

APPENDIX D

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SCHOOL BUS

"School bus" means a motor vehicle used to transport pupils to or from a school defined in section 120A.22, or to or from school-related activities, by the school or a school district, or by someone under an agreement with the school or a school district. A school bus does not include a motor vehicle transporting children to or from school for which parents or guardians receive direct compensation from a school district, a motor coach operating under charter carrier authority, a transit bus providing services as defined in section 174.22, subdivision 7, or a vehicle otherwise qualifying as a Type III vehicle under clause (6), when the vehicle is properly registered and insured and being driven by an employee or agent of a school district for nonscheduled or nonregular transportation. A school bus may be a Type A, Type B, Type C, or Type D, multifunction school activity bus or Type III.

TYPE A

A Type "A" school bus is a van conversion or bus constructed utilizing a cutaway front section vehicle with a left-side driver's door. This definition includes two classifications: Type A-I, with a Gross Vehicle Weight Rating (GVWR) less than or equal to 14,500 pounds; and Type A II, with a GVWR greater than 14,500 pounds and less than or equal to 21,500 pounds.

TYPE B

A Type "B" school bus is constructed utilizing a stripped chassis. The entrance door is behind the front wheels. This definition includes two classifications: Type B1, with a GVWR less than or equal to 10,000 pounds; and Type B2, with a GVWR greater than 10,000 pounds.

TYPE C

A Type "C" school bus is constructed utilizing a chassis with a hood and front fender assembly. The entrance door is behind the front wheels. A "type C school bus" also includes a cutaway truck chassis or truck chassis with cab, with or without a left side door, and with a GVWR greater than 21,500 pounds.

TYPE D

A Type "D" school bus is constructed utilizing a stripped chassis. The entrance door is ahead of the front wheels.

MULTIFUNCTION SCHOOL ACTIVITY BUS

A multifunction school activity bus is a school bus that meets

the definition of a definition of a multifunction school activity in Code of Federal Regulations, title 49, section 571.3. A vehicle that meets the definition of a type III vehicle is not a multifunction school activity bus.

TYPE III

A Type III vehicle is restricted to passenger cars, station wagons, vans, and buses having a maximum manufacturer's rated seating capacity of ten or fewer people, including the driver, and a gross vehicle weight rating of 10,000 pounds or less. A "type III vehicle" must not be outwardly equipped and identified as a type A, B, C, or D school bus or type A, B, C, or D Head Start bus. A van or bus converted to a seating capacity of ten or fewer and placed in service on or after August 1, 1999, must have been originally manufactured to comply with the passenger safety standards.

BUS CHASSIS SPECIFICATIONS

AIR CLEANER

- A. A dry element type air cleaner shall be provided.
- B. All diesel engine air filters shall include a latch-type restriction indicator that retains the maximum restriction developed during operation of the engine. The indicator should include a reset control so the indicator can be returned to zero when desired.

AXLES

- A. The front and rear axle and suspension systems shall have a gross axle weight rating (GAVWR) at ground commensurate with the respective front and rear weight loads of the bus loaded to the rated passenger capacity.

BRAKES

- A. The chassis brake system shall conform to the provisions of FMVSS No. 105, *Hydraulic and Electric Brake Systems*, 106, *Brake Hoses*, and 121, *Air Brake Systems*, as applicable.
- B. The anti-lock brake system (ABS), provided in accordance with FMVSS No. 105, *Hydraulic and Electric Brake Systems* or No. 121, *Air Brake Systems*, shall provide wheel speed sensors for each front wheel and for each wheel on at least one rear axle. The system shall provide anti-lock braking performance for each wheel equipped with sensors (Four Channel System).
- C. All brake systems shall be designed to permit visual inspection of brake lining wear without removal of any chassis component(s).
- D. The brake lines, booster-assist lines, and control cables shall be protected from excessive heat, vibration and corrosion and installed in a manner which prevents chafing.
- E. The parking brake system for either air or hydraulic service brake systems may be of a power-assisted design. The power parking brake actuator should be a device located on the instrument panel within seated reach of a 5th percentile female driver. As an option, the parking brake may be set by placing the automatic transmission shift control mechanism in the "park" position.
- F. The power-operated parking brake system may be interlocked to the engine key switch. Once the parking brake has been set and the ignition switch turned to the "off" position, the parking brake cannot be released until the key switch is turned back to the "on" position.

BRAKES: HYDRAULIC

- A. Buses using a hydraulic-assist brake shall be equipped with audible and visible warning signals that provide a continuous warning to the driver indicating a loss of fluid flow from the primary source or a failure of the back-up pump system.

BRAKES: AIR

- A. The air pressure supply system shall include a desiccant-type air dryer installed according to the manufacturer's recommendations. The air pressure storage tank system may incorporate an automatic drain valve.
- B. The chassis manufacturer should provide an accessory outlet for air-operated systems installed by the body manufacturer. This outlet shall include a pressure protection valve to prevent loss of air pressure in the service brake reservoir.
- C. For air brake systems, an air pressure gauge shall be provided in the instrument panel capable of complying with Commercial Driver's License (CDL) pre-trip inspection requirements.
- D. Air brake-equipped buses may be equipped with a service brake interlock. If equipped with a service brake interlock, the parking brake cannot be released until the brake pedal is depressed.
- E. Air brake systems shall include a system for anti-compounding of the service brakes and parking brakes.
- F. Air brakes shall have both a visible and audible warning device whenever the air pressure falls below the level where warnings are required under FMVSS No. 121, Air Brake Systems.

BUMPER, FRONT

- A. School buses shall be equipped with a front bumper. The front bumper shall be furnished by the chassis manufacturer for all school bus types unless there is a specific alternate agreement between the chassis manufacturer and body manufacturer.
- B. The front bumper on buses of Type A-2 (with GVWR greater than 14,500 pounds), Type B, Type C, and Type D shall be equivalent in strength and durability to pressed steel channel at least 3/16 inches thick and not less than 8 inches wide (high). It shall extend beyond the forward-most part of the body, grille, hood and fenders and shall extend to the outer edges of the fenders at the bumper's top line.

Type A buses having a GVWR of 14,500 pounds or less may be equipped with an OEM-supplied bumper. The front bumper shall be of sufficient strength to permit being pushed by another vehicle on a smooth service with a 5 degree (8.7 percent) grade, without permanent distortion. The contact point on the front bumper is intended to be between the frame rails, with as wide a contact area as possible. If the front bumper is used for lifting, the contact points shall be under the bumper attachments to the frame rail brackets unless the manufacturer specifies different lifting points in the owners manual. Contact and lifting pressures should be applied simultaneously at both lifting points.

- C. The front bumper, except breakaway bumper ends, shall be of sufficient strength to permit pushing a vehicle of equal gross vehicle weight, per Section B, without permanent distortion to the bumper, chassis, or body.
- D. Tow eyes or hooks shall be furnished and attached so they do not 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 specifications. Tow hooks or eyes shall have an individual strength rating of 13,500 pounds each, for a combined rating of 27,000 pounds. For pulling and lifting purposes, tow hooks are meant to be used simultaneously. For pulling, angularity applied to the tow hooks will decrease the capacities of the tow hooks.

NOTE: Type A buses are exempt from this requirement for front tow hooks or eyes due to built-in crush zones. Rear tow eyes or hooks are addressed in the BUS BODY SPECIFICATIONS under Towing Attachment points.

- E. The bumper shall be designed or reinforced so that it will not deform when the bus is lifted by a chain that is passed under the bumper (or through the bumper if holes are provided for this purpose) and attach to both tow hooks/eyes. For the purpose of meeting this specification, the bus shall be empty and positioned on a level, hard surface and both tow hooks/eyes shall share the load equally.

CERTIFICATION

- A. A chassis manufacturer shall certify that the product meets Minnesota standards.
- B. All buses with a certified manufacturing date prior to April 1, 1977, shall not be recertified as a school bus after January 1, 1996.

CLUTCH

- A. Clutch torque capacity shall be equal to or greater than the engine torque output.
- B. A starter interlock shall be installed to prevent actuation of the starter if the clutch pedal is not depressed.

COLOR

- A. The chassis, including wheels and front bumper, shall be black. Body, cowl, hood, and fenders shall be in National School Bus Yellow (NSBY.) The flat top surface of the hood may be non-reflective black or NSBY.
- B. Demountable rims, if used, may be silver, gray, white, yellow or black as received from the wheel manufacturer.
- C. The grill may be manufacturer's standard color or chrome.
- D. Fenderettes may be painted black.

DRIVE SHAFT

- A. The drive shaft shall be protected by a metal guard or guards around the circumference of the drive shaft to reduce the possibility of its whipping through the floor or dropping to the ground, if broken.

ELECTRICAL SYSTEM

- A. Battery
 - 1. The storage battery, as established by the manufacturers rating, must be of sufficient capacity to care for starting, lighting, signal devices, heating, and other electrical equipment.
 - 2. In bus with a gas powered chassis, the battery or batteries must provide a minimum of 800 cold cranking amperes.
 - 3. In a bus with a diesel-powered chassis the battery or batteries must provide a minimum of 1,050 cold cranking amperes.
 - 4. In a type B bus with gross vehicle weight rating of 15,000 pounds or more, and type C and D buses, the battery shall be temporarily mounted on the chassis frame. The final location of the battery and the appropriate cable lengths in these buses must comply with the SBMI design objectives booklet.
 - 5. In a type C bus, other than are powered by diesel fuel, a battery providing at least 550 cold cranking amperes

may be installed with a generator or alternator of at least 130 amperes.

6. A bus with a gross weight rating of 15,000 pounds or Less may be equipped with a battery to provide a minimum of 550 cold cranking amperes only if used in combination with an alternator of at least 130 Amperes. This paragraph does not apply to those buses with wheel chair lifts or diesel engines.
7. All batteries will be mounted according to chassis manufacturers recommendations.

B. Alternator

1. All Type A-2 buses and Type B buses with a GVWR of 15,000 lbs or less shall have a minimum 130 ampere alternator.
2. Type A-2 and Type B buses over 15,000 lbs GVWR and all Type C and Type D buses shall be equipped with a heavy-duty truck or bus-type alternator meeting SAE J180, *Electrical Charging Systems for Construction and Industrial Machinery*, having a minimum output rating of 130 amperes or higher, and should produce a minimum current output of 50 percent of the rating at engine idle speed.
3. Buses equipped with an electrically powered wheelchair lift, air conditioning or other accessories may be equipped with a device that monitors the electrical s system voltage and advances the engine idle speed when the voltage drops to, or below, a pre-set level.
4. A belt alternator drive shall be capable of handling the rated capacity of the alternator with no detrimental effect on any other driven components. (For estimating required alternator capacity, see School Bus Manufacturers Technical Council's publication, "School Bus Technical Reference," available at <http://www.nasdpts.org>.)
5. A direct-drive alternator is permissible in lieu of belt drive alternator.

C. Electrical Components

1. Materials in all electrical components shall contain no Mercury.

D. Wiring

1. All wiring shall conform to current applicable recommended practices of the Society of Automobile Engineers (SAE). All wiring shall use color and at least one other method for identification. The other method shall be either a number code or name code, and each chassis shall be delivered with a wiring diagram that illustrates the wiring of the chassis.
2. The chassis manufacturer of an incomplete vehicle shall install a readily accessible terminal strip or connector on the body side of the cowl or in an accessible location in the engine compartment of vehicles designed without a cowl. The strip or connector shall contain the following terminals for the body connections:
 - a. Main 100 amp body circuit;
 - b. Tail lamps;
 - c. Right turn signal;
 - d. Left turn signal;
 - e. Stop Lamps;
 - f. Back up lamps; and
 - g. Instrument panel lights (rheostat controlled by head lamp switch).

D. Circuits

1. An appropriate identifying diagram (color plus a name or number code) for all chassis electrical circuits shall be provided to the body manufacturer for distribution to the end user.
2. Wiring for the headlight system must be separate from the electronic controlled body solenoid/module.

E. Daytime Running Lamps (DRL)

1. A daytime running lamps system shall be provided.

ENGINE FIRE EXTINGUISHER

- A. The chassis manufacturer may provide an automatic fire extinguisher system in the engine compartment.

EXHAUST SYSTEM

- A. The exhaust pipe, muffler and tailpipe shall be outside the bus body compartment and attached to the chassis so any other chassis component is not damaged.
- B. 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.
- C. Chassis manufacturers shall furnish an exhaust system with a tailpipe of sufficient length to exit at the rear of the bus or at the left side of the bus body no more than 18 inches forward of the front edge of the rear wheel house opening. If designed to exit at the rear of the bus, the tailpipe shall extend at least five inches beyond the end of the chassis frame. If designed to exit to the side of the bus, the tailpipe shall extend at least 48.5 inches (51.5 inches if the body is to be 102 inches wide) outboard from the chassis centerline.
 - 1. On Types C and D vehicles, the tailpipe shall not exit beneath a fuel fill or emergency door exit.
 - 2. Types A and B chassis may be furnished with the manufacturer's standard tailpipe configuration. (See also BUS BODY SPECIFICATIONS: Tailpipe.)
- D. The exhaust system on a chassis shall be adequately insulated from the fuel system.
- E. The muffler shall be constructed of corrosion-resistant material.

FENDERS: FRONT-TYPE C VEHICLES

- A. When measured at the fender line, the total spread of the outer edges of front fenders shall exceed the total spread of front tires when front wheels are in a straight-ahead position.
- B. Front fenders shall be properly braced and shall not require attachment to any part of the body.

FRAME

- A. Frame lengths shall be established in accordance with the design criteria for the complete vehicle.
- B. Making holes in top or bottom flanges or side units of the frame and welding to the frame shall not be permitted except as provided or accepted by the chassis manufacturer.
- C. Frames shall not be modified for the purpose of extending the wheel base.

- D. Any secondary manufacturer that modifies the original chassis frame shall provide a warranty at least equal to the warranty provided by the original equipment manufacturer (OEM), and shall certify that the modification and other parts or equipment affected by the modification shall be free from defects in material and workmanship under normal use and service intended by the OEM.
- E. Installation of a trailer hitch is permitted. A hitch shall be flush mounted.

FUEL TANK

- A. Fuel tank(s) having a minimum 30-gallon capacity shall be provided by the chassis manufacturer. Each tank shall be filled from and vented to the outside of the passenger compartment, and each fuel filler should be placed in a location where accidental fuel spillage will not drip or drain on any part of the exhaust system.
- B. The fuel system shall comply with FMVSS No. 301, *Fuel System Integrity*.
- C. Fuel tank(s) may be mounted between the chassis frame rails or outboard of the frame rails on either the left or right side of the vehicle.
- D. The actual draw capacity of each fuel tank shall be a minimum of 83 percent of the tank capacity.
- E. Installation of alternative fuel systems, including fuel tanks and piping from tank to the engine, shall comply with all applicable fire codes in effect on the date of manufacture of the bus.
- F. Installation of LPG tanks shall comply with National Fire Protection Association (NFPA) 58, *Liquefied Petroleum Gas Code*.
- G. Installation of Compressed Natural Gas (CNG) containers shall comply with FMVSS No. 304, *Compressed Natural Gas Fuel Container Integrity*.
- H. The CNG Fuel System shall comply with FMVSS No. 303, *Fuel System Integrity of Compressed Natural Gas Vehicles*.

GOVERNOR

- A. An electronic engine speed limiter shall be provided and set to limit engine speed, not to exceed the maximum revolutions per minute, as recommended by the engine manufacturer.

HEATING SYSTEM, PROVISION FOR

- A. The chassis engine shall have plugged openings for the purpose of supplying hot water for the bus heating system. The openings shall be suitable for attaching 3/4 inch pipe thread/hose connectors. The engine shall be capable of supplying coolant at a temperature of at least 170 degrees Fahrenheit at the engine cooling thermostat opening. The coolant flow rate shall be 50 pounds per minute at the return end of 30 feet of 1 inch inside diameter automotive hot water heater hose. (See SBMIT C-001, *Standard Code for Testing and Rating Automotive Bus Hot Water Heating and Ventilating Equipment.*)

HORN

- A. A bus shall be equipped with a horn in good working order and capable of emitting sound audible from a distance of not less than 200 feet.

INSTRUMENTS AND INSTRUMENT PANEL

- A. The chassis shall be equipped with the instruments and gauges listed below. (Telltale warning lamps 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, unless tenths of miles are registered on a trip odometer. Odometer is to be able to be read without using a key;
 3. Tachometer (**Note:** For Types B,C and D buses, a tachometer shall be installed so as to be visible to the driver while seated in a normal driving position.);
 4. Voltmeter; (**Note:** An ammeter with graduated charge and discharge indications is permitted in lieu of a voltmeter; however, when used, the ammeter wiring must be compatible with the current flow of the system.);
 5. Oil pressure gauge;
 6. Water temperature gauge;
 7. Fuel gauge;
 8. Upper beam headlamp indicator;
 9. Brake air pressure gauge (air brakes), brake indicator lamp (vacuum/hydraulic brakes), or brake indicator lamp (hydraulic/hydraulic);
 10. Turn signal indicator; and
 11. Glow-plug indicator light where appropriate.

- B. All instruments shall be easily accessible for maintenance and repair.
- C. The instruments and gauges shall be mounted on the instrument panel so that each is clearly visible to the driver while seated in a normal driving position.
- D. Instruments and controls must be illuminated as required by FMVSS No. 101, *Controls and Displays*.
- E. Multi-function gauge (MFG)
 - 1. The driver must be able to manually select any displayable function of the gauge on a MFG, whenever desired.
 - 2. Whenever an out-of-limits condition that would be displayed on one or more functions of a MFG occurs, the MFG controller should automatically display this condition on the instrument cluster. This should be in the form of an illuminated telltale warning lamp, as well as having the MFG automatically display the out-of-limits indications. If two or more functions displayed on the MFG go out of limits simultaneously, then the MFG should sequence automatically between those functions continuously until the condition(s) are corrected.
 - 3. The use of a MFG does not relieve the need for audible warning devices, where required.

OIL FILTER

- A. An oil filter with a replaceable element shall be provided and connected by flexible oil lines if it is not a built-in or an engine-mounted design. The oil filter shall have a capacity in accordance with the engine manufacturer's recommendation.

OPENINGS

- A. All openings in the floorboard or firewall between chassis and the passenger compartment (e.g., for gearshift selector and parking brakes lever) shall be sealed.

PASSENGER LOAD

- A. Actual 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. For purposes of calculation, the driver's weight is 150 pounds and the pupil weight is 120 pounds per student.

- B. Actual GVW shall not exceed the chassis manufacturer's GVWR for the chassis, nor shall the actual weight carried on any axle exceed the chassis manufacturer's Gross Axle Weight Rating (GAWR.)
- C. The manufacturer's GVWR for a particular school bus shall be furnished in duplicate (unless more are requested) by manufacturers to the MN Dept. of Public Safety.

RETARDER SYSTEM (OPTIONAL EQUIPMENT)

- A. A retarder system, if used, shall maintain the speed of the fully loaded school bus at 19.0 mph on a 7 per cent grade for 3.6 miles.

ROAD SPEED CONTROL

- A. When it is desired to accurately control vehicle maximum speed, a vehicle speed limiter may be utilized.

SHOCK ABSORBERS

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

STEERING GEAR

- A. The steering gear shall be approved by the chassis manufacturer and designed to ensure safe and accurate performance when the vehicle is operated with maximum load and at maximum speed.
- B. If external adjustments are required, steering mechanism shall be accessible to make adjustments.
- C. Changes shall not be made to the steering apparatus which are not approved by the chassis manufacturer.
- D. There shall be a clearance of at least 2 inches between the steering wheel and 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 for lubrication of all wear-points, that are not permanently lubricated.

SUSPENSION SYSTEMS

- A. The capacity of springs or suspension assemblies shall be commensurate with the chassis manufacturer's GVWR.
- B. Rear leaf rear springs shall be of a progressive rate or multi-stage design. Front leaf springs shall have a stationary eye at one end and shall be protected by a wrapped leaf, in addition to the main leaf.

THROTTLE

- A. The force required to operate the throttle shall not exceed 16 pounds throughout the full range of accelerator pedal travel.

TIRES AND RIMS

- A. Rims and tires of the proper size and load rating commensurate with the chassis manufacturer's GVWR shall be provided. The use of multi-piece rims and/or tube-type tires shall not be permitted on any school bus ordered after October 31, 2004.
- B. Dual rear tires shall be provided on Type A-2, Type B, Type C, and Type D school buses.
- C. All tires on a vehicle shall be of the same size, and the load range of the tires shall meet or exceed the GVWR as required by FMVSS No. 120, *Tire Selection and Rims for Vehicles other than Passenger Car*.
- D. If the vehicle is equipped with a spare tire and rim assembly, it shall be of the same size as those mounted on the vehicle.
- E. If a tire carrier is required, it shall be suitably mounted in an accessible location outside the passenger compartment.
- F. Radial and bias tires shall not be used on the same axle.
- G. Front tire tread depth shall not be less than 4/32 inch in any major tire tread groove. Rear tire tread shall not be less than 2/32 inch. Tires must be measured in three locations around the tire, in two adjoining grooves.
- H. No recapped tires shall be used on the front wheels. Recapped tires are permitted on rear wheels.

