hub:

1. Any crack; or
2. Any obvious welded repair.

(d) The following are the out-of-service criteria pertaining to the steering gear box:

1. Any loose or missing mounting bolt;
2. Any crack in the steering gear box or mounting brackets; or
3. Any obvious welded repair.

(e) The following are the out-of-service criteria pertaining to the pitman arm:

1. Any looseness of the pitman arm on the steering gear output shaft; or
2. Any obvious welded repair.

(f) The following are the out-of-service criteria pertaining to power steering:

1. The auxiliary power assist cylinder is loose; or
2. The power steering pump is inoperable.

(g) The following are the out-of-service criteria pertaining to ball and socket joints:

1. Any movement under steering load of a stub nut;

**13:20-31.27 Windshield wipers**

(a) The following are the out-of-service criteria pertaining to windshield wipers:

1. Any power unit has a missing windshield wiper or missing part that renders it ineffective; or
2. Any power unit has an inoperative windshield wiper or damaged part that renders it ineffective.

**13:20-31.28 Wiring**

(a) The following are the out-of-service criteria pertaining to wiring:

1. Wires passing through metal openings are not protected by grommets;
2. Wires are not fastened securely at intervals of not more than 18 inches; or
3. Wire connectors are exposed.

**13:20-31.29 Doors; specially equipped school buses**

(a) The following are the out-of-service criteria pertaining to doors on specially equipped school buses:

1. A door is not equipped with a warning device that is actuated when the door is not securely closed and the ignition is in the "on" position;
2. A door is equipped with such a warning device that is not in proper operating condition;
3. A door is not equipped with a switch that prevents the lifting mechanism from operating when the power lift platform door is closed; or
4. A door is equipped with such a switch that is not in proper operating condition.

**13:20-31.30 Restraining devices; specially equipped school buses**

(a) The following are the out-of-service criteria pertaining to restraining devices on specially equipped school buses:

1. The attachment framework or anchorage devices for seat belts, restraining harnesses, or other restraining devices do not conform to FMVSS No. 209 (49 CFR § 571.209), incorporated herein by reference, as amended and supplemented, and FMVSS No. 210 (49 CFR § 571.210), incorporated herein by reference, as amended and supplemented; or
2. The wheelchair occupant restraint system does not conform to FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

**13:20-31.31 Wheelchairs and other mobile seating devices; specially equipped school buses**

(a) The following is the out-of-service criterion pertaining to wheelchairs and other mobile seating devices on specially equipped school buses:

1. A school bus that has in its passenger compartment an electric-powered wheelchair equipped with liquid electrolyte batteries.

**13:20-31.32 Credentials; insurance**

(a) The following are the out-of-service criteria pertaining to insurance credentials:

1. An insurance identification card is not presented for the school bus;
2. An expired insurance identification card is presented for the school bus;
3. An altered insurance identification card is presented for the school bus;
4. A mutilated insurance identification card, which renders the card illegible, is presented for the school bus;
5. A photocopy or facsimile of an insurance identification card is presented for the school bus;
6. An insurance identification card not in the form specified by the Department of Banking and Insurance in N.J.A.C. 11:3-6 is presented for the school bus;
7. An insurance identification card that has an expiration date of more than 14 months from the effective date is presented for the school bus;
8. A temporary insurance identification card without an effective date is presented for the school bus; or
9. An expired insurance binder is presented for the school bus.

**13:20-31.33 Placement out-of-service**

When an inspection of a school bus discloses the existence of an out-of-service violation(s), such school bus shall be placed out-of-service by authorized representatives of the Motor Vehicle Commission or by law enforcement authorities.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division".

**13:20-31.34 Duration of out-of-service order**

(a) The school bus shall be placed out-of-service:

1. Until all school bus out-of-service violations are repaired on-site; or

2. Until the school bus is towed by the operator to a repair facility or maintenance garage and all school bus out-of-service violations are repaired.

### 13:20-31.35 Operation of school bus prohibited

The school bus shall not be operated until all out-of-service violations are remedied and such remedial action is either certified or approved by representatives of the Motor Vehicle Commission.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division".

### 13:20-31.36 Direction to inspection site

Any authorized representative of the Motor Vehicle Commission may direct any school bus operated in this State to proceed immediately to a designated inspection site for inspection; provided, however, this section shall not apply to a school bus with school children on board.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division".

### 13:20-31.37 Examination of driver's operating credentials

Any authorized representative of the Motor Vehicle Commission may demand and examine the driver's operating credentials.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division".

### 13:20-31.38 Driver out-of-service violations

(a) A driver shall be immediately placed out-of-service and shall not be permitted to continue driving a school bus if such driver:

1. Does not have a commercial driver license (CDL);
2. Has been issued a CDL, but said license is suspended or revoked;
3. Is in possession of an improper class of CDL;
4. Is in possession of a CDL without proper endorsement(s), including the required School Bus Endorsement;
5. Has been issued a CDL with proper endorsement(s), but said endorsement(s) is suspended or revoked;
6. Is operating a school bus in violation of a CDL restriction;
7. Is not in possession of satisfactory evidence of continuing physical fitness or such evidence is not on file with the Motor Vehicle Commission; or

8. Does not have on file with the Motor Vehicle Commission proof of good character.

(b) In addition to (a) above, the driver shall be subject to the penalties set forth in N.J.S.A. 39:3-10.18.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (a)4, substituted "School Bus Endorsement" for "passenger endorsement"; and in (a)7 and (a)8, substituted "Motor Vehicle Commission" for "Division".

### 13:20-31.39 Provision of notice to driver

A school bus operator shall annually provide to each driver employed by the operator a notice containing a copy of N.J.A.C. 13:20-30 and this subchapter.

### 13:20-31.40 Coercion of driver by operator

No school bus operator shall compel, coerce, or otherwise cause a driver to include false information on a daily school bus inspection report.

## SUBCHAPTER 32. INSPECTION STANDARDS AND TEST PROCEDURES TO BE USED BY OFFICIAL INSPECTION FACILITIES

### 13:20-32.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings unless the context clearly indicates otherwise.

"Acute area of the windshield glazing" means the rectangular area of the windshield, eight and one-half inches by 11 inches, directly in front of the driver's line of vision as depicted in Appendix A of this subchapter, incorporated herein by reference. The center point of the acute area of the windshield glazing is the point of intersection of the centerline that is drawn directly from the center of the steering wheel onto the windshield and the midpoint line that is drawn across the length of the windshield halfway between the top and the bottom of the windshield.

"Certificate of approval" means an inspection sticker issued by an official inspection facility, a licensed private inspection facility, a State specialty inspection facility or the Motor Vehicle Commission's Mobile Inspection Unit certifying that a motor vehicle complies with the requirements of Title 39 and Title 26 of the Revised Statutes, N.J.A.C. 13:20-43, this subchapter or N.J.A.C. 13:20-33, whichever is applicable, and either N.J.A.C. 7:27-15 and 7:27B-5 regarding the inspection of gasoline-fueled and bi-fueled motor vehicles or N.J.A.C. 7:27-14 and 7:27B-4 regarding the inspection of diesel-fueled motor vehicles, whichever are applicable.

"Chief Administrator" means the Chief Administrator of the New Jersey Motor Vehicle Commission.

compartment. The exit point for the exhaust gas shall be located so that dangerous amounts of exhaust gas will not enter the passenger compartment under normal vehicle use even with the windows open or the outside air inlets to the heater or air conditioner open. A replacement exhaust system is acceptable provided it is specifically manufactured for the vehicle by a company which guarantees that the exhaust system has a safe exhaust gas exit location.

(b) Notwithstanding (a) above, certification shall not be refused because a muffler has drain holes which were placed in it at the time of manufacture for drainage purposes.

Amended by R.2001 d.20, effective January 16, 2001.  
See: 32 N.J.R. 3720(a), 33 N.J.R. 269(a).

In (a)4, substituted "provided" for "providing" preceding "it is specifically manufactured".

**13:20-48.5 Prescribed emission test procedures; Class I and II licensees; snap acceleration test**

The snap acceleration test shall be conducted in accordance with N.J.A.C. 7:27-14 and 7:27B-4.

**13:20-48.6 Prescribed emission test procedures; Class I and II licensees; rolling acceleration test**

The rolling acceleration test shall be conducted in accordance with N.J.A.C. 7:27-14 and 7:27B-4.

**13:20-48.7 Prescribed emission test procedures; Class I and II licensees; power brake test**

The power brake test shall be conducted in accordance with N.J.A.C. 7:27-14 and 7:27B-4.

Amended by R.2007 d.233, effective August 6, 2007.  
See: 38 N.J.R. 5318(a), 39 N.J.R. 3387(a).

Section was "Prescribed emission test procedures; Class I and II licensees; stall acceleration test". Substituted "power brake" for "stall".  
Amended by R.2009 d.312, effective October 19, 2009.  
See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

Section was "Prescribed emission test procedures; Class I and II licensees; power brake acceleration test". Deleted "acceleration" following "brake".

**13:20-48.8 Prescribed emission test procedures; Class I and II licensees; chassis dynamometer test (Reserved)**

**13:20-48.9 Equipment calibration; Class I and II licensees**

The smoke opacity meter shall be calibrated and maintained in accordance with the manufacturer's requirements and the general instructions for all tests adopted by the Department of Environmental Protection at N.J.A.C. 7:27B-4.2(a).

Amended by R.2009 d.312, effective October 19, 2009.  
See: 41 N.J.R. 1674(a), 41 N.J.R. 3939(b).

Substituted "opacity meter" for "opacimeter" and updated the N.J.A.C. reference.

**APPENDIX**

**AVERAGE LENGTH OF TIME REQUIRED TO REINSPECT A SPECIFIC ITEM ON A HEAVY-DUTY DIESEL TRUCK OR DIESEL BUS**

| <u>Item Reinspected</u>          | <u>Time Required</u> |
|----------------------------------|----------------------|
| Credentials .....                | .1 hour <sup>†</sup> |
| Emission Control Apparatus ..... | .2 hour              |
| Governor .....                   | .2 hour              |
| Exhaust System .....             | .2 hour              |
| Emission Control System .....    | .3 hour              |
| Engine Emissions (Opacity) ..... | .3 hour              |

<sup>†</sup>Note: If this is the only item to be reinspected on a vehicle, the reinspection time shall be considered to be .2 hour.

**SUBCHAPTER 49. STANDARDS FOR SCHOOL BUSES MANUFACTURED JULY 1985 THROUGH MAY 1993**

**13:20-49.1 Scope and purpose; school bus standards; incorporation by reference**

(a) This subchapter shall be applicable to all motor vehicles registered in New Jersey originally designed by the manufacturer to carry 10 or more passengers, excluding the driver, operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child care center, preschool center or other similar places of education. All such motor vehicles shall be registered as school buses in accordance with N.J.S.A. 39:3-19.2 and shall comply with the rules set forth in this subchapter and all applicable Federal standards. A motor vehicle shall not be used for the purposes set forth in this subsection unless it has been registered as a school bus in accordance with N.J.S.A. 39:3-19.2 and complies with the rules set forth in this subchapter and all applicable Federal standards.

(b) The Motor Vehicle Commission authorizes the use of Standards for School Buses and Operations, National Minimum Standards for School Buses, 1985 Revised Edition, which are issued as recommendations of the Tenth National Conference on School Transportation. These standards are divided into sections covering definitions, chassis standards and body standards. The purpose is to define school buses, minimum chassis and body standards and assign responsibility for providing the defined equipment. The 1985 revised edition of Standards for School Buses and Operations covering definitions and school bus chassis and body standards, is incorporated by reference and hereby adopted as a rule and supplemented by standards established in N.J.A.C. 13:20-49.2, 49.3 and 49.4. These standards apply to vehicles with a chassis manufacture date of July 1985 through May 1993.

1. This document is available for review at the Motor Vehicle Commission, 225 East State Street, PO Box 162, Trenton, New Jersey 08666-0162, or at the Office of Administrative Law, PO Box 049, Trenton, New Jersey 08625-0049.

2. This document may be purchased from the National Safety Council, 444 North Michigan Avenue, Chicago, Illinois 60611.

(c) Each school bus shall be inspected twice each year by the Motor Vehicle Commission's School Bus Inspection Unit to ensure that such vehicle is in safe and proper operating condition. The time and location of the inspections shall be established by the Chief Administrator or his or her designee.

(d) An autobus subject to inspection by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit that is used for the transportation of children to or from school shall display a certificate of inspection issued by the Commission indicating school use. An autobus is exempt from displaying a certificate for school use issued by the Motor Vehicle Commission when being used on a preset franchised route and schedule or chartered for school-connected activities.

(e) A parent or legal guardian under contract with a district board of education to transport only his or her own child or children shall not be required to possess a commercial driver license or to use a motor vehicle registered as a school bus.

(f) All equipment and components required by this subchapter shall be maintained in proper operating condition at all times.

Amended by R.2005 d.24, effective January 18, 2005.  
See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Added a new (a); recodified former (a) as (b) and added new (c) through (f).

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (b) and (b)1, substituted "Motor Vehicle Commission" for "Division of Motor Vehicles"; in (b), substituted "is" for "are" preceding "incorporated", substituted "in" for "by" preceding "N.J.A.C.", and deleted commas after "July" and "May"; and in (b)1, substituted "08666" for "08625" in (b)1.

### **13:20-49.2 Chassis standards supplement to the 1985 National Minimum Standards**

(a) The parking brake shall hold the vehicle stationary, or to a limit of traction of the braked wheels, on a 20 percent grade under any condition of legal loading and on a surface free from snow, ice and loose material.

(b) When applied, the parking brake shall remain in an applied position with the capability set forth in (a) above, despite exhaustion of the source of energy used for the application or leakage of any kind.

(c) A parking brake lever shall be mounted to the right of the driver on Types C and D buses and in a position that is

easily accessible. On Types A and B buses, the parking brake lever may be mounted to the left of the driver.

(d) The parking brake shall be equipped with an on or off warning device.

(e) The hood may be painted National School Bus Yellow low luster yellow or flat black. The wheels may be black, gray, silver or white. The grille shall be chrome or National School Bus Yellow.

(f) An exhaust system shall not exit under any operating window of a bus.

(g) Type A school bus fuel tank(s) shall be according to the manufacturers' standard.

(h) Buses shall be equipped with dual horns of standard make. Each horn shall be capable of producing a complex sound in a band of audio frequencies between approximately 250 and 2,000 cycles per second and each having a total sound level of 110 decibels within these frequency limits. Sound shall be measured at a point on the axis of the horn, three feet from the exit of the horn.

(i) All gauges and instruments must be appropriately identified.

(j) A telltale light, plainly visible to the driver, shall be installed to give a positive indication of the operation of the stop lights.

(k) A transmission shifting control pattern shall be affixed to a point convenient to the driver.

(l) There shall be a detent on the automatic transmission shift level to insure that the transmission cannot accidentally move from neutral to a drive gear without driver effort.

(m) School buses not equipped with a park position on the shift control selector for automatic or semi-automatic transmissions shall be equipped with a heavy duty parking brake.

### **13:20-49.3 Bus body standards supplement to the 1985 National Minimum Standards**

(a) Except for Type A vehicles, the minimum clearance of all aisles shall be 12 inches.

(b) When a bus is equipped with air doors or other air operated assemblies, excluding windshield wipers, an additional air tank is needed for the operation of those assemblies.

(c) The emergency door shall be designed to be opened from the inside and outside of the bus and shall be equipped with a fastening device which may be quickly released, but is designed to offer protection against accidental release. Control of the fastening device from the driver's seat shall not be permitted.

(d) The emergency door fastening device shall be equipped with a suitable electric plunger-type switch connected with a buzzer located in the driver's compartment. The switch shall be enclosed in a metal case, and wires leading from the switch shall be concealed in the bus body. The switch shall be installed so that the plunger contacts the farthest edge of the slide bar in such a manner so that any movement of the slide bar will immediately close the circuit on the switch and activate the buzzer.

(e) The emergency door may be equipped with a locking system which incorporates an interlocking electrical circuit that prevents the bus from being started while the emergency door is locked.

(f) The words "Emergency Door" shall be applied to the emergency door, both inside and outside, and shall be in red letters at least two inches high.

(g) The hot water heater system in a Type A vehicle shall be according to the manufacturers' standard.

(h) The owning or operating organization name shall be conspicuously identified in letters at least three inches high, located on each longitudinal side of the exterior of the bus. Such identification shall be completely horizontal and below the window line.

(i) No advertisement of any kind shall be exhibited either on the interior or exterior of the school bus, with the exception that the manufacturer's and vendor's trade name(s) shall be permitted to be exhibited on the bus.

(j) Types A and B buses shall install incandescent signal lamps.

(k) Types C and D buses shall use either the incandescent or strobe lamps.

(l) Interior lamps shall be provided which adequately illuminate the aisle and step-well.

(m) All lamps and their installation shall be of a type approved by the Chief Administrator of the Motor Vehicle Commission.

(n) If strobe lamps are utilized, the front and rear signal lamps on each school bus shall be equipped with eight electronic strobe lamps, four red and four amber, working in an automatic integrated system. The warning lamps shall be of a type approved by the Chief Administrator of the Motor Vehicle Commission.

1. Eight Par 46 sealed beam type strobe lamps shall be utilized.

2. The solid-state strobe power supply shall provide the electrical power to energize the sealed beam flash tubes. The power supply shall energize the lamps at a combined alternating flash rate of 120-128 flashes per minute. The power supply shall be fully enclosed in a metal environment container with a minimum metal wall thickness of 0.060 inch.

3. The power supply shall be fully enclosed within the bulkhead.

(o) Types B, C and D school buses shall have two exterior convex type mirrors mounted forward, one to the left side and one to the right of the driver. Each mirror shall be a minimum of six by six inches overall, rectangular in shape and shall have a minimum 21 inch to a maximum 30 inch radius of curvature on the convex. Each mirror shall be firmly supported and adjustable to give the driver a clear view of the left rear wheels and the immediate adjacent area, and the right rear wheels and the immediate adjacent area.

1. Type A school buses shall have two exterior clear view rearview mirrors mounted forward, below eye level, one to the left and one to the right of the driver and each

mirror shall be firmly supported and adjustable to give the driver a clear view past the left rear and right rear of the vehicle. Outside rearview mirrors, as a minimum, shall be four inches wide by six inches high.

(p) Mirror mounting brackets shall be affixed to the bus so as to be securely fastened to the structural frame members of the bus body, or shall be affixed to the existing exterior rearview mirror mounting brackets.

(q) The convex type mirrors shall not be a part of or attached to the exterior rearview mirrors.

(r) The convex type mirror head and the rearview mirror head shall be mounted so as to have a minimum of two inches distance between the two mirrors.

(s) Cross over mirrors shall have a minimum measurement of six and one-half inches at the base.

(t) The size of the interior mirror on Type A school buses shall be according to manufacturers' standard.

(u) The floor covering in Type A school buses shall be either one-half exterior plywood securely fastened to the floor of the school bus in the passenger compartment, tapered to the forward level, or 14 gauge smooth steel floor.

(v) Rub rails shall be attached at each body post, sedan doors and all other upright structural members.

(w) All seats shall be forward facing.

(x) The tailpipe shall terminate up to a maximum of two inches beyond the rear bumper.

(y) Glass in all side and rear windows shall be of AS-2 or better grade. Equivalent plastic AS-4 or better, may only be used in side windows of the bus.

(z) The windshield shall have a horizontal gradient band starting slightly above the line of a driver's vision and gradually decreasing in light transmission to 20 percent or less at the top of the windshield. Glass in the windshield shall be of AS-1 grade.

(aa) The wheelhousing shall be attached to floor sheets in such a manner to prevent any dust, water, or fumes from entering the body. The wheelhousing shall be constructed of 16-gauge steel.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (m) and (n), substituted "Chief Administrator" for "Director" and "Motor Vehicle Commission" for "Division of Motor Vehicles" throughout.

**13:20-49.4 Standards supplement to the 1985 National Minimum Standards for buses used to transport special needs students**

(a) If a ramp device is installed, it shall have a non-skid surface and be securely stored and protected from the elements when not in use.

1. The ramp must have at least three feet of length for each foot of incline.

(b) Seat belts or other suitable restraints shall be installed for each passenger including those seated in wheelchairs.

(c) Each door shall be equipped with a device that will actuate a visual or audible signal located in the driver's compartment when the door is not securely closed and the ignition is in the "on" position.

(d) Any aisle leading from a wheelchair position to the emergency or exit door shall be a minimum width of 30 inches.

|                                       |        |       |
|---------------------------------------|--------|-------|
| Tail lights .....                     | 2..... | 1.18  |
| Clearance lights.....                 | 4..... | 2.36  |
| Cluster lights .....                  | 6..... | 3.54  |
| Body instrument panel .....           |        | 0.80  |
| Primary front heater motors .....     | 2..... | 24.00 |
| Primary defroster motor .....         | 1..... | 12.00 |
| Supplementary front heater motor..... | 1..... | 12.00 |
| Supplementary defroster motor .....   | 1..... | 12.00 |
| Underseat heater motors.....          | 2..... | 10.50 |
| Underseat heater motor .....          | 1..... | 8.50  |
| Defroster fan motor.....              | 1..... | 3.50  |
| Windshield wipers.....                |        | 14.00 |
| Fuel pump .....                       |        | 3.00  |
| Emergency door buzzer.....            |        | 1.00  |

**Intermittent Load**

|   |        |       |
|---|--------|-------|
| Flasher motor .....                       |        | 2.90  |
| Alternately flashing signal lamps .....   | 2..... | 11.60 |
| Step-well and 6 interior dome lights..... |        | 5.64  |
| Individual additional dome lights.....    |        | 0.94  |
| Stop (brake) lights.....                  | 4..... | 6.60  |
| Turn signals.....                         | 2..... | 2.36  |

To determine the electrical load (in amperes) for a typical school bus, the following formula is recommended:

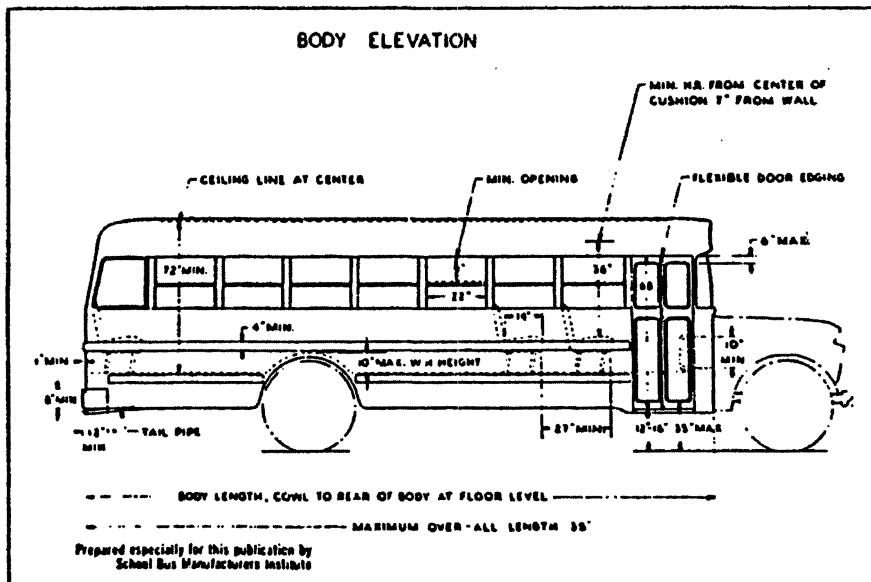
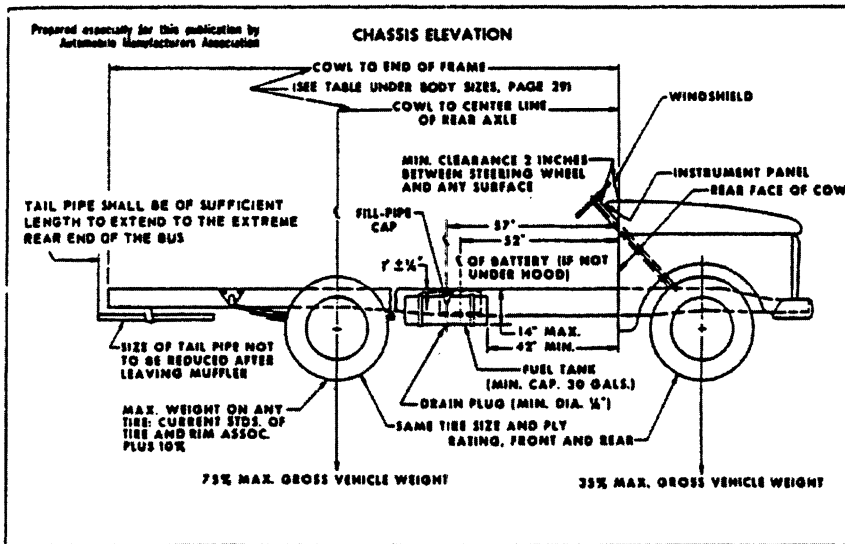
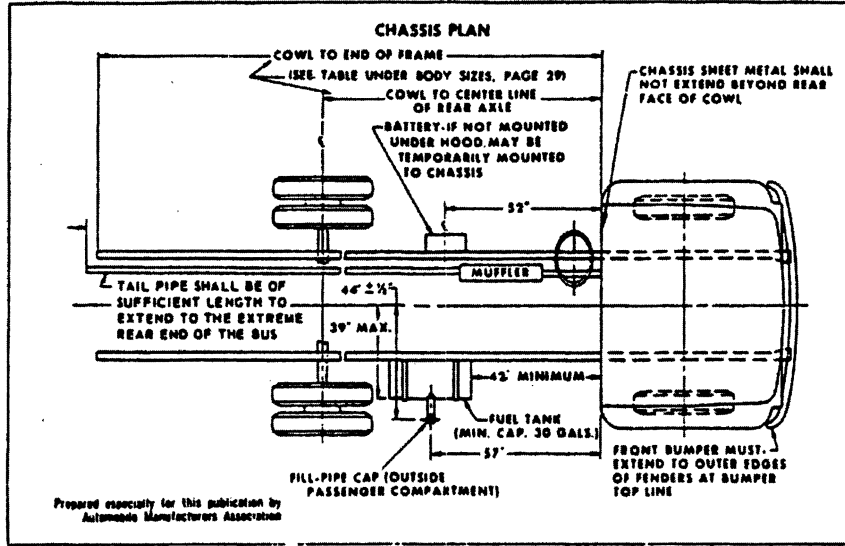
$$\text{Constant Load} + 35\% \text{ of intermittent load } \frac{3}{4} \text{ total load}$$

**APPENDIX**

**SUGGESTED METHOD FOR ESTIMATING GENERATOR OR ALTERNATOR CAPACITY**

**Constant Load**

| Equipment                                | Number<br>of Units | Current<br>Draw<br>(Amperes) |           |
|--|--------------------|------------------------------|-----------|
| Ignition.....                            | 2.50               |                              | (average) |
| Head lamps (Type 2 dual lower beam)..... | 2                  | 8.40                         |           |



SUBCHAPTER 49A. STANDARDS FOR BUSES USED  
FOR PUPIL TRANSPORTATION  
MANUFACTURED JUNE 1993 THROUGH  
DECEMBER 2005

**13:20-49A.1 Scope and purpose**

(a) This subchapter shall be applicable to all motor vehicles registered in New Jersey originally designed by the manufacturer to carry 10 or more passengers, excluding the driver, operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child care center, preschool center or other similar places of education. All such motor vehicles shall be registered as school buses in accordance with N.J.S.A. 39:3-19.2 and shall comply with the rules set forth in this subchapter and in N.J.A.C. 13:20-49B, 49C and 49D, and all applicable Federal standards. A motor vehicle shall not be used for the purposes set forth in this subsection unless it has been registered as a school bus in accordance with N.J.S.A. 39:3-19.2 and complies with the rules set forth in this subchapter and in N.J.A.C. 13:20-49B, 49C and 49D, and all applicable Federal standards.

(b) Each school bus shall be inspected twice each year by the Motor Vehicle Commission's School Bus Inspection Unit to ensure that such vehicle is in safe and proper operating condition. The time and location of the inspections shall be established by the Chief Administrator or his or her designee.

(c) The rules set forth in this subchapter and in N.J.A.C. 13:20-49B, 49C and 49D shall not apply to autobuses approved for school use and subject to inspection by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit unless otherwise provided.

(d) An autobus subject to inspection by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit that is used for the transportation of children to or from school shall display a certificate of inspection issued by the Commission indicating school use. An autobus is exempt from displaying a certificate for school use issued by the Motor Vehicle Commission when being used on a preset franchised route and schedule or chartered for school-connected activities.

(e) A parent or legal guardian under contract with a district board of education to transport only his or her own child or children shall not be required to possess a commercial driver license or to use a motor vehicle registered as a school bus.

(f) The rules set forth in this subchapter and in N.J.A.C. 13:20-49B, 49C and 49D shall apply to school buses with a June 1993 through December 2005 chassis manufacture date unless otherwise provided. School buses manufactured prior

to June 1993 shall comply with the standards in effect when the school bus was manufactured or converted.

(g) All equipment and components required by this subchapter and by N.J.A.C. 13:20-49B, 49C and 49D shall be maintained in proper operating condition at all times.

Amended by R.1994 d.404, effective August 1, 1994.

See: 26 N.J.R. 1997(a), 26 N.J.R. 3164(a).

Amended by R.2005 d.24, effective January 18, 2005.

See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Rewrote the section.

**13:20-49A.2 Words and phrases defined**

The following words and phrases, when used in N.J.A.C. 13:20-49A through 49D, shall have the following meanings unless the context clearly indicates otherwise. Any reference to direction is relative to the driver in a seated position.

"Completed vehicle" means a vehicle that requires no further manufacturing operation to perform its intended function.

"Curb weight" means the weight of a school bus or vehicle including a maximum capacity of all fluids.

"Driver" means the authorized licensed operator of the vehicle.

"Emergency brake" means the mechanism designed to stop a school bus or vehicle in case of service brake failure.

"FMVSS" means Federal Motor Vehicle Safety Standards.

"FMCSR" means Federal Motor Carrier Safety Regulations.

"GVW" means Gross Vehicle Weight. GVW is the total weight of a single vehicle plus its load.

"GVWR" means Gross Vehicle Weight Rating. GVWR is the value specified by the manufacturer as the maximum loaded weight of a single vehicle.

