

1 Department of Education

2

3 Adopted Permanent Rules Relating to School Buses

4

5 Rules as Adopted

6 3520.0200 APPLICATION AND CLAIM FOR TRANSPORTATION AID.

7 Subpart 1. Deadline. A district making application for
8 aid for transportation or board and lodging under Minnesota
9 Statutes, sections 124.223 and 124.225 shall report to the State
10 Department of Education and all claims submitted shall be
11 postmarked not later than August 15 after the close of the
12 school term for which aid is claimed in order to qualify for
13 final payment at the regular time.

14 Subp. 2. Frequency of reports. For each fiscal year
15 ending June 30, each district shall file a report pursuant to
16 subpart 1. This report and the year-end reports required in
17 subpart 1 shall provide the pupil counts on which the aid will
18 be paid.

19 3520.0300 AID LIMITATION.

20 Transportation aid will be paid for the transportation of
21 each eligible resident pupil for one round trip per day to the
22 classified school attended.

23 3520.0400 TRANSPORTATION DATA REPORTING REQUIREMENTS.

24 Subpart 1. Regular category. An elementary or secondary
25 pupil for which a school district is entitled to transportation
26 aid under Minnesota Statutes, sections 124.223, clauses (1) and
27 (2), must be transported 20 or more days to be eligible for
28 state aid. A kindergarten pupil attending full-day, every-other
29 day classes must be transported ten or more days to be eligible
30 for state aid. A district shall report annual mileage for
31 regular category transportation.

32 Subp. 2. Other authorized categories. A district that
33 transports pupils under Minnesota Statutes, sections 123.223,
34 clauses (1) and (3) to (10), and 275.125, subdivision 5d, must

1 report the number of pupils transported. Annual mileage must be
2 reported only when separate routes are set up to provide this
3 transportation.

4 Subp. 3. Other unauthorized categories. A district that
5 transports pupils in categories that are not authorized for
6 transportation aid must furnish information on students
7 transported and mileage as requested on the annual
8 transportation report.

9 Subp. 4. Other transportation data. A district shall
10 furnish information on vehicle ownership, fuel consumption, and
11 other data as requested on the annual transportation report.

12 Subp. 5. Duplication of pupil counts. A district must not
13 report a pupil in more than one to-and-from-school category.
14 These categories are: regular, handicapped, secondary
15 one-to-two-miles, traffic hazards, and ineligible.

16 3520.1000 TRANSPORTATION AND BOARD AND LODGING CONTRACTS.

17 The school board shall enter into written contracts for the
18 transportation and board and lodging of its resident pupils.
19 (See part 3525.1200)

20 3520.1200 COMMISSIONER'S RULES, TRANSPORTATION CONTRACTS.

21 The board of any school district may contract with another
22 district, private contract hauler, or parent for the
23 transportation of its resident pupils.

24 Transportation contracts should include at least the
25 following specific items:

- 26 A. the correct names of the contracting parties;
27 B. date the contract begins and date the contract
28 ends;
29 C. kind of transportation equipment to be used;
30 D. total amount to be paid during the school year or
31 base per pupil rate;
32 E. when and how payments are to be made;
33 F. minimum number of pupils to be transported; and
34 G. special terms to be mentioned:
35 (1) holidays, specific dates;

- 1 (2) vacations, beginning and ending dates;
2 (3) conditions governing bus route changes;
3 (4) how new and additional pupils will be
4 provided for;
5 (5) how extracurricular and other special trips
6 are to be provided and paid for;
7 (6) how adjustments and refunds are to be
8 handled;
9 (7) kinds and amounts of insurance to be carried
10 and special coverage;
11 (8) a statement that the local board shall
12 approve any and all school bus routes, drivers, and alternate
13 drivers; and
14 (9) how contracts may be terminated.

15 3520.1800 TRANSPORTATION OF NONRESIDENT PUPILS.

16 A school district may transport nonresident pupils on
17 district-owned and -operated buses or on privately owned and
18 operated buses contracted for by the school board of the
19 district. The equipment must not be required for the
20 transportation of resident pupils. There must be available
21 seating space in the bus for the nonresident pupils.

22 The routes must be within the area of the secondary school
23 to be served and must be approved by the State Board of
24 Education.

25 RULES, OPERATION OF SCHOOL BUSES AND PUPIL

26 TRANSPORTATION SAFETY EDUCATION PROGRAM

27 3520.2400 OPERATION OF TYPE I AND TYPE II SCHOOL BUSES.

28 Subpart 1. Application of rules. The operating rules in
29 parts 3520.2400 to 3520.2900 shall govern the operation of Type
30 I and Type II school buses used for the transportation of school
31 children when owned and operated by a school district or
32 privately owned and operated under a contract with a school
33 district.

34 Subp. 2. Transportation of pupils. Only pupils assigned
35 to the school bus by the school board or designated

1 administrative officer of the school district shall be
2 transported at district expense.

3 Pupils are not to be evicted from the bus along the route
4 for a breach of discipline. All breaches of discipline shall be
5 reported by the bus driver to the administrative officer.

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

8 All buses shall load and unload in the right lane of the
9 roadway, at pupil stops on bus routes approved by the
10 administrative officer. Loading or unloading in a designated
11 turn lane or in a lane immediately adjacent to a designated turn
12 lane is prohibited.

13 There shall be no pupils in the bus while the gas tank is
14 being filled. On leaving the vehicle when pupils are in the
15 bus, the driver shall stop the motor, remove the ignition key,
16 set the brakes, and otherwise render the bus immobile.

17 The administrative officer shall see that no materials,
18 including guns, loaded or unloaded; gasoline cans, empty or
19 full; animals; or any other object of a dangerous or
20 objectionable nature are transported in the school bus when
21 children are being transported.