TRANSMISSION

- A. Automatic transmissions shall have no fewer than three forward speeds and one reverse speed. Mechanical shift selectors shall provide a detente between each gear position when the gear selector quadrant and shift selector are not steering-column mounted.

- B. In manual transmissions, 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 transmission interlock, controlled by application of the service brake, shall be installed to prohibit accidental engagement of the automatic transmission.
- D. The transmission shifting pattern must be permanently displayed in the driver's full view.

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 42 1/2 feet, curb-to-curb measurement.
- B. A chassis with a wheel base of 265 inches or more shall have a right and left turning radius of not more than 44 1/2 feet, curb-to-curb measurement.

UNDERCOATING

- A. The chassis manufacturers, or their agents, shall coat the undersides of steel or metallic-constructed front fenders with a rust-proofing compound, for which the compound manufacturer has issued notarized certification of compliance to chassis builder that the compound meets or exceeds all performance and qualitative requirements of paragraph 3.4 of Federal Specification TT-C-520B, *Coating Compound, Bituminous, Solvent Type, Underbody*, using modified tests.

BUS BODY SPECIFICATIONS

AISLE

- A. All emergency doors shall be accessible by a 12-inch minimum aisle. The aisle shall be unobstructed at all times by any type of barrier, seat, wheelchair or tiedown, unless a flip seat is installed and occupied. A flip seat in the unoccupied (up) position shall not obstruct the 12-inch minimum aisle to any side emergency exit door.
- B. The seat backs shall be slanted sufficiently to give aisle clearance of 15 inches at tops of seat backs.

BACK-UP WARNING ALARM

- A. An automatic audible alarm may be installed behind the rear axle and shall comply with the published Backup Alarm Standards (SAE J994B), providing a minimum of 112 dBA or shall have a variable volume feature that allows the alarm to vary from 87 dBA to 112 dBA sound level, staying at least 5 dBA above the ambient noise level.
- B. A spring-loaded button in the driver's compartment that will temporarily disable the backup alarm is allowed for usage in school bus parking lots and repair facilities.

BATTERY

- A. The battery is to be furnished by the chassis manufacturer.
- B. When the battery(ies) is mounted as described in the "Bus Chassis Specifications," 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 accessible for convenient servicing from the outside. When in the stored position, the tray shall be retained by a securing mechanism capable of holding the tray [with battery(ies)] in position when subjected to a 5g load from any direction. The battery compartment door or cover if separate from the tray shall be hinged at the front or top, and be secured by a positive and adequate and conveniently operated latching system or other type fastener., or the door may be an integral part of the battery slide tray. Battery cables installed by the body manufacturer shall meet chassis manufacturer and SAE requirements. Battery cables shall be of sufficient length to allow the battery tray to fully extend. The battery compartment is required on Type A-1 diesel buses.
- C. Buses may be equipped with a battery shut-off switch. The switch is to be placed in a location not readily accessible to the driver or passengers.

BUMPER: FRONT

- A. If the chassis manufacturer does not provide a bumper on a Type D school bus, the bumper shall be provided by the body manufacturer. The bumper shall conform to the specifications described in BUS CHASSIS SPECIFICATIONS.

BUMPER: REAR

- A. The bumper on Type A-1 buses shall be a minimum of 8 inches wide (high). Bumpers on Types A-2, B, C and D buses shall be a minimum of 9 ½ inches wide (high). The bumper shall be of sufficient strength to permit being pushed by another vehicle of similar size and being lifted by the bumper without permanent distortion.
- B. The 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, and shall be flush mounted with the sides of the body or protected with an end panel.
- C. The bumper shall be attached to the chassis frame in such a manner that it may be removed. It shall be braced to resist deformation of the bumper resulting from impact from the rear or the side. It shall be designed to discourage hitching of rides by an individual.
- D. The bumper must extend at least 1 inch beyond the rear-most part of body surface measured at the floor line.
- E. The bottom of the rear bumper shall not be more than 30 inches above ground level.

CEILING

(See BUS BODY SPECIFICATIONS, Insulation and Interior.)

CERTIFICATION

- A. A body manufacturer shall certify that the product meets Minnesota standards.

CHAINS (TIRE)

(See BUS BODY SPECIFICATIONS, Wheelhousing.)

COLOR

- A. The School Bus body shall be painted National School Bus Yellow (NSBY). The beltline may be painted yellow over black or black over yellow. Rub Rails shall be black.

- B. The body exterior paint trim shall be black.
- C. Except for the vertical portion of the front and rear roof caps, the roof of the bus may be painted white.
- D. MFSABs shall be exempt from these color requirements.

COMMUNICATIONS SYSTEMS

- A. All buses manufactured after January 1, 1995, shall have a two-way voice communications system.

CONSTRUCTION

- A. **Side Intrusion Test:** The bus body shall be constructed to withstand an intrusion force equal to the curb weight of the vehicle or 20,000 pounds, whichever is less. Each vehicle shall be capable of meeting this requirement when tested in accordance with the procedures set forth below. The complete body structure, or a representative seven-body section mock up with seats installed, shall be load-tested at a location 24±2 inches above the floor line, with a maximum 10-inch diameter cylinder, 48 inches long, mounted in a horizontal plane.

The cylinder shall be placed as close as practical to the mid-point of the tested structure, spanning two internal vertical structural members. The cylinder shall be statically loaded to the required force of curb weight or 20,000 pounds, whichever is less, in a horizontal plane with the load applied from the exterior toward the interior of the test structure. When the minimum load has been applied, the penetration of the loading cylinder into the passenger compartment shall not exceed a maximum of 10 inches from its original point of contact. There can be no separation of lapped panels or construction joints. Punctures, tears or breaks in the external panels are acceptable but are not permitted on any adjacent interior panel. Body companies shall certify compliance with this intrusion requirement, including test results, as requested.

- B. Construction shall be reasonably dust-proof and watertight.

CROSSING CONTROL ARM

- A. Buses may be equipped with a crossing control arm mounted on the right side of the front bumper. When opened, this arm shall extend in a line parallel to the body side and positioned and aligned with the right front wheel.
- B. All components of the crossing control arm and all connections shall be weatherproofed.

- C. The crossing control arm shall incorporate system connectors (electrical, vacuum, or air) at the gate and shall be easily removable to allow for towing of the bus.
- D. The crossing control arm shall be constructed of non-corrodible or nonferrous material, or treated in accordance with the body sheet metal specification (see METAL TREATMENT).
- E. There shall be no sharp edges or projections that could cause injury or be a hazard to students. The end of the arm shall be rounded.
- F. The crossing control arm shall extend a minimum of 70 inches (measured from the bumper at the arm assembly attachment point) when in the extended position. The crossing control arm shall not extend past the end of the bumper when in the stowed position.
- G. The crossing control arm shall extend simultaneously with the stop signal arm(s), activated by stop are signal arm signal controls.
- H. An automatic recycling interrupt switch may be installed for temporary disabling the crossing control arm.
- I. The assembly shall include a device attached to the bumper near the end of the arm to automatically retain the arm while in the stowed position. That device shall not interfere with normal operations of the crossing control arm.

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. (**Exception:** The requirements of this standard do not apply to the exterior surfaces of double pane storm windows.)
- B. The defrosting system shall conform to SAE J381, *Windshield Defrosting Systems Test Procedure and Performance Requirements—Trucks, Buses, and Multipurpose Vehicles*.
- C. The defroster and defogging system shall be capable of furnishing heated, outside ambient air, except that the part of the system furnishing additional air to the windshield, entrance door and stepwell may be the recirculating air type.
- D. Auxiliary fans are not considered defrosting or defogging systems.
- E. Portable Heaters shall not be used.

DOORS

- A. The entrance door shall be under the driver's control, designed to afford easy release and to provide a positive latching device on manual operating doors to prevent accidental opening. When a hand lever is used, no part shall come together that will shear or crush fingers. Manual door controls shall not require more than 25 pounds of force to operate at any point throughout the range of operation, as tested on a 10% grade, both uphill and downhill.
- B. The entrance door shall be located on the right side of the bus, opposite and within direct view of the driver.
- C. The entrance door shall have a minimum horizontal opening of 24 inches and a minimum vertical opening of 68 inches.
- D. Service door shall be a split-type door and shall open outward.
- E. All entrance door glass 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 each upper glass panel when viewed from the interior shall not be more than 3 inches below the interior door control cover or header pad.
- F. Vertical closing edges on entrance doors shall be equipped with flexible material.
- G. All door openings shall be equipped with padding at the top edge of the opening. Padding shall be at least 3 inches wide and 1 inch thick and extend the full width of the door opening.
- H. On power-operated entrance doors, the emergency release valve, switch or device to release the entrance door must be placed above or to the immediate left or immediate right of the entrance door and must be clearly labeled.

EMERGENCY EXITS

- A. Any installed emergency exit shall comply with the design and performance requirements of FMVSS No. 217, *Bus Emergency Exits and Window Retention and Release*, applicable to that type of exit, regardless of whether or not that exit is required by FMVSS No. 217.
- B. Emergency Window requirements
 - 1. The rear emergency window shall have a lifting assistance device that will aid in lifting and holding the rear emergency window open.

2. Side emergency exit windows, when installed, may be vertically hinged on the forward side of the window. No side emergency exit window will be located above a stop arm.

C. Emergency door requirements

1. The upper portion of the emergency door shall be equipped with approved safety glazing, the exposed area of which shall be at least 400 square inches. The lower portion of the rear emergency door on Types A-2, B, C, and D vehicles shall be equipped with a minimum of 350 square inches of approved safety glazing.
2. There shall be no steps leading to an emergency door except on Types C and D all-wheel drive buses.
3. Padding shall be affixed to the top edge of each emergency door opening. Padding shall be at least 3 inches wide and 1 inch thick and shall extend the full width of the door opening.
4. There shall be no obstruction higher than 1/4 inch across the bottom of any emergency door opening.

D. Emergency exit requirements: The use of the following tables is to determine the REQUIRED number and types of emergency exits to comply with this specification, based on the bus manufacturer's equipped seating capacity.

1. Use **Table 1** if the bus contains a Rear Emergency Door, or
2. Use **Table 2** if the bus contains a Rear Pushout Emergency Window AND a Left Side Emergency Door, as required by FMVSS No.217 for school buses without a Rear Emergency Door.
3. When using Table 1 or Table 2:
 - a. Enter the Table at the appropriate "CAPACITY" and select the desired row from the options for that capacity.
 - b. A school bus will meet the requirements of this specification and the requirements of FMVSS 217 if it contains the types and quantities of emergency exits listed on the row selected.

TABLE 1
BUSES WITH REAR EMERGENCY DOOR
(All Front Engine Buses)

Manufacturer Equipped Capacity	Roof Hatch	L. Side Emergency Exit Window	R. Side Emergency Exit Window	L. Side Emergency Door
1-45	1	0	0	0
-----	-----	-----	-----	-----
46-70	2	1	1	0
46-70	2	0	0	1
-----	-----	-----	-----	-----
71-85	2	2	2	0
71-85	2	0	0	1
-----	-----	-----	-----	-----
86-93	2	2	2	0
86-83	2	1	1	1

TABLE 2
BUSES WITH REAR PUSHOUT WINDOW
AND LEFT SIDE EMERGENCY DOOR
(All Rear Engine Buses)

Manufacturer Equipped Capacity	Roof Hatch	L. Side Emergency Exit Window	R. Side Emergency Exit Window	L. Side Emergency Door
1-45	1	0	0	0
-----	-----	-----	-----	-----
46-82	2	1	1	0
46-82	2	0	0	1
-----	-----	-----	-----	-----
83-89	2	2	2	0
83-89	2	0	0	1
-----	-----	-----	-----	-----
90-105	2	2	2	0
90-105	2	1	1	1

EMERGENCY EQUIPMENT

A. Fire Extinguisher

1. The bus shall be equipped with at least one UL-approved pressurized, dry chemical fire extinguisher. The extinguisher shall be mounted (and secured) 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 and shall be easily read without moving the extinguisher from its mounted position.

2. The fire extinguisher shall have a rating of 2-A:10-BC or greater. The operating mechanism shall be secured with a seal that will not interfere with the use of the fire extinguisher.

B. First-Aid Kit

1. The bus shall have a removable, moisture-proof and dust-proof first aid kit in an accessible place in the driver's compartment. It shall be mounted and identified as a first aid kit. The location for the first aid kit shall be marked.
2. Contents include:
 - 2 - 1 inch x 2 1/2 yards of adhesive tape rolls
 - 24 - sterile gauze pads 3 inches x 3 inches
 - 100 - 3/4 inch x 3 inches adhesive bandages
 - 8 - 2 inch bandage compress
 - 10 - 3 inch bandage compress
 - 2 - 2 inch x 6 feet sterile gauze roller bandages
 - 2 - non-sterile triangular bandages minimum 39 inches x 35 inches x 54 inches with 2 safety pins
 - 3 - sterile gauze pads 36 inches x 36 inches
 - 3 - sterile eye pads
 - 1 - rounded-end scissors
 - 1 - pair medical examination gloves
 - 1 - mouth-to-mouth airway

C. Body Fluid Clean-up Kit

1. Each bus shall have a removable and moisture-proof body fluid clean-up kit accessible to the driver. It shall be properly mounted and identified as a body fluid clean-up kit.

D. Warning Devices

1. Each school bus shall contain at least three reflectorized triangle road warning devices mounted in an accessible place that meet requirements in FMVSS No.125, *Warning Devices*. They shall be mounted in an accessible place

- E. Any piece of emergency equipment may be mounted in an enclosed compartment, provided the compartment is labeled in not less than one-inch letters, identifying each piece of equipment contained therein.

FIRE SUPPRESSION SYSTEMS (OPTIONAL)

- A. Fire suppression system nozzles shall be located in the engine compartment, under the bus, in the electrical panel or under the dash, but they shall not be located in the passenger compartment. The system must include a lamp or buzzer to alert the driver that the system has been activated.

FLOORS

- A. The floor in the under-seat area, including tops of wheelhousings, driver's compartment and toeboard, shall be covered with an elastomer floor covering, having a minimum overall thickness of .125 inch and a calculated burn rate of 0.1 or less, using the test method procedures listed in FMVSS 302, *Flammability of Interior Materials*. The driver's area and toeboard area in all Type A buses may be manufacturer's standard flooring and floor covering.
- B. The floor covering in the aisles shall be ribbed or other raised pattern elastomer and having a calculated burn rate of 0.1 or less using the test methods, procedures and formulas listed in FMVSS 302. Minimum overall thickness shall be 3/16 inch measured from tops of ribs.
- C. The floor covering must be permanently bonded to the floor and must not crack when subjected to sudden changes in temperature. Bonding or adhesive material shall be waterproof and shall be a type recommended by the manufacturer of floor-covering material. All seams must be sealed with waterproof sealer.
- D. On Types B, C and D buses, a flush-mounted, screw-down plate that is secured and sealed shall be provided to access the fuel tank sending unit and/or fuel pump. This plate shall not be installed under flooring material.

HANDRAILS

- A. At least one handrail shall be installed. The handrail(s) shall assist passengers during entry or exit, and be designed to prevent entanglement, as evidenced by the passage of the NHTSA string and nut test.

HEATING AND AIR CONDITIONING SYSTEMS

- A. Heating System
 - 1. The heater shall be hot water and/or combustion type.
 - 2. If only one heater is used, it shall be fresh-air or combination fresh-air and recirculation type.
 - 3. If more than one heater is used, additional heaters may be re-circulating air type.

4. The heating system shall be capable of maintaining bus interior temperatures as specified in SAE test procedure J2233.
5. Auxiliary fuel-fired heating systems are permitted, provided they comply with the following:
 - a. The auxiliary heating system fuel shall utilize the same type fuel as specified for the vehicle engine;
 - b. The heater(s) may be direct, hot air-type or may be connected to the engine's coolant system;
 - c. An auxiliary heating system, when connected to the engine's coolant system, may be used to preheat the engine coolant or preheat and add supplementary heat to the heating system;
 - d. Auxiliary heating systems must be installed pursuant to the manufacturer's recommendations and shall not direct exhaust in such a manner that will endanger bus passengers;
 - e. All combustion heaters shall be in compliance with current Federal Motor Carrier Safety Regulations.
 - f. The auxiliary heating system shall require low voltage; and
 - g. Auxiliary heating systems shall comply with FMVSS No. 301, *Fuel System Integrity*, and all other applicable FMVSSs as well as with SAE test procedures.
6. All forced-air heaters installed by body manufacturers shall bear a nameplate that indicates the heater rating in accordance with SBMTC-001, *Standard Code for Testing and Rating Automotive Bus Hot Water Heating and Ventilating Equipment*. The plate shall be affixed by the heater manufacturer and shall constitute certification that the heater performance is as shown on the plate.
7. 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 any sharp edges and shall not interfere with or restrict the operation of any engine function. Heater hoses shall conform to SAE J20c, *Coolant System Hoses*. Heater lines on the interior of bus shall be shielded to prevent scalding of the driver or passengers.
8. Each hot water system installed by a 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 the engine in an accessible location, except that on all Types A and B buses, the valves may be installed in another accessible location.

9. Each hot water heating system shall be equipped with a device installed in the hot water pressure line that regulates the water flow to all heaters. The device shall be located for convenient operation by the driver while seated.
10. Accessible bleeder valves for removing air from the heater shall be installed in an appropriate place in the return lines of body company-installed heater.
11. Access panels shall be provided to make heater motors, cores and fans readily accessible for service. An exterior access panel to the driver's heater may be provided.

B. Air Conditioning (Optional)

The following specifications are applicable to all types of school buses that may be equipped with air conditioning. This section is divided into two parts. Part 1 covers performance specifications and Part 2 covers other requirements applicable to all buses.

1. Performance Specifications

- a. The installed air conditioning system should cool the interior of the bus down from 100 degrees to 80 degrees Fahrenheit, measured at three points (minimum) located four feet above the floor on the longitudinal centerline of the bus. The three points shall be: (1) near the driver's location, (2) at the longitudinal mid point of the body, and (3) two feet forward of the emergency door, or, for Type D rear-engine buses, two feet forward of the end of the aisle.
- b. The test conditions under which the above performance must be achieved shall consist of (1) placing the bus in a room (such as a paint booth) where ambient temperature can be maintained at 100 degrees Fahrenheit; (2) heat soaking the bus at 100 degrees Fahrenheit with windows open for at least one hour; and (3) closing windows, turning on the air conditioner with the engine running at the chassis manufacturer's recommended low idle speed, and cooling the interior of the bus to 80 degrees Fahrenheit, or lower, within a 30 minutes while maintaining 100 degrees Fahrenheit outside temperature.

- c. Alternately, and at the user's discretion, this test may be performed under actual summer conditions, which consist of temperatures above 85 degrees Fahrenheit, humidity above 50% with normal sun loading of the bus and the engine running at the engine manufacturer's recommended low idle speed. After a minimum of one hour of heat soaking, the system shall be turned on and must provide a minimum 20 degree temperature drop in the 30-minute time limit.
 - d. The manufacturer shall provide facilities for the user or user's representative to confirm that a pilot model of each bus design meets the above performance requirements.
2. Other Requirements
- a. Evaporator cases, lines and ducting (as equipped) shall be designed in such a manner that all condensation is effectively drained to the exterior of the bus below the floor level under all conditions of vehicle movement and without leakage on any interior portion of bus:
 - b. Evaporators and ducting system shall be designed and installed to be free of injury-prone projections or sharp edges. Ductwork shall be installed so that exposed edges face the front of the bus and do not present sharp edges.
 - c. On school buses equipped with Type-2 seatbelts having anchorages above the windows, the evaporator and ducting (if used) shall be placed at a height sufficient to not obstruct occupant securement anchorages. This clearance shall be provided along entire length of the passenger area on both sides of the bus interior.
 - d. The body may be equipped with insulation, including sidewalls, roof, firewall, rear, inside body bows and plywood or composite floor insulation to reduce thermal transfer;
 - e. All glass (windshield, service and emergency doors, side and rear windows) may be equipped with maximum integral tinting allowed by federal, state or ANSI standards for the respective locations, except that windows rear of the driver's compartment, if tinted, shall have approximately 28 percent light transmission.
 - f. Electrical generating capacity shall be provided to accommodate the additional electrical demands imposed by the air conditioning system.