"Kph" mean kilometers per hour.

"Mph" means miles per hour.

"NSFSB" means National Standards for School Buses.

"Parking brake" means a mechanism designed to prevent the movement of a stationary vehicle.

"Passenger" means any person riding in a school bus or vehicle other than the driver.

"Passenger seat" means a seat other than the driver's seat.

"SAE" means Society of Automotive Engineers, Inc.

"SBMI" means School Bus Manufacturers Institute.

“School bus” or “bus” when used in this subchapter shall refer to Types A, B, C and D buses and shall be classified in the following manner:

1. A Type “A” school bus is a conversion or body constructed upon a van-type compact truck or a front-section vehicle, with a GVWR of 10,000 pounds or less, designed for carrying 10 to 16 passengers;

2. A Type “B” school bus is a conversion or body constructed and installed upon a van or front-section vehicle chassis, or stripped chassis, with a GVWR of more than 10,000 pounds, designed for carrying 10 to 25 passengers. Part of the engine is beneath and/or behind the windshield and beside the driver’s seat. The entrance door is behind the front wheels;

3. A Type “C” school bus is a body installed upon a flat back cowl chassis with a GVWR of more than 10,000 pounds, designed for carrying 10 to 54 passengers. The engine is in front of the windshield, or part of the engine is beneath and/or behind the windshield and beside the driver’s seat. The entrance door is behind the front wheels;

4. A Type “D” school bus is a body installed upon a chassis, with the engine mounted in the front, midship, or rear, with a GVWR of more than 10,000 pounds, designed for carrying 10 to 54 passengers. The engine may be behind the windshield and beside the driver’s seat; it may be at the rear of the bus, behind the rear wheels, or midship between the front and rear axles. The entrance door is ahead of the front wheels;

5. A Type “I” school bus is any vehicle designed to transport 16 or more passengers, including the driver, used for the transportation of students to and from school or school related activities. This identification regulates the type of vehicle registration required by the New Jersey Motor Vehicle Commission; and

6. A Type “II” school bus is any vehicle designed to transport less than 16 passengers, including the driver, used for the transportation of students to and from school or school related activities. This identification regulates the type of vehicle registration required by the New Jersey Motor Vehicle Commission.

“School bus warning lamps” are eight alternately flashing red or amber lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the vehicle is stopped or about to stop.

“Service brake” means the primary mechanism designed to stop a motor vehicle.

“Strobe school bus warning lamps” means a school bus warning lamp system utilizing eight electronic sealed beam flash tubes.

“Webbed belt” means a narrow fabric belt woven with continuous filling yarns and finished selvages.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In definition “School bus”, rewrote 5 and 6.

### 13:20-49A.3 Certification

(a) The chassis and/or body manufacturer and any manufacturer of school bus equipment required by this subchapter shall, upon request, provide evidence and/or certify to the Motor Vehicle Commission and the user that their product meets the minimum standards of this subchapter and all applicable FMVSS.

(b) Any person who alters, converts, or modifies a certified “completed vehicle” used to transport students shall certify to the Motor Vehicle Commission and the user that all modifications conform to applicable design, construction, testing, and performance standards contained in this chapter.

(c) School bus vendors who sell or lease buses for student transportation shall issue a “Vendor Certification Statement”, to the buyer or lessee, signed by an authorized agent or officer of the company certifying that the bus meets all State and Federal requirements.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (a) and (b), substituted “Motor Vehicle Commission” for “Division of Motor Vehicles”.

## SUBCHAPTER 49B. CHASSIS STANDARDS FOR BUSES USED FOR PUPIL TRANSPORTATION MANUFACTURED JUNE 1993 THROUGH DECEMBER 2005

### 13:20-49B.1 Air cleaner

(a) The engine intake air cleaner system shall be furnished and properly installed by the chassis manufacturer to meet engine manufacturer’s specifications.

(b) The intake air system for diesel engines may have an air cleaner restriction indicator properly installed by the chassis manufacturer to meet engine specifications.

### 13:20-49B.2 Axles

The front axle and rear differential, including suspension assemblies, shall have a gross axle weight rating at ground at least equal to that portion of the load as would be imposed by the chassis manufacturer’s maximum gross vehicle weight rating.

### 13:20-49B.3 Brakes

(a) A braking system, including service brake and parking brake, shall be provided.

(b) Buses using air or vacuum in the operation of the brake system shall be equipped with warning signals, readily audible and visible to the driver, that will give a continuous warning when the air pressure available in the system for braking is 60 pounds per square inch or less or the vacuum in the system available for braking is eight inches of mercury or less. The audible warning signal shall be capable of alerting the driver while the bus is being operated in traffic. An illuminated gauge shall be provided that will indicate to the driver the air pressure in pounds per square inch or the inches of mercury vacuum available.

1. Vacuum-assist brake systems shall have a reservoir used exclusively for brakes that shall be adequate to ensure loss in vacuum at full stroke application of not more than 30 percent when the engine is not running. The brake system on gas-powered engines shall include suitable and convenient connections for the installation of a separate vacuum reservoir.

2. The brake system dry reservoir shall be safeguarded by a check valve or equivalent device, that in the event of failure or leakage in its connection to the source of compressed air or vacuum, the stored dry air or vacuum shall not be depleted by the leakage or failure.

(c) Buses using a hydraulic assist-brake system shall be equipped with warning signals, readily audible and visible to the driver, that will provide continuous warning in the event of a loss of fluid flow from the primary source or loss of the electric source powering the backup system.

(d) The brake lines and booster assist lines shall be protected from excessive heat and vibration and shall be installed to prevent chafing.

(e) The brake system shall be designed to permit visual inspection of brake lining wear without removal of any chassis components.

(f) The parking brake shall hold the vehicle stationary, or to a limit of traction of the braked wheels, on a 20 percent grade under any condition of legal loading and on a surface free from snow, ice and loose material.

(g) When applied, the parking brake shall remain in an applied position with the capacity set forth in (f) above despite exhaustion of the source of energy used for the application or leakage of any kind.

(h) A parking brake lever shall be mounted to the right of the driver in a position that is easily accessible.

1. On Types A and B buses, the parking brake lever may be mounted in accordance with the chassis manufacturer's standards.

(i) The parking brake shall be equipped with a warning device visible to the driver which will indicate that the parking brake is on.

#### 13:20-49B.4 Bumper, front

(a) The front bumper shall be furnished by the chassis manufacturer as part of the chassis.

1. The Type D bus front bumper may be furnished by the body or chassis manufacturer.

(b) The front bumper shall be of pressed steel channel or equivalent material at least 3/16 inch thick and not less than eight inches high and shall extend beyond the forward-most part of the body, grille, hood, and fenders and shall extend to outer edges of the fenders at the bumper top line.

(c) The front bumper, except breakaway bumper ends, shall be of sufficient strength to permit pushing a vehicle of equal gross vehicle weight without permanent distortion to bumper, chassis, or body.

(d) An energy absorbing front bumper, which conforms to current FMVSS test requirements, may be used. Its design shall incorporate a self-restoring energy absorbing system of sufficient strength to:

1. Push another vehicle of similar GVW without permanent distortion to the bumper, chassis, or body; and

2. Withstand repeated impacts without damage to the bumper, chassis or body according to current NSFBSB.

(e) Tow eyes or hooks shall be furnished and attached so as not to project beyond the front bumper. Tow eyes or hooks attached to the chassis frame, shall be furnished by the chassis manufacturer. This installation shall be in accordance with the chassis manufacturer's standards.

#### 13:20-49B.5 Clutch

The clutch torque capacity shall be equal to or greater than the engine torque output.

#### 13:20-49B.6 Color

The chassis, including front bumper, shall be black. The cowl, fenders and hood shall be National School Bus Yellow. The hood may be painted non-reflective National School Bus Yellow. Wheels and rims shall be black, gray, white, or silver. The grille shall be chrome, silver, gray, or National School Bus Yellow.

#### 13:20-49B.7 Drive shaft

Each segment of the drive shaft shall be equipped with a metal guard or guards around its circumference to prevent the drive shaft from whipping through the floor or dropping to the ground if broken.

#### 13:20-49B.8 Electrical system

(a) Buses shall be equipped with a battery or batteries as specified by the manufacturer.

1. The storage battery shall have a minimum cold cranking capacity rating equal to the cranking current required for 30 seconds at 0 degrees Fahrenheit (-17.8°C) and a minimum reserve capacity rating of 120 minutes at 25 amps. Higher capacities may be required depending upon optional equipment and local environmental conditions.

2. When a battery or batteries are to be mounted by the body manufacturer on a sliding tray rather than the standard installation provided by the chassis manufacturer, the battery(ies) shall be temporarily mounted on the chassis frame by the chassis manufacturer. In this case, the final location of the battery(ies) and the appropriate cable lengths shall be according to current SBMI design objectives.

(b) Buses shall be equipped with an alternator.

1. A Type A bus shall have a minimum 60 ampere per hour alternator.

2. A Type B bus shall have a minimum 80 ampere per hour alternator.

3. Types C and D buses shall have an alternator with a minimum output rating of at least 100 amperes capable of producing a minimum of 50 percent of its maximum rated output at manufacturer's recommended engine idle speed.

4. Buses equipped with an electrical power lift, shall have a minimum 100 amps per hour alternator.

5. A direct-drive alternator is permissible in lieu of belt drive. Belt drive shall be capable of handling the rated capacity of the alternator with no detrimental effect on the other driven components.

6. Estimating the required alternator capacity shall be according to current SBMI design objectives.

(c) Wiring shall use a standard color and number coding and conform to current SAE standards.

1. The chassis shall be delivered to the user with a wiring diagram that coincides with the wiring of the chassis.

2. The chassis manufacturer shall install a readily accessible terminal strip or plug on the body side of the cowl, or at an accessible location in the engine compartment of buses designed without a cowl, that shall contain the following terminals for the body connections:

- i. Main 100 amps. body circuit;
- ii. Tail lamps;
- iii. Right turn signal;
- iv. Left turn signal;
- v. Stop lamps;
- vi. Back up lamps; and

vii. Instrument panel lights which are rheostat controlled by the headlamp switch.

### 13:20-49B.9 Engine fire extinguishers

Buses may be equipped with a fire extinguisher system for the engine compartment.

Amended by R.1994 d.404, effective August 1, 1994.  
See: 26 N.J.R. 1997(a), 26 N.J.R. 3164(a).

### 13:20-49B.10 Exhaust system

(a) The exhaust pipe, muffler, and tailpipe shall be outside the bus body compartment and attached to the chassis.

(b) The exhaust system components shall not be located where their location would likely result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the bus.

1. The exhaust system on a gas-powered chassis shall be properly insulated from fuel tank connections by a securely attached metal shield at any point where it is 12 inches or less from fuel tank or tank connections.

i. When a metal shield is required, the metal shield shall provide a minimum of two inches clearance between the exhaust system components, the fuel system, and/or combustible components.

(c) The tailpipe diameter from muffler to the end shall comply with the chassis manufacturer's standard and shall be constructed of a corrosion resistant tubing material at least equal in strength and durability to 16-gauge steel tubing.

1. The exhaust system tailpipe shall terminate to the rear of all doors and windows designed to be opened for ventilation.

2. The exhaust system shall not discharge to the atmosphere immediately below an emergency exit, fuel tank or fuel tank fill pipe.

3. The exhaust system tailpipe of a bus powered by a gasoline engine shall extend to the rear bumper or to the left or right perimeter sides of the bus body and discharge to the atmosphere either:

- i. At or within six inches forward of the rearmost part of the bus on either side; or
- ii. Beyond the rear bus bumper up to a maximum of two inches.

4. The exhaust system tailpipe of a bus using fuel other than gasoline shall extend to the rear bumper or to the perimeter of the sides of the bus body and discharge to the atmosphere either:

- i. At or within 15 inches forward of the rearmost part of the bus on the sides; or

ii. Beyond the rear bus bumper up to a maximum of two inches.

(d) The muffler shall be constructed of corrosion-resistant material.

#### 13:20-49B.11 Fenders, front, Type C buses

(a) The total spread of the outer edges of the front fenders, measured at the fender line, shall exceed the total spread of front tires when front wheels are in straight-ahead position.

(b) Front fenders shall be properly braced and free from any body attachments.

#### 13:20-49B.12 Frame

(a) The frame or its equivalent shall be of such design and strength characteristics to correspond with the standard practice for trucks of the same general load characteristics.

(b) Any frame modification shall not be for the purpose of extending the wheelbase.

(c) Holes in the top or bottom flanges, or side units of the frame, shall not be permitted except as provided in the original chassis frame. Welding to the frame shall be by the chassis manufacturer or as approved by the chassis manufacturer.

(d) Frame lengths shall be provided in accordance with current SBMI design objectives.

#### 13:20-49B.13 Fuel tank

(a) The fuel tank or tanks of minimum 30 gallon capacity shall have a 25 gallon actual draw. If a fuel tank size, larger than 30 gallons is supplied, the actual draw shall be 83 percent of the tank capacity. The fuel tank(s) shall be filled and vented to the outside of the body, the location of which shall ensure that accidental fuel spillage will not drip or drain on any part of the exhaust system.

(b) No portion of the fuel system which is located to the rear of the engine compartment, except the filler tube, shall extend above the top of the chassis frame rail. Fuel lines shall be mounted to obtain maximum possible protection from the chassis frame.

(c) A fuel filter with replaceable element shall be installed between the fuel tank and the engine.

(d) The fuel tank installation shall be in accordance with current SBMI design objectives.

(e) An auxiliary tank may be added in accordance with current SBMI design objectives.

(f) A bus constructed with a power lift unit may have the fuel tank mounted on the left chassis frame rail or behind the rear wheels.

#### 13:20-49B.14 Governor

(a) An engine governor may be installed.

(b) When an engine is mounted in the midship or rear of a bus, a governor shall be installed to limit engine speed to the maximum revolutions per minute recommended by the engine manufacturer, or a tachometer shall be installed so the engine speed may be known to the driver.

(c) A road-speed governor may be installed to limit road speed.

#### 13:20-49B.15 Heating system

The chassis engine shall have plugged openings for the purpose of supplying hot water for the bus heating system. The opening shall be suitable for attaching a ¾ inch pipe thread/hose connector. The engine shall be capable of supplying water having a temperature of at least 170 degrees Fahrenheit at a flow rate of 50 pounds per minute at the return end of 30 feet of one inch inside diameter automotive hot water heater hose.

#### 13:20-49B.16 Horn

Buses shall be equipped with dual horns of a standard make. Each horn shall be capable of producing a complex sound in a band of audio frequencies between 250 and 2,000 cycles per second.

#### 13:20-49B.17 Instruments and instrument panel

(a) The chassis shall be equipped with the following instruments and gauges. Lights in lieu of gauges are not acceptable except as noted:

1. Speedometer;
2. Odometer which will give accrued mileage to seven digits including tenths of miles;
3. Voltmeter;
  - i. An ammeter with graduated charge and discharge with ammeter and its wiring compatible with generating capacities is permitted in lieu of a voltmeter;
4. Oil-pressure gauge;
5. Water temperature gauge;
6. Fuel gauge;
7. Upper beam headlight indicator;
8. Vacuum or air brake indicator gauge;
  - i. A light indicator in lieu of a gauge is permitted on buses equipped with a hydraulic-over-hydraulic brake system;
9. Turn signal indicator; and
10. Glow-plug indicator light, where appropriate.

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

(c) Above instruments and gauges shall be mounted on an instrument panel in such a manner that each is clearly visible to the driver while in normal seated-belted position in accordance with current SBMI design objectives.

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

(e) All gauges and instruments must be appropriately identified.

#### 13:20-49B.18 Oil filter

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

#### 13:20-49B.19 Openings

All openings in the floorboard or firewall between chassis and passenger compartment, such as for gearshift selector/lever and parking brake lever, shall be sealed.

#### 13:20-49B.20 Passenger load

(a) The gross vehicle weight (GVW) is the sum of the chassis weight, plus the body weight, plus the driver's weight, plus total seated pupil weight.

1. For purposes of calculation:
  - i. The driver's weight is 150 pounds; and
  - ii. The pupil weight is 120 pounds per pupil.

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

(c) Buses with a GVWR of 26,001 pounds or more shall display the GVWR on the sides of the bus as required by the Motor Vehicle Commission.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (c), deleted "in excess" following "GVWR", inserted "or more" and substituted "Motor Vehicle Commission" for "Division of Motor Vehicles".

#### 13:20-49B.21 Power and gradeability

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

#### 13:20-49B.22 Retarder system

A retarder system may be used which shall maintain the speed of the fully loaded school bus at 19.0 mph or 30 kph on a seven percent grade for 3.6 miles or six km.

#### 13:20-49B.23 Shock absorbers

Buses shall be equipped with front and rear double-action shock absorbers compatible with manufacturer's rated axle capacity at each wheel location.

#### 13:20-49B.24 Springs

(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.

#### 13:20-49B.25 Steering gear

(a) The steering gear shall be approved by the chassis manufacturer and designed to assure safe and accurate performance when a vehicle 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 in the steering apparatus which 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.

#### 13:20-49B.26 Tires and rims

(a) Tires and rims of proper size and tires with load rating commensurate with 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, construction and load rating. The load rating shall meet or exceed the GAWR in accordance with current applicable FMVSS.

1. Tires on Types C and D buses may be of more than one type construction provided all tires on the same axle are the same type of construction.

(d) If a bus is equipped with a spare tire and rim assembly, it shall be of the same size as those mounted on the bus.

(e) If a bus is equipped with a tire carrier, it shall be suitably mounted in an accessible location outside the passenger compartment.

(f) The tire tread depth shall at no time be less than  $\frac{4}{32}$  of an inch on the front tires and  $\frac{2}{32}$  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 wheels of a bus.

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

(i) Tire chains, snow tires or all weather tires shall be used for the drive wheels to enhance the safe operation of the bus in areas of snow and ice.

### 13:20-49B.27 Transmission

(a) When an automatic transmission is used, it shall provide for not less than 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) There shall be a detent on the automatic transmission shift lever to insure that the transmission cannot accidentally move from neutral to a drive gear without driver effort.

(e) Buses which 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.

### 13:20-49B.28 Turning radius

(a) A chassis with a wheel base of 264 inches or less shall have a right and left turning radius of not more than  $42\frac{1}{2}$  feet, curb to curb measurement.

(b) A chassis with a wheelbase of 265 inches or more shall have a right and left turning radius of not more than  $44\frac{1}{2}$  feet, curb to curb measurement.

### 13:20-49B.29 Undercoating

The undersides of steel or metallic-constructed front fenders shall be coated with rust-proofing compound.

### 13:20-49B.30 Weight distribution

The weight distribution of a fully loaded bus on a level surface shall not exceed the manufacturer's front and rear GAWR.

## SUBCHAPTER 49C. BODY STANDARDS FOR BUSES USED FOR PUPIL TRANSPORTATION MANUFACTURED JUNE 1993 THROUGH DECEMBER 2005

### 13:20-49C.1 Aisle

(a) The minimum clearance of all aisles shall be 12 inches.

1. The aisle leading to an exit door or a rear emergency exit shall be a minimum width of 12 inches.

2. The aisle leading from the center aisle to a side emergency door shall be a minimum width of 24 inches.

3. The aisle leading to an emergency or lift door from a wheelchair position shall be a minimum width of 30 inches.

(b) Aisles shall be unobstructed at all times by any type barrier, seat, or other object.

(c) The seat backs shall be slanted sufficiently to give aisle clearance of 15 inches at the tops of seat backs.

(d) This rule also applies to buses under the jurisdiction of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit, approved for school use, contracted by a local board of education for transportation to and from school.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).  
Rewrote (d).

### 13:20-49C.2 Back-up warning alarm

An automatic audible alarm shall be installed behind the rear axle of the bus and shall comply with current applicable SAE standards for rubber tired vehicles.

### 13:20-49C.3 Battery

(a) A battery is to be furnished by the chassis manufacturer.

(b) When the battery is mounted as described in the chassis standards of N.J.A.C. 13:20-49B.8(a), the body manufacturer shall securely attach battery on a slide-out or swing-out tray in a closed, vented compartment in the body skirt, so that the battery may be exposed to the outside for convenient servicing. The battery compartment door or cover shall be hinged at the front or top and secured by an adequate and conveniently operated fastening device.

### 13:20-49C.4 Bumpers

(a) The front bumper shall be provided by the chassis manufacturer.

1. The bumper on a Type D bus may be furnished by the body or chassis manufacturer.

2. A front safety shield attached directly under the bus front bumper may be used. It shall be constructed of rigid plastic, fiberglass, steel or equivalent material designed to withstand abnormal vibration, severe atmosphere conditions and removable to permit towing. The shield's overall width shall not exceed maximum front tire width, when bus wheels are in a straight ahead position and shall terminate 12 to 14 inches above the road surface. Front surface may be either solid, perforated or louvered and shall be black.

(b) A rear bumper shall be provided which is constructed of pressed steel channel or equivalent material at least 3/16 inch thick.

1. The bumper on a Type A bus shall be a minimum of eight inches high.

2. The bumper on Types B, C, and D buses shall be a minimum of 9½ inches high.

(c) The bumpers shall be of sufficient strength to permit pushing by another vehicle without permanent distortion.

(d) The rear bumper shall be wrapped around the back corners of the bus. It shall extend forward at least 12 inches, measured from the rear-most point of the body at the floor line.

(e) The rear bumper shall be attached to the chassis frame in such a manner that it may be easily removed. It shall be braced to withstand rear or side impact, and shall be attached to discourage hitching of rides.

(f) The rear bumper shall extend at least one inch beyond the rear-most part of the body surface measured at the floor line.

1. A Type A bus may conform to chassis manufacturer's specifications.

(g) Energy-absorbing bumpers which conform to current applicable FMVSS test requirements may be used. Its design shall incorporate a self-restoring energy absorbing bumper system so attached to discourage the hitching of rides and of sufficient strength to:

1. Permit pushing by another vehicle without permanent distortion to the bumper, chassis, or body; and

2. Withstand repeated impacts without damage to the bumper, chassis, or body according to current NSFSB.

### 13:20-49C.5 Capacity

(a) The number of pupils assigned to a seat may not exceed the gross seating length in inches divided by 15. Application of the foregoing formula shall not result in the approval of a school vehicle with a seating capacity in excess of 54.

1. Vehicles manufactured as 58 passenger elementary school vehicles owned by a district board of education or

contractor prior to December 18, 1989, may be utilized until retirement.

(b) There shall be no standees.

(c) This section shall not apply to a bus while being used as a common carrier on a preset franchised route and schedule.

Repeal and New Rule, R.1989 d.610, effective December 18, 1989.  
See: 21 N.J.R. 2724(a), 21 N.J.R. 3939(a).  
Amended by R.1994 d.404, effective August 1, 1994.  
See: 26 N.J.R. 1997(a), 26 N.J.R. 3164(a).

### 13:20-49C.6 Color

(a) The school bus body shall be painted National School Bus Yellow.

(b) The body exterior paint trim, bumper, lamp hoods, emergency door arrow, exterior mirror assembly and support brackets shall be black.

1. The words "EMERGENCY DOOR" shall be applied both inside and outside the door in red lettering at least two inches high and at least 3/16 inch wide.

(c) Reflective material may be applied to the bus. The material used shall be automotive engineering grade or better, meeting initial reflectance values as specified by NSFSB and retaining at least 50 percent of those values for a minimum of six years. Reflective materials and markings, if used, may include any or all of the following:

1. The bumpers may be marked diagonally 45 degrees down to the centerline of the pavement with stripes evenly spaced of National School Bus Yellow or non-contrasting reflective material two inches wide.

2. The rear of bus body may be marked with a strip of reflective National School Bus Yellow material no greater than two inches in width to be applied to the back of the bus, extending from the left lower corner of the "SCHOOL BUS" lettering, across to left side of the bus, then vertically down to the top of the bumper, across the bus on a line immediately above the bumper to the right side, then vertically up to a point even with the strip placement on the left side, and concluding with a horizontal strip terminating at the right lower corner of the "SCHOOL BUS" lettering.

3. The sides of the bus body may be marked with reflective National School Bus Yellow material at least six inches but not more than 12 inches in width, extending the length of the bus body and located (vertically) as close as practicable to the beltline.

4. The "SCHOOL BUS" signs may be marked with reflective National School Bus Yellow material comprising background for lettering of the front and/or rear "SCHOOL BUS" signs.

**13:20-49C.7 Communications**

(a) School buses may be equipped with an electronic voice communication system, preferably not citizen band equipment.

(b) A public address sound system with interior speakers and exterior horn may be installed.

**13:20-49C.8 Construction**

(a) The bus construction shall be of prime commercial quality steel or other metal or material with strength at least equivalent to all-steel as certified by the body manufacturer.

(b) The construction shall provide a reasonably dustproof and water-tight unit and the exterior shall be designed to discourage the hitching of rides.

(c) The bus body joints shall conform to current applicable FMVSS. This does not include the body joints created when body components are attached to components furnished by the chassis manufacturer.

(d) Restraining barriers shall conform to current applicable FMVSS requirements for buses with a GVWR of more than 10,000 pounds.

(e) Buses may be equipped with steel side panel skirts between the front and rear axles of the bus and shall extend to the bottom-most evaluation of any chassis component located within the center section of a wheel base measurement apportioned into three equal sections. The side panel skirt shall terminate no less than 12 inches above a level road surface. Beyond the rear axle, the bottom of the side panel skirts shall taper upward to the bottom-most part of the rear bumper.

(f) Buses shall not be equipped with stanchions, an interior luggage rack, a roof luggage rack, or luggage access ladder.

1. This rule also applies to buses under the jurisdiction of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit, approved for school use, contracted by a local board of education for transportation to and from school.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Rewrote (f)1.

**13:20-49C.9 Defrosters**

(a) Defrosting and defogging equipment shall direct a sufficient flow of heated air onto the windshield, the window to the left of the driver and the glass in the viewing area directly to the right of the driver to eliminate frost, fog and snow. The defroster unit shall have a separate blower motor in addition to the heater motors.

1. A Type A bus shall be equipped with defogging and defrosting equipment which will direct a sufficient flow of heated air onto the windshield to eliminate frost, fog, and snow.

(b) The defrosting system shall conform to SAE standards.

(c) The defroster and defogging system shall be capable of furnishing heated outside ambient air except that part of the system furnishing additional air to the windshield, entrance door, and step-well which may be of the recirculating air type.

(d) Auxiliary fans are not to be considered as a defrosting and defogging system.

(e) Portable heaters shall not be used.

**13:20-49C.10 Doors, entrance**

(a) The entrance door shall be under control of driver, and designed to afford easy release and prevent accidental opening. When a hand lever is used, no part shall come together so as to shear or crush fingers.

(b) The entrance door shall be located on the right side of the bus opposite the driver and within direct view of the driver.

(c) The entrance door on Types B, C, and D buses shall have a minimum horizontal opening of 24 inches and a minimum vertical opening of 68 inches. The entrance door on a Type A bus shall have a minimum opening of 1,200 square inches.

(d) The entrance door shall be of split-type, sedan-type, or jack-knife type. A split-type door includes any sectioned door which divides and opens inward or outward. If one section of split-type door opens inward and the other opens outward, the front section shall open outward.

(e) Door panels shall be of approved safety glass. The bottom of each lower glass panel shall not be more than 10 inches from the top surface of the bottom step. The top of the upper glass panel shall not be more than six inches from top of door.

1. A Type A bus which is not equipped with a split-type door shall have an upper panel window of safety glass with an area of at least 350 square inches.

(f) The vertical closing edges on a split-type door shall be equipped with a flexible material to protect children's fingers.

1. A Type A bus which is not equipped with a split-type door may conform to the chassis manufacturer's specifications.

(g) There shall be no entrance door to the left of the driver on Types C and D buses. Type A and B buses may conform to chassis manufacturer's specifications.

(h) All doors shall be equipped with a padding at the top edge of each door opening. Pad shall be at least three inches wide and one inch thick and extend the full width of the door opening.

(i) When a bus is equipped with air doors or other air operated assemblies, excluding windshield wipers, an additional air tank is needed for the operation of those assemblies.

#### **13:20-49C.11 Doors, emergency**

(a) The emergency door shall be hinged on the right side if in rear end of the bus and on the front side if on either side of the bus. All emergency doors shall open outward and be equipped with a device to hold the door open during emergencies and school bus evacuation drills.

1. A Type A bus equipped with double emergency doors shall be hinged on the outside edge and have a three point fastening device.

(b) The emergency door shall be labeled inside and outside to indicate how it is to be opened.

(c) The upper portion of emergency door shall be equipped with approved safety glazing, exposed area of which shall be not less than 400 square inches.

1. A rear view wide angle lens may be attached to one rear bus window. The lens shall not cover more than one third of the glass area.

(d) The lower portion of the rear emergency door on Types B, C, and D buses shall be equipped with a minimum of 350 square inches of approved safety glazing.

(e) There shall be no steps leading to emergency door.

(f) The words "EMERGENCY DOOR" shall be applied to the emergency door both inside and outside in red letters at least two inches high and 3/16 inch wide, shall be placed at top of or directly above the emergency door or on the door in the metal panel above the top glass.

(g) The emergency door shall be designed to be opened from the inside and outside of the bus and shall be equipped with a quick release fastening device designed to prevent accidental release. Control of the fastening device from the driver's seat shall not be permitted.

(h) The emergency door and the rear emergency window fastening device shall be equipped with a buzzer located in the driver's compartment which will indicate to the driver that the slide bar has moved and the emergency door is about to open. The switch which operates the buzzer shall be enclosed in a metal case and the wires leading from the switch shall be concealed in the bus body.

(i) The emergency door may be equipped with a locking system which incorporates an interlocking electrical circuit

that will prevent the bus from being started while the emergency door is locked.

(j) The emergency door windows shall not be covered by any metal bars or screening.

(k) The emergency door shall be equipped with padding at least three inches wide and one inch thick, at top edge of each door opening, which shall extend the full width of the door opening.

(l) There shall be no obstruction higher than ¼ inch high across the bottom of any emergency door opening.

#### **13:20-49C.12 Emergency exits**

(a) Buses shall be equipped with emergency push-out split sash side windows which are vertically hinged on the forward side of the bus and roof safety hatches as follows:

1. One emergency push-out exit window per side.

i. Push-out windows shall not be placed directly opposite each other.

ii. Each emergency push-out side exit window shall be equipped with a warning buzzer, located in the driver's compartment to alert the driver when the latch for the emergency push-out window is released.

2. A roof safety hatch shall be installed in the forward half of the bus roof.

i. The roof safety hatch shall be constructed of metal, fiberglass or equivalent and equipped with an interior and exterior latch release. Each roof safety hatch shall provide a minimum opening of 20 inches by 20 inches.

ii. Each roof safety hatch shall be equipped with a warning buzzer, located in the driver's compartment to alert the driver when the latch for the roof safety hatch is released.

(b) Additional push-out windows may be used.

(c) Buses shall be equipped with emergency exits in accordance with P.L. 1992, c.93.

#### **13:20-49C.13 Emergency equipment**

(a) A pry bar at least 24 inches in length shall be securely mounted in the bus in a location readily accessible to the driver.

(b) Each school bus shall contain at least three reflectorized triangle road warning devices in compliance with FMVSS and be mounted in an accessible place in the driver's compartment.

1. The mounting location in a Type A bus is optional.

(c) Buses may be equipped with an identified body fluid clean-up kit that is removable, moisture proof and mounted in an accessible place in driver's compartment.

#### 13:20-49C.14 Fire extinguishers

(a) The bus shall be equipped with at least one pressurized, dry chemical type fire extinguisher, complete with hose, mounted in a bracket located in the driver's compartment and readily accessible to the driver and passengers. A pressure gauge shall be mounted on the extinguisher which can be easily read without removing the extinguisher from its mounted position.

(b) The fire extinguisher shall be approved by the Underwriters Laboratories, Inc. with a total rating of 2 A-10 BC or greater. The operating mechanism shall be sealed with a type of seal which will not interfere with the use of the fire extinguisher.

#### 13:20-49C.15 First aid kit

(a) A removable first aid kit shall be provided. It should be moisture and dust proof and be mounted in an accessible place within the driver's compartment. When the first aid kit is stored in a storage compartment, the location of the kit shall be identified by the words "First Aid" in red letters two inches high and  $\frac{3}{16}$  inch wide.

(b) The kit shall contain, but is not limited to, the following items:

1. Two, one inch x 2½ yards adhesive tape rolls;
2. Twenty-four sterile gauze pads three inches x three inches;
3. One hundred  $\frac{3}{4}$  inch x three inches adhesive bandages;
4. Eight, two inch bandage compresses;
5. Ten, three inch bandage compresses;
6. Two, two inch x six yards sterile gauze roller bandages;
7. Two nonsterile triangular bandages approximately 40 inches x 54 inches with two safety pins;
8. Three sterile gauze pads 36 inches x 36 inches;
9. Three sterile eye pads;
10. One pair latex gloves;
11. One pair rounded end scissors;
12. One mouth-to-mouth airway;
13. One sharpened pencil; and
14. One small writing pad.

#### 13:20-49C.16 Floor

(a) The floor in the underseat area, including tops of the wheelhousing, drivers compartment, and the toe board, shall be covered with rubber floor covering or equivalent having minimum overall thickness of .125 inch.

1. The toe board floor covering on Types A and B buses may be the chassis manufacturer's standard.

(b) The floor covering in the aisle shall be rubber or equivalent, wear-resistant, and ribbed. Minimum overall thickness shall be .187 inch measured from the tops of the ribs.

(c) The floor covering must be permanently bonded to the floor and shall not crack when subjected to sudden changes in temperature. The bonding or adhesive material shall be waterproof and shall be the type recommended by the manufacturer of floor covering material. All seams must be sealed with waterproof sealer.

(d) A secured insulated screw-down plate to access the fuel tank sending unit shall be provided.

#### 13:20-49C.17 Heaters

(a) Heaters shall be of hot water type and/or combustion type.

(b) If only one heater is used, it shall be of fresh air or combination fresh air and recirculating type.

(c) If more than one heater is used, additional heaters may be of the recirculating air type.

(d) The heating system shall be capable of maintaining a temperature of not less than 40 degrees Fahrenheit throughout the bus at average minimum January temperature as established by the U.S. Department of Commerce, Weather Bureau, for the area in which the bus is to be operated.

(e) All heaters installed by the body manufacturers shall bear a name plate that indicates the heater rating is in accordance with SBMI standards. The plate shall be affixed by the heater manufacturer which will constitute certification that the heater performance is as shown on the plate.

(f) Heater hoses shall be adequately supported to guard against excessive wear due to vibration. The hoses shall not dangle or rub against the chassis or sharp edges and shall not interfere with or restrict the operation of any engine function. Heater hose shall conform to SAE standards. Heater lines on the interior of the bus shall be shielded to prevent scalding of the driver or passengers.

(g) Each hot water heater system installed by the body manufacturer shall include one shut-off valve in the pressure line and one shut-off valve in the return line with both valves at or near the engine in an accessible location. There shall

also be a water flow regulating valve installed in the pressure line for convenient operation by the driver while seated.

1. The hot water heater system in a Type A bus may conform to the chassis manufacturer's standard.

(h) Combustion type heaters shall comply with current applicable FMCSR.

(i) Accessible bleeder valves shall be installed in an appropriate place in the return lines of body company-installed heaters to remove air from the heater lines.

(j) Access panels shall be provided to make heater motors, cores, and fans readily accessible for service. Outside access panel may be provided for the driver's heater.

(k) A rear engine bus shall be equipped with a hot water heater booster pump.

### 13:20-49C.18 Identification

(a) The words "SCHOOL BUS" shall be applied to the bus body in black letters at least eight inches high on both the front and rear of the bus between the warning lamp signals or on signs attached thereto. Lettering shall be placed as high as possible without impairment of its visibility. Lettering shall conform to Series "B" of standard alphabets for highway signs.

1. An illuminated front and rear destination sign with "SCHOOL BUS" in eight inch black letters on background of National School Bus Yellow may be used.

(b) When attached signs are used, they shall comply with the following:

1. The sign on the front of the bus shall have the words "SCHOOL BUS" printed in black letters not less than eight inches on a background of National School Bus Yellow;

2. The sign on the rear of the bus shall be at least 10 square feet in size and shall be painted National School Bus Yellow and have the words "SCHOOL BUS" printed in black letters not less than eight inches high; and

3. Attached signs shall be removed or covered whenever the bus is not being used for to and from school transportation.

(c) The standards in (a) and (b) above also apply to buses under the jurisdiction of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit, approved for school use, contracted by a local board of education for transportation to and from school.

(d) There shall be no lettering on the front or rear of the bus unless specified in this subchapter.

(e) Only signs and lettering limited to the name of owner or operator and any marking necessary for identification shall appear on the sides of the bus.

1. The owning or operating organization shall be conspicuously identified in letters at least three inches high, located on each longitudinal side of the exterior of the bus. The identification shall be below the window line, completely horizontal and shall be black or National School Bus Yellow.

2. Identification letters or numbers, up to a maximum height of six inches, shall be in prominent locations on the front and rear of the bus below the window line. The color of the letters or numbers shall be either white, black or National School Bus Yellow.

(f) No advertisement of any kind shall be exhibited either on the interior or exterior of the bus, except for the manufacturer's and vendor's trade names which may be exhibited on the bus.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).  
Rewrote (c).

### 13:20-49C.19 Inside height

(a) The inside body height shall be 72 inches or more, measured from the ceiling to the floor metal, at any point on longitudinal center line from front vertical bow to rear vertical bow.

1. A Type A bus shall have a minimum of 62 inches inside body height.

### 13:20-49C.20 Insulation

(a) The ceiling and walls shall be insulated with adequate material to deaden sound and to reduce vibration to a minimum. If thermal insulation is specified, it shall be of fire-resistant material approved by the Underwriters Laboratories, Inc.

(b) Floor insulation may be used and shall be either five ply 19/32 inch thick plywood, or a material of equal or greater strength with an insulation R value and shall be equal or exceed properties of exterior-type softwood plywood, C-D Grade as specified in standards issued by U.S. Department of Commerce. When plywood is used, all exposed edges shall be sealed.

1. Type A bus shall be insulated with a minimum of one-half inch exterior grade plywood securely fastened to the steel floor of the bus in the passenger compartment.

### 13:20-49C.21 Interior

(a) The interior of the bus shall be free of all unnecessary projections, such as luggage racks, which may cause injury. This standard requires inner lining on ceilings and walls. If ceiling is constructed with lapped joints, the forward panel shall be lapped by the rear panel and the exposed edges shall be beaded, hemmed, flanged, or otherwise treated to minimize sharp edges.

(b) The driver's area forward of the foremost padded barriers shall permit the mounting of required safety equipment and vehicle operation equipment.

(c) Every school bus shall be constructed so that the noise level taken at the ear of the occupant nearest to the primary vehicle noise source shall not exceed 85 dBA when tested according to NSFBS.

### 13:20-49C.22 Lamps and signals

(a) The lamps on the exterior of the bus shall conform to current applicable FMVSS.

1. Each clearance, marker, or identification lamp shall be of the two bulb design and shall automatically be activated, whenever the headlights or parking lamps are activated, in a steady burning state.

2. Two parking lamps shall designate the front of the bus.

3. Two backup lamps shall be installed on the rear of Types B, C, and D buses. These lamps shall be illuminated when either the shift control lever for the transmission is placed into reverse gear or the rear emergency door is unlatched.

4. An armored marker-type amber lamp connected to the turn signals shall be installed on each side of the bus body immediately behind the entrance door on the right and symmetrically opposite on the left side of all Type C and D buses.

(b) Interior lamps shall be provided which adequately illuminate aisle and stepwell. Stepwell light shall be illuminated by the service door operated switch, which will illuminate only when headlights and clearance lights are on and the service door is open.

(c) Body instrument panel lights shall be controlled by an independent rheostat switch.

(d) A telltale light, plainly visible to the driver, shall be installed to give a positive indication of the operation of the stop lights.

(e) Alternately flashing signal lamps shall be provided as follows:

1. Red signal lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the bus is stopped to take on or discharge school children.

i. Buses shall be equipped with two front and two rear red lamps located approximately six inches below the top of the bus, as near the sides as is possible, and equidistant from the center.

2. Amber signal lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the bus is about to stop on the highway to take on or discharge school children.

i. In addition to the four red lamps described in (e)1 above, four amber lamps shall be installed with one amber lamp located near each red signal lamp, at same level, but closer to vertical centerline of bus.

ii. The amber lamps shall be activated, approximately 300 feet prior to each school bus stop, either by a hand button that is identified and easily accessible to the belted bus driver or by a foot switch located on the floor board directly in front of where a clutch pedal normally would be located.

3. The system of red and amber signal lamps shall be wired so that amber lamps are energized manually, and red lamps are automatically energized (with amber lamps being automatically de-energized) when stop signal arm is extended or when bus service door is opened.

4. All flashers for alternately flashing red and amber signal lamps shall be enclosed in the body in a readily accessible location.

5. Each school bus shall be equipped with a system which monitors the front and rear alternately flashing signal lamps and the monitor shall be mounted in full view of the driver. If the full circuit current passes through the monitor, each circuit shall be protected by a fuse or circuit breaker.

6. The area around the lens and extending outward approximately three inches from each alternately flashing signal lamp shall be black in color. In those installations where there is no flat vertical portion of the body immediately surrounding the entire lens of lamp, a circular or square band approximately three inches wide, immediately below and to both sides of the lens, shall be black in color on the body or roof area against which the signal lamp is seen from a distance of 500 feet along axis of vehicle.

7. Visors or hoods, black in color, with a minimum depth of four inches shall be provided.

8. If strobe alternately flashing signal lamps are utilized, the front and rear signal lamps shall be equipped with eight seven inch sealed beam electronic strobe lamps, four red and four amber, working in an automatic integrated system. The exterior surface of lens shall be smooth and meet SAE color requirements. Strobe alternately flashing signal lamps are only permitted on Type C and D buses.

i. The solid-state strobe power supply shall provide the electrical power to energize the sealed beam flash tubes. The power supply shall energize the lamps at a combined alternating flash rate of 120-128 flashes per

minute. The power supply shall be fully enclosed in a metal container, with a minimum metal wall thickness of .060 inches, and mounted within the front or rear bulkheads.

(f) The requirements in (e) above also apply to buses under the jurisdiction of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit, approved for school use, contracted by a local board of education for transportation to and from school.

(g) The bus body shall be equipped with rear turn signal lamps that are at least seven inches in diameter or if a shape other than round, a minimum 38 square inches of illuminated area and meet SAE standards. These signals must be connected to the chassis hazard wiring switch to cause simultaneous flashing of turn signal lamps when needed as vehicular traffic hazard warning. Turn signal lamps are to be placed as wide apart as practical and their centerline shall be approximately eight inches below the rear window.

1. On Type A buses, the lamps must be at least 21 square inches in lens area.

(h) Buses shall be equipped with four combination red stop/tail lamps as follows:

1. Two combination lamps with a minimum diameter of seven inches, or if a shape other than round, a minimum 38 square inches of illuminated area shall be mounted on the rear of the bus just inside the turn signals.

2. Two combination lamps with a minimum diameter of four inches, or if a shape other than round, a minimum 12 square inches of illuminated area shall be placed on the rear of the body between the beltline and the floor line. Rear license plate lamp may be combined with one lower tail lamp. Stop lamps shall be activated by the service brakes and shall emit a steady light when illuminated.

3. Type A buses may conform to the chassis manufacturer's standard.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Rewrote (f).

### 13:20-49C.23 Metal treatment

(a) All metal used in construction of bus body shall be zinc coated or aluminum coated or treated by equivalent process before bus is constructed. Included are such items as structural members, inside and outside panels, door panels, and floor sills; excluded are such items as door handles, grab handles, interior decorative parts, and other interior plated parts.

(b) All metal parts that will be painted shall be chemically cleaned, etched, zinc-phosphate coated, and zinc-chromate or epoxy primed or conditioned by equivalent process.

(c) In providing for these requirements, particular attention shall be given lapped surfaces, welded connections of structural members, cut edges, punched or drilled hole areas in sheet metal, closed or box sections, unvented or undrained areas, and surfaces subjected to abrasion during vehicle operation.

(d) As evidence that the above requirements have been met, samples of materials and sections used in the construction of the bus body shall not lose more than 10 percent of material by weight when subjected to 1,000 hour salt spray test as provided for in the NSFBS.

### 13:20-49C.24 Mirrors

(a) An interior mirror shall be provided which is either clear view laminated glass or clear view glass bonded to a backing which retains the glass in the event of breakage. Mirror shall be a minimum of six inches by 30 inches. The mirror shall have rounded corners and protected edges.

1. On a Type A bus, the mirror shall be a minimum of six inches by 16 inches.

(b) Buses shall be equipped with a system of exterior mirrors which conform to current applicable FMVSS as follows:

1. A rear vision mirror system which shall be capable of providing a view along the left and right sides of the vehicle which will provide the driver with a view of the rear tires at ground level, a minimum distance of 200 feet to the rear of the bus and at least 12 feet perpendicular to the side of the bus at the rear axle line; and

2. A crossview mirror system which shall provide the driver with indirect vision of an area at ground level from the front bumper forward and the entire width of the bus to a point where the driver can see by direct vision. The crossview system shall also provide the driver with indirect vision of the area at ground level around the left and right front corners of the bus to include the tires and entrance door on all types of buses to a point where it overlaps with the rear vision mirror system.

i. No portion of the crossview mirror assembly shall project more than six inches forward or laterally from the outer-most limits of the vehicle at point of installation.

ii. No portion of the crossview mirror assembly shall unduly obstruct the light emitted from any required lamp or the driver's view of vehicular traffic.

3. Stick-on convex mirrors shall not be attached to any mirror surface.

### 13:20-49C.25 Mounting

(a) The chassis frame shall support the rear body cross member. The bus body shall be attached to the chassis frame

at each main floor sill, except where chassis components interfere, in such manner as to prevent shifting or separation of body from chassis under severe operation conditions.

1. The distance between the fasteners which secure the body to the chassis shall not exceed 42 inches.

2. The fasteners shall be located directly opposite each other along the longitudinal length of the chassis frame.

(b) Insulation material shall be placed at all contact points between the body and the chassis frame on body on chassis type buses, and shall be attached to the chassis frame or body so that it will not move under severe operating conditions.

#### 13:20-49C.26 Overall length

Overall length of bus shall not exceed 40 feet.

#### 13:20-49C.27 Overall width

Overall width of bus shall not exceed 96 inches excluding accessories.

#### 13:20-49C.28 Reflectors

(a) Reflectors are required on buses which comply with current applicable FMVSS as follows:

1. On the rear: Two red reflectors, equally spaced as far from the center as practical and at the same height.

2. On each side: Two reflectors on each side, one amber, at or near the front and one red at or near the rear.

3. One amber reflector on each side of the bus body as near the center as practical shall be provided on buses 30 feet or more in length.

#### 13:20-49C.29 Rub rails

(a) There shall be one rub rail located on each side of bus approximately at seat level which shall extend from rear side of entrance door completely around bus body (except emergency door) to point of curvature near outside cowl on left side.

(b) There shall be one rub rail located approximately at floor line which shall cover same longitudinal area as upper rub rail, except at wheelhousing, and shall extend only to radii of right and left rear corners.

(c) Each rub rail shall be attached at each body post, and all other upright structural members.

(d) Each rub rail, in their finished form, shall be four inches or more in width. They shall be of 16 gauge steel or suitable material of equivalent strength, and shall be constructed in corrugated or ribbed fashion.

(e) Both rub rails shall be applied outside body or outside body posts. Pressed-in or snap-on rub rails do not satisfy this requirement.

(f) On Type A and B buses with a chassis manufacturer's body, or Type C and D buses with a rear luggage or a rear engine compartment, rub rails are not required to extend around rear corners.

#### 13:20-49C.30 Sanders and traction device

(a) When used, sanders shall:

1. Be of hopper cartridge-valve type;

2. Have a metal hopper with all interior surfaces treated to prevent condensation of moisture;

3. Be of at least 100 pound (grit) capacity;

4. Have a cover on the filler opening of the hopper, which screws into place, sealing unit airtight;

5. Have discharge tubes extending to front of each rear wheel under fender;

6. Have no-clogging discharge tubes with slush-proof, non-freezing rubber nozzles;

7. Be operated by an electric switch with a telltale pilot light mounted on the instrument panel;

8. Be exclusively driver-controlled; and

9. Have a gauge to indicate that hoppers need refilling when they are down to one-quarter full.

(b) Automatic traction chains may be used.

#### 13:20-49C.31 Seat belt for driver and students

(a) A type 2 lap belt/shoulder seat belt shall be provided for the driver. The assembly shall be equipped with an emergency locking retractor for the continuous belt system. The lap portion of the belt shall be guided or anchored where practical to prevent the driver from sliding sideways under it.

(b) The seat belt shall have a button type latch and the floor anchored belt section shall be booted to keep the buckle within driver's reach.

(c) Buses with a chassis manufacturer date of October, 1992 or thereafter shall be equipped with seat belts and 28 inch high back seats in accordance with P.L. 1992, c.92.

(d) Buses equipped with seat belts shall also contain a belt cutter for use in an emergency. The belt cutter shall be designed to prevent injury during use and secured in a safe location.

Amended by R.1994 d.404, effective August 1, 1994.  
See: 26 N.J.R. 1997(a), 26 N.J.R. 3164(a).

**13:20-49C.32 Seats and crash barriers**

- (a) All seats shall have minimum depth of 15 inches.
- (b) Seat backs shall be a minimum of 28 inches high and a minimum 24 inches above the seating reference point.
  - 1. This requirement shall apply only to school buses and equipment for which a bid is submitted or an order for purchase placed on or after September 8, 1992.
- (c) Seat, seat back cushion and crash barrier shall be covered with a material having 42-ounce finished weight, 54

inches width, and finished vinyl coating of 1.06 broken twill, or other material with equal tensile strength, tear strength, seam strength, adhesion strength, resistance to abrasion, resistance to cold, and flex separation, and meets the criteria contained in the NSFBS Fire Block Test for school bus seat upholstery.

- 1. Damaged or vandalized covers of seat cushions, seat backs, and crash barriers equipped with flame-retardant materials shall be repaired in a manner to maintain the original flame-retardant protection.

- (d) All seats shall be forward facing.

(e) Each seat leg shall be secured to the floor by a minimum of two bolts, washers, and nuts.

(f) All seat frames attached to the seat rail shall be fastened with two bolts, washers and nuts or flange-headed nuts.

(g) The driver's seat shall be of the highback type with a minimum seat back adjustment of 15 degrees and with a head restraint to accommodate a 95 percentile adult male. The driver's seat shall be secured with nuts, bolts, and washers or flange-headed nuts.

1. The space between the back of the driver's seat, in the rearmost position, and the front surface of the restraining barrier located directly behind the driver shall comply with FMVSS for barrier deflection.

#### 13:20-49C.33 Spray suppressant and mud flaps

Spray suppressants or mud flaps are required when an angle found by a level road surface and a line projected from the point of contact of the rearmost tire with the ground and the bottom edge of the rear bumper exceeds an angle of  $22\frac{1}{2}$  degrees.

#### 13:20-49C.34 Steps

(a) First step at the entrance door shall not be less than 10 inches and not more than 14 inches from the ground, based on standard chassis specifications.

1. Type D buses shall have the first step at the entrance door 12 to 16 inches from the ground.

(b) Step risers shall not exceed a height of 10 inches. When plywood is used on the steel floor or step, the riser height may be increased by thickness of the plywood used.

(c) Steps shall be enclosed to prevent accumulation of ice and snow.

- (d) Steps shall not protrude beyond side body line.

(e) A grab handle not less than 20 inches in length shall be provided in unobstructed location inside the doorway.

#### 13:20-49C.35 Step treads

(a) All steps, including floor line platform area, shall be covered with  $\frac{3}{16}$  inch rubber floor covering or other materials equal in wear resistance and abrasion resistance to top grade rubber.

(b) The rubber step treads shall be permanently bonded to the step well metal, minimum 24 gauge cold roll steel, and the ribbed rubber grooved design shall run at 90-degree angles to long dimension of the step tread.

(c) Three-sixteenth inch ribbed step tread shall have a  $\frac{1}{2}$  inch white nosing integral piece without any joint.

(d) The rubber portion of step treads shall have the following characteristics:

1. Special compounding for good abrasion resistance and high coefficient of friction;
2. Flexibility so that it can be bent around a one-half inch mandrel both at 130 degrees Fahrenheit and 20 degrees Fahrenheit without breaking, cracking, or crazing; and
3. Show a durometer hardness of 85 to 95.

#### 13:20-49C.36 Stirrup steps

There shall be at least one folding stirrup step or recessed foothold and suitably located handles on each side of the front of the bus body for easy accessibility for cleaning the windshield and lamps except when windshield and lamps are easily accessible from the ground. A step, in lieu of the stirrup steps, is permitted in or on the front bumper.

#### 13:20-49C.37 Stop signal arm

A stop signal arm shall be provided on the left side of the body which meets the applicable requirements of FMVSS. The stop arm shall be an octagonal shape with white letters and border on a red background. The flashing lamps in stop arm shall be connected to the alternately red flashing signal lamp circuits. Vacuum, electric or air operation of the stop signal arm is optional.

#### 13:20-49C.38 Storage compartment

If tools, tire chains and/or tow chains are carried on the bus, a container of adequate strength and capacity may be provided. Such storage container may be located either inside or outside the passenger compartment but, if inside, it shall have a cover (seat cushion may not serve as this purpose) capable of being securely latched and be fastened to the floor convenient to either the entrance or emergency door.

#### 13:20-49C.39 Sun shield

(a) Interior adjustable transparent sun shield not less than six inches by 30 inches with a finished edge shall be installed in a position convenient for use by driver.

1. A Type A bus may be equipped with a sun shield not less than six inches by 16 inches.

#### 13:20-49C.40 Tailpipe

(a) The tailpipe diameter from muffler to the end shall comply with the chassis manufacturer's standard and shall be constructed of a corrosion resistant tubing material at least equal in strength and durability to 16-gauge steel tubing.

(b) The tailpipe shall terminate to the rear of all doors and windows designed to be opened for ventilation.

(c) The tailpipe shall not terminate immediately below an emergency exit, fuel tank, or fuel tank fill pipe.

(d) The tailpipe of a bus powered by a gasoline engine shall extend to the rear bumper or to the left or right perimeter sides of the bus body and discharge to the atmosphere either:

1. At or within six inches forward of the rearmost part of the bus on the left or right side; or
2. Beyond the rear bus bumper up to a maximum of two inches.

(e) The tailpipe of a bus using fuel other than gasoline shall extend to the rear bumper or to the left or right perimeter sides of the bus body and discharge to the atmosphere either:

1. At or within 15 inches forward of the rearmost part of the bus on the left or right side; or
2. At or beyond rear bus bumper up to a maximum of two inches.

(f) Tailpipe(s) which terminate at either the left or right side of the bus shall extend to but not beyond the perimeter of the bus body side.

#### 13:20-49C.41 Tow eyes or hooks

Tow eyes or hooks may be furnished on the rear and attached so they do not project beyond the rear bumper. Tow eyes or hooks attached to the chassis frame shall be furnished by either the chassis or body manufacturer. The installation shall be in accordance with the chassis manufacturer's specifications.

#### 13:20-49C.42 Undercoating

(a) The entire underside of the bus body, including floor sections, cross member, and below floor line side panels, shall be coated with rustproofing compound for which the compound manufacturer has issued a notarized certification of compliance to the bus body builder that the compound meets or exceeds all performance and qualitative requirements of applicable Federal specifications.

(b) Undercoating compound shall be applied with suitable airless or conventional spray equipment to recommended film thickness and shall show no evidence of voids in cured film.

#### 13:20-49C.43 Ventilation

(a) The body shall be equipped with a suitable, controlled ventilating system of sufficient capacity to maintain proper quantity of air under operating conditions without opening of windows except in extremely warm weather.

(b) A static-type nonclosable exhaust vent shall be installed in the low-pressure area of roof.

(c) One six inch diameter, two speed auxiliary fan with protective cage shall be installed on each side of the driver position on Types C and D school buses. Each fan shall be controlled by a separate switch.

1. If an auxiliary fan is used on Types A and B buses, it shall be a nominal six inch diameter fan with the blades covered with a protective cage. Each fan shall be controlled by a separate switch.

#### 13:20-49C.44 Walking control arm

(a) A walking control arm may be installed on buses. The construction and design of this equipment shall offer a safe and trouble free operation. The control unit shall be installed on the right side of the front bumper. Equipment shall not obstruct the view of any sign or license plate on the bus. The open crossing gate shall extend forward on the front bumper at least 60 inches up to a maximum of 96 inches.

1. The walking control arm shall be powered by either vacuum, air pressure, or electric. No manual operation of the arm is permitted.
2. The walking control arm shall be activated automatically to the fully extended position when the red school bus warning lights are in operation. It shall be maintained in operating condition at all times or removed.

#### 13:20-49C.45 Wheelhousing

(a) The wheelhousing opening shall allow for easy tire removal and service.

(b) Wheelhousing shall be attached to floor sheets in such a manner to prevent any dust, water, or fumes from entering the body. Wheelhousing shall be constructed of at least 16 gauge steel, or other material of equal strength.

(c) The inside height of the wheelhousing above the floor line shall not exceed 12 inches.

(d) If tire chains are used, the wheelhousing shall provide clearance for installation and use of tire chains on single and dual power driving wheels.

(e) No part of a raised wheelhousing shall extend into the emergency door opening.

#### 13:20-49C.46 Windows and windshield

(a) Each full side window shall provide an unobstructed emergency opening at least nine inches high and 22 inches wide, obtained by lowering window.

1. Push-out type, split-sash windows may be used.
- (b) Push out windows shall be provided in accordance with the emergency exit requirements of this subchapter.

(c) Glass in all side and rear windows shall be of AS-2 or better grade. Equivalent plastic AS-4 or better shall only be used in side windows of the bus behind the driver.

(d) The windshield shall have a horizontal gradient tinted band starting slightly above the line of a driver's vision and gradually decreasing in light transmission to 20 percent or less at the top of the windshield. Glass in the windshield shall be of AS-1 grade.

1. Glass in the windshield shall be heat-absorbent, laminated plate. The windshield shall be large enough to permit the driver to see the roadway clearly, shall be slanted to reduce glare, and shall be installed between the front corner posts that are so designed and placed as to afford minimum obstruction to the driver's view of the roadway.

(e) All glass in the windshield, windows and doors shall be approved safety glass, so mounted that a permanent mark is visible, and of sufficient quality to prevent distortion of the view in any direction.

(f) All exposed edges of glass shall be banded.

(g) The windows in the rear of the bus shall be stationary.

(h) Windows shall be free of window guards or bars both inside and outside.

**13:20-49C.47 Windshield washers**

A windshield washer system shall be provided.

**13:20-49C.48 Windshield wipers**

(a) A windshield wiping system, two-speed or more, shall be provided.

(b) The wipers shall be operated by one or more air or electric motors of sufficient power to operate wipers. If one motor is used, the wipers shall work in tandem to give full sweep of windshield.

**13:20-49C.49 Wiring**

(a) All wiring shall conform to current applicable SAE standards.

(b) Wiring shall be arranged in circuits as required with each circuit protected by a fuse or circuit breaker. One extra fuse for each size fuse which is used on the bus shall be conveniently located in the fuse area unless the bus is equipped with circuit breakers. A system of color and number coding shall be used.

1. The following body interconnecting circuits shall be color coded as follows:

| Function                     | Color      |
|------------------------------|------------|
| Left Rear Directional Light  | Yellow     |
| Right Rear Directional Light | Dark Green |

| Function                    | Color |
|-----------------------------|-------|
| Stoptlights                 | Red   |
| Back-Up Lights              | Blue  |
| Taillights                  | Brown |
| Ground                      | White |
| Ignition Feed, Primary Feed | Black |

2. The color of the cables shall correspond to current applicable SAE standards.

3. Wiring shall be arranged in at least six regular circuits, as follows:

- i. Head, tail, stop (brake), and instrument panel lamps;
- ii. Clearance and step-well lamps (step-well lamp shall be actuated when entrance door is opened);
- iii. Dome lamp;
- iv. Ignition and emergency door signal;
- v. Turn signal lamps; and
- vi. Alternately flashing signal lamps.