- g. Roofs may be painted white to aid in heat dissipation (See Appendix B); and
- h. Air intake for any evaporator assembly(ies), except for front evaporator of Type A-1, shall be equipped with a replaceable air filter(s) accessible without disassembly of evaporator case.

HINGES

- A. All exterior metal door hinges shall be designed to allow lubrication to be channeled to the center 75% of each hinge loop without disassembly, unless they are constructed of stainless steel, brass or non-metallic hinge pins or other designs that prevent corrosion.

IDENTIFICATION

- A. The body shall bear the words "SCHOOL BUS" in black letters at least 8 inches high on both front and rear of the body or on signs attached thereto. Lettering shall be placed as high as possible without impairment of its visibility. Letters shall conform to "Series B" of Standard Alphabets for Highway Signs. "SCHOOL BUS" lettering shall have a reflective background, or as an option, may be illuminated by backlighting. MFSABs are exempt from these requirements.
- B. Required lettering and numbering shall include:
 - 1. District, district serviced, company name or owner of the bus in the beltline.
 - 2. The bus identification number displayed on the sides on the rear and on the front.
- C. Other lettering, numbering or symbols which may be displayed on the exterior of the bus shall be limited to:
 - 1. Bus identification number on the top of the bus, in addition to required numbering on the sides, rear and front;
 - 2. The location of the battery(ies) identified by the word "BATTERY" or "BATTERIES" on the battery compartment door in 2 inch lettering;
 - 3. Symbols or letters not to exceed 64 square inches of total display near the entrance door, displaying information for identification by the students of the bus or route served;
 - 4. Manufacturer's, dealer nameplate or logo;

5. Symbols identifying the bus as equipped for or transporting students with special needs as noted in SPECIALLY EQUIPPED SCHOOL BUS SPECIFICATIONS;
 6. Lettering on the rear of the bus relating to school bus flashing signal lamps or railroad stop procedures;
 7. Identification of fuel type in two-inch lettering adjacent to the fuel filter opening; and
 8. Effective December 31, 1994, all buses sold must display lettering "UNLAWFUL TO PASS WHEN RED LIGHTS ARE FLASHING" on the rear of the bus. The lettering shall be in two-inch black letters on school bus yellow background. The message shall be displayed directly below the upper window of the rear door. On rear engine buses, it shall be centered at approximately the same location.
- D. Only signs and lettering approved or required by state law may be displayed.

INSIDE HEIGHT

- A. Inside body height shall be 72 inches or more, measured metal to metal, at any point on the longitudinal center line from the front vertical bow to the rear vertical bow. Inside body height of Type A-1 buses shall be 62 inches or more.

INSULATION

- A. Thermal insulation is required. It shall be fire-resistant, UL approved, with minimum R-value of 5.5. Insulation shall be installed so as to prevent sagging
- B. Floor insulation is required. It shall be five-ply nominal five-eighths inch thick plywood, and shall equal or exceed properties of the exterior-type softwood plywood, C-D grade, as specified in the standard issued by United States Department of Commerce. All exposed edges on plywood shall be sealed. Type A-1 buses shall be equipped with nominal one-half inch-thick plywood or equivalent material meeting the above requirements. Equivalent material may be used to replace plywood, provided it has an equal or greater insulation R value, sound abatement, deterioration-resistant and moisture resistance properties.
- C. The underside of metal floor may be undercoated with polyurethane floor insulation, foamed in place. The floor insulation must be combustion resistant. The authorization in this paragraph does not replace the plywood requirement.

INTERIOR

- A. The interior of bus shall be free of all unnecessary projections, which include luggage racks and attendant handrails, to minimize the potential for injury. This specification requires inner lining on ceilings and walls. If the ceiling is constructed to contain lapped joints, the forward panel shall be lapped by rear panel and exposed edges shall be beaded, hemmed, flanged or otherwise treated to minimize sharp edges. Buses may be equipped with a storage compartment for tools, tire chains and/or tow chains. (see STORAGE COMPARTMENT.)
- B. Interior overhead storage compartments may be provided if they meet the following criteria:
1. Meet head protection requirements of FMVSS No. 222, *School Bus Passenger Seating and Crash Protection*, where applicable;
 2. Be completely enclosed and equipped with latching door, (both door and latch sufficient to withstand a pushing force of 50 pounds applied at the inside center of the door);
 3. Have all corners and edges rounded with a minimum radius of 1 inch or padded equivalent to door header padding;
 4. Be attached to the bus sufficiently to withstand a force equal to 20 times the maximum rated capacity of the compartment; and
 5. Have no intrusions greater than $\frac{1}{4}$ inch.
- C. The driver's area forward of the foremost padded barriers will permit the mounting of required safety equipment and vehicle operation equipment.
- D. Every school bus shall be constructed so that the noise level at the ear of the occupant nearest to the primary vehicle noise source shall not exceed 85 dbA when tested according to the procedures in the 2005 National School Transportation Specifications & Procedures, Appendix B.

LAMPS AND SIGNALS

- A. Interior lamps which illuminate the aisle and the stepwell shall be provided. The stepwell light shall be illuminated by an entrance door-operated switch, to illuminate only when headlights and clearance lights are on and the entrance door is open.

- B. Body Instrument panel lights may be controlled by an independent rheostat switch or may be controlled by the rheostat that operates the gauge lighting.
- C. School bus alternately flashing signal lamps shall be provided. MFSABs are exempt from this requirement.
1. The bus shall be equipped with 2 red lamps at the rear of the vehicle and 2 red lamps at the front of the vehicle.
 2. In addition to the 4 red lamps described above, 4 amber lamps shall be installed so that 1 amber lamp is located near each red signal lamp, at the same level, but closer to the vertical centerline of bus. The system of red and amber signal lamps shall be wired so that amber lamps are energized manually. The red lamps are automatically energized and amber lamps are automatically de-energized when stop signal arms are extended or when the bus entrance door is opened. An amber pilot light and a red pilot light shall be installed adjacent to the driver controls for the flashing signal lamp to indicate to the driver which lamp system is activated.
 3. The area around the lenses of alternately flashing signal lamps extending outward from the edge of the lamp three inches (+/-1/4 inch) to the sides and top and minimum one inch to the bottom, shall be black in color on the body or roof area against which the signal lamp is seen (from distance of 500 feet along axis of the vehicle). Visors or hoods, black in color, with a minimum depth of four inches may be provided.
 4. Red lamps shall flash at any time the stop signal arm is extended.
 5. All flashers for alternating flashing red and amber signal lamps shall be enclosed in the body in a readily accessible location.
- D. Turn signal and stop/tail lamps
1. The bus body shall be equipped with amber rear turn signal lamps that are at least 7 inches in diameter or, if a shape other than round, a minimum 38 square inches of illuminated area and shall meet FMVSS No. 108, *Lamps, Reflective Devices, and Associated Equipment*. These signal lamps must be connected to the chassis hazard warning switch to cause simultaneous flashing of turn signal lamps when needed as a vehicular traffic hazard warning. Turn signal lamps are to be placed as wide apart as practical and their horizontal centerline shall be a maximum of 12 inches below the rear window. Type A-1 conversion vehicle lamps must be at least 21 square inches in lens area

2. Buses shall be equipped with amber side-mounted turn signal lights. The turn signal lamp on the left side shall be mounted rearward of the stop signal arm and the turn signal lamp on the right side shall be mounted rearward of the entrance door.
3. Buses shall be equipped with 4 combination red stop/tail lamps:
 - a. Two combination lamps with a minimum diameter of 7 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 signal lamps.
 - b. Two combination lamps with a minimum diameter of 4 inches, or if a shape other than round, a minimum of 12 square inches of illuminated area, shall be placed on the rear of the body between the beltline and the floor line. The rear license plate lamp may be combined with 1 lower tail lamp. Stop lamps shall be activated by the service brakes and shall emit a steady light when illuminated. Type A-1 buses with bodies supplied by chassis manufacturer may be equipped with manufacturer's standard stop and tail lamps.
- E. On buses equipped with a monitor for the front and rear lamps of the school bus, 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 against any short circuit or intermittent shorts by a fuse circuit breaker, or electronic protection device.
- F. An optional white flashing strobe lamp may be installed. The white flashing strobe shall be of a double flash type. No roof hatch can be mounted behind the strobe light. A manual switch and a pilot lamp shall included to indicate when the lamp is in operation. The lamp must be permanently mounted on the longitudinal center line of the bus roof not less than two feet nor more than seven feet forward of the rear roof edge.
- G. The bus body shall be equipped with 2 white rear backup lamp signals that are at least 4 inches in diameter or, if a shape other than round, a minimum of 12 square inches of illuminated area and shall meet FMVSS No 108. If backup lamps are placed on the same horizontal line as the brake lamps and turn signal lamps, they shall be to the inside.
- H. Types A-1, A-2, B, C, or D school bus manufactured for use in Minnesota after December 31, 1994, may not be equipped with red rear turn signals on the rear of the bus.

METAL TREATMENT

- A. All metal except high grade stainless steel or aluminum used in construction of the bus body shall be zinc-coated or aluminum-coated or treated to prevent corrosion. This includes but is not limited to 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, in addition to the above requirements, shall be chemically cleaned, etched, zinc phosphate-coated and zinc chromate-or epoxy-primed to improve paint adhesion.
- C. In providing for these requirements, 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 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 a 1,000-hour salt spray test as provided for in the latest revision of ASTM Standard B-117.

MIRRORS

- A. The interior glass mirror shall be either laminated or tempered and shall have rounded corners and protected edges. Mirrors shall be 6 x 16 inches minimum for Type A buses and shall be 6 x 30 inches minimum for Types B, C and D buses.
- B. Each school bus shall be equipped with exterior mirrors meeting the requirements of FMVSS 111, *Rearview Mirrors*. The right side rear view mirror shall not be obscured by the unwiped portion of the windshield. Mirrors shall be easily adjustable but shall be rigidly braced, so as to reduce vibration.
- C. Heated external mirrors may be used.
- D. Remote controlled external mirrors may be used.

MOUNTING

- A. The rear body cross member shall be supported by the chassis frame. Except where chassis components interfere, the bus body shall be attached to chassis frame at each main floor sill in such a manner as to prevent shifting or separation

of the body from the chassis under severe operating conditions.

- B. Isolators shall be installed at all contact points between the body and the chassis frame on Types A-2, B, C, and D buses, and shall be secured by a positive means to the chassis frame or body to prevent shifting, separation, or displacement of the isolators under severe operating conditions.

OVERALL LENGTH

- A. Overall length of the bus shall not exceed 45 feet, excluding accessories.

OVERALL WIDTH

- A. Overall width of bus shall not exceed 102 inches, excluding accessories.

PUBLIC ADDRESS SYSTEM

- A. Buses may be equipped with an AM/FM/audio and/or public address system having interior and exterior speakers.
- B. No internal speakers, other than the driver's communication systems, may be installed within 4 feet of the driver's seat back in its rearmost upright position.

REFLECTIVE MATERIAL

(See also APPENDICES A and B, Reflective Sheeting, 2005 National School Transportation Specifications & Procedures)

- A. The front and/or rear bumper may be marked diagonally 45 degrees down toward the centerline of the pavement with $2\pm\frac{1}{4}$ inch wide strips of non-contrasting retroreflective material.
- B. The rear of the bus body shall be marked with strips of reflective NSBY material to outline the perimeter of the back of the bus using material which conforms with the requirements of FMVSS No. 131, *School Bus Pedestrian Safety Devices*, Table 1. The perimeter marking of rear emergency exits per FMVSS No. 217, *Bus Emergency Exits and Window Retention and Release*, and/or the use of retroreflective "SCHOOL BUS" signs partially accomplishes the objective of this requirement. To complete the perimeter marking of the back of the bus, strips of at least $1\frac{3}{4}$ -inch-reflective NSBY material shall be applied horizontally above the rear windows and above the rear bumper, extending from the rear emergency exit perimeter, marking outward to the left and right rear corners of the bus. Vertical strips shall be applied at the corners connecting these horizontal strips.

- C. "SCHOOL BUS" signs, if not of lighted design, shall be marked with reflective NSBY material comprising background for lettering of the front and/or rear "SCHOOL BUS" signs.
- D. Sides of bus body shall be marked with at least 1¼ inch reflective NSBY material, extending the length of the bus body and located (vertically) between the floor line and the beltline.

RUB RAILS

- A. There shall be 1 rub rail on each side of the bus located at, or no more than 8 inches above, the seat cushion level. They shall extend from the rear side of the entrance door completely around the bus body (except at the emergency door or any maintenance access door) to the point of curvature near the outside cowl on the left side.
- B. There shall be 1 additional rub rail located on each side locate 10 inches or less above the floor line. The rub rail shall cover the same longitudinal span as the upper rub rail, except at the wheelhousing, and it shall extend only to the longitudinal tangent of the right and left rear corners.
- C. Rub rails above the floor line shall be attached at each body post and at all other upright structural members.
- D. Each rub rail shall be 4 inches or more in width in its finished form and shall be constructed of 16-gauge steel or other material of equivalent strength suitable to help protect body side panels from damage. Rub rails 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 this requirement.) For Type A-1 vehicles using the body provided by the chassis manufacturer or for Types A-2, B, C and D buses using the rear luggage or the rear engine compartment, rub rails need not extend around the rear corners.
- F. There shall be one rub rail at the base of the skirt on all Type A, excluding van conversions, B,C, and D buses.

SEAT AND RESTRAINING BARRIERS

- A. Passenger Seating
 - 1. School bus design capacities shall be in accordance with 49 CFR, Part 571.3 Definitions, and FMVSS No. 222, *School Bus Passenger Seating and Crash Protection*.
 - 2. All seats shall have a minimum cushion depth of 15 inches, a seat back height of at least 20 inches above the seating reference point and beginning October 21,

2009 must also conform to the Federla Motor Vehicle Safety Standard in Code of Federal Regulations, title 49, section 571.222. In addition to the fastener that forms the pivot for each seat retaining clip, a secondary fastener may be used in each clip to prevent the clip from rotating and releasing the seat cushion unintentionally.

3. All restraining barriers and passenger seats shall be covered with a material that has fire retardant or fire block characteristics.
4. Each seat leg shall be secured to the floor by a minimum of 2 bolts, washers and nuts. Flange-head nuts may be used in lieu of nuts and washers, or seats may be track-mounted in conformance with FMVSS No. 222. If track seating is installed, the manufacturer shall supply minimum and maximum seat spacing dimensions applicable to the bus, which comply with FMVSS No. 222. This information shall be on a label permanently affixed to the bus.
5. All seat frames attached to the seat rail shall be fastened with 2 or more bolts, washers and nuts, or with flange-head nuts.
6. All school buses (including Type A) shall be equipped with restraining barriers which conform to FMVSS No. 222.
7. A flip-up seat may be installed at any side emergency door. If provided the flip-up seat shall conform with FMVSS No. 222 and aisle clearance requirements of FMVSS 217, *Bus Emergency Exits and Window Retention and Release*. The flip-up seat shall be free of sharp projections on the underside of the seat bottom. The underside of the flip-up seat bottoms shall be padded or contoured to reduce the possibility of clothing being snagged. Flip-up seats shall be constructed to prevent passenger limbs from becoming entrapped between the seat back and the seat cushion when the seat is in the upright position. The seat cushion shall be designed to rise to a vertical position automatically when it is not occupied.
8. A school bus (over 10,000 pounds GVWR) may be equipped with an approved lap belt or an approved lap and shoulder belt for each passenger-seating position. Lap belts used in conjunction with child safety restraint systems shall comply with the requirements of FMVSS No 213, *Child Restraint Systems*.

B. Pre-School Age Seating

1. Passenger seats designed to accommodate a child or infant carrier seat shall comply with FMVSS No. 225, *Child Restraint Anchorage Systems*. These seats shall be in compliance with NHSTA's "Guideline for the Safe Transportation of Pre-School Age Children in School Buses." (Note See A.8, above)

C. Driver Seat

1. The driver's seat supplied by the body manufacturer shall be a high back seat. The seat back shall be adjustable to 15 degrees minimum, without requiring the use of tools. The seat shall be equipped with a head restraint to accommodate a 5th percentile female to a 95th percentile adult male, as defined in FMVSS No. 208, *Occupant Crash Protection*.
2. Type A buses may utilize the standard driver's seat provided by the chassis manufacturer.

D. Driver Restraint System

1. A type 2 lap/shoulder belt shall be provided for the driver. On buses where the driver's seat and upper anchorage for the shoulder and lap belt are both attached to the body structure, a driver's seat with an integrated Type 2 lap/shoulder belt may be substituted. On buses where the driver's seat and upper anchorage for the shoulder belt are separately attached to both body and chassis structures (i.e., one attached to the chassis and the other attached to the body), a driver's seat with an integrated Type 2 lap/shoulder belt should be used.

The assembly shall be equipped with an automatic locking retractor for the continuous belt system. On all buses except Type A that are equipped with standard chassis manufacturer's driver's seat, the lap portion of the belt shall be guided or anchored to prevent the driver from sliding sideways under the belt system. The lap/shoulder belt shall be designed to allow for easy adjustment in order to fit properly and to effectively protect drivers varying in size from 5th percentile adult female to 95th percentile adult male.

E. Belt Cutter

1. Each bus shall be equipped with a durable webbing cutter having a full width handgrip and a protected, replaceable or non-corrodible blade. The required belt cutter shall be mounted in a location accessible to the seated driver in an easily detachable manner.

SIDE SKIRTS

- A. School bus body side skirts between the front and rear axles shall extend down to within 2 inches plus or minus, of the horizontal line from the center line of the front spindle to the center of the rear axle. The manufacturer may offer optional side skirt lengths that extend lower than this requirement. This measurement shall apply to a new unloaded school bus located on a flat level surface.

STEERING WHEEL

(See BUS CHASSIS SPECIFICATIONS, Steering Gear)

STEPS

- A. The first step at service door shall be not less than 10 inches and not more than 14 inches from the ground when measured from the top surface of the step to the ground, based on standard chassis specifications, except that on Type D vehicles, the first step at the service door shall be 12 inches to 16 inches from the ground. On chassis modifications which may result in increased ground clearance (such as four-wheel drive) an auxiliary step may be provided to compensate for the increase in ground-to-first-step clearance. The auxiliary step is not required to be enclosed.
- B. Step risers shall not exceed a height of 10 inches.
Exception: When plywood is used on a steel floor or step, the riser height may be increased by the thickness of the plywood.
- C. Steps shall be enclosed to prevent accumulation of ice and snow.
- D. Steps shall not protrude beyond the side body line.

STEP TREADS

- A. All steps, including the floor line platform area, shall be covered with an elastomer floor covering having a minimum overall thickness of 0.187 inch.
- B. The step covering shall be permanently bonded to a durable backing material that is resistant to corrosion.
- C. Steps, including the floor line platform area, shall have a 1½-inch nosing that contrasts in color by at least 70% measured in accordance with the contrasting color specification in 36 CFR, Part 1192 ADA, *Accessibility Guidelines for Transportation Vehicles*.
- D. Step treads shall have the following characteristics:

1. Abrasion resistance: Step tread material weight loss shall not exceed 0.40 percent, as tested under ASTM D-4060, *Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser*, (CS-17 Wheel, 1000 gram, 1000 cycle);
2. Weathering resistance: Step treads shall not break, crack, or check after ozone exposure (7 days at 50 phm at 40 degrees C) and Weatherometer exposure (ASTM D-750, *Standard Test Method for Rubber Deterioration in Carbon-Arc Weathering Apparatus*, 7 days); and
3. Flame resistance: Step treads shall have a calculated burn rate of .01 or less using the test methods, procedures and formulas listed in FMVSS No. 302, *Flammability of Interior Materials*.

STIRRUP STEPS

- A. If the windshield and lamps are not easily accessible from the ground, there may be at least 1 folding stirrup step or recessed foothold installed on each side of the front of the body for easy accessibility for cleaning. There also may be a grab handle installed in conjunction with the step. Steps are permitted in or on the front bumper in lieu of the stirrup steps if the windshield and lamps are easily accessible for cleaning from that position.

STOP SIGNAL ARM

- A. The stop signal arm(s) shall comply with the requirements of FMVSS No. 131, *School Bus Pedestrian Safety Devices*. MFSABs are exempt from these requirements.

STORAGE COMPARTMENT (OPTIONAL)

- A. A storage container for tools, tire chains, and/or other equipment may be located either inside or outside the passenger compartment. If inside, it shall be fastened to the floor, and have a cover with a positive fastening device.

SUN SHIELD

- A. For Types B, C and D vehicles, an interior adjustable transparent sun shield, with a finished edge and dimensions not less than 6 X 30 inches shall be installed in a position convenient for use by the driver.
- B. On Type A buses, the sun shield (visor) shall be installed by the chassis manufacturer.