4. Any of above combination circuits may be subdivided into additional independent circuits.

5. Whenever heaters and defrosters are used, at least one additional circuit shall be installed.

6. Whenever possible, all other electrical functions (such as sanders and electric-type windshield wipers) shall be provided with independent and properly protected circuits.

7. Each body circuit shall be coded by number or letter on a diagram of circuits and shall be attached to the body in readily accessible location.

(c) The entire electrical system of the body shall be designed for the same voltage as the chassis on which the body is mounted.

(d) All wiring shall have an amperage capacity equal to or exceeding the designed load. All wiring splices shall be in an accessible location and noted as splices on the wiring diagram.

(e) An easily readable body wiring diagram shall be furnished with each bus body or affixed in an area convenient to the electrical accessory control panel.

(f) The main power supply to the body shall be attached to a terminal on the chassis.

(g) Wires passing through metal openings shall be protected by a grommet.

(h) Wires not enclosed within the body shall be fastened securely at intervals of not more than 18 inches. All joints shall be soldered or joined by equally effective connectors.

(i) A heavy duty solenoid switch shall be installed in main electric power supply line to body circuits on Types B, C and D buses. The solenoid switch shall be energized by the bus ignition switch. Hazard and directional signal lamp circuits shall operate independently of the ignition switch.

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**SUBCHAPTER 49D. SPECIALLY EQUIPPED SCHOOL BUS STANDARDS FOR BUSES USED FOR PUPIL TRANSPORTATION MANUFACTURED JUNE 1993 THROUGH DECEMBER 2005**

**13:20-49D.1 Scope**

(a) The following standards address modifications to buses designed for transporting students with special transportation needs. These standards are supplementary to the chassis and body standards established in N.J.A.C. 13:20-49B and 49C.

(b) Specially equipped buses shall meet the body and chassis standards of N.J.A.C. 13:20-49B and 49C prior to any modifications made for mobile seating device positions or special equipment such as a power lift.

(c) A bus used for the transportation of children confined to a wheelchair or other mobile positioning device, or who require life support equipment which prohibits the use of the entrance door, shall be equipped with a power lift.

**13:20-49D.2 Aisle**

The aisle leading to emergency and power lift doors from a wheelchair position shall be a minimum width of 30 inches.

Amended by R.1994 d.404, effective August 1, 1994.  
See: 26 N.J.R. 1997(a), 26 N.J.R. 3164(a).

**13:20-49D.3 Communications**

Buses shall be equipped with an electronic voice communication system, preferably not citizen band equipment.

**13:20-49D.4 Doors**

(a) Buses with a power lift shall be equipped with a special entrance door to accommodate the power lift.

1. The door shall be located on the right side of the bus and designed so as not to obstruct the regular entrance door.

2. The opening may extend below the floor through the bottom of the body skirt. If such an opening is used, reinforcements shall be installed at the front and rear of the floor opening to support the floor. This opening shall be the same strength as other floor openings.

3. A drip molding shall be installed above the door opening to divert water from the entrance.

4. The door posts and headers shall be reinforced to provide support and strength equivalent to the sides of the bus.

5. A single door or double doors may be used.

6. The doors shall have fastening devices to hold the doors open.

7. The doors shall be weather sealed.

8. When manually operated dual doors are provided, the rear door shall have at least a one point fastening device to the header. The forward mounted door shall have at least three point fastening devices; one to the header, one to the floor line of the body, and one into the rear door.

i. The door and hinge mechanism strength shall be equivalent or greater than the strength of the emergency exit door.

9. The door material, panels and structural strength shall be equivalent to the entrance and emergency doors. The rub rail extensions, lettering and other exterior features shall match adjacent sections of the body.

10. The door shall have windows set in rubber compatible within one inch of the lower line of the adjacent sash.

11. Doors shall be equipped with a device that will actuate an audible or flashing visible signal, located in the driver's compartment, when the doors are not securely closed and the ignition is in the "on" position.

12. A switch shall be installed so that the lifting mechanism will not operate when the lift platform door is closed.

13. Doors shall be equipped with padding at the top edge of the door opening. The padding shall be at least three inches wide and one inch thick. It shall extend the full width of the door opening.

**13:20-49D.5 Glass**

(a) Tinted safety glass or tinted plastic may be installed in side windows of the bus to the rear of the driver which complies with applicable Motor Vehicle Commission requirements.

(b) Tinted safety glass shall be AS-3 or better grade.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission" for "Division of Motor Vehicle" in (a).

**13:20-49D.6 Identification**

(a) A bus equipped with a power lift shall display at least one universal handicapped symbol on the back of the bus and below the windowline.

1. The symbol shall not exceed 12 inches in size, be white on a blue background, and be of a high intensity reflectorized material as specified in NSFSB.

### 13:20-49D.7 Lights

Lights shall be placed inside the bus to sufficiently illuminate the lift door area.

### 13:20-49D.8 Power Lift

(a) The power lift with a skid resistant platform shall be located on the right side of the bus body and confined within the bus body when not extended.

(b) The lifting mechanism and platform shall be capable of lifting a minimum weight of 800 pounds. The lift platform shall have a minimum of 30 inches clear width unobstructed by the required handrail. The minimum clear length of the platform between the outer edge barrier and inner edge shall be 40 inches.

(c) When the platform is stored, it shall be securely fastened.

(d) Controls shall be provided that enable the operator to activate the lift mechanism from either inside or outside of the bus.

(e) The lift platform shall be designed to prevent the platform from falling while in operation due to a power failure or a single component mechanical failure.

(f) The power lift shall be equipped with a manual back-up system for use in the event of a power failure.

(g) The lift shall be designed to allow the lift platform to rest securely on the ground.

(h) The outboard platform edge and sides shall be designed to restrain a wheelchair or other mobile seating device from slipping or rolling off the platform. The platform outer edge barrier shall be designed to be automatically or manually lowered when the platform is at ground level, but shall not be equipped with any type of latch which could result in a lowered barrier when the platform is above ground level.

(i) The platform shall be equipped with at least one handrail. The handrail shall be approximately 25 to 34 inches in height and a minimum of 18 inches in length and designed to fold when it is in a stored position.

(j) A self-adjusting, skid resistant plate shall be installed on the outer edge of the platform to minimize the incline from the lift platform to the ground level. This plate, if so designed, may also serve as the restraining device described in (h) above.

(k) A circuit breaker shall be installed between the power source and lift motor if electrical power is used.

(l) The lift design shall prevent excessive pressure that could damage the lift system when the platform is fully lowered or raised.

(m) The lift mechanism shall be designed to prevent the lift platform from being folded or stored when occupied.

(n) An interlock shall be provided to prevent the operation of the bus while the lift or ramp is not in its fully stored and locked position.

### 13:20-49D.9 Ramp

(a) When a power lift system is not adequate to load and unload students with special needs, a ramp device may be used.

1. When a ramp is used, it shall be of sufficient strength and rigidity to support the mobile device, occupant, and attendant(s). It shall be equipped with a protective flange on each longitudinal side to keep the mobile device on the ramp.

2. The ramp floor shall be of non-skid construction.

3. The ramp shall be equipped with handles and of a weight and design that enables one person to lift or move the ramp.

4. The ramp shall have at least three feet of length for each foot of incline.

### 13:20-49D.10 Restraining devices

Seat frames may be equipped with attachments or devices to which belts, restraining harnesses or other devices may be attached. Attachment framework or anchorage devices, if installed, shall conform with FMVSS.

### 13:20-49D.11 Seating arrangements

Flexibility in seat spacing to accommodate special devices shall be permitted to meet passenger requirements. All seating shall be forward facing.

### 13:20-49D.12 Securement system for mobile seating device and occupant

(a) The body shall be designed for positioning and securement of mobile seating devices and occupants in a forward facing position. Securement system hardware and attachment points for the forward facing system shall be provided.

(b) The mobile seating device securement system shall utilize four-point tie downs, with a minimum of two body floor attachment points located at the rear and a minimum of two body floor attachment points at the front of the space designated for the mobile seating device.

(c) A type 2 occupant securement system shall be provided for securement of the occupant's pelvic lap area and upper torso area.

(d) The mobile seating device and occupant securement system shall be designed to withstand a sled-test at a minimum impact speed/force of 30 mph/20 G's. The dynamic test shall be performed using system components and hardware (including attachment hardware) which are identical to the final installation in type, configuration, and positioning. The body structure at the attachment points may be simulated for the purpose of the sled test, but the simulated structure used to pass the sled test may not exceed the strength of the attachment structure to be used in the final body installation. The mobile seating device used for test purposes shall be a 150 pound powered wheelchair and the occupant shall be a 50th percentile male test dummy as specified in FMVSS. Measurements shall be made on the test dummy during the test for head acceleration, upper thorax acceleration, and upper leg compressive force. These measurements shall not exceed the upper limits established in applicable FMVSS. The test dummy shall be retained within the securement system throughout the test and forward excursion shall be such that no portion of the test dummy's head or knee pivot points passes through a vertical transverse plane intersecting the forward-most point of the floor space designed for the mobile seating device. All hardware shall remain positively attached throughout the test and there shall be no failure of any component. Each mobile seating device belt assembly including attachments, hardware and anchorages shall be capable of withstanding a force of not less than 2,500 pounds. This will provide equal mobile seating device securement when subjected to forces generated by forward, rear or side impact.

(e) The belt material at each space designated for the mobile seating device and the occupant restraint system shall be similar in size and fabric.

(f) The floor track or anchorage system shall be recessed into the floor with the top of the track or anchorage level with the floor surface or be surface mounted. If surface mounted, the maximum track or anchorage height above the floor surface shall not exceed 3/4 inch and be ramped on all sides with a ramp run/rise ratio not less than three to one.

(g) The occupant securement belt assemblies and anchorages shall meet the requirements of applicable FMVSS.

(h) The occupant securement system shall be designed to be attached to the bus body either directly or in combination with the mobile seating device securement system, by a method which prohibits the transfer of weight or force from the mobile seating device to the occupant in the event of an impact.

(i) Securement system attachments or coupling hardware not permanently attached shall be designed to prohibit it from being accidentally disconnected.

1. The following fasteners shall not be used for any occupant restraint or equipment securement:

- i. T-bar or T-hook fasteners; or
- ii. Touch fasteners, vinyl lap and shoulder belts.

(j) All attachment or coupling systems shall be accessible and operable without the use of tools or other mechanical assistance.

(k) All securement system hardware and components shall be free of sharp or jagged areas and shall be of a non-corrosive material or treated to resist corrosion.

(l) The occupant securement system shall be made of materials which do not stain, soil, or damage an occupant's clothing.

(m) The mobile seating device or securement system hardware shall not block the access to the lift door.

(n) The following information shall be provided with each bus equipped with a securement system:

1. Detailed instructions regarding installation and use of the system, including a parts list; and
2. Detailed instructions, including a diagram, regarding the proper placement and positioning of the system, including correct belt angles.

### 13:20-49D.13 Steps

(a) The first step at the entrance door shall be not less than 10 inches and not more than 14 inches from the ground, based on standard chassis specifications.

1. The first step on a Type D bus at the entrance door shall be 12 to 16 inches from the ground.

(b) Step risers shall not exceed a height of 10 inches. When plywood is used on a steel floor or step, the riser height may be increased by the thickness of the plywood.

(c) On buses equipped with a power lift, the steps shall be the full width of the stepwell, excluding the thickness of the doors in an open position.

(d) The steps shall be enclosed to prevent the accumulation of ice and snow.

(e) The steps shall not protrude beyond the sides of the body line.

(f) Grab handles, not less than 20 inches in length, shall be provided inside the doorway on both sides in unobstructed locations.

**13:20-49D.14 Support equipment and accessories**

(a) Portable student support equipment or special accessory items (crutches, walkers, oxygen bottles, ventilators) shall be securely fastened at a mounting location able to withstand a pulling force of five times the weight of the item, or shall be retained in an enclosed, latched compartment.

1. The bus shall contain a belt cutter for use in emergencies, including evacuations. The belt cutter shall be designed to prevent injuries during use and secured in a safe location.

**13:20-49D.15 Wheelchair and other mobile seating device requirements**

(a) A wheelchair or other mobile seating device shall be equipped with an occupant restraint belt and hand brake which is furnished and maintained by the owner.

(b) An electric powered wheelchair shall be equipped with gel-cel (non-liquid electrolyte) battery. Batteries with liquid electrolyte are not permitted in the passenger compartment of the bus.

SUBCHAPTER 49E. AUTOBUSES APPROVED FOR PUPIL TRANSPORTATION BY THE NEW JERSEY DEPARTMENT OF TRANSPORTATION PRIOR TO MAY 21, 1993

**13:20-49E.1 Scope of exceptions and exemptions**

The exceptions and exemptions set forth in this subchapter shall apply to autobuses approved for school use by the New Jersey Department of Transportation prior to May 21, 1993.

Amended by R.1992 d.397, effective November 2, 1992.  
See: 24 N.J.R. 2109(a), 24 N.J.R. 4069(a).

Added reference to Department of Transportation and effective date.  
Amended by R.2005 d.24, effective January 18, 2005.  
See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

**13:20-49E.2 Exceptions and exemptions**

(a) The prohibition against advertisements of any kind on either the interior or exterior of the vehicle shall not apply.

(b) The seat requirements imposed pursuant to N.J.A.C. 13:20-49.1 and 49.3(w) shall not apply to longitudinal seats seating not more than four pupils.

(c) The entrance door and the emergency door with aisles leading to each shall be deemed to be in compliance with the requirement for doors imposed pursuant to N.J.A.C. 13:20-49.1 and 49.3(d).

(d) The requirement imposed pursuant to N.J.A.C. 13:20-49.1 and 49.3(f) to have the words "Emergency Door"

applied to the inside and outside of the emergency door shall not apply.

(e) In lieu of the lettering, Type I school vehicles that are operated by a privately or publicly owned local transit system and used for regular common carrier transit route service as well as special school route service shall meet the requirements of N.J.A.C. 13:20-49.1 and 49.3(h), except as follows:

1. Such vehicles shall, while transporting children to and from school, be equipped with signs, located conspicuously on the front and back of the vehicle:

- i. The sign on the front shall have the words "School Bus" printed in black letters not less than six inches high on a background of national school bus glossy yellow;

- ii. The sign on the rear shall be at least ten square feet in size and shall be painted national school bus glossy yellow and have the words "School Bus" printed in black letters not less than eight inches high.

(f) The requirements for the main aisle and the aisle to the emergency door imposed pursuant to N.J.A.C. 13:20-49.1 and 49.3(a) shall not apply.

(g) The requirement pursuant to N.J.A.C. 13:20-49.1 for bumpers shall not apply.

(h) The window requirements imposed pursuant to N.J.A.C. 13:20-49.1 and 49.3(y) shall not apply.

(i) The color requirements imposed pursuant to N.J.A.C. 13:20-49.1 and 49.2(e) shall not apply.

Amended by R.1974 d.90, effective April 11, 1974.  
See: 6 N.J.R. 99(a), 6 N.J.R. 172(c).  
Amended by R.1992 d.397, effective November 2, 1992.  
See: 24 N.J.R. 2109(a), 24 N.J.R. 4069(a).

Deleted cross reference to obsolete rules and added cross reference to current rules in N.J.A.C. 6:21-5.

Amended by R.2005 d.24, effective January 18, 2005.  
See: 35 N.J.R. 5483(a), 37 N.J.R. 321(a).

Rewrote the section. Amended N.J.A.C. references throughout.

**13:20-49E.3 Certificate of inspection**

(a) No autobus under the jurisdiction of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit shall be used for school pupil transportation services, as defined in N.J.S.A. 18A:39-1 and under contract with a local board of education for transportation to and from school unless such autobus is authorized on the certificate of inspection issued by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit.

(b) Owners or operators of buses approved by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit shall submit evidence of such approval to the county superintendent at such times as may be deemed necessary.

Amended by R.1992 d.397, effective November 2, 1992.  
See: 24 N.J.R. 2109(a), 24 N.J.R. 4069(a).

Deleted obsolete reference to jurisdiction of the Board of Public Utilities and replaced with Department of Transportation.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Rewrote the section.

**13:20-49E.4 Inspection by county superintendent**

(a) The county superintendent may inspect any bus approved by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit for any item not covered by the approval of the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit and from which they are not specifically exempted by these rules.

(b) Whenever, in the opinion of the county superintendent, a bus chassis or body is outworn or in a dilapidated condition, it shall not be used for pupil transportation.

Amended by R.1992 d.397, effective November 2, 1992.

See: 24 N.J.R. 2109(a), 24 N.J.R. 4069(a).

Deleted obsolete reference to jurisdiction of the Board of Public Utilities and replaced with Department of Transportation.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Rewrote (a).

SUBCHAPTERS 49F THROUGH 49H. (RESERVED)

SUBCHAPTER 50. STANDARDS FOR SCHOOL BUSES  
MANUFACTURED JANUARY 2006 AND  
THEREAFTER

**13:20-50.1 Scope and purpose**

(a) This subchapter shall be applicable to all motor vehicles registered in New Jersey originally designed by the manufacturer to carry 10 or more passengers, excluding the driver, operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child care center, pre-

school center or other similar places of education. All such motor vehicles shall be registered as school buses in accordance with N.J.S.A. 39:3-19.2 and shall comply with the rules set forth in this subchapter and in N.J.A.C. 13:20-50A, 50B and 50C, and all applicable Federal standards. A motor vehicle shall not be used for the purposes set forth in this subsection unless it has been registered as a school bus in accordance with N.J.S.A. 39:3-19.2 and complies with the rules set forth in this subchapter and in N.J.A.C. 13:20-50A, 50B and 50C, and all applicable Federal standards.

(b) Each school bus shall be inspected twice each year by the Commission's School Bus Inspection Unit to ensure that such vehicle is in safe and proper operating condition. The time and location of the inspections shall be established by the Chief Administrator or his or her designee.

(c) The rules set forth in this subchapter and in N.J.A.C. 13:20-50A, 50B and 50C shall not apply to autobuses approved for school use and subject to inspection by the Commission's Commercial Bus Inspection and Investigation Unit unless otherwise provided.

(d) An autobus subject to inspection by the Commission's Commercial Bus Inspection and Investigation Unit that is used for the transportation of children to or from school shall display a certificate of inspection issued by the Commission indicating school use. An autobus is exempt from displaying a certificate for school use issued by the Commission when being used on a preset franchised route and schedule or chartered for school-connected activities.

(e) A parent or legal guardian under contract with a district board of education to transport only his or her own child or children shall not be required to possess a commercial driver license or to use a motor vehicle registered as a school bus.

(f) The rules set forth in this subchapter and in N.J.A.C. 13:20-50A, 50B and 50C shall apply to school buses with a January 2006 or later incomplete chassis manufacture date unless otherwise provided. School buses manufactured prior to January 2006 shall comply with the standards in effect when the school bus was manufactured or converted.

(g) All equipment and components required by this subchapter and by N.J.A.C. 13:20-50A, 50B and 50C shall be maintained in proper operating condition at all times.

**13:20-50.2 Definitions**

The following words and terms, when used in this subchapter and in N.J.A.C. 13:20-50A, 50B and 50C, shall have the following meanings unless the context clearly indicates otherwise.

“Capacity” means the maximum permitted number of seated passengers if the vehicle contains no wheelchair positions, or the maximum permitted number of wheelchair positions if the vehicle contains no seated passengers, as certified by the manufacturer on the vehicle manufacturer’s certification plate.

“Chief Administrator” means the Chief Administrator of the New Jersey Motor Vehicle Commission.

“Commission” means the New Jersey Motor Vehicle Commission established by section 4 of P.L. 2003, c.13 (N.J.S.A. 39:2A-4).

“Completed vehicle” means a vehicle that requires no further manufacturing operation to perform its intended function.

“Driver” means the authorized licensed operator of a school bus.

“FMCSR” means the Federal Motor Carrier Safety Regulations as found in the Code of Federal Regulations (49 CFR Part 393). Copies of the Federal Motor Carrier Safety Regulations as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

“FMVSS” means the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations (49 CFR Part 571). Copies of the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

“Gross axle weight rating” or “GAWR” means the value specified by the manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-ground interfaces.

“Gross vehicle weight” or “GVW” means the total weight of a single vehicle plus its load.

“Gross vehicle weight rating” or “GVWR” means the value specified by the manufacturer as the maximum loaded weight of a single vehicle.

“Incomplete chassis” means an assemblage consisting, at a minimum, of frame and chassis structure, power train, steering system, suspension system and braking system, to the extent that those systems are to be part of the completed

vehicle, that requires further manufacturing operation to become a completed vehicle.

“Incomplete chassis manufacture date” means the incomplete vehicle date established by the chassis manufacturer. This date governs the chassis and body manufacturing standards and inspection standards that are applicable to such vehicle.

“Manufacturer” means a person engaged in the business of manufacturing or assembling school buses.

“NSTSP” means the National School Transportation Specifications and Procedures, 2000 Revised Edition (May 2000), which have been issued by the 2000 National Conference on School Transportation. Copies of this publication may be obtained from the Missouri Safety Center, Central Missouri State University, Humphreys Suite 201, Warrensburg, MO 64093, (660) 543-4830.

“Operator” means the owner or person responsible for the day-to-day operation and maintenance of a school bus.

“Parking brake” means a mechanism designed to prevent the movement of a stationary vehicle.

“Passenger” means any person riding in a school bus other than the driver.

“Passenger seat” means a seat other than the driver’s seat.

“Person” means any natural person, business, company, firm, partnership, association, corporation, or any other entity.

“SAE” means the Society of Automotive Engineers, Inc. Copies of the Standards and Recommended Practices of the Society of Automotive Engineers may be purchased from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096, (724) 776-4841.

“School bus” or “bus” when used in N.J.A.C. 13:20-50A, 50B, 50C, and this subchapter shall refer to Type A, B, C, and D school buses, which shall be classified in the following manner:

1. A “Type A” school bus is a conversion or body constructed and installed upon a van-type compact truck or a front-section vehicle chassis, with a GVWR of 10,000 pounds or less, originally designed by the manufacturer for carrying 10 to 16 passengers;

2. A “Type B” school bus is constructed utilizing a stripped or cutaway chassis with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carrying 10 to 30 passengers. Part of the engine is beneath and/or behind the windshield and beside the driver’s seat. The service door is behind the front wheels;

3. A “Type C” school bus is a body installed upon a flat back cowl chassis with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carry-

ing 10 to 54 passengers. The engine is in front of the windshield, or part of the engine is beneath and/or behind the windshield and beside the driver's seat. The service door is behind the front wheels; and

4. A "Type D" school bus is a body installed upon a chassis, with the engine mounted in the front, middle, or rear, with a GVWR of more than 10,000 pounds, originally designed by the manufacturer for carrying 10 to 54 passengers. The engine may be behind the windshield and beside the driver's seat; it may be at the rear of the school bus, behind the rear wheels; or it may be in the middle of the school bus between the front and rear axles. The service door is ahead of the front wheels.

"School bus signal warning lamps" means eight alternately flashing red or amber lamps, mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the vehicle is stopped or about to stop.

"Seating capacity" means the manufacturer's original passenger capacity design as noted on the manufacturer's vehicle certification plate.

"Service brakes" means the primary mechanism designed to stop a motor vehicle.

"Track seating" means a system installed for the purpose of seating and wheelchair position flexibility.

"UL" means the Underwriters' Laboratories, Inc.

"Vehicle manufacturer's certification plate" means the plate issued by the school bus body manufacturer in accordance with N.J.A.C. 13:20-50.3.

"Vendor" means any person engaged in the business of buying, selling, leasing, or exchanging school buses.

Amended by R.2006 d.249, effective July 3, 2006.  
See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In definition "School bus", substituted "30" for "54" in 2.

**13:20-50.3 Vehicle manufacturer's certification plate; chassis, body, and/or equipment manufacturer's certification; converter's certification; vendor's certification**

(a) The manufacturer of a completed vehicle shall ensure that the vehicle manufacturer's certification plate contains at least the following information:

1. Vehicle identification number;

2. Incomplete chassis manufacture date and completed vehicle date;

3. The vehicle type (Type A, B, C, or D);

4. Gross vehicle weight and gross vehicle weight rating;

5. Maximum permitted seated passengers and maximum permitted wheelchair capacity;

6. Year, make, and model number;

7. Body and chassis manufacturer's name, address, and telephone number; and

8. A statement that the vehicle meets all applicable Federal standards.

(b) The maximum seated passenger and wheelchair positions as set forth on the vehicle manufacturer's certification plate shall specify the maximum possible seated passengers if there are no wheelchair positions and the maximum possible wheelchair positions if the vehicle contains no passenger seating. To determine capacity, 15 inches of seat space shall be allowed for each seated passenger and 30 inches by 48 inches of wheelchair space shall be allowed for each wheelchair position.

(c) The chassis and/or body manufacturer and any manufacturer of school bus equipment shall, upon request, provide evidence and/or certify to the Commission and the school bus operator that such chassis, body, and/or equipment meet the standards of this subchapter, N.J.A.C. 13:20-50A, 50B and 50C, and all applicable Federal standards.

(d) Any person who alters, converts, or modifies a certified "completed vehicle" shall certify to the Commission and the school bus operator that all alterations, conversions, and modifications conform to applicable Federal and State design, construction, testing, and performance standards, this subchapter, N.J.A.C. 13:20-50A, 50B and 50C, and all applicable Federal standards.

(e) A vendor who sells or leases a school bus for the transportation of children shall issue a "Vendor Certification Statement" to the buyer or lessee, signed by an authorized agent or officer of the company, certifying that the school bus meets all Federal and State standards. The "Vendor Certification Statement" shall identify the school bus by make, model, year, and vehicle identification number. The vendor shall also file a copy of the "Vendor Certification Statement" with the Commission's School Bus Inspection Unit.

SUBCHAPTER 50A. CHASSIS STANDARDS FOR  
SCHOOL BUSES MANUFACTURED JANUARY  
2006 AND THEREAFTER

**13:20-50A.1 Air cleaner**

(a) The engine air intake cleaner system, including all duct tubing, shall be properly installed by the chassis manufacturer to meet the engine manufacturer's specifications.

(b) The engine air intake system for diesel engines shall have an air cleaner restriction indicator properly installed by the chassis manufacturer to meet the engine manufacturer's specifications.

**13:20-50A.2 Axles**

The front axle and rear differential, including suspension systems, shall have a GAWR at least equal to that portion of the load that may be carried in accordance with the chassis manufacturer's maximum GVWR.

**13:20-50A.3 Brakes**

(a) A brake system, including service brakes and parking brake, shall be provided.

(b) School buses using air in the operation of the brake system shall be equipped with a warning signal, readily audible or visible to the driver, that will emit a continuous warning when the air pressure available in the brake system is 60 pounds per square inch or less. The warning signal shall be capable of alerting the driver while the school bus is being operated. An illuminated gauge that will indicate to the driver the air pressure in the brake system in pounds per square inch shall be provided.

1. The brake system dry reservoir shall be safeguarded by a check valve or equivalent device so that in the event of failure or leakage in its connection to the source of compressed air, the stored dry air shall not be depleted by the failure or leakage.

(c) Except as otherwise provided for Type B school buses constructed on a cutaway chassis, Type B, C, and D school buses using a hydraulic-assist brake system shall be equipped with a back-up pump system and warning signal, readily audible or visible to the driver, that will emit a continuous warning in the event of a loss of fluid flow from the primary source or a failure of the back-up pump system. Type A school buses and Type B school buses constructed on a cutaway chassis using a hydraulic-assist brake system may be equipped in accordance with the chassis manufacturer's specifications.

(d) The brake lines, booster-assist lines, and control cables shall be protected from excessive heat, vibration, and corrosion and shall be installed in a manner so as to prevent chafing.

(e) The brake system shall be designed to permit the visual inspection of brake lining wear without the removal of any chassis components.

(f) The parking brake shall hold the school bus stationary, or to a limit of traction of the braked wheels, on a 20 percent grade under any condition of legal loading on a surface free of snow, ice, or loose material.

(g) When applied, the parking brake shall remain in the applied position with the capacity set forth in (f) above despite the exhaustion of the source of the energy used for the application of the parking brake or leakage of any kind.

(h) On Type A, B, C, and D school buses, the parking brake control shall be mounted in accordance with the chassis manufacturer's specifications to the right or left of the driver in a position that is easily accessible to the driver.

(i) The parking brake shall be equipped with a warning device visible to the driver that will indicate that the parking brake is engaged.

**13:20-50A.4 Bumper, front**

(a) A school bus shall be equipped with a front bumper. The front bumper shall be provided by the chassis manufacturer.

(b) The front bumper shall contain no sharp edges and shall be designed so as to prevent snagging.

(c) The front bumper shall be constructed of pressed steel channel or equivalent material. The front bumper shall be not less than eight inches high. The front bumper shall be black and shall extend beyond the forward most part of the body, grille, hood, and fenders of the school bus. The top line of the front bumper shall extend laterally to the outer edges of the fenders. Bumper brackets shall be secured to the bumper. Notwithstanding the front bumper requirements set forth in this subsection, the front bumpers 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.

(d) The front bumper, except breakaway bumper ends, shall be of sufficient strength to permit pushing another vehicle of equal GVW without permanent distortion to the bumper, chassis, or body.

(e) Type B, C, and D school buses may be equipped with tow eyes or hooks in accordance with the chassis manufacturer's specifications. Tow eyes or hooks shall be attached in a manner so as not to project beyond the front bumper.

**13:20-50A.5 Clutch**

The clutch torque capacity shall be equal to or greater than the engine torque output.

**13:20-50A.6 Color**

- (a) The chassis, including the front bumper, shall be black.
- (b) The body cowl, hood, and fenders shall be National School Bus Yellow. The hood may be black or nonreflective National School Bus Yellow.
- (c) Wheels and rims shall be black, gray, white, chrome, silver, stainless steel, or National School Bus Yellow.
- (d) The grille shall be gray, chrome, silver, stainless steel, or National School Bus Yellow.

**13:20-50A.7 Drive shaft**

A school bus shall be protected by a metal guard or guards around the circumference of the front half of the drive shaft to prevent the drive shaft from entering the passenger compartment through the floor or dropping to the ground if broken. If the drive shaft is manufactured in sections, each section of the drive shaft shall be protected by a metal guard or guards around its circumference.

**13:20-50A.8 Electrical system**

(a) School buses shall be equipped with a battery or batteries as specified by the chassis manufacturer.

1. The storage battery shall have a minimum cold cranking capacity rating equal to the cranking current required for 30 seconds at 0 degrees Fahrenheit and a minimum reserve capacity rating of 120 minutes at 25 amperes.

2. Battery cables shall have sufficient length to allow some slack.

(b) School buses shall be equipped with an alternator.

1. A Type A school bus shall have an alternator with a minimum output rating of 100 amperes per hour. A Type A school bus equipped with an electrical power lift and a Type B school bus shall have an alternator with a minimum output rating of 130 amperes per hour.

2. A Type C and D school bus shall have an alternator with a minimum output rating of 160 amperes per hour capable of producing a minimum of 50 percent of its maximum rated output at the engine manufacturer's recommended engine idle speed.

3. A school bus may be equipped with a direct-drive alternator in lieu of a belt-drive alternator. A belt-drive alternator shall be capable of handling the rated output capacity of the alternator with no detrimental affect on any other electrically-powered components or accessories.

(c) All wiring shall be of a standard color and number coding and shall conform to SAE Recommended Practice

J1292 (October 1981), incorporated herein by reference, as amended and supplemented. Multiplex wiring may be used.

1. The chassis shall be delivered to the school bus operator with a wiring diagram that coincides with the wiring of the chassis.

2. The chassis manufacturer shall install a readily accessible terminal strip or plug on the body side of the cowl, or in an accessible location in the engine compartment of school buses designed without a cowl. The terminal strip or plug shall contain the following terminals for the body connections:

- i. Main 100 amperes body circuit;
- ii. Taillamps;
- iii. Right turn signal;
- iv. Left turn signal;
- v. Stoplamps;
- vi. Back-up lamps; and
- vii. Instrument panel lights that are rheostat-controlled by the headlamp switch.

**13:20-50A.9 Exhaust system**

(a) The exhaust pipe, muffler, and tailpipe shall be outside the school bus body compartment and shall be attached to the chassis.

(b) The exhaust system components shall not be installed in a location that is likely to result in the burning, charring, or damaging of the electrical wiring, the fuel supply, or any combustible part of the school bus. The exhaust system on a gasoline-powered chassis shall be properly insulated from the fuel system, including the fuel tank and fuel tank connections, by a securely attached metal shield at any point where an exhaust system component is 12 inches or less from the fuel tank or fuel tank connections. When a metal shield is required, the metal shield shall provide a minimum clearance of two inches between the exhaust system components and the electrical wiring, fuel tank, fuel tank connections, and/or combustible components.

(c) The tailpipe shall be constructed of a corrosion-resistant tubing material at least equal in strength and durability to 16-gauge steel tubing of equal diameter.

1. The exhaust system tailpipe shall terminate to the rear of all doors and windows designed to be opened for ventilation.

2. The exhaust system shall not discharge to the atmosphere immediately below an emergency exit, fuel tank, or fuel tank fill pipe.

3. The exhaust system tailpipe of a gasoline-powered engine shall extend to the rear bumper or to the left or right side of the school bus body and shall discharge to the atmosphere either:

- i. At or within six inches forward of the rearmost part of the school bus on either side; or
- ii. At or beyond the rear school bus bumper up to a maximum of two inches.

4. The exhaust system tailpipe of an engine powered by a fuel other than gasoline shall extend to the rear bumper or to the left or right side of the school bus body and shall discharge to the atmosphere either:

- i. At or within 15 inches forward of the rearmost part of the school bus on either side; or
- ii. At or beyond the rear school bus bumper up to a maximum of two inches.

(d) The tailpipe diameter from the muffler to the end of the tailpipe shall comply with the chassis manufacturer's specifications.

(e) The muffler shall be constructed of corrosion-resistant material.

#### 13:20-50A.10 Fenders, front

(a) The outer edges of the front fenders, measured at the fender line, shall extend beyond the outer edges of the front tires when the front wheels are in a straight-ahead position.

(b) On Type C school buses, the front fenders shall be properly braced and shall not require attachment to any part of the school bus body.

(c) The front fenders shall not have any sharp edges.

#### 13:20-50A.11 Frame

(a) The frame or its equivalent shall be of such design and strength characteristics as to correspond to at least standard practices for trucks of the same general load characteristics.

(b) Frames shall not be modified for the purpose of extending the wheelbase.

(c) Holes in the top or bottom flanges or side units of the frame shall not be permitted except as provided in the original chassis frame. Welding to the frame shall be by the chassis manufacturer or as approved by the chassis manufacturer.

(d) Frame lengths shall be established in accordance with the design criteria for the completed vehicle.

#### 13:20-50A.12 Fuel tank

(a) A fuel tank(s) having a minimum 30-gallon capacity shall be provided by the chassis manufacturer. The actual draw capacity of each fuel tank shall be a minimum of 83 percent of the tank capacity. A fuel tank(s) shall be filled and vented to the outside of the body and the fuel filler shall be placed in a location where accidental fuel spillage will not drip or drain onto any part of the exhaust system.

(b) No portion of the fuel system that is located to the rear of the engine compartment, except the filler tube, shall extend above the top of the highest portion of the chassis frame rail. Fuel lines shall be mounted to the chassis frame so as to obtain the maximum possible protection from the chassis frame.

(c) A fuel filter with a replaceable element shall be installed between the fuel tank and the engine.

(d) A school bus constructed with a power lift unit may have the fuel tank mounted on the left chassis frame rail or behind the rear wheels.

(e) A Type B, C, and D school bus shall be equipped with a steel guard around the fuel tank, except as otherwise provided for a Type B school bus constructed on a cutaway chassis. A Type B school bus constructed on a cutaway chassis shall be deemed to be in compliance with this subsection if the fuel tank on such a school bus is mounted between the chassis frame rails. A Type A school bus shall be equipped with a fuel tank in accordance with the manufacturer's specifications.

(f) The fuel system shall comply with FMVSS No. 301 (49 CFR § 571.301), incorporated herein by reference, as amended and supplemented.

#### 13:20-50A.13 Governor

(a) When an engine is mounted in the middle or rear of a school bus, a governor shall be installed to limit engine speed to the maximum revolutions per minute recommended by the engine manufacturer, or a tachometer shall be installed so that the engine speed may be known to the driver.

(b) An engine governor may be installed in front engine school buses.

(c) A governor may be installed to limit road speed.

#### 13:20-50A.14 Heating system

The chassis engine shall have plugged openings for the purpose of supplying hot water for the school bus heating system. The openings shall be suitable for attaching 3/8-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  $n2 /32$  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.

**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.

**13:20-50A.28 Undercoating**

The underside of steel or metallic-constructed front fenders shall be coated with a rustproofing compound meeting or exceeding Federal Standard Rustproofing of Commercial (Nontactical) Vehicles (FED-STD-297E), incorporated herein by reference, as amended and supplemented. Copies of the above Federal Standard, which is approved by the Commissioner, Federal Supply Service, United States General Services Administration, may be obtained from the General

Services Administration, Federal Supply Service Bureau, Specification Section, Suite 8100, 470 East L'Enfant Plaza, S.W., Washington, DC 20407. The undercoating material shall be nonflammable, shall not peel, crack, chip, or melt, and shall be stable under both high and low temperatures.

### 13:20-50A.29 Weight distribution

The weight distribution of a fully-loaded school bus on a level surface shall not exceed the manufacturer's front and rear GAWR.

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## SUBCHAPTER 50B. BODY STANDARDS FOR SCHOOL BUSES MANUFACTURED JANUARY 2006 AND THEREAFTER

### 13:20-50B.1 Air conditioning

(a) School buses may be equipped with an air conditioning system.

(b) Installation of an air conditioning unit shall not infringe on the inside body height requirements set forth in N.J.A.C. 13:20-50B.20. Installation of an air conditioning ducting system shall not infringe on the head protection zone as set forth in FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

(c) An air conditioning unit shall not obstruct the rear emergency exit and shall be mounted in such a manner that it will not cause injury to persons entering or exiting the school bus.

(d) An air conditioning unit shall not be installed over a passenger seat or wheelchair position. An air conditioning ducting system that is mounted over a seat or wheelchair position shall not extend into the passenger compartment more than eight inches from the bulkhead nor more than 11 inches from the ceiling of the school bus. An air conditioning ducting system shall be designed and installed so as to be free of projections and sharp edges. Ducts shall be installed so that exposed edges face the front of the school bus and do not present sharp edges. The bottom and corners of ducts shall be padded with one-inch thick fire block material.

(e) Floor-mounted air conditioning units shall not be installed in a manner that allows passengers to stand or step onto the unit.

(f) An evaporator or air conditioning ducting system shall be designed and installed so as to be free of projections and

sharp edges and shall be padded to prevent injury. Air conditioning ducts that are mounted over a seated position shall not extend more than eight inches from the bulkhead nor more than 11 inches from the ceiling of the school bus. Ducts shall not infringe on the head protection zone as set forth in FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

(g) Roof-mounted air conditioning units shall not restrict the operation of any roof safety hatch.

(h) An air conditioning unit shall meet the performance specifications for air conditioning set forth in the NSTSP, 2000 Revised Edition (May 2000) at pages 30-31, incorporated herein by reference, as amended and supplemented.

(i) Notwithstanding (b) above, an air conditioning unit may be installed over the engine or in the driver's compartment in a Type D school bus.

(j) Notwithstanding (b) above, an air conditioning unit may be installed in the driver's compartment in a Type B and C school bus.

### 13:20-50B.2 Aisle

(a) The minimum clearance of all aisles shall be 12 inches unless otherwise provided in this subchapter.

1. The aisle leading to a service door and a rear emergency door shall be a minimum width of 12 inches.

2. The aisle leading from the center aisle to a side emergency door shall be a minimum width of 24 inches.

3. The aisle leading to the emergency door and the power lift door from each wheelchair position shall be a minimum width of 30 inches.

4. On Type A school buses, the aisle opening at the rear emergency door shall be a minimum width of 22 inches, a minimum height of 45 inches, and a minimum depth of six inches.

5. On Type B, C, and D school buses, the aisle opening at the rear emergency door shall be a minimum width of 24 inches, a minimum height of 45 inches, and a minimum depth of 12 inches.

(b) Aisles shall not be obstructed at any time by any barrier, seat, wheelchair mounting, or other object.

(c) The seatbacks shall be slanted so as to provide a minimum aisle clearance of 15 inches as measured from the tops of the seatbacks.

**13:20-50B.3 Back-up warning alarm**

An automatic audible back-up warning alarm shall be installed in the area behind the rear axle of the school bus. The back-up warning alarm shall comply with SAE Standard J994 (August 1993), incorporated herein by reference, as amended and supplemented. The back-up warning alarm shall not be activated when the side or rear emergency doors are opened unless the school bus is in reverse.

**13:20-50B.4 Battery**

(a) A battery shall be furnished by the chassis manufacturer.

(b) Except for a battery mounted in the engine compartment, the body manufacturer shall securely attach the battery on a slide-out or swing-out tray in a closed, vented compartment in the body skirt, so that the battery is readily accessible for convenient servicing from the outside. The battery compartment door or cover shall be hinged at the front or top and secured by a conveniently-operated latch or other type of fastening device. The location of the battery compartment shall be identified by the designation "BATTERY" in black letters at least one inch high and at least one-eighth inch wide. The lettering shall be located either on or adjacent to such compartment.

(c) The battery shall be securely mounted in the space provided. The battery shall be equipped with battery caps. Battery posts and battery cable ends shall be secure and free of corrosion. Battery cables shall be in accordance with the manufacturer's specifications and shall be insulated and installed so as to prevent the shorting of the electrical system.

**13:20-50B.5 Bumpers**

(a) A school bus shall be equipped with a front and rear bumper.

(b) Bumpers shall contain no sharp edges and shall be designed so as to prevent snagging.

(c) A front safety shield may be attached directly under the school bus front bumper. The front safety shield shall be constructed of rigid plastic, fiberglass, steel, or equivalent material. The shield shall be designed to withstand abnormal vibration or severe atmospheric conditions. The front safety shield shall be removable to permit towing. The front safety shield's overall width shall not extend beyond the front tire width when the school bus wheels are in a straight-ahead position. The bottom edge of the shield shall terminate 12 to 14 inches above the road surface. The front surface of the front safety shield may be solid, perforated, or louvered, and shall be black.

(d) The rear bumper shall be provided by the body manufacturer. The rear bumper shall be constructed of pressed steel channel or equivalent material. The rear bumper shall be at least 3/16 inch thick. The rear bumper on Type A school buses shall be a minimum of eight inches high. The

rear bumper on Type B, C, and D school buses shall be a minimum of 9½ inches high.

(e) The bumpers shall be of sufficient strength to permit pushing by another vehicle without permanent distortion to the bumper, chassis, or body.

(f) The rear bumper shall wrap around the rear corners of the school bus and shall extend forward at least 12 inches, measured from the rearmost point of the school bus body at the floor line, and shall be flush-mounted to the body sides or protected by an end panel.

(g) The rear bumper shall be attached to the chassis frame in such a manner that it may be easily removed. The rear bumper shall be braced so as to withstand impact from the rear or side, and shall be attached in a manner so as to prevent to the greatest extent possible the hitching of rides.

(h) The rear bumper shall extend at least one inch beyond the rearmost part of the body surface measured at the floor line. The rear bumper shall not contain any holes other than the opening to accommodate the exhaust pipe, the manufacturer's drain holes, and the holes required to accommodate the mounting bolts. If there is an opening in the bumper to accommodate an exhaust pipe, the opening shall not be more than one-half inch larger than the exhaust pipe diameter. There shall be at least one and one-half inches of bumper material above and below the opening measured from the top edge and bottom edge of the bumper. The bumper may be reinforced around the opening for the exhaust pipe.

(i) A school bus shall not be equipped with a rear bumper designed in a manner so that it can be used as a step.

**13:20-50B.6 Color**

(a) The school bus body, including the fenders and doors, shall be National School Bus Yellow.

(b) The body exterior paint trim, bumpers, lamp hoods, emergency door arrow, rub rails, exterior mirror assembly and support brackets shall be black.

(c) The words "EMERGENCY DOOR" shall be applied on both the inside and outside of the emergency door in red letters at least two inches high with a brushstroke at least 3/16 inch wide.

(d) National School Bus Yellow reflective material may be applied to the school bus. The material used shall be of an automotive engineering grade or better, shall meet initial reflectance values in accordance with performance specifications for reflective material set forth in the NSTSP, 2000 Revised Edition (May 2000) at page 36, incorporated herein by reference, as amended and supplemented, and at Appendix B (Retroreflective Sheeting Daytime Color Specification) thereof at page 199, incorporated herein by reference, as amended and supplemented, and shall retain at least 50 percent of the initial reflectance values for a minimum of six years. Reflective materials and markings, if used, may include any or all of the following:

1. If reflective materials and markings are applied to the bumpers, the bumpers shall be marked with stripes of reflective National School Bus Yellow or non-contrasting reflective material. The stripes shall be two inches wide and shall be evenly spaced across the entire width of the bumper. The stripes shall run diagonally at 45 degree angles from the top of the bumper to the bottom of the bumper toward the centerline of the bumper.

2. If reflective materials and markings are applied on the rear, the rear of the school bus body shall be marked with a strip of reflective National School Bus Yellow material no greater than two inches in width to be applied to the back of the school bus, extending from the lower left corner of the "SCHOOL BUS" lettering, across to the left side of the school bus, then vertically down to the top of the bumper, across the school bus on a line immediately above the bumper to the right side, then vertically up to a point even with the strip placement on the left side, and concluding with a horizontal strip terminating at the lower right corner of the "SCHOOL BUS" lettering.

3. If reflective materials and markings are applied to the sides, the sides of the school bus body shall be marked with reflective National School Bus Yellow material at least two inches but not more than 12 inches in width, extending the length of the school bus body and located vertically as close as practicable to the belt line.

(e) The background of the front and/or rear "SCHOOL BUS" signs shall be marked with reflective National School Bus Yellow material.

(f) The roof of the school bus may be painted white provided that at least a six-inch National School Bus Yellow border is maintained above the top window line. The front and rear roof caps shall remain National School Bus Yellow.

### 13:20-50B.7 Communications

(a) School buses may be equipped with an electronic voice communication system.

(b) A public address sound system with an interior flush-mounted speaker(s) and an exterior speaker(s) may be installed.

### 13:20-50B.8 Construction

(a) The school bus shall be constructed of prime commercial quality steel or other metal or material with strength at least equivalent to all-steel as certified by the body manufacturer.

(b) The construction shall provide a dustproof and watertight unit and the exterior shall be designed to prevent to the greatest extent possible the hitching of rides.

(c) The school bus body joints, other than the body panel joints created when body components are attached to components furnished by the chassis manufacturer, shall

conform to FMVSS No. 221 (49 CFR § 571.221), incorporated herein by reference, as amended and supplemented.

(d) A school bus may be equipped with steel side panel skirts between the front and rear axles of the school bus. The side panel skirts shall extend to the bottommost elevation of any chassis component located between the front and the rear axles of the school bus. A school bus may be equipped with steel side panel skirts behind the rear axles of the school bus. On Type D school buses, the bottom of the side panel skirts located behind the rear axle shall taper upward to the bottommost part of the rear bumper.

(e) School buses shall not be equipped with stanchions, interior luggage racks, roof luggage racks, luggage access ladders, or any other equipment that may obstruct the passenger compartment.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (d), deleted the former third sentence.

### 13:20-50B.9 Crossing control arm

(a) Every school bus shall be equipped with a crossing control arm.

(b) The construction and design of the crossing control arm shall offer safe and trouble-free operation.

(c) The crossing control unit shall be installed on the right side of the front bumper. The crossing control arm shall not obstruct the front license plate on the school bus.

(d) The open crossing control arm shall extend forward from the front bumper at least 70 inches. The crossing control arm shall be powered by either vacuum, air pressure, or electricity. Manual operation of the crossing control arm shall not be permitted.

(e) The crossing control arm shall be activated automatically to the fully-extended position when the red school bus signal warning lights are in operation. An override switch may be installed that prevents the automatic extension of the crossing control arm, provided the override switch is within the reach of the driver and has an audible warning buzzer to indicate that the crossing control arm has been deactivated.

### 13:20-50B.10 Defrosters

(a) Defrosting and defogging equipment shall direct a sufficient flow of heated air onto the windshield, the window to the left of the driver, and the glass in the viewing area directly to the right of the driver to eliminate frost, fog, or snow. A Type A school bus and a Type B school bus constructed on a cutaway chassis shall be equipped with defrosting and defogging equipment that will direct a sufficient flow of heated air onto the windshield to eliminate frost, fog, or snow in accordance with the manufacturer's specifications.

(b) The defrosting system shall conform to SAE Recommended Practice J381 (April 1994), incorporated herein by reference, as amended and supplemented.

(c) The defrosting and defogging system shall be capable of furnishing heated outside ambient air, except that that part of the system furnishing additional air to the windshield, service door, and stepwell may be of the recirculating air-type.

(d) Auxiliary fans shall not be considered to be a defrosting or defogging system.

(e) Portable heaters shall not be used in school buses.

### 13:20-50B.11 Doors, emergency

(a) The emergency door shall be hinged on the right side if the emergency door is located in the rear end of the school bus and on the front side if the emergency door is located on either side of the school bus. All emergency doors shall open outward and shall be equipped with a device to hold the door open during emergencies and school bus evacuation drills.

(b) If a Type A school bus is equipped with double emergency doors, such emergency doors shall be hinged on the outside edges of the doors and shall have three one-point fastening devices attached to the body.

(c) The emergency door shall be labeled inside and outside to indicate how the door is to be opened. A black arrow on the outside shall indicate how the emergency door is to be opened. The opening instructions on the inside shall be red or black.

(d) The upper portion of an emergency door shall be equipped with approved safety glazing, the exposed area of which shall be not less than 400 square inches.

1. A rear view wide-angle lens may be attached to one rear school bus window. The lens shall not cover more than one-third of the glass area.

(e) The lower portion of the rear emergency door on a Type B, C, and D school bus shall be equipped with approved safety glazing, the area of which shall be not less than 350 square inches. This subsection shall not apply to a Type D school bus that is equipped with a rear engine.

(f) A school bus shall not be equipped with steps leading to the emergency door.

(g) The words "EMERGENCY DOOR" shall be applied on both the inside and outside of the emergency door in red letters at least two inches high with a brushstroke at least  $\frac{3}{16}$  inch wide. The letters shall be placed directly above the emergency door; or on the top of the emergency door in the metal panel above the safety glazing; or on the uppermost portion of the safety glazing provided that the letters on the

safety glazing are on a background of a contrasting color and further provided that the emergency door has an exposed clear glass area of not less than 400 square inches as provided in (d) above.

(h) The emergency door shall be designed to be opened from the inside and the outside of the school bus and shall be equipped with a quick release fastening device designed to prevent accidental release. The emergency door fastening device shall not be controlled from the driver's seat. The release mechanism shall be free of any obstruction that may prevent a quick release in case of an emergency.

(i) The emergency door fastening device shall be equipped with an electric plunger-type switch connected to a buzzer located in the driver's compartment that will indicate to the driver that the slide bar has moved and the emergency door is about to open. The switch that operates the buzzer shall be enclosed in a metal case and the wires leading from the switch shall be concealed in the school bus body. The switch shall be installed so that the plunger contacts the farthest edge of the slide bar in such a manner that any movement of the slide bar shall immediately close the circuit on the switch and activate the buzzer.

(j) The emergency door may be equipped with a locking system that incorporates an interlocking electrical circuit that prevents the engine of the school bus from being started while the emergency door is locked. A buzzer shall be provided in the driver's compartment that will indicate to the driver that the door lock has been tampered with while the school bus is in motion. No other locking system designed for school bus security shall be used. The engine ignition system of a school bus shall not operate if an emergency door is locked from either inside or outside the school bus.

(k) The emergency door shall be equipped on the outside with a handle designed to permit the opening of such door from the outside. The design of the handle shall be such that it is not readily removable from the emergency door without the use of tools. The handle shall be designed so as to prevent to the greatest extent possible the hitching of rides.

(l) The emergency door windows shall not be covered by any metal bars or other screening material.

(m) The emergency door shall be equipped with padding at the top edge of each door opening. The padding shall be covered with fire block material and be at least three inches wide and one-inch thick, and shall extend the full width of the door opening. The emergency door shall have a securely fastened rubber seal around the circumference of the door opening.

(n) There shall be no obstruction higher than  $\frac{1}{4}$  inch across the bottom of any emergency door opening.

(o) The emergency door shall be equipped with a fastening device to hold the door open during emergencies and school bus evacuation drills. A fastening device affixed to the outside shall not protrude more than  $\frac{3}{4}$  inch from the school bus body or door, or be of a type that may cause injury when it is not securing the emergency door in its open position.

(p) The emergency door shall contain no numbering or lettering other than the words "EMERGENCY DOOR" and the emergency door arrow.

#### 13:20-50B.12 Doors, service

(a) The service door is the door intended to be used by passengers to enter and exit the school bus. The service door shall be under the control of the driver and shall be designed so as to afford easy release and prevent accidental opening. When a hand lever is used, no parts of the lever shall come together so as to cause injury.

(b) The service door shall be located on the right side of the school bus opposite the driver and within the direct view of the driver.

(c) The service door on a Type B, C and D school bus shall have a minimum horizontal opening of 24 inches and a minimum vertical opening of 68 inches. The service door on a Type A school bus shall have a minimum opening area of 1,200 square inches.

(d) The service door shall be a split-type, sedan-type, or jackknife-type. A split-type door includes any sectioned door that divides and opens inward or outward. If one section of a split-type door opens inward and the other section opens outward, the front section shall open outward.

(e) The glass portion of the door panels shall be approved safety glass. The bottom of each lower glass panel shall not be more than 10 inches from the top surface of the bottom step. The top of the upper glass panel shall not be more than three inches from the top of the door. A Type A school bus that is not equipped with a split-type door shall have an upper panel window of safety glass with an area of at least 350 square inches.

(f) The vertical closing edges on a split-type door shall be equipped with a flexible material to protect against injury. A Type A school bus that is not equipped with a split-type door may conform to the chassis manufacturer's service door specifications.

(g) A power-operated door shall be equipped with an emergency manual override to permit the operation of the door by the driver when there is a loss of power. The emergency manual override shall be placed inside the school bus above or to the immediate left or right of the service door and shall be clearly labeled.

(h) There shall be no door to the left of the driver on a Type B, C or D school bus, except as otherwise provided for a Type B school bus constructed on a cutaway chassis. A Type A school bus and a Type B school bus constructed on a cutaway chassis may conform to the manufacturer's specifications for the driver's entrance door.

(i) All service doors shall be equipped with padding at the top edge of each door opening. The padding shall be covered with fire block material and be at least three inches wide and one inch thick and shall extend the full width of the door opening.

(j) When a school bus is equipped with air brakes, air-operated doors, or other air-operated assemblies, the school bus shall be equipped with an additional air tank(s) for the operation of those assemblies. Such tanks shall be equipped with pressure protection valves.

(k) Service door trim may be National School Bus Yellow or black in color.

#### 13:20-50B.13 Emergency equipment

(a) Every school bus shall have a pry bar at least 23 inches in length that shall be securely mounted in the school bus in a location readily accessible to the driver.

(b) Each school bus shall contain at least three reflectorized triangular road-warning devices in compliance with FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented, which shall be securely mounted in an accessible place in the driver's compartment.

(c) A school bus may be equipped with a properly identified vehicle fluid clean-up kit that is removable, moisture-proof, and mounted in an accessible place in the driver's compartment.

#### 13:20-50B.14 Emergency exits

(a) School buses shall be equipped with emergency push-out side exit windows that are vertically hinged on the forward side of the window as follows:

1. One emergency push-out exit window per side.

i. Emergency push-out side exit windows shall not be placed directly opposite each other.

ii. Each emergency push-out side exit window shall be equipped with a switch connected to a warning buzzer, located in the driver's compartment, to alert the driver when the latch for the emergency push-out side exit window has been released.

iii. Each emergency push-out side exit window shall be outlined around its outside perimeter with a retroreflective tape with a minimum width of 2.5 centimeters (.975 inch) and shall be either red, white, or yellow in color.

iv. Each emergency push-out side exit window shall have the designation "EMERGENCY EXIT" in red or black letters at least five centimeters high with a brush-stroke at least  $\frac{3}{16}$  inch wide. The red or black letters shall contrast with the color of the surface upon which they are placed. The lettering shall be placed either directly above the push-out side exit window, or at the top of, or at the bottom of the push-out side exit window on both the inside and outside surfaces of the school bus. Concise operating instructions describing the motions necessary to unlatch and open the emergency push-out side exit window shall be located within 15 centimeters of the release mechanism on the inside surface of the school bus. The instructions shall be in letters at least one centimeter high and of a color that contrasts with its background.

v. Emergency push-out side exit windows shall not be located directly above the stop signal arm.

vi. Emergency push-out side exit windows shall not be obstructed at any time by any barrier, seat, door, or other object.

2. School buses may be equipped with additional emergency push-out side exit windows.

(b) School buses shall be equipped with roof safety hatches as follows:

1. Each Type B, C and D school bus shall be equipped with two roof safety hatches. One roof safety hatch shall be located as near as practicable to a point equidistant from the midpoint of the passenger compartment and the forwardmost point of the passenger compartment and the other roof safety hatch shall be located as near as practicable to a point equidistant from the midpoint of the passenger compartment and the rearmost point of the passenger compartment. Each Type A school bus shall be equipped with one roof safety hatch, which shall be located as near as practicable to the midpoint of the passenger compartment.

2. Each roof safety hatch shall be constructed of metal, fiberglass, or equivalent material and shall be equipped with interior and exterior latch releases. Each roof safety hatch shall provide a minimum opening of 20 inches by 20 inches.

3. Each roof safety hatch shall be equipped with a switch connected to a warning buzzer, located in the driver's compartment, to alert the driver when the latch for the roof safety hatch has been released. Each roof safety hatch shall have the designation "EMERGENCY EXIT" in red or black letters at least two inches high with a brushstroke at least  $\frac{3}{16}$  inch wide. The lettering shall be located on the inside and outside surfaces of the roof safety hatch or within 12 inches of the roof safety hatch opening. Concise operating instructions describing the motions necessary to unlatch and open the roof safety

hatch shall be located within six inches of the release mechanism on the inside and outside of the school bus.

#### 13:20-50B.15 Fire extinguisher systems

(a) School buses may be equipped with an automatic fire extinguisher system for the engine compartment. If so equipped, the fire extinguisher system shall be installed in accordance with the fire extinguisher system manufacturer's installation specifications.

(b) School buses may be equipped with fire extinguisher systems in other locations in accordance with the fire extinguisher system manufacturer's installation specifications.

(c) If a school bus is equipped with an automatic fire extinguisher system for the engine compartment in accordance with (a) above, an indicator light shall be provided in the driver's compartment that will indicate to the driver the existence of a fire in the engine compartment of the school bus. The indicator light shall remain lit until the system is serviced and the light reset. An indicator light shall be provided in the driver's compartment that will indicate a system discharge.

(d) Every school bus shall be equipped with at least one UL-approved pressurized, dry chemical-type fire extinguisher, complete with hose, mounted in a bracket located in the driver's compartment and readily accessible to the driver and passengers. A pressure gauge shall be mounted on the fire extinguisher that can be easily read without removing the fire extinguisher from its mounted position. The fire extinguisher shall be fully-charged and display an inspection tag.

(e) The fire extinguisher shall be approved by the UL with a total rating of 2A10BC or greater. The operating mechanism shall be sealed with a type of seal that will not interfere with the use of the fire extinguisher.

(f) A school bus shall not be equipped with a fire extinguisher system that uses the chemical Halon as the fire suppression agent.

#### 13:20-50B.16 First aid kit

(a) Every school bus shall be equipped with a removable first aid kit. The first aid kit shall be moistureproof and dustproof and shall be mounted in an accessible place in the immediate vicinity of the driver's compartment. The words "FIRST AID" shall be printed on the kit in letters that are clearly visible. If the first aid kit is stored in a storage compartment, the storage compartment shall be identified by the words "FIRST AID" in red letters at least two inches high with a brushstroke at least  $\frac{3}{16}$  inch wide. The storage compartment may also be marked with the Red Cross symbol.