TAILPIPE

- A. The tailpipe may be flush with, or shall not extend out more than 2 inches beyond, the perimeter of the body for side-

exit pipe or the bumper for rear-exit pipe.

- B. The tailpipe must exit either in the rear of the vehicle or to the left side of the bus in front or behind the rear drive axle. The tailpipe exit location on all Types A-1 or B-1 buses may be in accordance to the manufacturer's standards. The tailpipe shall not exit beneath any fuel filler location or beneath any emergency door.

TOWING ATTACHMENT POINTS

- A. Rear towing devices (i.e. tow hooks, tow eyes, or other designated towing attachment points) shall be furnished to assist in the retrieval of buses that are stuck and/or for towing buses when a wrecker with a "wheel lift" or an "axle lift" is not available or cannot be applied to the towed vehicle.
 - 1. Towing devices shall be attached to the chassis frame either by the chassis manufacturer or in accordance with the chassis manufacturer's specifications.
 - 2. Each rear towing device shall have a strength rating of 13,500 pounds with the force applied in the rearward direction, parallel to the ground, and parallel to the longitudinal axis of the chassis frame rail.
 - 3. The towing devices shall be mounted such that they do not project rearward of the rear bumper.

TRACTION ASSISTING DEVICES (OPTIONAL)

- A. Where required or used, sanders shall:
 - 1. Be hopper cartridge-valve type;
 - 2. Have a metal hopper with all interior surfaces treated to prevent condensation of moisture;
 - 3. Have at least 100-pounds (grit) capacity;
 - 4. Have a cover that screws on the filler opening of hopper, thereby sealing the unit airtight;
 - 5. Have discharge tubes extending under the fender wheelhousing to the front of each rear wheel;
 - 6. Have non-clogging discharge tubes with slush-proof, non-freezing rubber nozzles;
 - 7. Be operated by an electric switch with a pilot lamp mounted on the instrument panel located so as to be exclusively controlled by the driver;

8. Be equipped with a gauge to indicate that the hopper has reached the one-quarter level (and needs to be refilled); and
9. Be designed to prevent freezing of all activation components and moving parts.

B. Automatic traction chains may be installed.

TRASH CONTAINER AND HOLDING DEVICE (Optional)

- A. Where requested or used, the trash container shall be secured by a holding device that is designed to prevent movement and to allow easy removal and replacement. It shall be installed in an accessible location in the driver's compartment, not obstructing passenger access of the entrance door.

UNDERCOATING

- A. The entire underside of bus body, including floor sections, cross member and below-floor-line side panels, shall be coated with rust-proofing material for which the material manufacturer has issued to the bus body manufacturer a notarized certification to the bus body manufacturer that materials meet or exceed all performance and qualitative requirements of paragraph 3.4 of Federal Specification TT-C-520b, *Coating Compound, Bituminous, Solvent Type, Underbody (For Motor Vehicles)*, using modified test procedures* for the following requirements:
 1. Salt spray resistance-test modified to 5% salt and 1000 hours;
 2. Abrasion resistance-pass; and
 3. Fire resistance-pass

*(Test panels are to be prepared in accordance with paragraph 4.6.12 of TT-C-520b with modified procedure requiring that the test be made on a 48-hour air-cured film at a thickness recommended by the material manufacturer).
- B. The undercoating material 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.

VENTILATION

- A. Auxiliary fans shall meet the following requirements:
 1. Fans for left and right sides of the windshield shall be placed in a location where they can be adjusted for maximum effectiveness and where they do not obstruct

vision to any mirror. **Note:** Type A buses may be equipped with one fan.

2. Fans shall have 6-inch (nominal) diameter; and
 3. Fan blades shall be covered with a protective cage. Each fan shall be controlled by a separate switch.
- B. The bus body shall be equipped with a suitably controlled ventilating system with sufficient capacity to maintain the proper quantity of air under operating conditions without having to open a window except in extremely warm weather.
 - C. Static-type, non-closeable exhaust ventilation shall be installed in a low-pressure area of the roof.
 - D. Roof hatches designed to provide ventilation in all types of exterior weather conditions may be provided.

WHEELHOUSING

- A. The wheelhousing opening shall allow for easy tire removal and service.
- B. Wheelhousings shall be attached to the floor panels in a manner to prevent any dust, water or fumes from entering the body. Wheelhousings shall be constructed of at least 16-gauge (or thicker) steel.
- C. The inside height of the wheelhousings above the floor line shall not exceed 12 inches.
- D. The wheelhousings shall provide clearance for installation and use of tire chains on single or dual (if so equipped) power-driving wheels.
- E. No part of a raised wheelhousing shall extend into the emergency door opening.

WINDSHIELDS/WINDOWS

- A. Windshield, entrance, and rear emergency exit doors must be of approved safety glass. Laminated or tempered glass (AS-2 or AS-3) is permitted in all other windows. All glass shall be federally approved and marked as provided in Minnesota Statute 169.74.
- B. The windshield may be of uniform tint throughout or may have a horizontal gradient band starting slightly above the line of vision and gradually decreasing in light transmission to 20 % or less at top of windshield.
- C. The use of approved tinted glass as approved by Minnesota Statutes, section 169.71, is permitted on side windows and rear windows except for the entrance door, the first window

behind the service door, and the window to the left of the driver.

- D. The window to the left of the driver, the upper service door windows, and the window immediately behind the entrance door must be thermal glass. The window to the left of the driver for type A buses need not be thermal glass.
- E. Other than emergency exits designated to comply with FMVSS No. 217, *Bus Emergency Exits and Window Retention and Release*, each side window shall provide an unobstructed opening of at least 9 inches high (but not more than 13 inches) and at least 22 inches wide, obtained by lowering the window. One window on each side of the bus may be less than 22 inches wide.

WINDSHIELD WASHERS

- A. A windshield washer system shall be provided.

WINDSHIELD WIPERS

- A. A two-speed or variable speed windshield wiping system, with an intermittent feature, shall be provided and shall be operated by a single switch.
- B. The wipers shall meet the requirements of FMVSS No. 104, *Windshield Wiping and Washing Systems*.

WIRING

- A. Wiring
 - 1. All wiring shall conform to current SAE standards.
 - 2. All wiring shall have an amperage capacity exceeding the design load by at least 25 percent. All wiring splices are to be done at an accessible location and noted as splices on the wiring diagram.
 - 3. A body wiring diagram, sized to be easily read, shall be furnished with each bus body or affixed in an area convenient to the electrical accessory control panel.
 - 4. The body power wire shall be attached to a special terminal on the chassis.
 - 5. All wires passing through metal openings shall be protected by a grommet.
 - 6. 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, which shall be water-resistant and corrosion-resistant

7. If a master cut off switch is used, it shall not be wired as to kill power to the electric brake system.

B. Circuits:

1. Wiring shall be arranged in circuits, as required, with each circuit protected by a fuse breaker or electronic protection device. A system of color and number-coding shall be used and an appropriate identifying diagram shall be provided to the end user, along with the wiring diagram provided by the chassis manufacturer. The wiring diagrams shall be specific to the bus model supplied and shall include any changes to wiring made by the body manufacturer. Chassis wiring diagrams shall be supplied to the end user. The following body interconnecting circuits shall be color-coded as noted:

<u>FUNCTION</u>	<u>COLOR</u>
Left Rear Directional Lamp	Yellow
Right Rear Directional Lamp	Dark Green
Stop Lamps	Red
Back-up Lamps	Blue
Tail Lamps	Brown
Ground	White
Ignition Feed, Primary Feed	Black

The color of the cables shall correspond to SAE J 1128, *Low-Tension Primary Cable*.

2. Wiring shall be arranged in at least 6 regular circuits, as follows:
- a. Head, tail, stop (brake) and instrument panel lamps;
 - b. Clearance lamps and stepwell lamps that shall be actuated when the entrance door is open;
 - c. Dome Lamps;
 - d. Ignition and emergency door signal;
 - e. Turn signal lamps; and
 - f. Alternately flashing signal lamps.

3. Any of the above combination circuits may be subdivided into additional independent circuits.
 4. Heaters and defrosters shall be wired on an independent circuit.
 5. Whenever possible, all other electrical functions (such as sanders and electric-type windshield wipers) shall be provided with independent and properly protected circuits.
 6. 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. Buses may be equipped with a 12-volt power port in the driver's area.
- D. There shall be a manual noise suppression switch installed in the control panel. The switch shall be labeled and alternately colored. This switch shall be an on/off type that deactivates body equipment that produces noise, including, at least, the AM/FM radio, heaters, air conditioners, fans and defrosters. This system shall not deactivate safety systems, such as windshield wipers or lighting systems.
- E. The entire electrical system of the body shall be designed for the same voltage as the chassis on which the body is mounted.

SPECIFICATIONS FOR SPECIALLY EQUIPPED SCHOOL BUSES

INTRODUCTION

Equipping buses to accommodate students with disabilities is dependent upon the needs of the passengers. While one bus may be fitted with a lift, another may have lap belts installed to secure child seats. Buses so equipped are not to be considered a separate class of school bus, but simply a regular school bus that is equipped for special accommodations.

The specifications in this section are intended to be supplement specifications in the chassis and body sections. In general, specially equipped buses shall meet all the requirements of the preceding sections, plus those listed in this section. It is recognized that the field of special transportation is characterized by varied needs for individual cases and by rapidly emerging technologies for meeting individual student needs. A flexible, "common-sense" approach to the adoption and enforcement of specifications for these vehicles, therefore, is prudent.

As defined by the Code of Federal Regulations (CFR) 49 Part 571.3, "Bus means a motor vehicle with motive power, except a trailer, designed for carrying more than 10 persons" (11 or more including the driver). This definition also embraces the more specific category, *school bus*. Vehicles with 10 or fewer passenger positions (including the driver) cannot be classified as buses. For this reason, the federal vehicle classification *multipurpose passenger vehicle* (CFR 49 Part 571.3), or MPV, must be used by manufacturers for these vehicles in lieu of the classification *school bus*. The definition of *designated seating position* in 49 CFR 571.3 states that, in the case of "vehicles sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events" and which are "intended for securement of an occupied wheelchair during vehicle operations," each wheelchair securement position shall be counted as four designated seating positions when determining the classification (whether *school bus* or MPV). This classification system does not preclude state or local agencies or these national specifications from requiring compliance of school bus-type MPVs with the more stringent federal standards for school buses. The following specifications address modifications as they pertain to school buses that, with standard seating arrangements prior to modification, would accommodate eleven or more including the driver. If by addition of a power lift, mobile seating device positions or other modifications, the capacity is reduced such that vehicles become MPVs, the intent of these specifications is to require these vehicles to meet the same specifications they would have had to meet prior to such modifications, and such MPVs are included in all references to school buses and requirements for school buses which follow.

DEFINITION

- A. A specially equipped school bus is any school bus that is designed, equipped or modified to accommodate students with special needs.

GENERAL REQUIREMENTS

- A. School buses designed for transporting students with special transportation needs shall comply with *National School Transportation Specifications & Procedures* and with Federal Motor Vehicle Safety Standards (FMVSS) applicable to their Gross Vehicle Weight Rating (GVWR) category.
- B. Any school bus to be used for the transportation of children who utilize a wheelchair or other mobile positioning device, or who require life-support equipment that prohibits use of the regular service entrance, shall be equipped with a power lift, unless a ramp is needed for unusual circumstances related to passenger needs.

AISLES

- A. All school buses equipped with a power lift shall provide a 12" aisle leading from wheelchair/mobility aid position to at least one emergency door and the lift area. A wheelchair securement position shall never be located directly in front of (blocking) a power lift door location

COMMUNICATIONS

- A. All vehicles used to transport disabled students shall be equipped with a two-way communication system.

GLAZING

- A. Tinted glazing may be installed in all doors, windows and windshield consistent with federal, state, and local regulations.

IDENTIFICATION

- A. Specially equipped school buses shall display the International Symbol of Accessibility below the window line. Such emblems shall be white on blue or black background, shall not exceed 12 square inches in size, and shall be of a high-intensity retroreflective material meeting Federal Highway Administration (FHWA) FP-85 Standards, *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects*.

PASSENGER RATING CAPACITY

- A. In determining the passenger capacity of a school bus for purposes other than actual passenger load (e.g., vehicle classification, or various billing/reimbursement models), any location in a school bus intended for securement of an occupied wheel chair/mobility aid during vehicle operations shall be regarded as four designated seating positions, and each lift area shall be counted as four designated seating positions.

POWER LIFTS AND RAMPS

- A. The power lift shall be located on the right side of the bus body. **Exception:** The lift may be located on the left side of the bus if, and only if, the bus is primarily used to deliver students to the left side of one-way streets.
1. A ramp device may be used in lieu of a mechanical lift if the ramp meets all the requirements of the Americans with Disabilities Act (ADA) as found in 36 CFR Part 1192.23 *Vehicle ramp*.
 2. A ramp device that does not meet the specifications of ADA but does meet the specifications of paragraph C of this section, may be installed and used, when, and only when, a power lift system is not adequate to load and unload students having special and unique needs. A readily accessible ramp may be installed for emergency exit use. If stowed in the passenger compartment, the ramp must be properly secured and placed away from general passenger contact. It must not obstruct or restrict any aisle or exit while in its stowed or deployed position.
 3. All specially equipped school buses shall provide a level-change mechanism or boarding device (e.g., lift or ramp) complying with paragraph B or C of this section, with sufficient clearances to permit a wheelchair user to reach a securement location.

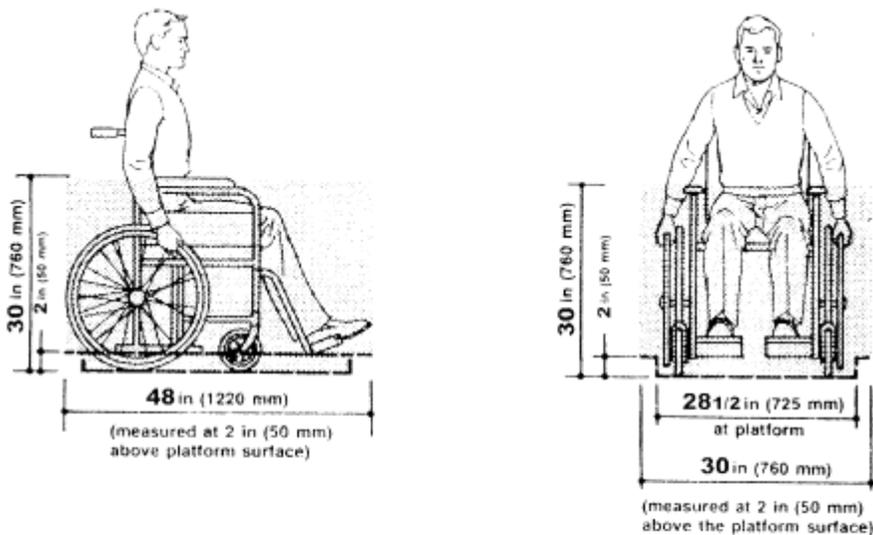
B. Vehicle lift and installation

1. General: Vehicle lifts and installations shall comply with the requirements set forth in FMVSS 403, *Platform Lift Systems for Motor Vehicles*, and FMVSS 404, *Platform Lift Installations in Motor Vehicles*.
2. Design loads. The design load of the lift shall be at least 800 pounds. Working parts, such as cables, pulleys and shafts, which can be expected to wear, and upon which the lift depends for support of the load, shall have a safety factor of at least six, based on the ultimate strength of the material. Non-working parts, such as platform, frame and attachment hardware that would not be expected to wear, shall have a safety factor of at least three, based on the ultimate strength of the material.
3. Lift capacity: The lifting mechanism and platform shall be capable of operating effectively with a wheelchair and occupant mass of at least 800 pounds.
4. Controls: (See 49 CFR 571.403, S6.7 *Control systems*.)

5. Emergency operations: (See 49 CFR 571.403, S6.9, *Backup operation*.)
6. Power or equipment failure: (See 49 CFR 571.403, S6.2.2, *Maximum platform velocity*.)
7. Platform barriers: (See 49 CFR 571.403, S6.4.7, *Wheelchair retention*.)
8. Platform surface: (See 49 CFR 571.403, S6.4.2, S6.4.3, *Platform requirements*. (See, also "Wheelchair or Mobility Aid Envelope" figure at the end of this section.
9. Platform gaps and entrance ramps: (See 49 CFR 571.403, S6.4.4, *Gaps, transitions and openings*.)
10. Platform deflection: (See 49 CFR 571.403, S6.4.5, *Platform deflection*.)
11. Platform movement: (See 49 CFR 571.403, S6.2.3, *Maximum platform acceleration*.)
12. Boarding direction: The lift shall permit both inboard and outboard facing of wheelchair and mobility aid users.
13. Use by standees: Lifts shall accommodate persons who are using walkers, crutches, canes or braces, or who otherwise have difficulty using steps. The platform may be marked to indicate a preferred standing position. **Note:** This item refers to equipment specifications.
14. Handrails: (See 49 CFR 571.403, S6.4.9, *Handrails*.)
15. Circuit breaker: A resettable circuit breaker shall be installed between the power source and the lift motor if electrical power is used. It shall be located as close to the power source as possible, but not within the passenger/driver compartment.
16. Excessive pressure: (See 49 CFR 571.403, S6.8, *Jacking prevention*.)
17. Documentation: The following information shall be provided with each vehicle equipped with a lift:
 1. A phone number where information can be obtained about installation, repair and parts. (Detailed written instructions and a parts list shall be available upon request.)
 2. Detailed instructions regarding use of the lift shall be readily visible when the lift door is

open, including a diagram showing the proper placement and positioning of wheelchair/mobility aids on lift.

18. Training materials: The lift manufacturer shall make training materials available to ensure the proper use and maintenance of the lift. These may include instructional videos, classroom curriculum, system test results or other related materials.
19. Identification and certification: Each lift shall be permanently and legibly marked or shall incorporate a non-removable label or tag that states that it conforms to all applicable requirements of the current National School Transportation Specifications and Procedures. In addition and upon request of the original titled purchaser, the lift manufacturer or an authorized representative shall provide a notarized Certificate of Conformance, either original or photocopied, which states that the lift system meets all the applicable requirements of the current National School Transportation Specifications and Procedures.



Minimum Unobstructed Platform Operating Volume for Public Use Lifts

Figure 3

C. Vehicle ramp

1. If a ramp is used, it shall be of sufficient strength and rigidity to support the special device, occupant and attendant(s). It shall be equipped with a protective flange on each longitudinal side to keep the special device on the ramp.

2. The surface of the ramp shall be constructed of non-skid material.
3. The ramp shall be equipped with handles and shall be of weight and design to permit one person to put the ramp in place and return it to its storage place.
4. Ramps used for emergency evacuation purposes may be installed in raised floor buses by manufacturers. They shall not be installed as a substitute for a lift when a lift is capable of servicing the need.

REGULAR SERVICE ENTRANCE

- A. On power lift-equipped vehicles, step shall be the full width of the step well, excluding the thickness of the doors in the open position.
- B. A suitable device shall be provided to assist passengers during ingress and egress. This device shall allow for easy grasping or holding and shall have no openings or pinch points that might entangle clothing, accessories or limbs.

RESTRAINING DEVICES

- A. On power lift-equipped school buses with a GVWR of 10,000 pounds or more, seat frames may be equipped with attachments to which belt assemblies can be attached for use with child safety restraint systems (CSRS) that comply with FMVSS No. 213, *Child Restraint Systems*. Any belt assembly anchorage shall comply with FMVSS No. 210, *Seat Belt Assembly Anchorages*.
- B. Alternatively, a child restraint anchorage system that complies with FMVSS No. 225, *Child Restraint Anchorage Systems*, may be installed.
- C. Seat belt assemblies, if installed, shall conform to FMVSS No. 209, *Seat Belt Assemblies*.
- D. Child restraint systems, which are used to facilitate the transportation of children who in other modes of transportation would be required to use a child, infant or booster seat, shall conform to FMVSS No. 213.

SEATING ARRANGEMENTS

- A. Flexibility in seat spacing to accommodate special devices shall be permitted to meet passenger requirements. All seating shall meet the requirements of FMVSS No. 222, *School Bus Passenger Seating and Crash Protection*.

SECUREMENT AND RESTRAINT SYSTEM FOR WHEELCHAIR/MOBILITY AID AND OCCUPANT

For purposes of better understanding the various aspects and components of this section, the term *securement and tiedown* and the phrases *securement system or tie down system* are used exclusively in reference to the devices that anchor the wheelchair to the vehicle. The term *restraint* and phrase *restraint system* is used exclusively in reference to the equipment that is intended to limit the movement of the wheelchair occupant in a crash or sudden maneuver. The term *wheelchair tiedown and occupant restraint system (WTORS)* is used to refer to the total system that secures the wheelchair and restrains the wheelchair occupant.