(b) The first aid kit shall contain at a minimum the following items:

1. Two rolls of adhesive tape, one inch by 2½ yards;
2. Twenty-four sterile gauze pads, three inches by three inches;
3. One hundred adhesive bandages, ¾ inch by three inches;
4. Eight two-inch bandage compresses;
5. Ten three-inch bandage compresses;
6. Two sterile gauze roller bandages, two inches by six feet;
7. Two nonsterile triangular bandages, approximately 40 inches by 35 inches by 54 inches, with two safety pins;
8. Three sterile gauze pads, 36 inches by 36 inches;
9. Three sterile eye pads;
10. One pair latex gloves;
11. One pair rounded-end scissors;
12. One mouth-to-mouth airway;
13. One sharpened pencil; and
14. One small writing pad.

**13:20-50B.17 Floor**

(a) The floor in the underseat area, including the tops of the wheelhousing, the driver's compartment, and the toe board, shall be covered with nonskid rubber floor covering or equivalent material having a minimum overall thickness of .125 inch. The toe board floor covering on Type A and B school buses may be the chassis manufacturer's standard.

(b) The floor covering in the aisle shall be of an aisle-type rubber or equivalent material, wear-resistant, and ribbed. The minimum overall thickness shall be .187 inch measured from the tops of the ribs.

(c) The floor covering shall be permanently bonded to the floor and shall not crack when subjected to sudden changes in temperature. The bonding or adhesive material shall be waterproof and shall be of a type recommended by the manufacturer of the floor covering material. All seams shall be sealed with a waterproof sealer.

(d) If a flush-mounted, screw-down plate is provided to access the fuel tank sending unit, it shall be secured, sealed, and insulated. The plate shall be covered with a nonskid surface when it is located in the aisle.

**13:20-50B.18 Heaters**

(a) Heaters shall be of a hot water and/or combustion-type.

(b) If only one heater is used, it shall be of a fresh air or combination fresh air and recirculating air-type.

(c) If more than one heater is used, the additional heater(s) may be of the recirculating air-type or convection-type.

(d) The heating system shall be capable of maintaining a temperature of not less than 40 degrees Fahrenheit throughout the school bus at the average low temperature for the month of January as established by the United States Department of Commerce, National Weather Service, for the area in which the school bus is to be operated.

(e) Every heater installed by a body manufacturer shall bear a nameplate that indicates that the heater rating is in accordance with specifications for heating systems set forth in the NSTSP, 2000 Revised Edition (May 2000) at pages 29-30, incorporated herein by reference, as amended and supplemented. The nameplate shall be affixed by the heater manufacturer and shall constitute the manufacturer's certification that the heater performance is as shown on the nameplate.

(f) Heater hoses shall be adequately supported to guard against excessive wear due to vibration. The heater hoses shall not dangle or rub against the chassis or any device that has sharp edges and shall not interfere with or restrict the operation of any engine function. Heater hoses shall conform to SAE Standard J20 (October 1997), incorporated herein by reference, as amended and supplemented. Heater lines on the interior of the school bus shall be shielded to prevent scalding of the driver or passengers.

(g) Each hot water heater system installed by the body manufacturer shall include one shut-off valve in the pressure line and one shut-off valve in the return line with both valves at or near the engine or at another location accessible to the driver that will isolate the heating system from the engine in the event of a leak. Each hot water heater system shall also include a water flow regulating valve installed in the pressure line for convenient operation by the driver while seated. The hot water heater system in a Type A school bus may conform to the chassis manufacturer's standard.

(h) Each hot water heater system installed by the body manufacturer shall include accessible bleeder valves installed in an appropriate place in the return lines to remove air from the heater lines.

(i) A rear engine school bus shall be equipped with a hot water heater booster pump.

(j) All combustion-type heaters shall comply with 49 CFR § 393.77, incorporated herein by reference, as amended and supplemented.

(k) Access panels shall be provided to make heater motors, cores, and fans readily accessible for service. An outside access panel may be provided for the driver's heater.

(l) A diesel-powered school bus may be equipped with an auxiliary heater designed to preheat the engine and passenger compartment. The exhaust for this type of heater may vent under an operable window.

### 13:20-50B.19 Identification

(a) The words "SCHOOL BUS" shall be applied to the body of a school bus, or on signs attached thereto, in black letters not less than eight inches high on both the front and rear of the school bus between the signal warning lamps. The lettering shall be placed as high as possible without impairment of its visibility. The lettering shall conform to Series B of Standard Alphabets for Highway Signs, Federal Highway Administration, 1966 Edition, reprinted May 1972, incorporated herein by reference, as amended and supplemented, copies of which may be obtained from the Federal Highway Administration, 400 Seventh Street, S.W., Room 3408, Washington, DC 20590. An illuminated front and rear destination sign with the words "SCHOOL BUS" in black letters not less than eight inches high on a background of National School Bus Yellow may be used.

(b) Autobuses that are subject to inspection by the Commission's Commercial Bus Inspection and Investigation Unit and that have been approved for school use shall conform to the requirements of (a) above. If attached signs are used, they shall comply with the following:

1. The sign on the front of the autobus shall have the words "SCHOOL BUS" printed in black letters not less than eight inches high on a background of National School Bus Yellow;
2. The sign on the rear of the autobus shall be at least 10 square feet in size, shall be painted National School Bus Yellow, and shall have the words "SCHOOL BUS" printed in black letters not less than eight inches high; and
3. Attached signs shall be removed or covered whenever the autobus is not being used for student transportation to or from school or school-connected activities.

(c) There shall be no lettering on the school bus other than that required by law or specified in this subchapter.

(d) Only signs and lettering limited to the name and municipality of the school bus owner or operator and any numbers and/or letters necessary for school bus identification shall appear on the sides of the school bus:

1. The school bus owner's or operator's name and municipality, as set forth on the school bus registration, shall be located on each side of the exterior of the school bus in black letters at least three inches high. The name and municipality shall be below the window line and shall be completely horizontal.
2. Numbers and/or letters necessary for school bus identification shall be in prominent locations on the front and rear of the side of the school bus below the window line. The numbers and/or letters shall be white, black, or National School Bus Yellow and shall be not more than

six inches in height. Numbers and/or letters necessary for school bus identification may also be located on the bumpers.

3. 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.

(e) Neither the interior nor exterior of a school bus shall exhibit advertising of any kind, except that the school bus manufacturer's and vendor's trade names may be displayed on the school bus and the area of the school bus adjacent to the fuel inlet may be labeled so as to identify the type of fuel required.

(f) A route destination sign may be affixed to the right side of a school bus inside the lower portion of the side window located directly behind the first seatback. The route destination sign shall be a maximum of eight inches by 12 inches. A route destination sign shall not be displayed on any other window.

(g) If a route destination sign is affixed to the exterior of a school bus, it shall be affixed to the right side of the school bus to the left of the service door directly below the first window between the rub rails. The route destination sign shall be a maximum of eight inches by 12 inches.

### 13:20-50B.20 Inside height

The inside body height of a school bus shall be not less than 72 inches measured from the ceiling to the nonskid floor surface at any point on the centerline from the front bulkhead to the rear bulkhead. The inside body height of a Type A school bus shall be not less than 62 inches measured from the ceiling to the nonskid floor surface at any point on the centerline from the front bulkhead to the rear bulkhead.

### 13:20-50B.21 Insulation

(a) The ceiling and walls of a school bus shall be insulated with fire-resistant material so as to reduce noise and minimize vibration.

(b) If floor insulation is used, it shall be five-ply nominal  $\frac{3}{8}$  inch-thick plywood, and it shall equal or exceed properties of exterior-type softwood plywood, C-D grade, as set forth in the specifications of the Voluntary Product Standard PS 1-95, "Construction and Industrial Plywood," published by the United States Department of Commerce, Technology Administration, National Institute of Standards and Technology (March 1996), incorporated herein by reference. A copy of PS 1-95 may be obtained from the United States Department of Commerce, National Institute for Standards and Technology, Office of Product Standards, Gaithersburg, MD 20899. When plywood is used, all exposed edges shall be sealed. Type A school buses may be equipped with nominal  $\frac{1}{2}$  inch-thick plywood or equivalent material. Equivalent material may be used to replace plywood, provided it has an equal or greater insulation R value, deterioration, sound abatement, and moisture-resistant properties. The insulation shall be securely fastened to the steel floor in the passenger compartment of the school bus.

**13:20-50B.22 Interior**

(a) The interior of a school bus shall be free of all projections including, but not limited to, luggage racks that may cause injury. An inner lining shall be installed on ceilings and walls. If the ceiling is constructed with lapped joints, the forward panel shall be lapped by the rear panel and the exposed edges shall be beaded, hemmed, flanged, or otherwise treated so as to minimize sharp edges.

(b) The driver's area in front of the forward most padded restraining barriers shall be of sufficient size so as to permit the mounting of all required safety equipment and vehicle operating equipment.

(c) Every school bus shall be constructed so that the noise level measured at the ear of the occupant nearest to the primary vehicle noise source shall not exceed 85 decibels when tested in accordance with the Noise Test Procedure set forth in Appendix B of the NSTSP, 2000 Revised Edition (May 2000) at page 198, incorporated herein by reference, as amended and supplemented.

**13:20-50B.23 Lamps and signals**

(a) Each lamp on the exterior of a school bus shall be marked with the SAE rating for its proper use and shall conform to FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented.

1. Every school bus shall be equipped with clearance, marker, and identification lamps as set forth in FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented. Each clearance, marker, or identification lamp shall automatically be activated whenever the headlights or parking lamps are activated in a steadily burning state.

2. Every school bus shall be equipped with two parking lamps installed on the front of the school bus.

3. Every school bus shall be equipped with two white rear back-up lamps that are at least four inches in diameter or, if a shape other than round, a minimum of 13 square inches of illuminated area in accordance with FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented. If the back-up lamps are placed on the same horizontal line as the stoplamps and turn signal lamps, they shall be positioned to the inside of the stoplamps and turn signal lamps. The back-up lamps shall be illuminated when the shift control lever for the transmission is placed in reverse gear. The back-up lamps or a landing area light shall be illuminated when the rear emergency door is unlatched. The back-up lamps or a landing area light on a Type D school bus that is equipped with a rear engine shall be illuminated when a rear emergency window is unlatched. The landing area light shall be illuminated when the side emergency door is unlatched.

4. Every Type B, C, and D school bus shall be equipped with an armored marker-type amber lamp on each side of the school bus body immediately behind the service door on the right side and symmetrically opposite on the left side of the school bus. Armored marker-type amber lamps shall be connected to the turn signals. Type A school buses may be equipped with armored marker-type amber lamps.

(b) Every school bus shall be equipped with interior lamps that adequately illuminate the aisle, stepwell, and any step outside the stepwell area leading to the aisle. The stepwell light and any light for any step outside the stepwell area leading to the aisle shall be activated by the service door operating switch and shall be illuminated only when the headlights and clearance lights are on or the service door is open. The source of the stepwell illumination shall be located within the stepwell. Each step outside the stepwell area leading to the aisle shall be equipped with an independent light.

(c) Body instrument panel lights shall be controlled by an independent rheostat switch.

(d) A school bus may be equipped with a light to illuminate the area outside of the service door.

(e) Every school bus shall be equipped with a telltale light, plainly visible to the driver, to give a positive indication that the stoplights are operating.

(f) Alternately flashing signal warning lamps shall be provided as follows:

1. Every school bus shall be equipped with strobe or incandescent signal warning lamps.

2. Red signal warning lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the school bus is stopped on the highway to take on or discharge school children.

i. Every school bus shall be equipped with two front and two rear red signal warning lamps located approximately six inches below the top of the school bus, as near to the sides as possible, and equidistant from the center.

ii. The red signal warning lamps shall be activated by an automatic switch on the service door opener. Opening the service door shall automatically cut off the amber signal warning lamps and activate the red signal warning lamps. Closing the service door shall automatically cut off the red signal warning lamps and recycle the signal warning lamp system for the next stop.

3. Amber signal warning lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that the school bus is about to stop on the highway to take on or discharge school children.

i. In addition to the four red signal warning lamps described in (f)2 above, four amber signal warning lamps shall be installed with one amber signal warning lamp located near each red signal warning lamp, at the same level, but closer to the vertical centerline of the school bus.

ii. The amber signal warning lamps shall be activated, approximately 300 feet prior to each school bus stop, by either a foot switch located on the floorboard directly in front of the driver or by a hand switch that is easily accessible to the seat-belted driver.

4. The system of red and amber signal warning lamps shall be wired so that the amber signal warning lamps are energized manually, and the red signal warning lamps are automatically energized (with the amber signal warning lamps automatically deenergized) when the stop signal arm is extended and when the school bus service door is opened. An amber signal warning lamp cancel switch, easily accessible to the driver, shall be installed to allow the driver to cancel the amber signal warning lamps without using the master switch or opening the service door.

i. In addition to the above requirement, school buses equipped with an automatic service door may be equipped with a manual override switch to permit the driver to activate the red signal warning lamps prior to opening the door.

5. All flashers for alternately flashing red and amber signal warning lamps shall be enclosed in the school bus body in a readily accessible location.

6. Each school bus shall be equipped with indicator lights that monitor the proper operation of the front and rear alternately flashing signal warning lamps. The indicator lights shall be mounted in full view of the driver. If the full circuit current passes through the indicator lights, each circuit shall be protected by a fuse or circuit breaker.

7. The area around the lens of each alternately flashing signal warning lamp and extending outward from the edge of the lamp approximately three inches shall be black in color. In those installations where there is no flat vertical portion of the school bus body immediately surrounding the entire lens of the lamp, a black circular or square band approximately three inches wide shall be installed immediately below and to both sides of the lens on the body or roof area against which the signal warning lamp is seen from a distance of 500 feet along the axis of the school bus.

8. Visors or hoods, black in color, with a minimum depth of four inches shall be provided.

9. If strobe alternately flashing signal warning lamps are utilized, the front and rear signal warning lamps shall be equipped with eight five-inch sealed beam electronic strobe lamps, four red and four amber, working in an automatic integrated system. The exterior surface of the lens shall be smooth and shall meet the color specifications set forth in SAE Standard J578 (June 1995), incorporated herein by reference, as amended and supplemented.

i. The solid-state strobe power supply shall provide the electrical power to energize the sealed beam flash tubes. The power supply shall energize the lamps at a combined alternating flash rate of 120 to 128 flashes per minute. The power supply shall be fully enclosed in a metal container, with a minimum metal wall thickness of .060 inch, and shall be mounted within the front or rear bulkheads.

(g) The school bus body shall be equipped with two rear turn signal lamps that conform to FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented. Each rear turn signal lamp shall have a diameter of at least seven inches, or shall have an illuminated lens area of at least 38 square inches if the turn signal lamp is of a shape other than round. Each Type A school bus shall be equipped with two rear turn signal lamps that each have at least 21 square inches of illuminated lens area. Turn signal lamps shall be connected to the chassis hazard warning switch to cause simultaneous flashing of the turn signal lamps when needed as a vehicular traffic hazard warning. Turn signal lamps shall be placed as wide apart as practical and their centerline shall be approximately eight inches below the rear window.

(h) Every school bus shall be equipped with four combination red stoplamps/taillamps as follows:

1. Two combination lamps shall be mounted on the rear of the school bus body just inside the turn signal lamps. Each combination lamp shall have a diameter of at least seven inches, or shall have an illuminated lens area of at least 38 square inches if the combination lamp is of a shape other than round.

2. Two combination lamps shall be mounted on the rear of the school bus body between the belt line and floor line. Each combination lamp shall have a diameter of at least four inches, or shall have an illuminated lens area of at least 12 square inches if the combination lamp is of a shape other than round. The rear license plate lamp may be combined with one lower taillamp. Stoplamps shall be activated by the service brakes and shall emit a steady light when illuminated.

3. Type A school buses may be equipped with stoplamps and taillamps that conform to the manufacturer's specifications.

(i) A white flashing strobe light may be installed on the roof of a school bus at a location not to exceed one-third the body length forward from the rear of the roof edge, or on the roof of a school bus in the area directly over the restraining barrier on the driver's side. The light shall have a single clear lens emitting light 360 degrees around its vertical axis. The light shall not extend above the roof so as to place the school bus in violation of the maximum height standard set forth in N.J.S.A. 39:3-84. A manual switch and a pilot light shall be included to indicate to the driver when the light is in operation. The light shall be wired to activate with the amber alternately flashing signal warning lamps, continuing through the full loading or unloading cycle, and may be equipped with an override switch to allow activation of the light at any time for use in inclement weather.

(j) Taillamps, stoplamps, marker lamps, clearance lamps, identification lamps, and turn signal lamps may be equipped with LED-type lamps. Such lighting devices shall be marked with a SAE rating for location and intended use and shall operate in accordance with the manufacturer's specifications.

#### 13:20-50B.24 Metal treatment

(a) All metal used in the construction of a school bus body, including items such as structural members, inside and outside panels, door panels, and floor sills, shall be zinc-coated or aluminum-coated or treated by an equivalent process before the school bus is constructed. This subsection shall not apply to items such as door handles, grab handles, interior decorative parts, and other interior plated parts.

(b) All metal parts that will be painted shall be chemically cleaned, etched, zinc phosphate-coated and zinc chromate or epoxy-primed, or the metal may be conditioned by an equivalent process.

(c) In complying with the requirements of this section, particular attention shall be given to lapped surfaces, welded connections of structural members, cut edges on punched or drilled hole areas in sheet metal, closed or boxed sections, unvented or undrained areas, and surfaces subject to abrasion during vehicle operation.

(d) As evidence that the requirements of this section have been met, samples of materials and sections used in the construction of the school bus body shall not lose more than 10 percent of material by weight when subjected to a 1,000-hour salt spray test in accordance with American Society for Testing and Materials B117-73, "Standard Method of Salt Spray (Fog) Testing," incorporated herein by reference, as amended and supplemented, copies of which may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428, (610) 832-9585.

#### 13:20-50B.25 Mirrors

(a) An interior mirror shall be provided that is either clear view laminated glass or clear view glass bonded to a backing that retains the glass in the event of breakage. The mirror shall have rounded corners and protected edges. Except as otherwise provided for a Type B school bus constructed on a cutaway chassis, every Type B, C and D school bus shall be equipped with an interior mirror that is a minimum of six inches by 30 inches. Every Type A school bus and every Type B school bus constructed on a cutaway chassis shall be equipped with either an interior mirror that is a minimum of six inches by 16 inches or an interior mirror that is in accordance with the manufacturer's specifications.

(b) Every school bus shall be equipped with a system of exterior mirrors that conforms to FMVSS No. 111 (49 CFR § 571.111), incorporated herein by reference, as amended and supplemented, as follows:

1. A rear view mirror system that shall be capable of providing a view along the left and right sides of the school bus. The rear view mirror system shall provide the driver with a view of the rear tires at ground level, a view to the rear of the school bus a minimum distance of 200 feet, and a view at least 12 feet perpendicular to each side of the school bus at the rear axle line; and

2. A cross view mirror system that shall provide the driver with indirect vision of an area at ground level encompassing the entire width of the school bus from the front bumper forward to a point where the driver can see by direct vision. The cross view mirror system on every school bus shall also provide the driver with indirect vision of the area at ground level around the left and right front corners of the school bus, including the areas adjacent to the tires and service door, to a point where the cross view mirror system overlaps with the rear view mirror system. No portion of the cross view mirror assembly shall unduly obstruct either the light emitted from any required lamp or the driver's view of vehicular traffic.

(c) Stick-on convex mirrors shall not be attached to any mirror surface.

(d) Mounting brackets shall be affixed to the school bus so as to be securely fastened to the structural frame members of the school bus body, or shall be affixed to the existing exterior rear view mirror mounting brackets. Exterior mirror housing and support brackets shall be black. The mirror attachments such as clips, nuts, screws, rims, and rings may be black or chrome.

#### 13:20-50B.26 Mounting

(a) The chassis frame shall support the rear body cross member. The school bus body shall be attached to the chassis frame at each main floor sill, except where chassis components interfere with such attachment, in such a manner so as to prevent shifting or separation of the school bus body from the chassis under severe operating conditions.

(b) Body fasteners shall conform to the manufacturer's specifications. The distance between the fasteners that secure the body to the chassis shall not exceed 42 inches along the length of the chassis frame. The fasteners shall be located directly opposite each other along the length of the chassis frame. Type A school buses that utilize the original chassis manufacturers' floor plans shall conform to the manufacturers' mounting specifications.

(c) Isolators shall be placed at all contact points between the body and the chassis frame on each body-on-chassis-type school bus, and shall be attached to the chassis frame or body so that it will not move under severe operating conditions.

#### 13:20-50B.27 Overall length

The maximum overall length of a school bus body shall not exceed 40 feet, excluding the bumpers. The maximum overhang of the body to the rear of the center of the rear axle shall not be in excess of one-third of the total length of the vehicle.

#### 13:20-50B.28 Overall width

The maximum overall width of a school bus shall not exceed 96 inches, excluding accessories.

#### 13:20-50B.29 Reflectors

(a) Every school bus shall be equipped with reflectors that comply with FMVSS No. 108 (49 CFR § 571.108), incorporated herein by reference, as amended and supplemented, as follows:

1. On the rear: two red reflectors, equally spaced as far from the center as practical and at the same height;
2. On each side: two reflectors, one amber at or near the front, and one red at or near the rear; and
3. On school buses 30 feet or more in length: one amber reflector on each side of the school bus body as near to the center as practical.

(b) Reflectors shall be marked with the SAE rating for their proper use.

#### 13:20-50B.30 Rub rails

(a) There shall be one rub rail located on each side of the school bus approximately at seat cushion level that shall extend from the rear side of the service door completely around the school bus body (except the emergency door, the service door, the service compartment, and, on a Type A school bus and a Type B school bus constructed on a cutaway chassis, the driver's entrance door) to the point of curvature near the outside cowl on the left side of the school bus.

(b) There shall be one additional rub rail located on each side approximately at the floor line that shall cover the same

longitudinal area as the upper rub rail, except at the wheel-housing, and shall extend only to the radii of the right and left rear corners of the school bus.

(c) Each rub rail shall be attached at each body post and at all other upright structural members.

(d) Each rub rail, in its finished form, shall be four inches or more in width. Each rub rail shall be constructed of 16-gauge steel or suitable material of equivalent strength, and shall be constructed in corrugated or ribbed fashion.

(e) Both rub rails shall be applied outside the body or outside the body posts. Pressed-in or snap-on rub rails do not satisfy the requirements of this section.

(f) Rub rails are not required to extend around the rear corners on a Type A school bus or on a Type D school bus with a rear engine compartment.

(g) There shall be a rub rail or equivalent bracing located horizontally at the bottom edge of the body side skirts.

(h) Rub rails shall be black.

#### 13:20-50B.31 Sanders and traction devices

(a) When used, a sander shall:

1. Be of a hopper cartridge valve-type;
2. Have a metal hopper with all interior surfaces treated to prevent condensation of moisture;
3. Be of at least 100 pound grit capacity;
4. Have a cover on the filler opening of the hopper that screws into place, sealing the unit airtight;
5. Have discharge tubes extending to the front of each rear wheel under the fender;
6. Have non-clogging discharge tubes with slushproof, nonfreezing rubber nozzles;
7. Be operated by an electric switch with a telltale pilot light mounted on the instrument panel;
8. Be exclusively driver-controlled; and
9. Have a gauge to indicate that the hopper(s) is down to one-quarter capacity.

(b) Automatic traction chains may be used.

#### 13:20-50B.32 Seat belts for driver and passengers

(a) A Type 2 lap/shoulder belt shall be provided for the driver. The assembly shall be equipped with an emergency locking retractor for the continuous belt system. The lap portion of the belt system shall be guided or anchored where practical to prevent the driver from sliding sideways under the lap belt.

(b) The driver's seat belt shall have a button-type latch and the floor-anchored belt section shall be booted to keep the buckle within the driver's reach.

(c) Every school bus shall be equipped with passenger lap safety belts or lap and shoulder safety belts for each seat position that conform to FMVSS Nos. 208, 209, and 210 (49 CFR §§ 571.208, 571.209, and 571.210), incorporated herein by reference, as amended and supplemented. If safety belt floor installation is used, attachment hardware shall be designed to prevent attaching bolts and other parts from becoming inadvertently disengaged from the floor of the school bus.

(d) Every school bus shall be equipped with a seat belt cutter for use in an emergency. The seat belt cutter shall be designed to prevent injury during use. The seat belt cutter shall be sheathed and secured in a safe location in the driver's compartment.

### 13:20-50B.33 Seats and restraining barriers

(a) Every seat and restraining barrier shall conform to the requirements of FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

(b) Every seat shall have a minimum cushion depth of 15 inches measured from the front of the seatback to the front edge of the seat.

(c) Seatback height shall be 28 inches, or 24 inches as measured from the seating reference point as that term is defined in 49 CFR § 571.3.

(d) The seat, seatback cushion, and restraining barrier shall be completely encapsulated and shall meet the performance criteria in the School Bus Seat Upholstery Fire Block Test set forth in Appendix B of the NSTSP, 2000 Revised Edition (May 2000) at pages 199-201, incorporated herein by reference, as amended and supplemented.

(e) Every seat shall face forward and shall not be of a type that flips or folds.

(f) The space between seats shall be not less than 27 inches nor more than 31 inches as measured from the center of each front seat leg.

(g) Each seat leg shall be secured to the floor by a minimum of two bolts, washers, and nuts.

(h) Every seat frame attached to the seat rail shall be fastened with two bolts, washers, and nuts or flange-headed nuts.

(i) The driver's seat shall be of the highback-type with a minimum seatback adjustment of 15 degrees and with a head restraint to accommodate a 95th percentile adult male. The driver's seat shall meet the performance criteria in the School Bus Seat Upholstery Fire Block Test set forth in Appendix B of the NSTSP, 2000 Revised Edition (May 2000) at pages 199-201, incorporated herein by reference, as amended and supplemented, and shall be secured with nuts, bolts, and washers or flange-headed nuts. The space between the back of the driver's seat, in the rearmost position, and the front surface of the restraining barrier located directly behind the driver shall be in accordance with FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented, for barrier deflection. A Type A school bus may be equipped with a driver's seat in accordance with the manufacturer's specifications provided that the driver's seat meets the performance criteria in the School Bus Seat Upholstery Fire Block Test set forth in Appendix B of the NSTSP, 2000 Revised Edition (May 2000) at pages 199-201.

(j) Every school bus shall be equipped with a restraining barrier located behind the driver's seat. Every school bus shall also be equipped with a restraining barrier forward of any designated seating position, excluding wheelchair positions, that does not have the rear surface of another school bus passenger seat in front of that position. Restraining barriers shall be located within a minimum of 28 inches and a maximum of 32 inches measured from the front of the seatback of the seat for which they are required. Restraining barriers shall be the same height and width as the back of the passenger seat for which they are required.

### 13:20-50B.34 Spray suppressants and mud flaps

A school bus shall be equipped with spray suppressants or mud flaps when the angle formed by the intersection of a line on the level road surface projected rearward from the point where the rearmost tire contacts the ground and a line projected from the point where the rearmost tire contacts the ground to the bottom edge of the rear bumper exceeds 22½ degrees.

### 13:20-50B.35 Steps

(a) The first step at the service door of Type A, B, and C school buses shall be not less than 10 inches nor more than 14 inches from the ground, based on standard chassis specifications. The first step at the service door of Type D school buses shall be not less than 12 inches nor more than 16 inches from the ground.

(b) Step risers shall not exceed a height of 10 inches. If plywood has been installed on top of the steel floor or step, the maximum riser height may be increased by the thickness of the plywood used.

(c) Steps shall be enclosed to prevent the accumulation of ice or snow.

(d) Steps shall not protrude beyond the side body line of the school bus.

(e) A school bus shall be equipped with two grab handles, each not less than 20 inches in length. The grab handles shall be in unobstructed locations inside the doorway, one on the left side and one on the right side. The grab handle on the left side shall be adjacent to the passenger compartment. Grab handles shall be designed so as to prevent snagging.

#### 13:20-50B.36 Step treads

(a) Steps shall be covered with a nonskid material. Steps, including the aisle step and the floor line platform area, shall be covered with  $\frac{3}{16}$  inch rubber floor covering or with other material equal in wear-resistance and abrasion-resistance to top grade rubber. Steps, including the floor line platform area, shall have a  $1\frac{1}{2}$  inch white or yellow nosing.

(b) The rubber step treads shall be permanently bonded to the stepwell metal. The stepwell metal shall be a minimum 24-gauge cold rolled steel or equivalent material. The ribbed/grooved design of the step treads shall run at a 90 degree angle to the long dimension of the step tread.

(c) The nonskid portion of the step treads shall have the following characteristics:

1. Special compounding for good abrasion-resistance and a coefficient of friction of at least 0.6 for the step surface, and 0.8 for the step nosing;
2. Flexibility so that it can be bent around a one-half inch mandrel both at 130 degrees Fahrenheit and 20 degrees Fahrenheit without breaking, cracking, or crazing; and
3. A durometer hardness of 85 to 95.

#### 13:20-50B.37 Stirrup steps

If the windshield and/or lamps are not easily accessible from the ground, there shall be at least one folding stirrup step or recessed foothold and suitably located handles on each side of the front of the school bus body. Steps are permitted in or on the front bumper in lieu of stirrup steps if the windshield and lamps are easily accessible for cleaning from that position.

#### 13:20-50B.38 Stop signal arm

(a) Every school bus shall be equipped with a stop signal arm on the left side of the school bus body that meets the requirements of FMVSS No. 131 (49 CFR § 571.131), incorporated herein by reference, as amended and supplemented.

(b) A stop signal arm shall not be mounted below an emergency window.

(c) Vacuum, electric, or air operation of a stop signal arm is optional.

(d) When two stop signal arms are installed on a school bus, the rear stop signal arm shall be on the same horizontal plane as the front stop signal arm.

#### 13:20-50B.39 Storage container

If tools, tire chains, and/or tow chains are carried on the school bus, a storage container of adequate strength and capacity shall be provided. Such storage container may be located either inside or outside of the passenger compartment. If such storage container is located inside the passenger compartment, it shall have a cover capable of being securely locked and shall be under the control of the driver. The storage container shall be fastened to the floor in close proximity to either the service door or the emergency door. The storage container shall not be deemed a passenger seat and shall not be covered by a seat cushion.

#### 13:20-50B.40 Sun shield

Except as otherwise provided for a Type B school bus constructed on a cutaway chassis, every Type B, C, and D school bus shall be equipped with an interior adjustable, transparent sun shield not less than six inches by 30 inches with a finished edge. A Type A school bus and a Type B school bus constructed on a cutaway chassis shall be equipped with a sun shield that is not less than six inches by 16 inches; provided, however, that a Type A school bus and a Type B school bus constructed on a cutaway chassis may be equipped with a sun shield in accordance with the manufacturer's specifications. The sun shield shall be tinted and shall be installed in a position convenient for use by the driver.

#### 13:20-50B.41 Tailpipe

(a) The tailpipe shall be constructed of a corrosion-resistant tubing material at least equal in strength and durability to 16-gauge steel tubing. The tailpipe diameter from the muffler to the end of the tailpipe shall comply with the chassis manufacturer's specifications.

(b) The exhaust system tailpipe shall terminate to the rear of all doors and windows designed to be opened for ventilation.

(c) The exhaust system shall not discharge to the atmosphere immediately below an emergency exit, fuel tank, or fuel tank fill pipe.

(d) The exhaust system tailpipe of a gasoline-powered engine shall extend to the rear bumper or to the left or right side of the school bus body and shall discharge to the atmosphere either:

1. At or within six inches forward of the rearmost part of the school bus on the left or right side; or

2. At or beyond the rear school bus bumper up to a maximum of two inches.

(e) The exhaust system tailpipe of an engine powered by a fuel other than gasoline shall extend to the rear bumper or to the left or right side of the school bus body and shall discharge to the atmosphere either:

1. At or within 15 inches forward of the rearmost part of the school bus on the left or right side; or
2. At or beyond the rear school bus bumper up to a maximum of two inches.

(f) A tailpipe that terminates at either the left or right side of the school bus shall extend to, but not beyond, the edge of the school bus body.

#### 13:20-50B.42 Tow eyes or hooks

Tow eyes or hooks may be furnished on the rear of the school bus provided that they are attached so that they do not project beyond the rear bumper. Tow eyes or hooks attached to the chassis frame shall be furnished by either the chassis or body manufacturer. The installation shall be in accordance with the chassis manufacturer's specifications.

#### 13:20-50B.43 Undercoating

(a) The entire underside of the school bus body, including floor sections, cross members, and side panels below the floor line, shall be coated with a rustproofing compound for which the compound manufacturer has issued a certification of compliance to the school bus body manufacturer that the compound meets or exceeds all performance and qualitative specifications for body undercoating set forth in Federal Standard Rustproofing of Commercial (Nontactical) Vehicles (FED-STD-297E), incorporated herein by reference, as amended and supplemented. Copies of the above Federal Standard, which is approved by the Commissioner, Federal Supply Service, United States General Services Administration, may be obtained from the General Services Administration, Federal Supply Service Bureau, Specification Section, Suite 8100, 470 East L'Enfant Plaza, S.W., Washington, DC 20407.

(b) The undercoating compound shall be applied with suitable airless or conventional spray equipment to the recommended film thickness and shall show no evidence of voids in the cured film. The undercoating material shall be nonflammable, shall not peel, crack, chip, or melt, and shall be stable under both high and low temperatures.

#### 13:20-50B.44 Ventilation

(a) The school bus body shall be equipped with a controlled ventilation system of sufficient capacity so as to provide the proper quantity of air under normal operating conditions without the opening of windows except in hot weather.

(b) A static-type nonclosable exhaust vent may be installed in the low-pressure area of the roof.

(c) Type B, C, and D school buses may be equipped with auxiliary fans. Except as otherwise provided for a Type B school bus constructed on a cutaway chassis, if auxiliary fans are used on a Type B, C, or D school bus, one six-inch diameter two-speed auxiliary fan with a protective cage shall be installed on each side of the driver position on such school buses. Each fan shall be controlled by a separate switch. If an auxiliary fan is used on a Type A school bus or on a Type B school bus constructed on a cutaway chassis, it shall be a nominal six-inch diameter fan with a protective cage. Each fan shall be controlled by a separate switch.

#### 13:20-50B.45 Wheelhousing

(a) The wheelhousing opening shall allow for easy tire removal and service.

(b) The wheelhousing shall be attached to the floor sheets in such a manner so as to prevent any dust, water, or fumes from entering the school bus body. The wheelhousing shall be constructed of at least 16-gauge steel, or other material of equal strength.

(c) The inside height of the wheelhousing above the floor line shall not exceed 12 inches.

(d) The wheelhousing shall provide clearance for the installation and use of tire chains on single and dual-powered driving wheels.

(e) The wheelhousing shall not extend into the emergency door opening.

#### 13:20-50B.46 Windows and windshields

(a) Each full side window shall provide an unobstructed emergency opening at least nine inches high and at least 22 inches wide, obtained by lowering the window.

1. When the body design does not accommodate the installation of a full side window, the window located directly in front of the side emergency door and the rearmost side windows may be in accordance with the manufacturer's standard and shall be operational.

2. Push-out-type, split sash emergency windows may be used.

(b) Push-out emergency windows shall be provided in accordance with N.J.A.C. 13:20-50B.14.

(c) Except as otherwise provided herein, glass in all side and rear windows shall be AS-2 or better grade. Approved tinted safety glass of AS-3 or better grade or approved tinted plastic of AS-4 or better grade may be installed in the side windows and rear windows of the school bus to the rear of the driver.

(d) Glass in the windshield shall be AS-1 grade. The windshield may have a horizontal gradient tinted band starting slightly above the line of the driver’s vision and gradually decreasing in light transmission to 20 percent or less at the top of the windshield. Glass in the windshield shall be heat-absorbent, laminated plate glass. The windshield shall be large enough to permit the driver to see the highway clearly, shall be slanted to reduce glare, and shall be installed between the front corner posts that are so designed and placed as to afford minimum obstruction to the driver’s view of the highway.

(e) All glass in the windshield, windows, and doors shall be approved safety glass, so mounted that a permanent mark is visible, and of sufficient quality to prevent distortion of the driver’s view in any direction.

(f) All exposed edges of glass shall be finished to prevent injury.

(g) School buses shall be equipped with stationary windows to the upper right and upper left of the rear emergency door.

(h) Windows shall be free of window guards or bars both inside and outside.

**13:20-50B.47 Windshield washers**

A windshield washer system shall be provided. The windshield washer system shall have a pumping mechanism with fluid for washing the windshield.

**13:20-50B.48 Windshield wipers**

(a) A windshield wiping system, two-speed or more, shall be provided.

(b) The windshield wipers shall be operated by one or more air or electric motors of sufficient power to operate the wipers. If one motor is used, the windshield wipers shall work in tandem to provide a full sweep of the windshield.

**13:20-50B.49 Wiring**

(a) All wiring shall conform to SAE Recommended Practice J1292 (October 1981), incorporated herein by reference, as amended and supplemented. Multiplex wiring may be used.

(b) Wiring shall be arranged in circuits as required with each circuit protected by a fuse, circuit breaker, or field effect transistor. One extra fuse for each size fuse that is used on the school bus shall be conveniently located in the fuse area unless the school bus is equipped with circuit breakers or field effect transistors. A system of color and number coding shall be used.

1. The following body interconnecting circuits shall be color-coded as follows:

| <u>Function</u>              | <u>Color</u> |
|------------------------------|--------------|
| Left Rear Turn Signal Light  | Yellow       |
| Right Rear Turn Signal Light | Dark Green   |
| Stoplights                   | Red          |
| Back-Up Lights               | Blue         |
| Taillights                   | Brown        |
| Ground                       | White        |
| Ignition Feed, Primary Feed  | Black        |

2. The color of the cables shall conform to SAE Standard J1128 (May 2000), incorporated herein by reference, as amended and supplemented.

3. Wiring shall be arranged in at least six regular circuits as follows:

- i. Head, tail, stop (brake), and instrument panel lamps;
- ii. Clearance and stepwell lamps (stepwell lamps shall be actuated when the service door is opened);
- iii. Dome lamp;
- iv. Ignition and emergency door signal;
- v. Turn signal lamps; and
- vi. Alternately flashing signal warning lamps.

4. Any of the above combination circuits may be subdivided into additional independent circuits.

5. Whenever heaters and defrosters are used, at least one additional circuit shall be installed.

6. Whenever the circuit panel permits, all other electrical functions (such as sanders and electric-type windshield wipers) shall be provided with independent and properly protected circuits.

7. Each body circuit shall be coded by number or letter on a diagram of circuits and shall be attached to the body in a readily accessible location.

(c) The entire electrical system of the school bus body shall be designed for the same voltage as the chassis on which the school bus body is mounted.

(d) All wiring shall have an amperage capacity exceeding the designed load by at least 25 percent. All wiring splices shall be in an accessible location and shall be noted as splices on the wiring diagram.

(e) An easily readable body wiring diagram shall be furnished with each school bus body or affixed in an area convenient to the electrical accessory control panel.

(f) The main power supply to the body shall be attached to a terminal on the chassis.

(g) Wires passing through metal openings shall be protected by a grommet.

(h) Wires not enclosed within the body shall be fastened securely at intervals of not more than 18 inches. All joints shall be soldered or joined by equally effective connectors so that no connectors are exposed.

(i) A heavy-duty solenoid switch or electronic control system shall be installed in the main electrical power supply line to the body circuits on each Type B, C, and D school bus. The solenoid switch shall be energized by the school bus ignition switch. Hazard and turn signal lamp circuits shall operate independently of the ignition switch.

SUBCHAPTER 50C. STANDARDS FOR SPECIALLY  
EQUIPPED SCHOOL BUSES MANUFACTURED  
JANUARY 2006 AND THEREAFTER

**13:20-50C.1 Scope**

(a) The following standards address modifications to school buses designed for transporting students with special transportation needs. These standards are supplementary to the school bus chassis and body standards set forth in N.J.A.C. 13:20-50A and 50B.

(b) Specially equipped school buses shall continue to meet the school bus chassis and body standards set forth in N.J.A.C. 13:20-50A and 50B after modifications have been made.

**13:20-50C.2 Aisle**

The aisle leading to the emergency door and the power lift door from each wheelchair position shall be a minimum width of 30 inches.

**13:20-50C.3 Communications**

Every school bus shall be equipped with an electronic voice communication system.

**13:20-50C.4 Construction modifications**

(a) A power lift door that has been modified by removing the power lift in order to accommodate passenger seating shall:

1. Be sealed;
2. Be equipped with an operable window that conforms to the requirements of N.J.A.C. 13:20-50B.46(a);

3. Handles, both inside and outside, removed and all holes sealed;

4. Existing rub rails replaced with continuous full-length rub rails; and

5. All existing hardware for wheelchair or lift securement removed and all openings sealed.

**13:20-50C.5 Doors**

(a) A school bus with a power lift shall be equipped with a special service door to accommodate the power lift.

1. The door shall be located on the right side of the school bus and designed so as not to obstruct the regular service door.

2. The opening may extend below the floor through the bottom of the body skirt. If such an opening is used, reinforcements shall be installed at the front and rear of the floor opening to support the floor. This opening shall be certified as meeting the manufacturer's specifications for structural strength.

3. A drip molding shall be installed above the door opening to divert water from the entrance.

4. The door posts and headers shall be reinforced to provide support and strength equivalent to the sides of the school bus.

5. A single door or double doors shall be used.

6. The door(s) shall have a fastening device to hold it open. A fastening device(s) affixed to the outside shall not protrude more than 3/4 inch from the school bus body or door(s), nor be of a type that may cause injury when it is not securing the door(s) in an open position.

7. The door(s) shall be weathersealed.

8. When manually-operated dual doors are provided, the rear-mounted door shall have at least a one-point fastening device to the header. The forward-mounted door shall have at least three one-point fastening devices: one to the header, one to the floor line of the body, and one into the rear-mounted door.

9. The door and hinge mechanism strength shall be in compliance with the manufacturer's specifications. Hinges shall support the door and maintain the door in proper alignment for closing and latching.

10. The door material, panels, and structural strength shall be equivalent to those of the service and emergency doors. The color, rub rail extensions, lettering, and other exterior features shall match adjacent sections of the body.

11. The door(s) shall have glass set in a waterproof manner.

12. The door(s) shall be equipped with a device that will actuate an audible or flashing visible signal, located in the driver's compartment, when the door(s) is not securely closed and the ignition is in the "on" position.

13. A switch shall be installed so that the lifting mechanism will not operate when the power lift platform door is closed.

14. The door(s) shall be equipped with padding at the top edge of the door opening. The padding shall be covered with fire block material and be at least three inches wide and one inch thick. The padding shall extend the full width of the door opening.

#### 13:20-50C.6 Fire extinguisher systems

(a) Every school bus shall be equipped with an automatic fire extinguisher system for the engine compartment. The fire extinguisher system shall be installed in accordance with the fire extinguisher system manufacturer's specifications.

(b) School buses may be equipped with fire extinguisher systems in other locations in accordance with the fire extinguisher system manufacturer's installation specifications.

(c) An indicator light shall be provided in the driver's compartment that will indicate to the driver the existence of a fire in the engine compartment of the school bus. The indicator light shall remain lit until the system is serviced and the light reset. An indicator light shall be provided in the driver's compartment that will indicate a system discharge.

#### 13:20-50C.7 Identification

A school bus equipped with a power lift shall display at least one International Symbol of Accessibility on the back of the school bus below the window line. The International Symbol of Accessibility shall not exceed 12 square inches in size, shall be white on a blue background, and shall be of a high-intensity reflectorized material.

#### 13:20-50C.8 Lights

Lights shall be placed on the school bus to illuminate the power lift door, doorway, and landing area.

#### 13:20-50C.9 Power lift

(a) A school bus used for the transportation of students who use wheelchairs or other mobile seating devices or who require life support equipment shall be equipped with a power lift.

(b) The power lift, with a nonskid platform, shall be located on the right side of the school bus body and shall be confined within the school bus body when not extended.

(c) The lifting mechanism and platform shall be capable of lifting a minimum weight of 800 pounds. The power lift platform shall have a minimum width of 30 inches unobstructed by the required handrails. The minimum length of the platform between the outer edge barrier and the inner edge shall be 40 inches.

(d) When the power lift platform is stored, it shall be securely fastened.

(e) Controls shall be provided that enable the operator to activate the power lift mechanism from either inside or outside of the school bus.

(f) The power lift shall be designed to prevent the platform from dropping while in operation in the event of a single failure of any load-carrying component.

(g) The power lift shall be equipped with a manual backup system for use in the event of a power failure.

(h) The power lift shall be designed to allow the lift platform to rest securely on the ground.

(i) The outboard power lift platform edge and sides shall be designed to prevent a wheelchair or other mobile seating device from slipping or rolling off of the platform. The power lift platform outer edge barrier shall be designed to be automatically or manually lowered when the platform is at ground level, but shall not be equipped with any type of latch that could result in the lowering of the outer edge barrier when the platform is above ground level.

(j) The power lift platform shall be equipped with a handrail on each side of the power lift platform. Each handrail shall be 25 to 34 inches in height above the platform and a minimum of 18 inches in length and shall be designed to fold when in a stored position. A handrail with a curved-end design shall be at least 24 inches in length.

(k) A self-adjusting, nonskid plate shall be installed on the outer edge of the power lift platform to minimize the incline from the power lift platform to ground level. This plate, if so designed, may also serve as the restraining device described in (i) above.

(l) A circuit breaker shall be installed between the power source and the power lift motor if electrical power is used.

(m) The power lift design shall prevent excessive pressure that may result in damage to the power lift system when the platform is fully lowered or raised.

(n) The power lift mechanism shall be designed to prevent the lift platform from being folded or stored when occupied.

(o) An interlock shall be provided to prevent the school bus from moving when the power lift or ramp is not in its fully stored and locked position.

#### 13:20-50C.10 Ramp

(a) When a power lift system is not adequate to load and unload students with special needs, a ramp device may be used.

1. When a ramp is used, it shall be of sufficient strength and rigidity to support the wheelchair or other mobile seating device, occupant, and attendant(s). The ramp shall be equipped with a protective flange on each longitudinal side to keep the wheelchair or other mobile seating device on the ramp.

2. The floor of the ramp shall be constructed of nonskid material.

3. The ramp shall be equipped with handles and shall be of a weight and design that enables one person to lift or move the ramp.

4. The ramp shall have at least three feet of length for each foot of incline.

#### 13:20-50C.11 Restraining devices

Seat frames may be equipped with attachments or devices to which belts, restraining harnesses, or other devices may be attached. Attachment framework or anchorage devices, if installed, shall conform to FMVSS No. 210 (49 CFR § 571.210), incorporated herein by reference, as amended and supplemented.

#### 13:20-50C.12 Seating arrangements

(a) Flexibility in seat spacing to accommodate special devices shall be permitted to meet passenger needs.

(b) School buses may be equipped with track seating.

1. The floor track shall be recessed into the floor with the top of the track level with the floor surface.

2. Track shall not be installed across the power lift door area.

3. Track shall be installed in a manner that maintains a 30-inch aisle leading to the emergency and power lift doors. This shall be determined by allowing for 30 inches by 48 inches for each wheelchair position.

4. Track shall provide for the installation of passenger seats in accordance with N.J.A.C. 13:20-50B.33(e).

(c) All seats and wheelchair positions shall face forward.

#### 13:20-50C.13 Securement system for wheelchairs/mobile seating devices and occupants

(a) The school bus body shall be designed for the positioning and securement of wheelchairs/mobile seating devices and occupants in a forward-facing position. Securement system hardware and attachment points for the forward-facing system shall be provided. The wheelchair/mobile seating device securement system and the occupant restraint system shall comply with all applicable requirements of FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

(b) The wheelchair/mobile seating device securement system shall have a minimum of four anchorage points, with a minimum of two body floor attachment points located at the rear and a minimum of two body floor attachment points located at the front of the space designated for the wheelchair/mobile seating device.

(c) A Type 2 lap/shoulder belt restraint system that meets all applicable requirements of FMVSS Nos. 209 and 210 (49 CFR §§ 571.209 and 571.210), incorporated herein by reference, as amended and supplemented, shall be provided for restraint of the occupant's pelvic lap area and upper torso area.

(d) The wheelchair/mobile seating device securement and occupant restraint system shall be designed to pass a dynamic sled test at a minimum impact speed/deceleration force of 30 miles per hour/20 gravities. The dynamic test shall be performed in accordance with the procedures set forth in Appendix A of SAE Recommended Practice J2249 (January 1999), "(Normative) Frontal Impact Test," incorporated herein by reference, as amended and supplemented. When tested, the wheelchair/mobile seating device securement and occupant restraint system shall meet the performance requirements specified in section 6.2 of SAE Recommended Practice J2249 (January 1999), "Frontal Sled Impact Test," incorporated herein by reference, as amended and supplemented. The dynamic test shall be performed using system assemblies, components, and attaching hardware that are identical to the final installation in type, configuration, and positioning. The body structure at the anchorage points may be simulated for the purpose of the sled test, but the simulated structure shall not exceed the strength of the attachment structure to be used in the final body installation. The test dummy shall be retained within the securement system throughout the test and forward movement shall be such that no portion of the test dummy's head or knee pivot points passes through a vertical transverse plane intersecting the forward most point of the floor space designed for the mobile seating device. All hardware shall remain positively attached throughout the test and there shall be no failure of any component. Each mobile seating device belt assembly including attachments, hardware, and anchorages shall be capable of withstanding a force of not less than 2,500 pounds.

(e) The belt material at each space designated for the mobile seating device and the occupant restraint system shall be similar in size and fabric.

(f) If an anchorage unit is surface-mounted, the anchorage height above the floor surface shall not exceed  $\frac{3}{4}$  inch and the anchorage unit shall be ramped on all sides.

(g) The wheelchair/mobile seating device securement system and occupant restraint system shall comply with all applicable requirements of FMVSS No. 222 (49 CFR § 571.222), incorporated herein by reference, as amended and supplemented.

(h) The occupant restraint system shall be designed to be attached to the school bus body, either directly or in combination with the wheelchair or mobile seating device securement system, by a method that prevents the transfer of weight or force from the wheelchair/ mobile seating device to the occupant in the event of an impact.

(i) Securement system attachments or coupling hardware not permanently attached to the school bus body shall be designed to prevent such attachments or hardware from being accidentally disconnected.

1. The following fasteners shall not be used for any occupant restraint or equipment securement:

- i. T-bar or T-hook fasteners; or
- ii. Touch fasteners, vinyl lap or shoulder belts.

(j) All attachment or coupling devices shall be accessible and operable without the use of tools or other mechanical assistance.

(k) All securement and restraint system hardware and components shall be free of sharp or jagged areas and shall be of a noncorrosive material or shall be treated to resist corrosion in accordance with FMVSS No. 209 (49 CFR § 571.209), incorporated herein by reference, as amended and supplemented.

(l) The occupant restraint system shall be made of materials that do not stain, soil, or damage an occupant's clothing.

(m) The mobile seating device and all securement and restraint system hardware and components shall be located and installed such that when the mobile seating device is occupied and secured, access to the emergency door or the power lift door is not blocked.

(n) The school bus body floor and sidewall structures where the securement and restraint system anchorages are attached shall have equal or greater strength than the load requirements of the system(s) being installed.

(o) For each school bus equipped with a securement system, the following information shall be provided by the

securement system manufacturer to either the school bus body manufacturer or the school bus operator:

1. Detailed instructions regarding the installation and use of the system, including a parts list; and
2. Detailed instructions, including a diagram, regarding the proper placement and positioning of the system, including correct belt angles.

#### 13:20-50C.14 Steps

(a) The first step at the service door shall be not less than 10 inches nor more than 14 inches from the ground, based on standard chassis specifications. The first step at the service door on a Type D school bus shall be not less than 12 inches nor more than 16 inches from the ground.

(b) Step risers shall not exceed a height of 10 inches. If plywood has been installed on top of the steel floor or step, the maximum riser height may be increased by the thickness of the plywood.

(c) On a school bus equipped with a power lift, the steps shall be the full width of the stepwell, excluding the thickness of the doors in an open position.

(d) The steps shall be enclosed to prevent the accumulation of ice or snow.

(e) The steps shall not protrude beyond the body line of the school bus.

(f) Grab handles, not less than 20 inches in length, shall be provided inside the doorway on both sides in unobstructed locations. Grab handles shall be designed so as to prevent snagging.

#### 13:20-50C.15 Support equipment and accessories

(a) Portable student support equipment or special accessory items including, but not limited to, crutches, walkers, canes, other ambulating devices, oxygen bottles, and ventilators, shall be securely fastened at a mounting location able to withstand a pulling force of five times the weight of the item, or shall be stored in an enclosed, latched compartment. If the school bus is equipped with a storage compartment, it shall be capable of withstanding forces applied to its interior equal to five times the weight of its contents without failure of the compartment's integrity and securement to the school bus. The storage compartment shall be securely fastened to the floor of the school bus in either the driver's compartment in front of the restraining barrier or the rearmost part of the school bus. The storage compartment shall not block access to the school bus emergency door, any other emergency exit, the service door, or the power lift door. The storage compartment shall be equipped with a cover that can be securely fastened and with rounded corners that are padded so as to prevent injury.

(b) The school bus shall be equipped with an evacuation blanket that is fireproof or is made of flameproof material.

**13:20-50C.16 Wheelchair or other mobile seating device requirements**

(a) A wheelchair or other mobile seating device shall be equipped with an occupant restraint belt and hand brake that is furnished and maintained by the owner of such wheelchair or other mobile seating device.

(b) An electric-powered wheelchair shall be equipped with a gel-cel (non-liquid electrolyte) battery. Liquid electrolyte batteries shall not be permitted in the passenger compartment of a school bus.

(c) The area designed for a wheelchair or other mobile seating device position shall be 30 inches by 48 inches.

SUBCHAPTER 51. STANDARDS FOR TYPE S SCHOOL BUSES

**13:20-51.1 Scope**

(a) This subchapter shall apply to any Type S school bus including, but not limited to, vans and passenger automobiles, which is used for the transportation of children to or from school or school-connected activities.

(b) This subchapter shall also apply to all Type S school buses, including limousines, omnibuses, taxicabs, motor vehicles for which a handicapped placard or registration plates have been issued in accordance with N.J.S.A. 39:4-206, and motor vehicles for which no fee registration plates have been issued in accordance with N.J.S.A. 39:3-27 that are used for two or more modes of transportation, one of which is for the transportation of children to or from school or school-connected activities.

(c) A Type S school bus shall be inspected twice each year by the Motor Vehicle Commission's School Bus Inspection Unit to ensure that such vehicle is in safe and proper operating condition. The time and location of the inspection shall be established by the Chief Administrator or his or her designee.

(d) A motor vehicle with a GVWR of less than 3,000 pounds shall not be used for the transportation of children to or from school or school-connected activities.

(e) A motor vehicle with a manufacturer's statement of origin that identifies the vehicle as a truck shall not be used for the transportation of children to or from school or school-connected activities.

(f) Any modification to a Type S school bus for the purpose of transporting children with special needs shall

comply with all applicable FMVSS and SAE standards governing the modifications.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

In (c), substituted "Motor Vehicle Commission's" for "Division's" and "Chief Administrator" for "Director".

**13:20-51.2 Definitions**

The following words and terms, when used in this subchapter, shall have the following meanings unless the context clearly indicates otherwise.

"Chief Administrator" means the Chief Administrator of the New Jersey Motor Vehicle Commission.

"Driver" means the authorized licensed operator of a Type S school bus.

"FMVSS" means the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations (49 CFR Part 571). Copies of the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

"Gross vehicle weight rating" or "GVWR" means the value specified by the manufacturer as the maximum loaded weight of a single vehicle.

"Motor Vehicle Commission" or "Commission" means the New Jersey Motor Vehicle Commission established by section 4 of P.L. 2003, c. 13 (N.J.S.A. 39:2A-4).

"Operator" means the owner or person responsible for the day-to-day operation and maintenance of a Type S school bus.

"Passenger" means any person riding in a Type S school bus other than the driver.

"SAE" means the Society of Automotive Engineers, Inc. Copies of the Standards and Recommended Practices of the Society of Automotive Engineers may be purchased from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096, (724) 776-4841.

"Type S school bus" means a motor vehicle with a GVWR of 3,000 pounds or more, originally designed by the manufacturer with a maximum seating capacity of nine passengers or less excluding the driver, operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child care center, preschool center, or other similar places of education.

“UL” means the Underwriters’ Laboratories, Inc.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Added definitions “Chief Administrator” and “Motor Vehicle Commission”; and deleted definitions “Director” and “Division”.

### 13:20-51.3 Capacity

(a) The maximum number of passengers who may be transported in each Type S school bus shall be determined by the seat measurement. Fifteen inches of seat length shall be provided for each passenger.

(b) There shall be no standees.

### 13:20-51.4 Chains or snow tires

The drive wheels of Type S school buses shall be equipped with tire chains, all-weather tires, or snow tires for safe operation in areas of snow and/or ice.

### 13:20-51.5 Emergency equipment

(a) Emergency equipment shall be provided consisting of at least the following:

1. A seat belt cutter;
2. A spare tire;
3. A jack;
4. A lug wrench; and
5. Three red reflectorized triangular warning devices.

### 13:20-51.6 Fire extinguisher

(a) A fully-charged dry chemical fire extinguisher with a pressure gauge approved by the UL with the minimum UL rating of B2, C2, ½ BC, or 10BC shall be provided. The fire extinguisher shall be mounted in a bracket in a convenient location in the driver’s compartment and display an inspection tag.

(b) A Type S school bus shall not be equipped with a fire extinguisher system that uses the chemical Halon as the fire suppression agent.

### 13:20-51.7 First aid kit

(a) A removable first aid kit shall be provided. The first aid kit shall be a moistureproof and dustproof container without a lock, with the words “FIRST AID” printed on the cover. The contents shall be maintained as follows:

1. Six single unit sterile gauze pads, three inches by three inches;
2. Two gauze bandages, one inch by 10 yards;
3. One roll of adhesive tape, one inch by 2½ yards;
4. Twelve bandaid plastic strips;

5. One triangular bandage, approximately 40 inches by 54 inches, with a safety pin; and

6. One pair rounded-end scissors.

(b) If the first aid kit is stored in a storage compartment, the location of the kit shall be identified by the words “FIRST AID” or marked with the Red Cross symbol.

### 13:20-51.8 Floor covering

A securely attached nonskid material floor covering shall be provided.

### 13:20-51.9 Heater capacity

The heater shall be capable of bringing the interior temperature of the Type S school bus up to and maintaining a minimum temperature of 50 degrees Fahrenheit.

### 13:20-51.10 Lettering

(a) A Type S school bus shall display lettering that indicates the name of the operator and the name of the municipality in which the operator has his or her principal place of business, wording on the rear of a school vehicle to indicate that the vehicle stops at railroad crossings, wording on the rear of the school vehicle to indicate that the vehicle is carrying children, and on the rear of the school vehicle the International Symbol of Accessibility to indicate that the vehicle is capable of transporting a wheelchair. A Type S school bus shall not display any advertising or telephone numbers. Lettering shall not be permitted on the windows of a school vehicle.

(b) This section shall not apply to vehicles that are used for two or more modes of transportation, one of which is for the transportation of children to or from school or school-connected activities including limousines, omnibuses, and taxicabs.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Added designation (a); rewrote (a); and added (b).

### 13:20-51.11 Rear view mirrors

Approved rear view mirrors shall be mounted inside and outside of a Type S school bus. Outside mirrors shall be mounted on both sides of the Type S school bus.

### 13:20-51.12 Rear window

The rear window shall be non-ventilating.

### 13:20-51.13 Seats and backrests

(a) Securely fastened seats and backrests shall be provided. Seats shall be forward facing and shall be spring or foam rubber upholstered.

(b) A “jump-type” or folding seat shall not be permitted.

(c) Each seat exit shall be clear of obstructions.

(d) A vehicle shall not be used as a Type S school bus if the seat in front of the seat to be exited from must be folded in order for a passenger to exit the vehicle.

(e) A seat belt shall be provided for the driver and for each passenger.

(f) A child passenger restraint system or booster seat, as described in FMVSS No. 213 (49 CFR § 571.213), incorporated herein by reference, as amended and supplemented, shall be provided for each passenger under the age of eight years and weighing less than 80 pounds.

#### 13:20-51.14 Sun visor

An adjustable sun visor shall be provided.