Wheelchair securement devices must comply with all requirements for wheelchair securement systems contained in federal regulation in effect on the later of the date the bus was manufactured or the date that a wheelchair securement system was added to the bus.

A. WTORS—general requirements

1. A wheelchair tiedown and occupant restraint system installed in specially equipped school buses shall be designed, installed, and operated for use with forward-facing wheelchair-seated passengers and shall comply with all applicable requirements of FMVSS No. 222, *School Bus Passenger Seating and Crash Protection*, and SAE J2249, *Wheelchair Tiedown and Occupant Restraint Systems for Use in Motor Vehicles*.
2. The WTORS, including the anchorage track, floor plates, pockets or other anchorages, shall be provided by the same manufacturer or shall be certified to be compatible by manufacturers of all equipment/systems used.
3. Wheelchair securement positions shall be located such that wheelchairs and their occupants do not block access to the lift door.
4. A device for storage of the WTOTS shall be provided. When the system is not in use, the storage device shall allow for clean storage of the system, shall keep the system securely contained within the passenger compartment, shall provide reasonable protection from vandalism and shall enable the system to be readily accessed for use.
5. The WTORS, including the storage device, shall meet the flammability standards in FMVSS No. 302, *Flammability of Interior Materials*.
6. The following information shall be provided with each vehicle equipped with a securement and restraint system:
 - a. A phone number where information can be obtained about installation, repair, and parts. (Detailed

written instructions and a parts list shall be available upon request.)

- b. Detailed instructions regarding use, including a diagram showing the proper placement of the wheelchair/mobility aids and positioning of securement devices and occupant restraints, including correct belt angles.
- 7. The WTORS manufacturer shall make training materials available to ensure the proper use and maintenance of the WTORS. These may include instructional videos, classroom curriculum, system test results or other related materials.
- B. Wheelchair Securement/Tiedown: (See CFR 571.403, S5.4.1, S5.4.2.)
 - 1. Each wheelchair position in a specially equipped school bus shall have a minimum clear floor area of 30 inches laterally by 48 inches longitudinally. Additional floor area may be required for some wheelchairs. Consultation between the user and the manufacturer is recommended to ensure that adequate area is provided.
- C. Occupant restraint system: (See 49 CFR 571.403, S5.4.3, S5.4.2.)

SPECIAL LIGHT

- A. Doorways in which lifts are installed shall be equipped with a special light that provides a minimum of two foot-candles of illumination measured on the floor of the bus immediately adjacent to the lift during lift operation.

SPECIAL SERVICE ENTRANCE

- A. Power lift-equipped bodies shall have a special service entrance to accommodate the power lift. **Exception:** A special service entrance shall not be required if the lift is designed to operate within the regular service entrance, is capable of stowing such that the regular service entrance is not blocked in any way and a person entering or exiting the bus are not impeded in any way.
- B. The special service entrance and door shall be located on the right side of the bus and shall be designed so as not to obstruct the regular service entrance. **Exception:** A special service entrance and door may be located on the left side of the bus only if the bus is used to deliver students to the left side of one-way streets and its use is limited to that function.
- C. 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 and give the same strength as other floor openings.

- D. A drip molding shall be installed above the special service entrance to effectively divert water away from the entrance.
- E. Door posts and headers at the special service entrance shall be reinforced sufficiently to provide support and strength equivalent to the areas of the side of the bus not used for the special service entrance.

SPECIAL SERVICE ENTRANCE DOORS

- A. A single door or double doors may be used for the special service entrance.
- B. A single door shall be hinged to the forward side of the entrance unless doing this would obstruct the regular service entrance. If the door is hinged to the rearward side of the doorway, the door shall utilize a safety mechanism which will prevent the door from swinging open should the primary door latch fail. If double doors are used, the system shall be designed to prevent the door(s) from being blown open by the aerodynamic forces created by the forward motion of the bus, and/or shall incorporate a safety mechanism to provide secondary protection should the primary latching mechanism(s) fail.
- C. All doors shall have positive fastening devices to hold doors in the "open" position when the special service entrance is in use.
- D. All doors shall be weather sealed.
- E. When manually operated dual doors are provided, the rear door shall have at least a one-point fastening device to the header or floor line of the body. The forward-mounted door shall have at least three one-point fastening devices. One shall be to the header, one to the floor line of the body, and the other shall be into the rear door. The door and hinge mechanism shall have strength that is greater than, or equivalent to, the strength of the emergency exit door.
- F. Door materials, panels and structural components shall have strength equivalent to the conventional service and emergency doors. Color, rub rail extensions, lettering and other exterior features shall match adjacent sections of the body.
- G. Each door shall have windows set in waterproof manner that are visually similar in size and location to adjacent non-door windows. Glazing shall be of same type and tinting (if applicable) as standard fixed glass in other body locations.

- H. Door(s) shall be equipped with a device that will actuate an audible or flashing signal located in the driver's compartment when the door(s) is not securely closed and the ignition is in the "on" position.
- I. A switch shall be installed so that the lift mechanism will not operate when the lift platform door(s) is closed.
- J. Special service entrance doors shall be equipped with padding at the top edge of the door opening. Padding shall be at least three inches wide and one inch thick and shall extend the full width of the door opening.

SUPPORT EQUIPMENT AND ACCESSORIES

- A. Each specially equipped school bus that is set up to accommodate wheelchairs or other assistive or restraint devices with belts attached shall contain at least one webbing cutter properly secured in a location within reach of the driver while belted into his/her driver's seat. The belt cutter shall be durable and designed to prevent the operator or others from being cut during use.
- B. Special equipment or supplies that are used in the bus for mobility assistance, health support or safety purposes shall meet any local, federal or engineering standards that may apply, including requirements for proper identification.

Equipment that may be used for these purposes includes, but is not limited to:

1. Wheelchairs and other mobile seating devices. (See subsection on Securement and Restraint System for Wheelchairs and Wheelchair-seated Occupants.)
 2. Crutches, walkers, canes and other ambulating devices.
 3. Medical Support equipment. This may include respiratory devices such as oxygen bottles (which should be no larger than 22 cubic feet for liquid oxygen and 38 cubic feet for compressed gas) or ventilators. Tanks and valves should be located and positioned to protect them from direct sunlight, bus heater vents or other heat sources. Other equipment may include intravenous and fluid drainage apparatus.
- C. All portable equipment and special accessory items, including the equipment listed above, shall be secured at the mounting location to withstand a pulling force of five times the weight of the item or shall be retained in an enclosed, latched compartment. The compartment shall be capable of withstanding forces applied to its interior equal to five times the weight of its contents without failure of the box's integrity and securement to the bus. **Exception:** If these specifications provide specific requirements for

securement of a particular type of equipment (e.g., wheelchairs), the specific specification shall prevail.

TYPE III STANDARDS

Standards

This section applies to type III vehicles used for the transportation of school children when owned and operated by a school district or privately owned and operated. All related equipment provided on the vehicle must comply with federal motor vehicle safety standards where applicable. If no federal standard applies, equipment must be manufacturer's standard.

Age

- A. Vehicles twelve years or older must not be used for the transportation of school children, except those vehicles that are manufactured to meet the structural requirements of federal motor vehicle safety standard 222, Code of Federal Regulations, title 49, part 571.

Color

- A. Vehicles must be painted a color other than national school bus yellow.

Fire Extinguisher

- A. A minimum of one 10BC rated dry chemical type fire extinguisher is required. The extinguisher must be mounted in a bracket, and must be located in the drivers compartment and be readily accessible to the driver and passengers. A pressure indicator is required and must be easily read without removing the extinguisher from its mounted position.

First Aid Kit and Body Fluids Cleanup Kit

- A. A minimum of a ten-unit first aid kit and a body fluids cleanup kit is required is required. They must be contained in a removable, moisture- and dust-proof container mounted in an accessible place within the driver's compartment and must be marked to indicate its location.

Identification

- A. The vehicle must not have the words "school bus" in any location on the exterior of the vehicle, or in any interior location visible to a motorist.

Lamps

- A. Installation and use of the eight-lamp warning system is prohibited.
- B. All lamps on the exterior of the vehicle must conform with and be installed as required by federal motor vehicle safety standard 108, Code of Federal Regulations, title 49, part 571.

Stop Signal Arm

- A. Installation and use of a stop signal arm is prohibited.

Mirrors

- A. The interior clear rear view mirror must afford a good view of pupils and roadway to the rear. Two exterior mirrors must be provided, one to the left and one to the right of the driver. Each mirror must be firmly supported and adjustable to give the driver clear view past the left and the right rear of the bus.

Warning Device

- A. A type III bus must contain at least three red reflectorized triangle road warning devices. Liquid burning "pot type" flares are not allowed.

Option, Emergency Equipment Location

- A. Passenger cars and station wagons may carry fire extinguisher, first aid kit, and warning triangles in the trunk or trunk area of the vehicle, if a label in the driver and front passenger area clearly indicates the location of these items.

CHAPTER 7470
DEPARTMENT OF PUBLIC SAFETY
STATE PATROL DIVISION
SCHOOL BUS INSPECTION CERTIFICATES

7470.0100 DEFINITIONS.
7470.0200 PURPOSE AND AUTHORITY.
7470.0300 ISSUANCE OF CERTIFICATE.
7470.0400 DISPLAY OF CERTIFICATE.
7470.0500 TIMES OF INSPECTION.
7470.0600 SCORING FOR INSPECTIONS.
7470.0700 TABLE OF POINTS TO BE DEDUCTED.

7470.0100 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of this chapter, the following terms have the meanings given them.

Subp. 2. **Certificate.** "Certificate" means a school bus inspection certificate required by the provisions of Minnesota Statutes, section 169.451, subdivision 2.

Subp. 3. **Rejection sticker.** "Rejection sticker" means a sticker signifying the vehicle to which it is affixed is not to be used for school bus purposes. The size of the rejection sticker may not be larger than the inspection certificate.

Subp. 4. **State patrol.** "State patrol" means the Minnesota state patrol, or an individual state trooper thereof or a state patrol law compliance representative II (LCR II) employed pursuant to Minnesota Statutes, section 299D.06.

Subp. 5. **Temporary certificate.** "Temporary certificate" means a distinctive certificate indicating a school bus was found to have deficiencies of a nature not substantially affecting safety of operation.

7470.0200 PURPOSE AND AUTHORITY.

The purpose of this chapter is to establish rules governing the issuance and display of school bus inspection certificates, consistent with the provisions of Minnesota Statutes, section 169.451, and to establish a point system to evaluate the effect on safety operation of any variance from law detected during school bus inspection, consistent with the mandate of the legislature.

7470.0300 ISSUANCE OF CERTIFICATE.

The certificate shall be issued for an individual bus on an annual basis when the state patrol has inspected the vehicle and the inspection indicates that the school bus adequately complies with laws and rules relating to construction, design, equipment, and color of school bus.

7470.0400 DISPLAY OF CERTIFICATE.

Subpart 1. **Certificate to be affixed.** The certificate issued for each individual school bus shall be immediately affixed to the school bus by the inspecting state patrol trooper or LCR II.

Subp. 2. **Certificate must be current.** Only the certificate that is valid for the current time period may be displayed.

Subp. 3. **Where displayed.** The certificate shall be affixed in the lower left corner of the main windshield of the school bus.

Subp. 4. **Rejection sticker; display; removal.** A rejection sticker shall be affixed to the lower left corner of the windshield of a school bus that fails a school bus inspection. The sticker shall be removed only upon authorization from an LCR II or trooper who has determined that the defects that caused the rejection have been corrected.

7470.0500 TIMES OF INSPECTION.

Subpart 1. **Scheduled inspection.** All school buses shall be inspected for compliance with applicable laws and with rules of the Department of Children, Families and Learning as stated in parts 3520.2400 to 3520.5800 of the Department of Children, Families and Learning.

Subp. 2. **Other inspections.** In addition to scheduled annual inspections and reinspections scheduled for the purpose of verifying that deficiencies have been corrected, a trooper or LCR II may conduct an unannounced inspection of any school bus at the location where the bus is kept when not in operation. This subpart shall not be construed to limit the right or duty of any law enforcement officer to inspect any vehicle upon reasonable cause.

7470.0600 SCORING FOR INSPECTIONS.

Subpart 1. **Point system.** The point system contained in part 7470.0700 shall be used to assess the safety operation of all types of school buses. Each bus will start with 100 points and each defect shall be cause for points to be deducted in accordance with point values established in part 7470.0700.

Subp. 2. **Score of 96 to 100.** Any school bus with an inspection score of 96 to 100 shall be identified by affixing a distinctive school bus inspection certificate to the windshield. Where an inspection score of 96 is achieved, no inspection certificate shall be affixed to the bus at the next annual inspection unless the inadequacies from the previous inspection have been corrected.

Subp. 3. **Score of 80 to 95.** Any school bus with an inspection score of 80 to 95 points shall pass the inspection and receive a temporary bus inspection certificate of contrasting color or design or both. This temporary certificate will be valid for 14 days following inspection and all defects must be corrected. Pending reinspection and certification of the bus by a trooper or LCR II, a bus bearing a

temporary certificate may be used to transport pupils beyond the 14-day period if the inspection sheet is signed by the owner or his designee certifying that all of the defects are corrected. The signed inspection sheet shall be carried in the first aid kit in the bus.

Subp. 4. **Score below 80.** Any school bus with less than 80 points shall be deemed unsafe for the transportation of school children. Any school bus which fails the inspection shall not be used to transport school children until the defects are corrected and an inspection certificate is issued and affixed to the bus. Pending reinspection and certification of the bus by a trooper or LCR II, a bus bearing a rejection sticker may be used to transport pupils if the inspection sheet is signed by the owner or a designee certifying that all of the defects are corrected. The signed inspection sheet shall be carried in the first aid kit in the bus.

7470.0700 TABLE OF POINTS TO BE DEDUCTED.

In accordance with part 7470.0600, subparts 1 to 3, defects in the equipment of a school bus listed in the left column will cause the number of points specified in the right column to be deducted from the starting score of 100.

<u>Equipment Defect</u>	<u>Points</u>
Tires, Front	each 25
Tires, Rear	each 25
Exhaust	
Inadequate Pipe	25
Leak in system	5
Muffler Deflective	5
(treat like leak in system)	
School bus color	
Not basic yellow or orange	25
Improper trim color	2
Required lettering	
No school bus sign (type I&II)	25
Stop at railway crossing (type III only)	25
Other lettering-nicknames	2
Stop arm (octagonal)	25
Reflective material cracked, scratched, or separated	5
Optional lamps on stop arm	2
Crossover mirror	
Missing or inoperable	25
If only line of vision is distorted, flaking or cracked	5
Headlamps out of adjustment	5
(allow mechanic time to adjust)	
Headlamp out	5
Both low beams out	25
One low beam out or either or both high beams out	each 5
Dimmer switch inoperable	5
Turn signals inoperable	25
Eight lamp warning system	

Lamp system not working	25
Eight-lamp indicator malfunctioning	10
Indicator lamps	
High beam	2
Turn signals	5
Clearance lamps or optional white strobe lamp	each 1
Rear lamps	
One out	5
Both out	25
Stop lamps (minimum of 2 required)	
Not working	each 15
auxiliary stop lamp not working	each 2
Back-up lamps	5
Brakes-service (foot)	
Not working	25
Hose blistered but no fluid leakage	each hose 5
Brakes-emergency (auxiliary)	25
Defective or no warning horn	25
Rear view mirror	
Interior	15
Exterior	25
Slight crack, discolored or flaking	5
Windshield wipers (not working at all)	25
Wiper blade only	5
One speed not working on left side or the right side not working	10
Windshield glass	10
Steering	25
One king pin bad (more than 1/2 inch)	15
Two king pins bad (more than 1/2 inch)	25
Driver seat belt, missing or not usable	25
Entrance door, out of adjustment	5
Interior lamps	
Step-well	2
Other interior lamps (mention only)	0
First aid kit	
Missing	25
Short supply-per unit missing	1
Fire extinguisher, missing or in inoperable range	15
Flags and flares (electric or reflector) (for up to three missing)	5
Side glass and rear glass-each defect	5
Loose objects interior	each 2
Seats loose (floor mount)	each 5
Seat condition	each 2
Bus interior (cleanliness)	2
Carbon monoxide	25
Emergency exit, inoperable	25
Emergency lettering missing	2
Bad door gasket	5
Speedometer	10

Suspension, main leaf	25
Other than main leaf, 25 percent or more of the remaining leaves broken	25
Other than main leaf, less than 25 percent broken	10
Loose or leaking shocks	10
Wheels	25
One stud nut missing if less than 20 percent of stud nuts on wheel	10
20 percent or more of stud nuts are missing on wheel	25
Body condition	2
Hazardous protuberance or sharp edge	25
Two cross members bad, must be replaced	2
Cross members rusted, to be written up	0
Drive shaft guard	25
Frame	25
Defroster fan or heaters in excess of one in multiple heater buses	each 5
Battery	10
Body mounting	10
Fuel system	10

CHAPTER 299A
DEPARTMENT OF PUBLIC SAFETY

299A.11 Vehicles Transporting Wheelchair User; Definitions.

The following terms have the definitions given them for the purposes of sections 299A.11 to 299A.18:

(a) "Wheelchair securement device" or "seurement device" means an apparatus installed in a transit vehicle or other motor vehicle for the purpose of securing an occupied wheelchair into a location in the vehicle and preventing movement of that wheelchair while the vehicle is in motion.

(b) "Operator" means any person, firm, partnership, corporation, service club, public or private agency, city, town or county. Section 299A.15 does not apply to any school bus as defined in section 169.01, subdivision 6.

(c) "Transportation service" means the transportation by motor vehicle, other than a school bus manufactured before January 1, 1988, of any sick, injured, invalid, incapacitated, or handicapped individual while occupying a wheelchair, which transportation is offered or provided by any operator to the public or to its employees or in connection with any other service offered by the operator including schooling or nursing home, convalescent or child care services.

(d) "Transit vehicle" means a bus that is not a school bus as defined in section 169.01, subdivision 6, with a gross vehicle weight rating greater than 15,000 pounds.

299A.12 Wheelchair Seurement Devices.

Subdivision 1. **General requirements.** Except as provided in subdivision 4, any vehicle used by an operator to provide transportation service shall be equipped with wheelchair securement devices which are approved by the commissioner of public safety as meeting the specifications of subdivisions 1 and 2. A wheelchair securement device shall prevent any forward, backward, or lateral movement of an occupied wheelchair when the device is engaged and the vehicle is in motion, accelerating or braking, and shall attach to the frame of the wheelchair without damaging it. Wheelchair securement devices installed in any vehicle shall be maintained in working order.

Subd. 2. **Strength requirements.** The strength requirements for securing the part of a wheelchair that is forward in the vehicle shall be one-half of those required for the rear. Where the wheelchair securement device and the seat belt are combined in a common system, those parts which provide the combined restraining force shall have a combined strength of both according to the strength requirements of each as adopted by the commissioner of public safety.

Subd. 3. **Maximum number of persons transported.** A vehicle used to provide transportation service shall carry only as many persons seated in wheelchairs as the number of securement devices approved by the commissioner of public safety as meeting the specifications of subdivisions 1 and 2 with which the vehicle is equipped, and each occupied wheelchair shall be secured by such a securement device before the vehicle is set in motion.

Subd. 4. **Transit vehicles; rules.** A transit vehicle used to provide transportation services may be equipped with wheelchair securement devices that may be engaged and released by the user or the user's assistant. The commissioner of public safety shall adopt rules as necessary to set standards for the operation, strength, and use of these wheelchair securement devices.

299A.13 Additional Safety Requirements.

Subdivision 1. **Seat belt.** Any vehicle used to provide transportation service shall be equipped with seat belts which are approved by the commissioner of public safety. The seat belts required by this subdivision shall be adequate to secure the occupant of a wheelchair who is being transported by the vehicle. These seat belts shall be used only to secure the person and shall not be used to secure the wheelchair unless the wheelchair securement force is not cumulative to the seat belt. The seat belts shall meet all other applicable state and federal requirements for safety.

Subd. 2. **Electric wheelchair.** When transportation service is provided to an individual in an electrically powered wheelchair, the main power switch of the wheelchair shall be placed in the "off" position at all times while the vehicle is in motion.

299A.14 Vehicle Inspection.

Subdivision 1. **Inspection certificate required.** No person shall drive and no operator shall knowingly permit or cause a vehicle to be used for transportation service unless there is displayed thereon a certificate issued upon inspection by the commissioner of public safety as provided in this section.

Subd. 2. **Wheelchair securement device.** Inspection shall be made by personnel in the department of public safety assigned to the state patrol. An operator of transportation services shall submit a vehicle for inspection after the installation of a wheelchair securement device in the vehicle and before using the vehicle for transportation service, but not later than one month after the date of installation. Evidence of the date of installation shall be provided by the operator at the inspection.