#### 13:20-51.15 Windshield wipers

A windshield wiper(s) shall be provided so as to provide clear vision for the driver.

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### SUBCHAPTER 52. INSURANCE

#### 13:20-52.1 General provisions

(a) Each contractor and district board of education shall furnish liability insurance for bodily injury and property damage in the amount of \$1,000,000 combined single limit per occurrence for all vehicles which are used for pupil transportation to and from school and school related activities.

(b) Insurance shall be obtained through a company authorized to insure in New Jersey and shall cover the district board of education as an additional named insured.

(c) Self-insured transportation contractors and district boards of education as provided in N.J.S.A. 48:4-12 and 13 shall file a certificate of self-insurance with the county superintendent of schools.

(d) Policies or certificates of insurance shall accompany all contracts or renewals when transportation contracts or renewals are submitted to the county superintendent of schools for approval.

(e) Policies or certificates of insurance shall be submitted to the county superintendent of schools for approval whenever policies are amended, revised or renewed.

(f) Transportation contractors and district boards of education shall comply with these regulations as of September 1, 1990.

### SUBCHAPTER 53. STANDARDS FOR ALTERNATIVELY FUELED SCHOOL BUSES

#### 13:20-53.1 Scope and purpose

(a) To ensure the safety of students, this subchapter shall apply to school buses originally designed by the manufacturer to carry 10 or more passengers used in the transportation of children to or from school pursuant to N.J.S.A. 39:1-1 and that operate in whole or in part on alternative fuels. Such school buses shall comply with N.J.A.C. 13:20-53A, 53B, or 53C, whichever is applicable, this subchapter including all applicable standards incorporated herein, and industry-recommended practices.

(b) This subchapter shall not apply to autobuses approved for school use and subject to inspection by the Motor Vehicle Commission's Commercial Bus Inspection and Investigation Unit unless otherwise provided.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Substituted "Motor Vehicle Commission's" for "Division's" in (b).

#### 13:20-53.2 Definitions

The following words and terms, when used in this subchapter and in N.J.A.C. 13:20-53A, 53B, and 53C, shall have the following meanings unless the context clearly indicates otherwise.

"Alteration" means any change in the construction, design, or installation of a fuel supply container or system that affects the strength or safety of the fuel system.

"Alternative fuel" means any fuel other than gasoline or diesel, excluding battery or fuel cell power systems, but including CNG, LNG, and LPG.

"ASME Code" means section VIII and IX of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, incorporated herein by reference, as amended and supplemented. Copies of the ASME Code may be obtained from the American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016, (800) THE-ASME.

"Chief Administrator" means the Chief Administrator of the New Jersey Motor Vehicle Commission.

"CNG" means compressed natural gas.

"Cradle" means a supporting and/or protective structure that surrounds a fuel system container, enclosing it as necessary to provide physical security and integrity, and that may support its weight in whole or in part.

"Dual fuel" means the simultaneous use of gasoline or diesel and an alternative fuel, but not a mixture thereof.

“FMCSR” means the Federal Motor Carrier Safety Regulations as found in the Code of Federal Regulations (49 CFR Part 393). Copies of the Federal Motor Carrier Safety Regulations as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

“FMVSS” means the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations (49 CFR Part 571). Copies of the Federal Motor Vehicle Safety Standards as found in the Code of Federal Regulations may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402, (202) 783-3238.

“Fuel supply container” or “fuel cylinder” means a container or cylinder installed on a vehicle to supply fuel for the propulsion system of the vehicle.

“Fuel system” means the fuel cylinder, supply lines, and all ancillary fuel equipment.

“LNG” means liquefied natural gas.

“LPG” means liquefied petroleum gas.

“Liquid fuel” means any fuel that is in a liquid state under normal ambient atmospheric conditions of temperature and pressure.

“Motor Vehicle Commission” or “Commission” means the New Jersey Motor Vehicle Commission established by section 4 of P.L. 2003, c. 13 (N.J.S.A. 39:2A-4).

“NFPA” means the National Fire Protection Association. Copies of the National Fire Protection Association standards may be obtained from the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, (617) 770-3000.

“Passenger seat” means a seat other than the driver’s seat.

“SAE” means the Society of Automotive Engineers, Inc. Copies of the Standards and Recommended Practices of the Society of Automotive Engineers may be purchased from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096, (724) 776-4841.

“School bus” or “bus” when used in N.J.A.C. 13:20-53A, 53B, 53C, or this subchapter means every motor vehicle operated by, or under contract with, a public or governmental agency, or religious or other charitable organization or corporation, or privately operated for compensation for the transportation of children to or from school for secular or religious education, school-connected activity, day camp, summer day camp, nursery school, child-care center, preschool center or other similar places of education.

“Supply line” means the piping, tubing, or hose, including all related fittings, through which vapor or liquid passes

between the first shut-off valve at the fuel supply container and the final stage regulator or vaporizer.

“UL” means the Underwriters’ Laboratories, Inc.

“Vaporizer” means a device that converts liquefied natural gas and liquefied petroleum gas to the gaseous state by means of heat.

Amended by R.2006 d.249, effective July 3, 2006.

See: 38 N.J.R. 386(b), 38 N.J.R. 2835(a).

Added definitions “Chief Administrator” and “Motor Vehicle Commission”; and deleted definitions “Director” and “Division”.

### 13:20-53.3 Installation requirements

(a) The installation of LPG, CNG, or LNG fuel systems on school buses equipped with gaseous fuel carburetors shall be in accordance with the following requirements:

1. Fuel supply containers on school buses shall not be located in or above the passenger compartment; and
2. Fuel supply containers shall be installed and fitted so that no gas from fueling and gauging operations or from relief valves can be released inside the driver, passenger, or luggage compartment.

### 13:20-53.4 Fuel supply container requirements

(a) Fuel supply containers shall meet all applicable requirements of the ASME Code, 49 CFR § 393.67, incorporated herein by reference, as amended and supplemented, and the following requirements:

1. Each container and cradle shall be mounted in a protected location to minimize damage from collision. All valves and gauges shall be protected by doors or other means.
2. To prevent damage from road hazards, slippage, loosening, or rotation, each container or cradle shall be secured to the school bus body, bed, or frame by either of the following means:
  - i. By attaching bolts not less than  $\frac{7}{16}$  inch in diameter that meet SAE Standard J429 (January 1999), incorporated herein by reference, as amended and supplemented, for grade 5 threaded fasteners and self-locking nuts to at least four securement points and, where bolts pierce body metal but not frame, by reinforcing both sides of each securement point with metal plates at least  $\frac{3}{4}$  inch thick and seven square inches in area; or
  - ii. By using other means that render the container or cradle capable of withstanding at a minimum in any direction a static force of eight times the weight of the fully-loaded container.
3. Each container shall be secured to its cradle by means capable of withstanding at a minimum in any

direction a static force of eight times the weight of the fully-loaded container.

4. No portion of the container or container valve(s) in communication with the liquid or vapor shall be located

behind the rear frame cross member of the school bus unless such container or container valve(s) is provided with protection equivalent to that provided by the rear frame cross member.

5. The weight of the container shall not, in any way, be supported by outlets, valves, manifold, or other fuel connections.

6. No part of the container shall be field-welded. Only saddle plates, brackets, or other non-pressure parts that were provided and installed by the manufacturer of the container may be field-welded.

7. No container shall be repaired until the method of repair has been authorized by the container manufacturer. United States Department of Transportation containers shall be repaired in accordance with applicable United States Department of Transportation regulations and shall meet the applicable standards set forth in 49 CFR § 393.67, incorporated herein by reference, as amended and supplemented. The replacement of valves, fittings, and accessories intended for the same purpose is not considered a repair.

8. Containers located less than eight inches from the engine or exhaust system shall be shielded against direct heat.

9. Filler caps shall fit snugly to prevent leakage of fuel while the school bus is standing or in motion.

#### 13:20-53.5 Markings

Markings of set-to-discharge pressure for safety relief devices and working pressure of fuel supply containers required by this subchapter shall be visible either directly or by use of a mirror after installation. All remote filling inlets shall be visibly marked with the type of fuel and the lowest working pressure of any fuel supply container in the system.

#### 13:20-53.6 Venting

(a) All safety devices that may discharge to the atmosphere shall be vented to the outside of the school bus, and all discharge lines and outlets shall be installed as follows:

1. Discharge lines shall be constructed of metal other than aluminum and shall be of a size and so located and maintained as not to restrict the maximum flow of the safety device. Flexible metallic lines shall be used when necessary.

2. The discharge line of a fuel supply container installed inside a compartment shall extend to the outside of the compartment.

3. Discharge lines shall be located as far from the exhaust outlet as is practicable and shall direct escaping gas upward within 45 degrees of vertical. Escaping gas shall not impinge upon fuel supply containers and shall not be directed into wheel wells, at other vehicles in traffic, or at engine air intake inlets.

4. The discharge line from the safety relief valve on all school buses shall be located at the rear of the school bus, directed upward, and extended to the top of the

school bus roof. Means shall be provided to verify that the discharge line is clear.

5. Outlets shall be protected by caps, covers, or other means to keep water or dirt from collecting in the discharge lines. Protective devices shall not restrict the flow of gas.

6. Each discharge line and its connectors shall withstand the pressure caused by the discharge of vapor or liquid from a safety device in the fully-open position.

7. CNG containers may be vented to the outside of the school bus with a flexible bag. Such bag shall be constructed of a material that is nonflammable or self-extinguishing. The bag and attachments shall be capable of withstanding an internal pressure produced by a flow rate of 300 cubic feet per minute with a safety factor of not less than four. The bag shall be shielded or installed in a protected location to prevent damage from unsecured objects or abrasion.

#### 13:20-53.7 Manifold shut-off valve

Manifolds connected to fuel supply containers shall be supported to minimize vibration and shall be installed in a protected location or shielded to prevent damage from unsecured objects. A normally closed automatic shut-off valve that is held open by electrical current shall be installed in the outlet of the manifold and marked with the words "AUTOMATIC SHUT-OFF VALVE." The automatic shut-off valve shall be wired so that it shuts off when the ignition switch is in the "off" or "accessory" position and when engine vacuum or oil pressure is not present.

#### 13:20-53.8 Pipes, tubing, hoses, and fittings

(a) All pipes, tubing, hoses, and fittings shall meet the following requirements:

1. All materials and assemblies shall be designed for the widest pressure and temperature ranges to which they may be subjected with a pressure safety factor of at least four.

2. All materials, including gaskets and packing materials, shall be compatible with the fuel used in the system and its service conditions. Aluminum pipe, tubing, or fittings shall not be used between the fuel supply container and first-stage regulator. When used, copper tubing shall be seamless.

3. A pipe thread sealant impervious to the action of the fuel used in the system shall be applied to all male pipe threads prior to assembly. Only tin-silver (95 percent tin, five percent silver) or silver braze alloy shall be used on sweat-type joints or fittings.

#### 13:20-53.9 Supply lines

(a) Every gasoline or diesel fuel supply line shall have the fuel supply line fitting located in the top of the tank.

(b) Supply lines passing through a panel shall be protected by grommets or similar devices, which shall snugly fit both the supply lines and the holes in the panel. Supply lines shall have a minimum clearance of eight inches from the engine exhaust system unless they are shielded from exhaust heat. Supply lines shall be supported at least every 24 inches and shall be prevented from sagging. Damaged supply lines shall be replaced, not repaired.

#### 13:20-53.10 Shut-off valve

An automatic fuel supply shut-off valve shall be installed in a protected location adjacent to the manual shut-off valve on all school buses and shall be activated by engine vacuum or oil pressure.

#### 13:20-53.11 Carburetor flows

Means shall be provided in the fuel system to prevent the flow of gaseous fuel to the carburetor when the ignition is in the "off" or "accessory" position, or from the carburetor when engine vacuum or oil pressure is not present.

#### 13:20-53.12 Dual fuel systems

A dual fuel system using liquid and gaseous fuels shall have an automatic shut-off valve installed in the liquid fuel line to the carburetor.

#### 13:20-53.13 Relief device

A by-pass relief device shall be installed in the fuel pump or between the fuel pump and the automatic shut-off valve in the liquid fuel line to the carburetor on a school bus equipped with a dual fuel system for the use of gasoline and gaseous fuels. The relief device need not be installed on a fuel pump containing a by-pass relief device as original equipment.

#### 13:20-53.14 Electrical equipment

(a) Radio transmitters, radio receivers, electric motors, or other electrical equipment (except lamps and wiring) shall not be mounted in a compartment with fuel supply containers, unless one of the following conditions is met:

1. All piping, connectors, and valves on the fuel supply containers are exterior to and sealed from the compartment containing electrical equipment;
2. All piping, connectors, and valves within the compartment are contained in a vapor tight enclosure and vented to the atmosphere outside of the school bus; or
3. The electrical equipment is contained in a vapor tight enclosure that is vented to the atmosphere outside of the school bus.

#### 13:20-53.15 Road clearance

The fuel system, including the fuel supply container, shall be installed with as much road clearance as possible. The lowest part of any component in the fuel system, including protective guards and fuel cradles, shall not be lower than the lowest edge of the vehicle differential housing under maximum spring deflection.

#### 13:20-53.16 Gasoline tank

The gasoline tank shall not be placed below the aisle to a door unless the area over such tank is adequately protected by metal shielding.

#### 13:20-53.17 Certified fuel tanks

Diesel or gasoline fuel tanks shall be certified and marked by the manufacturer to be in compliance with United States Department of Transportation requirements.

#### 13:20-53.18 Fuel system

All parts of the fuel system shall be securely installed outside of the passenger compartment and shall be located so as to prevent damage to any part of the passenger compartment.

#### 13:20-53.19 Fuel containers

(a) Fuel containers for all fuels shall conform to 49 CFR § 393.65, incorporated herein by reference, as amended and supplemented.

(b) A fuel container for liquid fuel shall, in addition to (a) above, conform to 49 CFR § 393.67, incorporated herein by reference, as amended and supplemented, and shall have:

1. Suitable baffles;
2. A supply line taken from the top of the fuel tank; and
3. All parts of the electrical system located under any part of the fuel system including the fuel tank, carburetor, gasoline pump, gasoline filter, or fuel line connections shielded from possible fuel leakage.

(c) Fuel containers for LPG shall, in addition to (a) above, conform to 49 CFR § 393.69, incorporated herein by reference, as amended and supplemented.

(d) For a fuel supply system using LPG, CNG, or LNG, such a system shall be constructed and installed in accordance with the provisions of N.J.A.C. 13:20-53A, 53B, or 53C, whichever is applicable, and this subchapter.

SUBCHAPTER 53A. STANDARDS FOR SCHOOL  
BUSES HAVING FUEL SYSTEMS USING  
LIQUEFIED PETROLEUM GAS

**13:20-53A.1 General provision**

In addition to the NFPA Standard 58A "Liquefied Petroleum Gases Engine Fuel Systems," incorporated herein by reference, as amended and supplemented, in effect at the time of installation, fuel systems using LPG shall also meet the requirements of this subchapter.

**13:20-53A.2 Fuel supply container**

(a) Each LPG fuel supply container shall be constructed, inspected, and permanently marked in accordance with 49 CFR § 393.69, incorporated herein by reference, as amended and supplemented, or the ASME Code provision.

(b) Fuel supply containers constructed to the United States Department of Transportation specifications shall have a minimum service pressure of 240 pounds per square inch.

(c) Fuel supply containers constructed to the ASME Code specifications shall have a minimum working pressure of 250 pounds per square inch.

(d) Each fuel supply container shall be equipped with an outage valve or a fixed liquid level gauge to indicate when the container is 80 percent full. A float gauge shall not be used to meet this requirement.

(e) Each fuel supply container shall have a fill valve that limits the amount of fuel that may be pumped into such container to 80 percent of the container capacity.

**13:20-53A.3 Back-flow check valve**

When two or more fuel supply containers are used, a back-flow check valve with a pressure setting not higher than 500 pounds per square inch shall be installed between the back-flow check valves and the filling operation. A hydrostatic relief valve with a pressure setting not lower than 350 pounds per square inch shall be installed in each fuel line to prevent the passage of fuel between the fuel supply containers during gaseous fuel cutoff to the carburetor.

**13:20-53A.4 Fuel supply container markings**

(a) Each LPG fuel supply container constructed in accordance with ASME specifications shall be permanently marked with the following information:

1. The official ASME Code U symbol;
2. The manufacturer's name, initials, or trademark;
3. The maximum allowable working pressure in pounds per square inch at degrees Fahrenheit;
4. The serial number; and

5. The year built.

(b) Each LPG fuel supply container constructed in accordance with United States Department of Transportation specifications shall be permanently marked with the following information:

1. The letters "USDOT" or "ICC" (referring to the former Interstate Commerce Commission) with the applicable specifications and service pressure;
2. The manufacturer's name, initials, or trademark, as registered with the United States Department of Transportation;
3. The serial number; and
4. The year tested.

(c) All fuel supply container inlets and outlets, except those for relief valves and gauging devices, shall be permanently marked to indicate whether they connect to vapor or liquid space.

**13:20-53A.5 Valves**

Each valve shall be of a type that has been tested and listed by the UL or by any other nationally recognized testing laboratory as meeting the UL requirements for LPG. Each valve shall be securely mounted and shielded or installed in a protected location to prevent damage from excessive vibration or unsecured objects.

**13:20-53A.6 Safety relief valves**

(a) One or more spring-loaded internal safety relief valves shall be installed in each fuel supply container that is connected to vapor space.

(b) The fuel supply container shall be permanently marked to indicate the "set to discharge pressure" after the safety relief valves have been installed in the container.

(c) Safety relief valves for United States Department of Transportation fuel supply containers shall be approved by the Federal Bureau of Explosives and the valve setting shall be as required by that Bureau.

(d) The safety relief valve setting for ASME fuel supply containers shall be not less than 100 percent nor more than 110 percent of the maximum allowable service pressure of the container.

**13:20-53A.7 Safety relief valve markings**

(a) Permanent markings on safety relief valves in ASME fuel supply containers shall include:

1. The manufacturer's name, initials, or trademark;
2. The manufacturer's design or type number;
3. The discharge pressure in pounds per square inch;

4. The discharge capacity in cubic feet of air per minute at 60 degrees Fahrenheit and 14.7 pounds per square inch; and

5. The ASME or UL symbol.

(b) Permanent markings on safety relief valves in United States Department of Transportation fuel supply containers shall include:

1. The manufacturer's name, initials, or trademark;
2. The catalog number;
3. The discharge pressure in pounds per square inch; and
4. The discharge capacity in cubic feet of air per minute at 60 degrees Fahrenheit and 14.7 pounds per square inch.

#### **13:20-53A.8 Excess flow valve**

(a) An internal excess flow valve shall be provided that is designed to close when maximum volume escapes through the smallest connection in the supply line valve or gauging device outlets.

(b) The internal excess flow valve shall have a by-pass not to exceed a No. 60 drill size opening to allow for the equalization of pressure.

#### **13:20-53A.9 Check valves**

(a) The inlet connection in the fuel supply container shall be fitted with either an internal and external check valve or an internal check valve with an adjacent or remote manual shut-off valve.

(b) The inlet of the filling system shall be capped, except when filling, to withstand the maximum service pressure of the fuel supply container.

(c) Every fuel supply container shall have an internal and an external check valve connected to the container and shall be equipped for filling outside of the school bus passenger compartment.

#### **13:20-53A.10 Vapor equalizing valve**

A vapor equalizing valve may be installed in the fuel supply container. The valve shall be capped, except when filling, to withstand the maximum pressure of the container.

#### **13:20-53A.11 Shut-off valve**

A manually-operated shut-off valve shall be installed in the fuel supply container outlet connection serving the supply line and shall be marked "SHUT-OFF VALVE."

#### **13:20-53A.12 Liquid volume gauge**

(a) Every LPG fuel supply container shall be equipped with a liquid volume gauge, which shall be designed and installed as follows:

1. The gauging device shall be a type that has been listed by the UL or by any other nationally recognized testing laboratory as meeting the UL requirements for LPG;

2. The gauge shall be securely mounted and shielded or installed in a protected location to prevent damage from excessive vibration or unsecured objects; and

3. A gauge that requires the bleeding of the product shall be equipped with a bleeder valve and the product shall be bled to the outside of the school bus passenger compartment. A restricting orifice not larger than a No. 54 drill size shall be installed inside the fuel supply container.

#### **13:20-53A.13 Pressure reducing regulator and vaporizer regulator**

An automatic pressure reducing regulator or a vaporizer regulator designed to withstand a service pressure of at least 250 pounds per square inch shall be installed between the LPG fuel supply container and the carburetor. All regulators and vaporizers shall be of a type that has been tested and listed by the UL or by any other nationally recognized testing laboratory as meeting the UL requirements for LPG. The regulator or vaporizer shall be installed so that its weight is not placed on, or supported alone by, the attached tubing or flexible lines.

#### **13:20-53A.14 Vents**

Every compartment in which an LPG fuel supply container is installed shall be vented to the atmosphere unless all piping and connectors are outside of the compartment. The vent or vents shall be installed at the lowest practicable point of the compartment and shall have an open area totaling not less than three square inches.

#### **13:20-53A.15 LPG hose for high pressure liquid or vapor use**

(a) All LPG hose and hose assemblies shall have a working pressure of not less than 350 pounds per square inch and a burst pressure of not less than 1,750 pounds per square inch.

(b) Each LPG hose shall be reinforced with corrosion-resistant wire braid and shall be of a type that has been tested and listed by the UL or by any other nationally recognized testing laboratory as meeting the UL requirements for LPG.

(c) Each LPG hose shall have the following permanent identification markings in letters and numerals at least 3/4 inch in height at intervals of 24 inches or less:

1. The manufacturer's name, initials, or trademark;
2. LPG or LP Gas; and
3. The working pressure.

SUBCHAPTER 53B. STANDARDS FOR SCHOOL  
BUSES HAVING FUEL SYSTEMS USING  
COMPRESSED NATURAL GAS

**13:20-53B.1 General provision**

In addition to the NFPA Standard 52A "Compressed Natural Gas Vehicular Fuel Systems," incorporated herein by reference, as amended and supplemented, in effect at the time of installation, fuel systems using CNG shall also meet the requirements of this subchapter.

**13:20-53B.2 Fuel supply container**

(a) Each CNG fuel supply container shall be constructed and inspected in accordance with FMVSS No. 304 (49 CFR § 571.304), incorporated herein by reference, as amended and supplemented, and shall have a rated service pressure of not less than 2250 pounds per square inch at 70 degrees Fahrenheit.

(b) The working pressure shall be stamped on the CNG fuel supply container near the filler connection.

(c) The CNG fuel supply container shall not be filled beyond the working pressure stamped thereon corrected for the ambient temperature at the time of filling as prescribed by the United States Department of Transportation.

**13:20-53B.3 Markings**

(a) Each CNG fuel supply container shall have the following identification markings:

1. The letters "USDOT" with the applicable specification and working pressure;
2. The manufacturer's name, initials, or trademark;
3. The serial number; and
4. The year tested.

**13:20-53B.4 Shut-off valve**

(a) A manually-operated shut-off valve shall be in direct contact with the CNG fuel supply container and shall be marked "SHUT-OFF VALVE."

(b) A shut-off valve shall not be used for CNG unless it has been certified for that purpose by the manufacturer.

(c) The shut-off valve shall be securely mounted and shielded or installed in a protected location to prevent damage from excessive vibration or unsecured objects.

**13:20-53B.5 Safety relief devices**

(a) One or more safety relief devices shall be installed in the CNG fuel supply container in order to vent the fuel to the outside of the school bus passenger compartment.

(b) Safety relief devices shall be approved as to type, size, quantity, and location by the Federal Bureau of Explosives and shall be permanently marked as follows:

1. The manufacturer's name, initials, or trademark;
2. The flow capacity in cubic feet per minute; and
3. The yield temperature rating in degrees Fahrenheit.

**13:20-53B.6 Gauges**

(a) Gauges used in CNG systems shall be designed and installed as follows:

1. Gauging devices shall be designed for the most severe pressure and temperature conditions to which the devices may be subjected with a pressure safety factor of not less than four; and
2. Gauges shall be securely mounted and shielded or installed in protected locations to prevent damage from excessive vibration or unsecured objects.

**13:20-53B.7 Automatic pressure reducing regulators**

(a) An automatic pressure reducing regulator or regulators shall be installed in every CNG system to reduce fuel supply container pressure to a value consistent with the working pressure required by the carburetor. Means shall be provided to prevent regulator malfunction due to refrigeration effects.

(b) Every automatic pressure reducing regulator shall be installed so that its weight is not placed on, or supported alone by, the attaching line or lines.

(c) Every automatic pressure reducing regulator shall be designed to the CNG fuel supply container's maximum working pressure and temperature with a pressure safety factor of not less than four.

**13:20-53B.8 Vents**

Every compartment in which a CNG fuel supply container is installed shall be vented to the atmosphere, unless all piping and connectors outside of the compartment are vapor-sealed and vented to the atmosphere. The vent or vents shall be installed at the highest practicable point of the compartment and shall have an open area totaling not less than three square inches.

SUBCHAPTER 53C. STANDARDS FOR SCHOOL  
BUSES HAVING FUEL SYSTEMS USING  
LIQUEFIED NATURAL GAS

**13:20-53C.1 General provision**

In addition to the NFPA Standard 57 “Liquefied Natural Gas Vehicular Fuel Systems,” incorporated herein by reference, as amended and supplemented, in effect at the time of installation, fuel systems using LNG shall also meet the requirements of this subchapter.

**13:20-53C.2 Fuel supply container**

(a) Each LNG fuel supply container shall be constructed and inspected in accordance with 49 CFR § 178.57 (Specification 4L welded insulated cylinders), incorporated herein by reference, as amended and supplemented, with the exception of subsections 178.57-13 and 178.57-20 and the reports to the Federal Bureau of Explosives in subsection 178.57-4(d). Each LNG container shall meet the following additional requirements:

1. The unrelieved fuel pressure inside the LNG fuel supply container shall not exceed 100 pounds per square inch within a total 72-hour period consisting of 48 hours at 60 degrees Fahrenheit, 12 hours at 70 degrees Fahrenheit, and 12 hours at 90 degrees Fahrenheit ambient temperatures when the container has been filled with LNG conditioned at one atmosphere;
2. The LNG fuel supply container shall be equipped with a liquid level gauging device and a dip tube to prevent filling beyond 90 percent by volume at atmospheric pressure; and
3. Each completed LNG fuel supply container, including its supporting structure and valves, enclosures, and lines normally attached thereto, shall have structural integrity to withstand damage from deceleration and acceleration forces resulting from a 30 miles per hour front-end or rear-end collision with the type of vehicle in which the container is installed. A test of other means as established by a national standards testing institute shall demonstrate that the LNG fuel supply container and its openings do not rupture in such collisions.

**13:20-53C.3 Markings**

(a) Each LNG fuel supply container shall be permanently marked as follows:

1. The service pressure;
2. The serial number;
3. The manufacturer’s name, initials, or trademark;
4. The inspector’s mark; and
5. The date tested.

(b) All inlets and outlets, except relief valves and gauging devices, shall be permanently marked to designate whether they make contact with vapor or liquid space.

**13:20-53C.4 Valve certification**

Valves shall be certified for LNG use by the manufacturer or certified for cryogenic service at temperatures down to and including minus 320 degrees Fahrenheit. All valves shall be securely mounted and shielded or installed in a protected location to prevent damage from excessive vibration or unsecured objects.

**13:20-53C.5 Safety relief valves**

(a) Each LNG fuel supply container shall be equipped with one or more safety relief valves.

(b) A safety relief valve(s) shall be installed in a line that is connected to the vapor space of the container. A safety relief valve shall be installed between two shut-off valves in a supply line to prevent a buildup of pressure between the valves in the “off” position.

(c) The discharge pressure of a safety relief valve shall not exceed 125 percent of the service pressure of the LNG fuel supply container.

(d) A safety relief valve shall have sufficient capacity to meet the requirements of the NFPA Standard 59 (A)—Appendix A, incorporated herein by reference, as amended and supplemented, and be capable of preventing explosion of the normally-charged cylinder when it is placed in a fire.

(e) A safety relief valve shall be permanently marked as follows:

1. The manufacturer’s name, initials, or trademark;

2. The catalog number;
3. The discharge pressure in pounds per square inch; and
4. The discharge capacity in cubic feet of air per minute at 60 degrees Fahrenheit and 14.7 pounds per square inch.

**13:20-53C.6 Shut-off valves**

(a) One manually-operated shut-off valve shall be secured directly to the tank vapor outlet with no intervening fitting other than the safety relief valve and shall be marked "VAPOR SHUT-OFF VALVE."

(b) Another manually-operated shut-off valve shall be secured directly to the tank liquid outlet and shall be marked "LIQUID SHUT-OFF VALVE."

(c) Automatic shut-off valves that are held open by electrical current may be used in lieu of manual shut-off valves at either the tank vapor port or tank liquid port, or both. An automatic shut-off valve shall be wired so that it shuts off when the ignition switch is in the "off" or "accessory" position and when engine vacuum or oil pressure is not present.

**13:20-53C.7 Control valve**

A positive shut-off valve shall be installed in the fuel supply lines as close to the LNG fuel supply containers as possible, automatically closing off and preventing the flow of fuel to the carburetor when the ignition switch is in the "off" or "accessory" position.

**13:20-53C.8 Gauges**

(a) Gauges used in LNG systems shall be designed and installed as follows:

1. Gauging devices shall be designed for the most severe pressure and temperature conditions to which the devices may be subjected with a pressure safety factor of not less than four;
2. Gauges shall be securely mounted and shielded or installed in protected locations to prevent damage from excessive vibration or unsecured objects; and
3. A gauging device that requires bleeding of the product shall be equipped with a bleeder valve and the product shall be bled to the outside of the school bus passenger compartment.

**13:20-53C.9 Pressure reducing regulators**

LNG systems shall be equipped with one or two-stage pressure reducing regulators. The regulators shall be installed so that their weight is not placed on, or supported alone by, the attached tubing or flexible lines.

**13:20-53C.10 Vents**

Every compartment in which an LNG fuel supply container is installed shall be vented to the atmosphere unless all piping and connectors are outside of the compartment. The vent or vents shall be installed at the highest practicable point of the compartment and shall have an open area totaling not less than three square inches.