Subd. 3. **Standards.** The inspection shall be made to determine that the vehicle complies with the provisions of sections 299A.12, subdivisions 1 and 4, and 299A.13, subdivision 1; that the securement device is in working order; and that the securement device is not in need of obvious repair. The inspection may include testing the use of a securement device while the vehicle is in motion.

Subd. 4. **Certificate display and contents.** A certificate furnished by the commissioner shall be issued upon completion of inspection if the vehicle complies with the requirements set forth in subdivision 3. The certificate shall be affixed to the lower left corner of the windshield. It shall note compliance with this section, record the number of wheelchairs which may be simultaneously carried in the vehicle, and note the month and year in which the next inspection is required.

Subd. 5. **When inspections required.** Subsequent inspections shall be made annually. If additional securement devices are installed in a vehicle already equipped with a securement device, inspection is required as specified in subdivision 2.

299A.15 Aid and License Withheld.

No agency of the state, political subdivision or other public agency shall grant or approve any financial assistance to any operator for the purchase or operation of any vehicle used for transportation service or grant any permit or license otherwise required by law for operation of that service unless the operator of the transportation service complies with the provisions of sections 299A.11 to 299A.14.

299A.16 Evidence.

Proof of the installation or failure to install wheelchair securement devices, or proof of faulty installation of wheelchair securement devices, or proof of the maintenance or failure to properly maintain wheelchair securement devices, or proof of the use or failure to use wheelchair securement devices is admissible in evidence in any litigation involving personal injuries or property damage arising out of the use or operation of a vehicle providing transportation service. For the purposes of this section "wheelchair securement device" means such a device approved by the commissioner of public safety.

299A.17 Misdemeanor.

For each failure to comply with any requirement of sections 299A.12, 299A.13 or 299A.14 an operator is guilty of a misdemeanor.

CHAPTER 7450
DEPARTMENT OF PUBLIC SAFETY
STATE PATROL DIVISION
WHEELCHAIR SAFETY DEVICES

7450.0100 DEFINITIONS.
7450.0200 PURPOSE, AUTHORITY, AND SCOPE.
7450.0250 TYPE OF SECUREMENT REQUIRED.
7450.0300 FRAME-ATTACHED WHEELCHAIR SECUREMENT.
7450.0400 MINIMUM STANDARDS FOR FRAME-ATTACHED DEVICES.
7450.0430 USER-FRIENDLY WHEELCHAIR SECUREMENT.
7460.0460 MINIMUM STANDARDS FOR USER-FRIENDLY DEVICES.
7450.0500 APPROVAL PROCEDURE.
7450.0600 OCCUPANT RESTRAINT.
7450.0700 USE OF SECUREMENT DEVICE.
7450.0800 INSPECTION, REMOVAL, AND CORRECTION.
7450.0900 REPEALED

7450.0100 DEFINITIONS.

Subpart 1. **Scope.** The terms used in parts 7450.0100 to 7450.0800 have the meanings given them in this part.

Subp. 2. **Anchorage.** "Anchorage" means the provision for transferring wheelchair securement loads to the vehicle structure.

Subp. 3. **Commissioner.** "Commissioner" means the commissioner of public safety or an authorized agent.

Subp. 3a. **FMVSS.** "FMVSS" means federal motor vehicle safety standard No. 209 or No. 210, found in Code of Federal Regulations, title 49, section 571.209 or 571.210. respectively, as amended through December 31, 1991.

Subp. 3b. **Gross vehicle weight rating.** "Gross vehicle weight rating" means the value specified by the vehicle manufacturer as the maximum loaded weight of the vehicle.

Subp. 4. **Interior paneling.** "Interior paneling" means the material used to finish the interior of a vehicle, not including the floor.

Subp. 5. **Occupant restraint.** "Occupant restraint" means a seat belt assembly and/or upper torso restraint intended to hold the occupant of a wheelchair in a generally seated position during transportation by motor vehicle.

Subp. 6. **Operator.** "Operator" has the meaning given in Minnesota Statutes, section 299A.11, paragraph (b).

Subp. 6a. **Transit vehicle.** "Transit vehicle" means a bus with a gross vehicle weight rating greater than 15,000 pounds. Transit vehicle does not include a school bus as defined in Minnesota Statutes, section 169.01, subdivision 6.

Subp. 7. **Wheelchair.** "Wheelchair" means a mobility aid belonging to any class of three- or four-wheeled devices and that are usable indoors and designed for and used by individuals with mobility impairments, whether operated manually or powered.

Subp. 8. **Wheelchair securement device; securement device.** "Wheelchair securement device" or "seurement device" has the meaning given in Minnesota Statutes, section 299A.11, paragraph (a).

7450.0200 PURPOSE, AUTHORITY, AND SCOPE.

Subpart 1. **Purpose.** The purpose of parts 7450.0100 to 7450.0800 is to establish minimum standards for approval of wheelchair securement devices in vehicles and approval of seat belt assemblies and anchorages used to protect persons in wheelchairs while transported in vehicles.

Subp. 2. **Authority.** Parts 7450.0100 to 7450.0800 are adopted pursuant to the authority granted by Minnesota Statutes sections 299A.01, subdivision 6; 299A.12, subdivision 4; and 299A.18.

Subp. 3. **Scope.** Parts 7450.0100 to 7450.0800 apply to the transportation by motor vehicle of a disabled person while occupying a wheelchair. This transportation is offered or provided by an operator to the public, to its employees, or in connection with any other service offered by the operator including schooling or nursing homes and convalescent or child care services.

Subp. 4. **Exception.** Parts 7450.0100 to 7450.0800 do not apply to a school bus manufactured before January 1, 1988, and subject to regular school bus inspection under Minnesota Statutes, section 169.451, nor do they apply to incidental transportation of an occupied wheelchair under circumstances other than as provided in subpart 3.

7450.0250 TYPE OF SEUREMENT REQUIRED.

Subpart 1. **Transit vehicle.** An occupied wheelchair transported in a transit vehicle must be secured with an approved seurement device that is either:

- A. a frame-attached device that meets the requirements of parts 7450.0300 and 7450.0400; or
- B. a user-friendly device that meets the requirements of parts 7450.0430 and 7450.0460.

Subp. 2. **Vehicle other than transit vehicle.** An occupied wheelchair transported in a vehicle other than a transit vehicle must be secured with an approved frame-attached seurement device that meets the requirements of parts 7450.0300 and 7450.0400.

7450.0300 FRAME-ATTACHED WHEELCHAIR SECUREMENT.

Subpart 1. **Sufficient strength.** A frame-attached securement device must be of sufficient strength to prevent forward, backward, lateral, or vertical movement of the wheelchair when the device is engaged and the vehicle is in motion, accelerating, or braking.

Subp. 2. **Attached to frame.** A frame-attached wheelchair securement device must attach to the frame of the wheelchair without damaging the frame. "Damage" includes effects harmful to the strength, integrity, or serviceableness of the wheelchair, but does not include minor dents, scratches, or other cosmetic blemishes not materially affecting serviceableness.

Subp. 3. **Limitation.** A frame-attached wheelchair securement device must not be attached to a wheel of a wheelchair.

7450.0400 MINIMUM STANDARDS FOR FRAME-ATTACHED DEVICES.

Each frame-attached wheelchair securement device must meet the requirements of items A to G.

A. It must attach to the wheelchair frame on at least three points. The three points of contact must be spaced to provide effective securement. Alternatively, a securement device meeting all other requirements of this chapter may attach to two widely spaced points on the wheelchair frame if the wheel tires or the wheelchair frame abuts an unyielding surface in a manner that meets the approval requirements of part 7450.0500.

B. It must consist of at least two webbing-type belts described in sub-item (1) or at least two all-metal devices described in sub-item (2) or one or more of each type of device.

- (1) Webbing-type devices must be assemblies that meet or exceed Type 2 pelvic restraint seat belt requirements as specified in S4.2(b) of FMVSS No. 209, or be certified by the manufacturer that the device meets or exceeds assembly strength of 5,000 pounds in loop fashion or 2,500 pounds on each anchorage leg.
 - (a) Certification may be the specification listed in catalogs or publications by the manufacturer.
 - (b) New construction of these securement devices and repairs to webbing must conform with standards established by the manufacturer of the webbing.
- (2) All-metal securement devices must be designed and constructed to provide wheelchair securement strength that is at least equal to the strength of a webbing-type device comprised of three separate attachments and anchorages.

C. It must be free of sharp edges, corners, and jagged projections to minimize injury to persons in the event of unintentional contact.

D. It must be capable of retraction, and be readily removable or otherwise suitably storable when not in use.

E. It must be anchored to the vehicle at not less than two separate points with bolts, nuts, and lock washers or self-locking nuts.

- (1) Bolts used must be not less than 3/8-inch in diameter and of National Fine Thread SAE grade 5 designation or equivalent.
- (2) Where anchorage bolts do not pierce the vehicle frame, subframe, bodypost, or equivalent metal structure, a metal reinforcement plate or washer 1/16-inch thick and not less than four square inches or 2-1/4 inches in diameter respectively, is required.
- (3) Interior paneling may not be used to constitute anchorage for a point of securement.
- (4) A metal track, rail, or similar device permitting attachment of the securement device at optional points on it may be used to anchor the securement device, only if:
 - (a) the track, rail, or other device is secured to the vehicle in compliance with anchorage requirements of this part; and
 - (b) the attachment of the securement device to the anchor point is by means of a positive attachment metal fitting.

F. The method or device that provides attachment of the securement device to the wheelchair frame and the method or device locking the securement device in the load-holding mode must each be of a strength and design that will ensure performance of their intended function until the securement device is intentionally released.

G. Buckles, anchorage fittings, and other components essential to the functioning of the securement device must be integrated into the securement device in accordance with recognized practices and in a manner that preserves the overall strength of the securement device.

7450.0430 USER-FRIENDLY WHEELCHAIR SECUREMENT.

Subpart 1. **Nominal movement.** A user-friendly securement device must limit movement of an occupied wheelchair when the vehicle is in normal operation. An occupied wheelchair loaded with a restrained weight of 250 pounds may not move more than two inches in any direction at any point of contact with the floor when the vehicle is being operated under the following conditions:

A. full-throttle acceleration on dry pavement from a standstill to a speed of 25 miles per hour with the vehicle at its curb weight plus one occupied wheelchair;

B. maximum braking from a speed of 22 miles per hour to a standstill on dry pavement with the vehicle at its curb weight plus one occupied wheelchair; and

C. driving both clockwise and counterclockwise with the outer, front wheel around one of the following:

- (1) a 50-foot diameter circle at a minimum steady speed of 12 miles per hour;
- (2) a 75-foot diameter circle at a minimum steady speed of 14 miles per hour; or
- (3) a 100-foot diameter circle at a minimum steady speed of 16 miles per hour.

Subp. 2. **Attachment.** A user-friendly securement device must attach to the wheelchair without damaging it during normal vehicle operations. "Damage" includes effects harmful to the strength, integrity, or serviceableness of the wheelchair but does not include minor dents, scratches, or other cosmetic blemishes not materially affecting serviceableness. A bent wheel or broken spokes for example is "damage."

Subp. 3. **Release.** A user-friendly securement device must be designed so as to prevent an unintended mechanical release.

Subp. 4. **User-friendly.** A user-friendly securement device must be designed so that it can be readily engaged and released by the user, or remotely by the vehicle driver, subject to the following conditions:

A. The manual operating control for the user must be located within the upper 33 inches of a 48-inch cube occupied by the secured wheelchair.

B. The force required by the user to engage and release may not exceed five pounds of force and may not require tight grasping, pinching, or twisting of the wrist.

C. When a device is manually engaged, the reach, force, and dexterity required to manually release the device may not exceed that required to manually engage it.

D. The device may be automatically engaged by the wheelchair or remotely by the vehicle driver, but a manual release must be available that meets the specifications of items A and B. A device that may be remotely engaged or released by the driver must have an indicator light to inform the driver that the device has engaged or released the wheelchair.

E. A user-friendly device does not need to be able to secure all types of wheelchairs. A user-friendly device must secure all types of wheelchairs for which it is approved by the commissioner.

7450.0460 MINIMUM STANDARDS FOR USER-FRIENDLY DEVICES.

Subpart 1. **Force to be restrained.** A user-friendly securement device must be able to restrain force as follows:

A. A user-friendly securement device and its attachments used on a vehicle with a gross vehicle weight rating of 30,000 pounds or more must withstand a force in a forward longitudinal direction of up to 2,000 pounds per securement leg or clamping mechanism and a minimum of 4,000 pounds total for each wheelchair.

B. A user-friendly securement device and its attachments used on a vehicle with a gross vehicle weight rating of over 15,000 pounds but less than 30,000 pounds must withstand a force in a forward longitudinal direction of up to 2,500 pounds per securement leg or clamping mechanism and a minimum of 5,000 pounds total for each wheelchair.

Subp. 2. **Attachment to vehicle.** A user-friendly securement device must be attached to a part of the vehicle that can, when attached, withstand the forces specified in subpart 1. The device must be installed according to the manufacturer's installation instructions approved under part 7450.0500.

Subp. 3. **Damage to device.** After the test modes in subpart 1 have been removed, a user-friendly securement device must be operable to the extent that it will release a wheelchair, as specified in part 7450.0430, subpart 4.

7450.0500 APPROVAL PROCEDURE.

Subpart 1. **Application.** Application for approval of a wheelchair securement device must be made in writing to the commissioner and must be accompanied by the manufacturer's actual or proposed written installation and use instructions and photographs or drawings clearly depicting the construction of the device and its physical characteristics, including all mounting hardware. The application must also include the labeling used for identifying the manufacturer and the model designation. An application for approval of a user-friendly securement device must also include a test report or engineering document certifying that the device and its attachment to the vehicle can withstand the forces specified in part 7450.0460, or the manufacturer's specifications to the same effect listed in catalogs or publications by the manufacturer.

Subp. 2. **Demonstration of frame-attached securement device.** When requested by the commissioner, and applicant for approval of a frame-attached securement device shall provide a vehicle with the securement device installed in it, and demonstrate the device by attaching it to a wheelchair provided by the applicant. The commissioner may load the wheelchair to 140 pounds and require that the vehicle be accelerated, driven around corners, and subjected to

hard braking at speeds of 30 miles per hour or less. Movement of the wheelchair more than one inch in any direction, including vertically, during the test is grounds for refusing approval. Measurement of movement must be at the points where wheelchair wheels contact the floor. Damage to the wheelchair or other property or injury to a person during the test is the responsibility of the applicant.

Subp. 2a. Demonstration of user-friendly securement device.

When requested by the commissioner, an applicant for approval of a user-friendly securement device shall provide a vehicle with a wheelchair and with the securement device installed in the vehicle and demonstrate compliance of the device to the requirements of parts 7450.0430 and 7450.0460. Damage to the wheelchair or other property or injury to a person during the test is the responsibility of the applicant.

Subp. 3. Approval. On determining that the securement device meets the requirements of this chapter, the commissioner shall issue a certificate of approval authorizing use of the device. If a user-friendly device does not secure all types of wheelchairs, the certificate must state the types of wheelchairs for which the device is approved.

Subp. 4. Denial and revocation. The commissioner shall deny or revoke an approval upon a showing that the securement device does not meet a requirement of parts 7450.0100 to 7450.0800. The commissioner shall notify the applicant in writing of a denial or revocation of approval.

Subp. 5. Label. Each wheelchair securement device must be permanently labeled with the name, initials, or trademark of the manufacturer and the model designation of the device. The label must be readily visible and legible from the outside of the device when it is properly mounted to the vehicle and in use.

7450.0600 OCCUPANT RESTRAINT.

Subpart 1. Seat belt assembly. Each vehicle equipped with a wheelchair securement device must be equipped with a Type 2 seat belt assembly with a detachable upper torso portion at each wheelchair position in the vehicle or, in the alternative, must be equipped with a Type 1 pelvic restraint assembly and a length of Type 1 or Type 2 seat belt webbing, with buckle, adequate to encircle the chest of the wheelchair occupant and the backrest of the wheelchair.

Subp. 2. Standard. Type 1 and Type 2 seat belt assemblies must meet the requirements of S1 to S4.4 of FMVSS No. 209.

Subp. 3. Installation and anchorage. Type 1 and Type 2 seat belt assemblies and the detachable upper torso restraint, if a detachable upper torso restraint is installed instead of using a length of seat belt webbing to encircle the chest of the occupant and the backrest of the wheelchair, must be installed and anchored in accordance with S1 to S4.3.2 of FMVSS No. 210.

7450.0700 USE OF SECUREMENT DEVICE.

The driver of a vehicle equipped with a wheelchair securement device has the following duties:

A. The driver or a person designated by the driver shall ensure that an occupied wheelchair is properly secured before the driver sets the vehicle in motion.

B. When requested by the wheelchair user, when the wheelchair user is unable to communicate, when seat belt usage is required of all passengers in the vehicle, or when the vehicle is a school bus, the driver or a person designated by the driver shall ensure that the seat belt assembly, and upper torso restraint if so equipped, is fastened around the wheelchair user, before the driver sets the vehicle in motion. The seat belt assembly or the upper torso restraint must not be fastened, however, if the wheelchair user or other responsible person advises the driver that to do so would aggravate a physical condition of the wheelchair user. If the physical condition would be aggravated by the use of but one of the devices, the device that would have no adverse effect on the physical condition must be fastened in the required manner.

C. The driver or a person designated by the driver shall ensure that securement devices and seat belt assemblies are retracted, removed, or otherwise stored when not in use to prevent tripping of persons and damage to devices.

7450.0800 INSPECTION, REMOVAL, AND CORRECTION.

Subpart 1. **Inspection.** Annual inspections of securement devices must be performed in accordance with Minnesota Statutes, section 299A.14.

Subp. 2. **Removal, correction.** The commissioner shall order the removal or correction of a securement device upon determining that the device, without regard to date of installation:

A. is not capable of sustaining loads imposed on it in restraining an occupied wheelchair;

B. permits excessive movement of an occupied wheelchair; or

C. does not meet the requirements of parts 7450.0100 to 7450.0800.

CHAPTER 7414

DEPARTMENT OF PUBLIC SAFETY

DRIVER AND VEHICLE SERVICES DIVISION

SCHOOL BUS DRIVER QUALIFICATIONS

7414.0100 DEFINITIONS

Subpart 1. **Scope.** The terms in this chapter have the meanings given them in this part.

Subp. 2. **Charter carrier.** "Charter carrier," as used in the definition of "school bus" has the meaning given in Minnesota Statutes, section 221.011, subdivision 21.

Subp. 3. **Department.** "Department" means the Minnesota Department of Public Safety.

Subp. 4. **Driver.** "Driver" has the meaning given in Minnesota Statutes, section 171.01, subdivision 6.

Subp. 5. **Head Start Bus.** "Head Start bus" has the meaning given in Minnesota Statutes, section 171.01, subdivision 27.

Subp. 6. **Head Start Bus Driver.** "Head Start bus driver" has the meaning given in Minnesota Statutes, section 171.3215, subdivision 1, paragraph (d).

Subp. 7. **License.** "License" has the meaning given in Minnesota Statutes, section 171.01, subdivision 14.

Subp. 8. **Motor Vehicle.** "Motor vehicle" has the meaning given in Minnesota Statutes, section 171.01, subdivision 3.

Subp. 9. **Parent of guardian.** "Parent" or "guardian," as used in the definition of "school bus," means a person having legal custody of a school-age child or pupil.

Subp. 10. **School.** "School" has the meaning given in Minnesota Statutes, section 120A.22.

Subp. 11. **School bus.** "School bus" has the meaning given in Minnesota Statutes, section 171.01, subdivision 21.

Subp. 12. **School bus driver.** "School bus driver" has the meaning given in Minnesota Statutes, section 171.3215, subdivision 1, paragraph (b).

Subp. 13. **School children or pupil.** "School children" or "pupil," as used in the definition of "school bus" and in Minnesota Statutes, section 171.321, subdivision 1, means:

A. an individual meeting the qualifications for admission to a public school as specified in Minnesota Statutes, section 120A.20; or;

B. an individual admitted to or enrolled in a school as defined in Minnesota Statutes, section 120A.22.

Subp. 14. **School-related trip or activity.** "School-related trip or activity," as used in the definition of "school bus," is a function undertaken, sanctioned, sponsored, endorsed, or authorized by a school or school district.

Subp. 15. **School district.** "School district" has the meaning given in Minnesota Statutes, section 120A.05.

7414.0200 BASIC REQUIREMENT; APPLICABILITY.

Every person required by Minnesota Statutes, section 171.321 to have a school bus endorsement on the person's driver's license must meet the requirements specified in this chapter.

A. A person who operates a motor vehicle with a seating capacity for ten or fewer persons used as a school bus is not required to have a school bus endorsement if:

- (1) the motor vehicle operated by the individual is not outwardly equipped or identified as a school bus; and
- (2) the driver possesses a valid class driver's license in accordance with Minnesota Statutes, section 171.02, subdivision 2.

B. The driver of a vehicle operated as a Head Start bus is not subject to the qualifications in this chapter for a school bus endorsement, except that the driver is subject to the disqualification provisions applicable to a Head Start bus driver in Minnesota Statutes, section 171.3215.

C. The transportation of persons by a charter carrier is not subject to the provisions of this chapter.

7414.0300 TESTS.

Subpart 1. **Initial endorsement.** To obtain an initial school bus endorsement to drive a school bus, a person must satisfactorily pass a written test and a road test administered by the department.

Subp. 2. **Written Test.** The applicant for a school bus endorsement on the driver's license must satisfactorily pass a written test administered by the department.

A. The written test must be based on:

- (1) chapters 7414 and 7470;

- (2) Minnesota Statutes, chapter 169, and sections 171.321 to 171.322; and
- (3) a general knowledge of the operation of school buses, including knowledge of the equipment, devices, laws, and rules peculiar to the operation of school buses.

B. The written test must contain at least 50 questions.

C. There must be at least two forms of the test with the questions arranged in different order on each form.

D. The written test is satisfactorily passed if a score of at least 80 percent is obtained.

Subp. 3. **Road test.** The applicant must satisfactorily pass a road test administered by the department in a school bus that represents the least restrictive category of a school bus the applicant expects to operate.

A. The road test must evaluate knowledge of the school bus, bus-related equipment, operation of the motor vehicle in accordance with Minnesota Statutes, chapter 169, and the rules contained in chapter 7470, and include:

- (1) a pretrip inspection;
- (2) placing the vehicle in operation;
- (3) use of the vehicle's controls and emergency equipment;
- (4) operating the vehicle in traffic and while passing other vehicles;
- (5) turning the vehicle;
- (6) braking, and slowing the vehicle by means other than braking;
- (7) backing and parking the vehicle;
- (8) loading and unloading pupils; and
- (9) proper procedures at railroad crossings.

B. The road test is satisfactorily passed if a score of at least 80 percent is obtained.

C. In determining whether a score of at least 80 percent has been obtained, the commissioner of public safety shall weight each portion of the test with regard to the criticalness of the specific factor being tested in relation to overall driving safety.

An endorsement to drive a school bus on a Minnesota driver's license must be issued by the department in one of the categories specified in items A to D. The endorsement must be issued based on the passenger capacity of the school bus and the gross vehicle weight (GVW) of the motor vehicle used by the applicant to take the road test.

A. An "A" category endorsement is unrestricted. The license holder may drive a school bus with a GVW of more than 26,000 pounds as well as a school bus described in item B, C, or D.

B. A "B" category endorsement is restricted. The license holder may drive a school bus designed to transport 24 or more passengers with a GVW of 26,000 pounds or less. The license holder may also drive a school bus in item C or D.

C. A "C" category endorsement is restricted. The license holder may drive a school bus with 16 to 23 passengers with a GVW of 26,000 pounds or less. The license holder may also drive a school bus in item D.

D. A "D" category endorsement is restricted. The license holder may only drive a school bus designed to transport 15 or fewer passengers.

7414.0400 DRIVER BACKGROUND CHECK

Subpart 1. **Scope.** Before issuing or renewing a driver's license with a school bus endorsement, the department shall conduct a background check to investigate the applicant's criminal and driving records. The department shall use the criteria listed in subpart 3 and Minnesota Statutes, section 171.3215, when issuing or denying an application for a new school bus endorsement or when renewing or canceling an existing endorsement.

Subp. 1a. **Temporary endorsement.** An otherwise qualified applicant seeking a temporary endorsement on the driver's license to drive a school bus pursuant to Minnesota Statutes, section 171.321, subdivision 3, paragraph (b), shall present to the department at the time of application for the temporary endorsement, the affidavits described in this subpart.

A. The applicant shall sign and have notarized an affidavit attesting:

- (1) that the applicant is not currently charged with a felony against another and has not been convicted of a disqualifying offense as defined in Minnesota Statutes, section 171.3215; and
- (2) as to the states in which the applicant has resided in the past five years immediately before the date of application.

B. The applicant shall submit a signed and notarized affidavit from an authorized individual of a school district or a contractor employed by a school or school district:

- (1) attesting that a criminal records check has been conducted on the applicant;
- (2) specifying the source of the criminal records check; and
- (3) attesting that the applicant is not currently charged with a felony against another or has not been convicted of a disqualifying offense as defined in Minnesota Statutes, section 171.3215.

C. For an individual who has resided in the state for the past five years immediately before the date of application, the criminal history check must be obtained by the department through the state criminal records repository of the Bureau of Criminal Apprehension.

D. For an individual who has been a resident of a state other than Minnesota at any time in the five years immediately before the date of application, a criminal history check must be obtained from:

- (1) a government agency performing the same function as the Bureau of Criminal Apprehension in each resident state other than Minnesota;
- (2) the Federal Bureau of Investigation; or
- (3) a private source acceptable to the commissioner of public safety.

Subp. 2. (Repealed)

Subp. 3. **Felony charges.** The department shall not consider the application for an initial school bus endorsement of an individual charged with a felony against another until that individual is found not guilty of the charge.

A driver with a school bus endorsement who is charged with a felony against another shall notify the employer within seven days of the charge. If the driver fails to notify the employer, the department shall revoke the endorsement. If the endorsement is revoked under this paragraph, the department shall not reinstate the endorsement until the driver is found not guilty of the charge or until five years have elapsed since the final disposition of the case or the applicant's release from a correctional facility, whichever event occurs last.

Subp. 4. (Repealed)

An applicant for a school bus driver's endorsement shall be in good physical and mental health, able-bodied, and free from communicable disease. As evidence of physical fitness and mental alertness, the applicant shall submit to a physical examination by a reputable physician designated by the local school authorities; and the physician's certificate of physical fitness and mental alertness shall accompany the application for school bus driver's endorsement when presented to the Department of Public Safety.

7414.1200 PHYSICAL QUALIFICATIONS REQUIREMENT, GENERALLY.

The department shall consider an applicant for an initial school bus endorsement or for renewal of a school bus endorsement to be physically qualified for endorsement to operate a school bus when the applicant provides evidence of being examined and the evidence shows that the examiner has determined that the applicant meets the requirements in Code of Federal Regulations, title 49, section 391.41, which are incorporated by reference.

7414.1300 EXAMINATION FORM AND CERTIFICATE.

The examination form used by the physician to record the physical condition of the applicant must substantially comply with the form prescribed in Code of Federal Regulations, title 49, section 391.43, paragraph (f). A form may be obtained from the department or from any driver examining station. The certificate of the examining physician must be substantially in accordance with the certificate in Code of Federal Regulations, title 49, section 391.43, paragraph (g).

7414.1400 PERIODIC PHYSICAL REEXAMINATION.

Each driver with a school bus endorsement shall take and pass a physical examination every two years to retain the school bus endorsement.

A. The two-year reexamination period starts from the examination date of the most recent physical examination certificate submitted by a driver with a school bus endorsement.

B. The department will send a physical examination certificate to a driver with a school bus endorsement.

C. A driver with a school bus endorsement shall return the certificate, completed by the examining physician, along with a \$2 processing fee, on or before the expiration of the two-year period, to the department.

D. If the driver fails to pass the physical examination or return the physical examination certificate within two years of the date of the last physical examination filed with the department, the commissioner of public safety shall cancel the school bus endorsement from the Minnesota driver's license.

E. If a person's school bus endorsement is canceled because of a failure to submit the certificate verifying physical reexamination within two years after the initial or a subsequent physical examination, the person is allowed up to three years after the date of the last physical examination to submit the required certificate of physical examination without having to retake the written test and road test for school bus endorsement.

7414.1410 PHYSICAL QUALIFICATIONS WAIVER; REQUEST, APPLICATION.

Subpart 1. **Waiver request, generally.** An individual who does not meet the physical qualifications for a school bus endorsement because of a failure to meet the requirements in Code of Federal Regulations, title 49, section 391.41, may request a waiver from the commissioner of public safety according to the procedures and criteria specified in parts 7414.1410 to 7414.1570.

Subp. 2. **Application.** An application for a waiver must be submitted by the applicant seeking the school bus endorsement. The application must be submitted to the Minnesota Department of Public Safety, Driver and Vehicle Services Division.

7414.1420 APPLICATION CONTENTS FOR WAIVER, GENERALLY.

An application for a waiver must:

A. contain the applicant's name, address, birth date, driver's license number, and the date of license expiration;

B. specify the physical qualification for which a waiver is requested;

C. describe the applicant's disability or impairment;

D. describe the school bus the applicant intends to drive including the passenger capacity of the vehicle and gross vehicle weight, if known;

E. estimate the period of time per day the driver will driving and on duty;

F. contain the driving record for the last three years, if any, the applicant has operated a commercial vehicle and the driving record for the last three years the applicant has operated all types of motor vehicles from each state the applicant has had a driver's license or permit;

G. contain a copy of the form for the physical examination performed according to Code of Federal Regulations, title 49, section 391.41, and a copy of the certificate from the examining physician attesting that the applicant is otherwise qualified, except for the disability or impairment for which a waiver is requested.

H. contain a copy of the applicant's road test as prescribed by the department's Driver and Vehicle Services Division;

I. describe the alternative measures; modification of policies, practices, or procedures; or the provision of auxiliary aids or services that will be taken to ensure that there is no significant risk to the health and safety of the public and pupils if the waiver is granted; and

J. contain the signature of the applicant and the date.

7414.1430 LIMB IMPAIRMENT WAIVER; ADDITIONAL INFORMATION

The application of an applicant seeking a waiver because of the failure to meet the physical qualifications in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (1) or (b) (2), must also contain;

A. a description of the vehicle the applicant intends to drive that specifies:

- (1) whether the transmission is automatic or manual and, if manual, the number of forward speeds;
- (2) the type of brake system;
- (3) whether the steering is manual or power assisted; and
- (4) whether vehicle modification has been or will be made for the applicant; and

B. a medical waiver summary completed by either a doctor of physical medicine or orthopedic surgeon that includes:

- (1) an assessment of the applicant's functional capabilities as they relate to the applicant's ability to perform the normal tasks associated with operating the school bus in question;
- (2) a statement by the examining physician that the applicant is capable of safely performing normal school bus driver operations required; and
- (3) an assessment and medical opinion of whether the impairment or disability is likely to remain medically stable over the applicant's lifetime.

7414.1440 VISION WAIVER; ADDITIONAL APPLICATION INFORMATION.

The application of an applicant seeking a waiver because of the failure to meet the vision requirements in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (10), must also contain a letter signed and dated from an optometrist or ophthalmologist that:

A. identifies and defines the visual deficiency;

B. certifies that the applicant's visual acuity is at least 20/40 Snellen, corrected or uncorrected, in the better eye;

C. certifies that the applicant has a field of vision of no less than 120 degrees of field in one or both eyes together as demonstrated on a Goldman perimeter using a IIIe target, or equivalent full field test using an automated perimeter;

D. certifies that the individual recognizes the colors of red, green, and amber in traffic signals in an actual field test if the subject fails a color screening test or a comparable color contrast sensitivity test; and

E. certifies that in the examiner's opinion the applicant can safely perform the normal school bus driver operations required.

7414.1450 DIABETES WAIVER; ADDITIONAL INFORMATION.

The application of an applicant seeking a waiver because of the failure to meet the requirement in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (3), relating to diabetes mellitus currently requiring insulin for control must also contain:

A. a letter signed and dated from a physician licensed under Minnesota Statutes, chapter 147, attesting that:

- (1) the physician is familiar with the applicant's medical history;
- (2) the applicant does not suffer from hypoglycemia unawareness;
- (3) within the last three years the applicant has not had a hypoglycemic reaction that resulted in a change in mental or physical status that precludes the applicant from safely performing normal school bus operations;
- (4) the applicant's diabetic condition will not adversely impact the applicant's ability to perform normal school bus operations safely;
- (5) the applicant has been educated on diabetes and its management, thoroughly informed on and understands the procedures to follow to monitor and manage the diabetes, and what procedures to follow if complications arise; and
- (6) the applicant has the ability and has demonstrated a willingness to properly monitor and manage the diabetes; and

B. a signed statement from an examining ophthalmologist indicating that the applicant:

- (1) has been examined within the preceding six weeks;

- (2) does not have unstable proliferative diabetic retinopathy; and
- (3) has stable distant visual acuity of at least 20/40 Snellen in each eye separately, with or without corrective lenses.

7414.1460 EPILEPSY, LOSS OF CONTROL WAIVER; MORE INFORMATION.

The application of an applicant seeking a waiver because of the failure to meet the requirement in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (8), relating to epilepsy or any other condition likely to cause loss of consciousness or loss of ability to control a motor vehicle safely, must also contain the information in this subpart. The applicant shall provide a letter signed and dated from a physician licensed under Minnesota Statutes, chapter 147, attesting that:

A. the physician is familiar with the applicant's medical history and the applicant has been examined within the last six weeks;

B. any neurological or neuromuscular condition is controlled;

C. the applicant's driving is not or will not be impaired by weakness, numbness, or muscle spasm, or the applicant adequately compensates for any paralysis or paresthesia while driving;

D. the applicant is knowledgeable about the condition; and

E. there are no episodes of altered consciousness or loss of bodily control caused by a neurological condition unless the following apply;

- (1) there has been a single, nonrecurring episode of altered consciousness or loss of bodily control that occurred more than two years prior to application, the cause has been identified, and no further treatment is required; or
- (2) a seizure disorder has been diagnosed but the person has been episode free for at least five years preceding application and has not required treatment for at least five years preceding application.

7414.1470 GENERAL CRITERIA FOR GRANTING WAIVER.

The commissioner shall grant a waiver if:

A. the waiver was requested in the manner prescribed by parts 7414.1410 to 7414.1460;

B. the waiver will have no potential adverse effect on public or pupil safety;

C. any alternative measures; the modification of policies, practices, or procedures; or the provision of auxiliary aids or services, if any, are equivalent or superior to those prescribed in rules; and

D. the waiver does not waive a statutory standard.

7414.1490 GRANTING WAIVER FOR DIABETES MELLITUS.

A waiver that is granted to the applicant who fails to meet the physical requirement in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (3), relating to diabetes mellitus currently requiring insulin for control, must require the applicant to:

A. carry, use, and record in a log the readings from a portable, self-monitoring blood glucose device equipped with a computerized memory or, if the device is capable of printing paper tape reports, the paper tape reports may be used instead of a log;

B. monitor blood glucose one hour before going on duty and approximately every four hours while on duty;

C. make log records or tapes available to any authorized enforcement official upon request;

D. carry and use when on duty a source of rapidly absorbable glucose;

E. carry insulin and the equipment of materials necessary to administer this medication;

F. report in writing within 15 calendar days to the Minnesota Department of Public Safety, Driver and Vehicle Services Division:

- (1) any citation for a moving traffic violation involving the operation of a school bus along with a photocopy of the citation;
- (2) the judicial or administrative disposition of a citation for a moving violation involving a school bus along with a photocopy of the notice of disposition; and
- (3) the involvement in any accident whatever while operating a school bus and include any state, insurance company, or motor carrier accident reports and any attending physician's and laboratory reports of treatment arising from the accident;

G. submit a signed statement from an ophthalmologist no later than 15 days before the renewal date of the waiver and the endorsement that indicates the applicant:

- (1) was examined within the six-week period immediately preceding the renewal date of the waiver;
- (2) was found not to have unstable proliferative diabetic retinopathy; and
- (3) has a stable visual acuity of at least 20/40 Snellen in each eye, corrected or uncorrected; and

H. comply with the provisions of part 7410.2610 for reporting a diabetes-related episode involving the loss of consciousness or voluntary control due to hypoglycemia or hyperglycemia.

7414.1500 ADDITIONAL EXAMINATIONS.

Pursuant to Minnesota Statutes, section 171.13, subdivisions 1 and 3, the commissioner may require a medical examination of an applicant for a school bus endorsement or licensed driver with a school bus endorsement to determine incompetency, physical or mental disability or disease, or any other condition that might affect the driver in exercising reasonable and ordinary control over a motor vehicle.

7414.1510 GRANTING WAIVER FOR EPILEPSY, LOSS OF CONTROL.

A waiver that is granted to the applicant who fails to meet the physical requirement in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (8), relating to epilepsy, or any other condition likely to cause loss of consciousness or control, must require the applicant to:

- A. meet the requirements specified in part 7414.1460;
- B. obtain a recommendation to grant a waiver from the department's seizure subcommittee of neurologists established under part 7410.3000; and
- C. comply with the reporting provisions of part 7410.2500, subparts 2 and 2a.

7414.1520 NO WAIVER FOR HEARING.

The hearing qualifications contained in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (11), are not subject to waiver for a person applying for a school bus endorsement.

7414.1530 GRANTING WAIVER FOR VISION.

A waiver from the vision qualifications contained in Code of Federal Regulations, title 49, section 391.41, paragraph (b) (10), relating to vision, may be granted only if the requirements in part 7414.1440, are met.

7414.1550 EFFECT OF WAIVER.

A waiver has only future effect. Alternative measures, conditions, or limitations attached to the waiver have the force and effect of the applicable law or rule.

A. The driver or applicant must have the waiver in possession whenever operating a school bus.

B. If the driver violates the alternative measures, conditions, or limitations attached to the waiver, the applicant is subject to the enforcement actions and penalties provided in the applicable law or rule. The applicant shall notify the commissioner in writing within 30 days of any material change in the conditions upon which the waiver was granted.

7414.1560 RENEWAL OF WAIVER.

Subpart 1. **Request.** A request for a renewal of a waiver must be submitted by the driver to the commissioner of public safety in writing at least 30 days before its expiration date. The renewal request must contain the current information specified in parts 7414.1410 to 7414.1460.

Subp. 2. **Renewal upon satisfactory compliance.** The commissioner shall renew the waiver if the applicant continues to satisfy the criteria contained in this part and demonstrates compliance with any alternative measures, conditions, or limitations imposed at the time the original waiver was approved.

Subp. 3. **Material change.** Subpart 2 does not apply if there has been any material change in the conditions upon which the variance was granted, such as a change in the type or category of school bus to be driven or a material change in the applicant's medical condition.

7414.1570 NOTICE OF DENIAL, REVOCATION, REFUSAL TO RENEW; APPEALS.

Subpart 1. **Notification.** The commissioner of public safety shall notify the applicant in writing of the commissioner's decision to grant or deny the waiver.

A. If the waiver is granted, the notice shall specify the period of time for which the waiver is effective and any alternative measures, conditions, or limitations the applicant or driver must meet.

B. If the waiver is denied, the commissioner shall specify the reasons for the denial and indicate that the individual may request a review of the commissioner's decision by a medical review panel established under 7410.3000.

Subp. 2. **Action.** The commissioner shall deny, revoke, or refuse to renew a waiver if the commissioner determines the criteria and conditions in parts 7414.1470 to 7414.1560 are not met.

Subp. 3. **Appeal.** An applicant or driver may appeal the denial, revocation, or refusal to renew a waiver, by requesting in

writing a review of the commissioner's decision by the medical review board established under part 7410.3000.

7414.1600 FEDERAL COMMERCIAL CARRIER MEDICAL EXAMINATION.

Subpart 1. **Exemption.** An applicant for an initial school bus driver's endorsement or for renewal of a school bus driver's endorsement is exempt from parts 7414.1100, 7414.1200, 7414.1300, and 7414.1400, upon providing evidence of being medically examined and certified within the preceding 24 months as physically qualified to operate a commercial motor vehicle, pursuant to Code of Federal Regulations, title 49, part 391, subpart E, or Minnesota Statutes, section 221.0314, incorporating those federal regulations. As evidence of being medically examined and certified, the applicant is required to submit, to the Department of Public Safety, the original or photographic copy of the commercial motor carrier physical examination form or the medical examiner's certificate under those federal regulations.

Subp. 2. **Periodic reexamination.** Each school bus driver is required to take and pass a physical examination every two years in order to retain the school bus driver's endorsement. The two-year reexamination period will start from the examination date of the most recent physical examination form or medical examiner's certificate submitted by a school bus driver under subpart 1. A school bus driver must send the original or photographic copy of the completed physical examination form or medical examiner's certificate, along with a \$2 processing fee, on or before the expiration of the two-year period, to the Department of Public Safety. Failure to pass the physical examination and submit the physical examination form or medical examiner's certificate will result in cancellation of the school bus driver's endorsement from the Minnesota driver's license.

RENEWAL OF SCHOOL BUS ENDORSEMENT

7414.2100 RENEWAL REQUIREMENTS.

Subpart 1. **Written examination.** Every four years a school bus driver applying for the renewal of a driver's license and school bus endorsement shall pass a written examination containing only such material as the commissioner of public safety deems necessary to determine if the licensee is entitled to retain the endorsement previously issued.

Subp. 2. **Noncompliance.** Failure to comply with any of the requirements of this part shall result in the cancellation or denial of the school bus driver's endorsement.

CHAPTER 171
MINNESOTA STATE LAW
QUALIFICATIONS FOR SCHOOL BUS DRIVERS

171.321 Qualifications of school bus driver.

Subdivision 1. **Endorsement.** No person shall drive a school bus when transporting school children to or from school or upon a school related trip or activity without having a valid class A, class B, or class C driver's license with a school bus endorsement except that a person possessing a valid driver's license but not a school bus endorsement may drive a vehicle with a seating capacity of ten or less persons used as a school bus but not outwardly equipped or identified as a school bus.

Subd. 2. **Rules.** (a) The commissioner of public safety shall prescribe rules governing the physical qualifications of school bus drivers and tests required to obtain a school bus endorsement. The rules must provide that an applicant for a school bus endorsement or renewal is exempt from the physical qualifications and medical examination required to operate a school bus upon providing evidence of being medically examined and certified within the preceding 24 months as physically qualified to operate a commercial motor vehicle, pursuant to Code of Federal Regulations, title 49, part 391, subpart E, or rules of the commissioner of transportation incorporating those federal regulations. The commissioner shall accept physical examinations for school bus drivers conducted by medical examiners authorized as provided by Code of Federal Regulations, title 49, chapter 3, part 391, subpart E.

(b) The commissioner of public safety, in conjunction with the commissioner of economic security, shall adopt rules prescribing a training program for Head Start bus drivers. The program must provide for initial classroom and behind-the-wheel training, and annual in-service training. The program must provide training in defensive driving, human relations, emergency and accident procedures, vehicle maintenance, traffic laws, and use of safety equipment. The program must provide that the training will be conducted by the contract operator for a Head Start agency, the Head Start grantee, a licensed driver training school, or by another person or entity approved by both commissioners.

Subd. 3. **Records check of applicant.** (a) Before issuing or renewing a school bus endorsement, the commissioner shall conduct a criminal and driver's license records check of the applicant. The commissioner may also conduct the check at any time while a person is so licensed. The check must consist of a criminal records check of the state criminal records repository and a check of the driver's license records system. If the applicant has resided in Minnesota for less than five years, the check must also include a criminal records check of information from the state law enforcement agencies in the states where the person resided during the five years before moving to Minnesota, and of the national criminal records repository including the criminal justice data communications network. The applicant's

failure to cooperate with the commissioner in conducting the records check is reasonable cause to deny an application or cancel a school bus endorsement. The commissioner may not release the results of the records check to any person except the applicant or the applicant's designee in writing.

(b) The commissioner may issue to an otherwise qualified applicant a temporary school bus endorsement, effective for no more than 180 days, upon presentation of (1) an affidavit by the applicant that the applicant has not been convicted of a disqualifying offense and (2) a criminal history check from each state of residence for the previous five years. The criminal history check may be conducted and prepared by any public source or private source acceptable to the commissioner. The commissioner may reissue the temporary endorsement if the National Criminal Records Repository check is timely submitted but not completed within the 180-day period.

Subd. 4. **Training.** (a) No person shall drive a Class A, B, C, or D school bus when transporting school children to or from school or upon a school-related trip or activity without having demonstrated sufficient skills and knowledge to transport students in a safe and legal manner.

(b) A bus driver must have training or experience that allows the driver to meet at least the following competencies:

- (1) safely operate the type of school bus the driver will be driving;
- (2) understand student behavior, including issues relating to students with disabilities;
- (3) encourage orderly conduct of students on the bus and handle incidents of misconduct appropriately;
- (4) know and understand relevant laws, rules of the road, and local school bus safety policies;
- (5) handle emergency situations;
- (6) safely load and unload students.

(c) The commissioner of public safety, in conjunction with the commissioner of children, families and learning, shall develop a comprehensive model school bus driver training program and model assessments for school bus driver training competencies, which are not subject to chapter 14. A school district may use alternative assessments for bus driver training competencies with the approval of the commissioner of public safety. The employer shall keep the assessment for the current period available for inspection by representatives of the commissioner.

Subd. 5. **Annual evaluation.** A school district's pupil transportation safety director, the chief administrator of a nonpublic school or private contractor shall certify annually to the school board or governing board of a nonpublic school that, at a minimum, each school bus driver meets the school bus driver training competencies under subdivision 4. A school district, nonpublic school, or private operator also shall provide in-service training annually to each school bus driver.

171.3215 Canceling bus endorsement for certain offenses.

Subdivision 1. **Definitions.** (a) As used in this section, the following terms have the meanings given them.

(b) "School bus driver" means a person possessing a school bus driver's endorsement on a valid Minnesota driver's license or a person possessing a valid Minnesota driver's license who drives a vehicle with a seating capacity of ten or less persons used as a school bus.

(c) "Disqualifying offense" includes any felony offense, any misdemeanor, gross misdemeanor, or felony violation of chapter 152, or any violation under section 609.3451, 609.746, subdivision 1, or 617.23, or while driving, operating, or being in physical control of a school bus or a Head Start bus, in violation of section 169A.20 or a similar statute or ordinance from another state.

(d) "Head Start bus driver" means a person possessing a valid Minnesota driver's license:

- (1) with a passenger endorsement, who drives a Head Start Bus;
- (2) with a school bus driver's endorsement, who drives a Head Start bus;
- (3) who drives a vehicle with a seating capacity of ten or fewer persons used as a Head Start bus,

Subd. 2. **Cancellation for disqualifying and other offenses.**

Within ten days of receiving notice under section 631.40, subdivision 1a, or otherwise receiving notice for a nonresident driver, that a school bus driver has been convicted of a disqualifying offense, the commissioner shall permanently cancel the school bus driver's endorsement on the offender's driver's license and in the case of a nonresident, the driver's privilege to operate a school bus in Minnesota. A school bus driver whose endorsement or privilege to operate a school bus in Minnesota has been permanently canceled may not apply for reinstatement. Within ten days of receiving notice under section 631.40, subdivision 1a, or otherwise receiving notice for a nonresident driver, that a school bus driver has been convicted of a violation of section 169A.20, or a similar statute or ordinance from another state, and within ten days of revoking a school bus driver's license under section 169A.52, the commissioner shall cancel the school bus driver's endorsement on the offender's driver's license or the nonresident's privilege to operate a school bus in Minnesota for five years. After five years, a school bus driver may apply to the commissioner for reinstatement. Even after five years, cancellation of a school bus driver's endorsement or a nonresident's privilege to operate a school bus in Minnesota for a violation under section 169A.20, sections 169A.50 to 169A.53, or a similar statute or ordinance from another state, shall remain in effect until the driver provides proof of successful completion of an alcohol or controlled substance treatment program. For a first offense, proof of completion is required only if treatment was ordered as part of a chemical use assessment. Within ten days of receiving notice under section 631.40, subdivision 1a, or otherwise receiving notice for a nonresident

driver, that a school bus driver has been convicted of a fourth moving violation in the last three years, the commissioner shall cancel the school bus driver's endorsement on the offender's driver's license or the nonresident's privilege to operate a school bus in Minnesota until one year has elapsed since the last conviction. A school bus driver who has no new convictions after one year may apply for reinstatement. Upon canceling the offender's school bus driver's endorsement, the commissioner shall immediately notify the licensed offender of the cancellation in writing, by depositing in the United States post office a notice addressed to the licensed offender at the licensed offender's last known address, with postage prepaid thereon.

Subd. 2a. **Cancellation for crime against minor.** Within ten days of receiving notice that a Head Start bus driver has committed a crime against a minor, the commissioner shall permanently cancel the passenger endorsement on the offender's driver's license. Upon canceling the offender's passenger endorsement, the commissioner shall immediately notify the licensed offender of the cancellation in writing, by depositing in the United States post office a notice addressed to the licensed offender at the licensed offender's last known address, with postage prepaid thereon. For purposes of this subdivision, "crime against a minor" means an act committed against a minor victim that constitutes a violation of section 609.185, 609.19, 609.195, 609.20, 609.205, 609.21, subdivision 1, 609.221, 609.222, 609.223, 609.342, 609.343, 609.344, 609.345, 609.352, or a felony violation of section 609.322, 609.324, or 609.377.

Subd. 3. **Background check.** Before issuing or renewing a driver's license with a school bus driver's endorsement, the commissioner shall conduct an investigation to determine if the applicant has been convicted of committing a disqualifying offense, four moving violations in the previous three years, a violation of section 169A.20 or a similar statute or ordinance from another state, a gross misdemeanor, or if the applicant's driver's license has been revoked under section 169A.52. The commissioner shall not issue a new bus driver's endorsement and shall not renew an existing bus driver's endorsement if the applicant has been convicted of committing a disqualifying offense. The commissioner shall not issue a new bus driver's endorsement and shall not renew an existing bus driver's endorsement if, within the previous five years, the applicant has been convicted of committing a violation of section 169A.20, or a similar statute or ordinance from another state, a gross misdemeanor, or if the applicant's driver's license has been revoked under section 169A.52, or if, within the previous three years, the applicant has been convicted of four moving violations. An applicant who has been convicted of violating section 169A.20, or a similar statute or ordinance from another state, or who has had a license revocation under section 169A.52 within the previous ten years must show proof of successful completion of an alcohol or controlled substance treatment program in order to receive a bus driver's endorsement. For a first offense, proof of completion is required only if treatment was ordered as part of a chemical use assessment. A school district or contractor that employs a nonresident school bus driver must conduct a background check of the employee's driving record and criminal history in both Minnesota and the driver's state of residence. Convictions for disqualifying offenses, gross misdemeanors, a fourth moving violation

within the previous three years, or violations of section 169A.20, or a similar statute or ordinance in another state, must be reported to the department of public safety.

Subd. 4. **Waiver of permanent cancellation.** (a) The commissioner of public safety or the commissioner's designee, in consultation with the division of driver and vehicle services, may waive the permanent cancellation requirement of this section for a person convicted of a misdemeanor, a gross misdemeanor, a nonfelony violation of chapter 152, or a felony that is not a violent crime under section 609.1095.

(b) After notice to the requesting school district and contract provider of school bus transportation, the commissioner may waive the permanent cancellation requirement after ten years have elapsed since the person was convicted of a violation of section 609.582, subdivision 2, 3, or 4.

RULES

OPERATION OF SCHOOL BUSES

7470.1000 OPERATION OF TYPE A, B, C, AND D SCHOOL BUSES.

Subpart 1. **Application.** Parts 7470.1000 to 7470.1700 govern the operation of Type A, B, C, and D school buses used for transporting pupils to or from school or school-related activities when the buses are owned and operated by a school district or nonpublic school, or privately owned and operated under a contract or agreement with a school district or nonpublic school.

Subp. 2. **Transportation of pupils.** Pupils are not to be evicted from the bus along the route for a breach of discipline. All breaches of discipline must be reported by the bus driver to the authorized person.

The entrance door must be closed at all times when transporting pupils and the bus is in motion.

All buses must load and unload in the right lane of the roadway, at pupil stops on bus routes approved by the authorized person. Loading or unloading in a designated turn lane or in a lane immediately adjacent to a designated turn lane is prohibited unless the turn lane is a designated school bus stop at which pupils are not required to cross the road. Under these circumstances, the bus must stop at the extreme right-hand side of the turn lane and the eight-light system and stop arm should not be used. Loading and unloading students within an intersection is prohibited.

No pupils may be in the bus while the fuel tank is being filled. On leaving the vehicle when pupils are in the bus, the driver shall stop the motor, remove the ignition key, set the brakes, and otherwise render the bus immobile.

The authorized person shall see that no materials, including guns, loaded or unloaded; gasoline cans, empty or full; animals, except service dogs accompanying persons with disabilities; or any other object of a dangerous or objectionable nature are transported in the school bus when pupils are being transported.

Subp. 3. **Driving on school grounds.** Buses must not be run backwards on the school grounds or at any other point if it can be avoided. If necessary to run a bus backwards, the driver should have adequate visibility to determine if any moving vehicles are within 500 feet in either direction, when on roadways. When there is a pupil pick-up or unloading at a backing point, the driver shall always load before backing and unload after backing. No pupils may be outside the bus when it is backing.

Subp. 4. **In case of accidents.** In case of an accident or breakdown of the bus the driver shall not leave the bus, but

shall send two of the patrol or other responsible pupils to the nearest house to summon help.

Immediate reports of all accidents, however slight, involving the school bus must be made by the driver to the authorized person and to any other authorities required by law, rule, or regulation. The driver shall prepare and keep all records and reports required by the authorized person.

7470.1100 DRIVER OF TYPE A, B, C, OR D BUS.

The driver of a type A, B, C, or D school bus shall:

A. bring the bus to a full stop and disengage gears by shifting into neutral or park before loading and unloading pupils;

B. use the prewarning amber flashing signals, flashing red signals, and stop signal arm in accordance with Minnesota Statutes, section 169.443;

C. maintain at least a 50-foot interval when following another bus entering or leaving the school ground, and at least 500 feet when traveling on the highway, in accordance with Minnesota Statutes, section 169.18, subdivision 8, paragraph (b);

D. load or unload pupils only where the view is unobstructed to the motorist for 500 feet in either direction on a roadway with a speed limit of 35 miles per hour or greater and where the view is unobstructed for at least 100 feet where the speed limit is less than 35 milers per hour;

E. be responsible for safely delivering the pupils who must cross the highway to the left side of the road by one of the following methods: the pupil shall pass around in front of the vehicle and cross the road only upon receiving word or signal from the driver; or the pupil shall pass around in front of the bus and be conducted across the road by the school bus patrol or the bus monitor; or the driver shall personally conduct the pupils across the road; and

F. stop at all railroad crossings whether carrying passengers or not in accordance with Minnesota Statutes, section 169.28. The driver shall activate the four-way hazard warning lights not less than 100 feet from the nearest rail, and stop not less than ten feet from the nearest rail. While so stopped, the driver shall open the driver's window and service door to look and listen in both directions along the track for any approaching train. Eight-lamp prewarning alternately flashing amber signals and flashing red stop signals must not be used at railroad crossings. Hazard warning signals should be used.

7470.1200 FLAGGING AT RAILROAD GRADE CROSSINGS

A school bus must not be flagged across railroad grade crossings except at such railroad grade crossings as the local school authorized person may designate.

Flagging must be done in the following manner.

The pupil or bus monitor shall take a position so as to have a clear view of the railroad tracks in both directions. If a train is approaching, the pupil or monitor shall not cross the track but shall face the bus and signal the bus not to proceed by holding up both hands above his head. On making certain that the track is clear and safe for crossing, the pupil or monitor shall signal the driver to cross the tracks by a forward motion of an upraised arm. The driver must be sure to check for approaching trains and be certain it is safe to cross before driving the bus across the tracks. The pupil or monitor shall not reenter the bus until the bus has crossed the tracks to a safe distance.

7470.1300 EQUIPMENT, INSPECTION AND USE.

No school bus shall be driven unless the driver or other designated person has inspected the vehicle to ensure that, at a minimum, the following parts and accessories are in good working order: service brakes, including trailer brake connections; parking (hand) brakes; steering mechanism; lighting devices and reflectors; tires; fluid levels; horn; windshield wiper or wipers; rear-vision and crossover mirrors, including their proper adjustment; eight-lamp system; and stop arm. A copy of the current daily pretrip inspection report must be carried in the bus.

7470.1400 OPERATION OF TYPE III SCHOOL BUSES.

The operating rules in parts 7470.1000 to 7470.1500 govern the operation of Type III school buses used for transporting pupils when owned and operated by a school district or nonpublic school, or privately owned and operated under an agreement with a school district or nonpublic school. Type III school buses are restricted to automobiles, station wagons, and other vehicles having a manufacturer's rated seating capacity of ten or fewer people including the driver, and a gross vehicle weight rating of 10,000 pounds or less.

7470.1500 DRIVER OF TYPE III BUSES

The driver of a Type III school bus shall not:

- A. operate vehicle as a Type A, B, C, or D school bus;
- B. not stop traffic.
- C. load or unload in a vehicular traffic lane or on the shoulder, but is restricted to curb, non-traffic side (normal parking lane), off-street loading areas, driveways, yard service, and other areas to avoid any hazardous conditions.

D. load or unload in the right-hand lane of the roadway, designated turn lane, or lane immediately adjacent to a designated turn lane.

E. load or unload so that a pupil has to cross the road except where not possible or impractical, then the driver or aide shall personally escort the pupil across the road;

F. escort a pupil across the road under item E unless the motor is stopped, the ignition key is removed, the brakes are set, and the vehicle is otherwise rendered immobile;

G. load or unload before making a complete stop and disengaging gears by shifting into neutral or park; or

H. operate the vehicle as a school bus, whether carrying pupil passengers or not, without displaying the "Vehicle Stops At RR Crossings" sign and stopping at all railroad crossings. The sign may be covered or removed when vehicle is not operating as a school bus.

7470.1600 TRANSPORTING PUPILS WITH DISABILITIES.

Subpart 1. **Services provided.** Minnesota Statutes, sections 125A.03 to 125A.24, requires school districts to provide special education and services for a school age resident with a disability. Accordingly, free transportation services must be provided to any child with a disability who requires special transportation services because of the child's disabling conditions or special program needs.

Parts 7470.1600 and 7470.1700 apply to transportation of a child with a disability, as defined in Minnesota Statutes, section 125A.02, when the disabling conditions of the child are such that the child cannot be safely transported on the regular school bus route or when the child is transported on a special route for the purpose of attending an approved special education program.

Parts 7470.1600 and 7470.1700 are not applicable to parents who transport their own child under contract with a school district or nonpublic school.

Subp. 2. **Appeal process.** Any parent of a child with a disability who believes that the transportation services provided for that child are not in compliance with parts 7470.1600 and 7470.1700 may utilize the due process procedures provided for in Minnesota Statutes, sections 125A.03 to 125A.24.

Subp. 3. **Length of transit time.** The length of time a pupil with a disability is transported must be appropriate to the physical, mental, and emotional well being of the pupil. In general, a pupil with a disability should not spend more time in transit than a pupil without a disability except as may be

required because of the unique location of the pupil's educational program.

Subp. 4. **Type of vehicle.** The school district shall determine the type of vehicle used to transport pupils with a disability on the basis of the disabling conditions of those pupils. These vehicles must comply with Minnesota Statutes, section 169.4504.

Subp. 5. **Additional assistance; determination.** Vehicles used to transport pupils with a disability must be equipped with a two-way communications system or have a responsible aide, or both, to provide necessary assistance and supervision that cannot safely be provided by the driver. A school district may determine that an aide is required. The determination of whether an aide is required must reflect the needs of the pupils and be based on such factors as disabilities of pupils transported, distance traveled, density of population, terrain, and other factors that may affect the safety of the pupil passengers. Exceptions to this subpart may be made upon mutual agreement between the parents and the school district.

Subp. 6. **Special equipment.** Specially adapted seats, support, or protective devices must be provided for all pupils who require the devices to ensure their safe transportation. These devices must be selected by the school district in consultation with the pupil's parents and on the basis of the specific needs of the individual pupil with a disability.

Subp. 7. **Wheelchair securement.** A school bus used to transport pupils in wheelchairs must be equipped with fastening devices that will hold the wheelchairs securely in a fixed position.

7470.1700 DRIVERS AND AIDES FOR PUPILS WITH DISABILITY.

Subpart 1. **Drivers generally.** Each driver of a vehicle for pupils with a disability shall be carefully selected to assure the driver can perform the requirements of the job. Drivers must be assigned to each route on a regular basis whenever possible.

Subp. 2. **Information necessary.** Each aide assigned to a vehicle transporting pupils with a disability, or driver if no aide is assigned, or both, shall have available to them in the vehicle a typewritten card indicating:

- A. the pupil's name and address;
- B. the nature of the pupil's disabilities;
- C. emergency health care information; and
- D. the names and telephone numbers of the pupil's physician, parents, guardians, or custodians, and some person other than the pupil's parents or custodians who can be contacted in case of an emergency.

Subp. 3. **Training.** Each driver and aide assigned to a vehicle transporting pupils with a disability must:

A. be instructed in basic first aid and procedures for the pupils under their care;

B. within one month after the effective date of assignment, participate in a program of in-service training on the proper methods for dealing with the specific needs and problems of pupils with disabilities;

C. assist pupils with disabilities on and off the bus when necessary for their safe ingress and egress from the bus; and

D. ensure that protective safety devices, as required in part 7470.1600, subpart 6, are in use and fastened properly.