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

31 Subp. 4. **In case of accidents.** In case of an accident or
32 breakdown of the bus the driver shall not leave the bus but send
33 two of the patrol or other responsible pupils to the nearest
34 house to summon help.

35 Immediate reports of all accidents, however slight,
36 involving the school bus shall be made by the driver to the

1 administrative officer and to such other authorities as required
2 by law, rule, or regulation. The driver shall prepare and keep
3 all records and reports required by the administrative officer.

4 3520.3000 OPERATION OF TYPE III SCHOOL BUSES. (INCLUDES
5 AUTOMOBILES, STATION WAGONS, AND OTHER VEHICLES DESIGNED FOR
6 CARRYING NINE OR FEWER.)

7 Subpart¹ 1. Application. The operating rules in parts
8 3520.3000 to 3520.3200 shall govern the operation of Type III
9 school buses used for the transportation of school children when
10 owned and operated by a school district or privately owned and
11 operated under a contract with a school district.

12 Subp. 2. Transportation of pupils. Only pupils assigned
13 to the vehicle by the school board or designated administrative
14 officer of the school district shall be transported at district
15 expense.

16 3520.3680 INCORPORATIONS BY REFERENCE.

17 Part or all of the documents and standards referred to in
18 this part are incorporated by reference in chapter 3520. The
19 documents are subject to frequent change and are conveniently
20 available to the public through the Minitex interlibrary loan
21 system. The latest edition available at the time the amendments
22 to chapter 3520 are proposed is cited. Unless a later
23 rulemaking by the Department of Education specifically restricts
24 application of material incorporated by reference to a specific
25 edition, later editions are incorporated by reference as they
26 are published and made conveniently available to the public.

27 National Minimum Standards for School Buses and
28 Operations, 1985 Revised Edition, National Safety Council, 444
29 North Michigan Avenue, Chicago, IL 60611.

30 SBMI School Bus Design Objectives, January 1985,
31 School Bus Manufacturers Institute, 4907 Cordell Avenue,
32 Bethesda, MD 20814.

33 Standard for Safety for Dry Chemical Fire
34 Extinguishers ANSI-UL 299-1984, Approved March 2, 1984, American
35 National Standard/Underwriter Laboratories, Inc., 333 Pfingsten

1 Road, Northbrook, IL 60062.

2 School Bus Warning Lamps - SAE J887, May 1982, Society
3 of Automotive Engineers Standards, 400 Commonwealth Drive,
4 Warrendale, PA 15096.

5 Standard Method of Salt Spray (706) Testing -
6 Designation B117-85, American Society for Testing and Materials,
7 1916 Race Street, Philadelphia, PA 19103.

8 Windshield Defrosting Systems Test Procedure - Trucks,
9 Buses, and Multipurpose Vehicles - SAE J381 and SAE J382, June
10 1984, Society of Automotive Engineers Standards.

11 Standard for the Storage and Handling of Liquefied
12 Petroleum Gases NFPA58, 1986 Edition, National Fire Protection
13 Association, Batterymarch Park, Quincy, MA 02269.

14 School Bus Stop Arm - Recommended Practice - SAE
15 J1133, April 1984, Society of Automotive Engineers Standards.

16 Windshield Defrosting Systems Performance Guidelines -
17 Trucks, Buses, and Multipurpose Vehicles - Recommended Practice
18 - SAE J382, October 1984, Society of Automotive Engineers
19 Standards.

20 Turn Signal Lamps for Use on Motor Vehicles Less Than
21 2032 MM in Overall Width - SAE J588, November 1984 and SAE
22 J5881, Society of Automotive Engineers Standards.

23 Manual on Uniform Traffic Control Devices for Streets
24 and Highways, 1987, Federal Highway Administration, 400 7th
25 S.W., Washington, D.C. 20590.

26 United States Standard Alphabets for Highway Signs,
27 Series B and Series D, Federal Highway Administration.

28 Federal Specification TT-C-520B, Coating Compound,
29 Bituminous Solvent Type Underbody (for Motor Vehicles), General
30 Services Administration, Specification and Consumer Information,
31 Distribution Center, Washington Navy Yard, Building 197,
32 Washington, D.C. 20407.

33 Product Standard PS 1-83, Construction and Industrial
34 Plywood, United States Department of Commerce, National Bureau
35 of Standards, Washington, D.C. 20234.

1 3520.3700 DESIGN OF SCHOOL TRANSPORTATION EQUIPMENT STANDARDS.

2 Subpart 1. **General.** The design and color of school buses
3 used in the transportation of school children to and from school
4 or to and from school-related activities, whether owned and
5 operated by a school or school district or privately owned and
6 operated under a contract with a school or school district,
7 shall ensure safe and economical transportation of pupils at all
8 times and shall conform to the minimum standards for design of
9 school buses as established by the State Board of Education and
10 shall comply with applicable federal standards. These are
11 minimum standards and may be exceeded if exceeding them does not
12 conflict with federal standards, state laws, or rules.

13 Subp. 2. [See Repealer.]

14 Subp. 2a. **Variations.** The commissioner of the Department
15 of Education, after consulting with the commissioner of the
16 Department of Public Safety, may grant a variance to any of the
17 standards to accommodate testing of new equipment related to
18 school buses. The variance must not conflict with Minnesota
19 Statutes, federal laws, or Federal Motor Vehicle Safety
20 Standards.

21 A variance from the standards must be for the sole purpose
22 of testing and evaluating for increased safety, efficiency, and
23 economy of pupil transportation. The variance expires 12 months
24 from the date of its granting by the commissioner unless the
25 commissioner specifies an earlier expiration date.

26 The commissioner upon granting a variance must furnish the
27 commissioner of the Department of Public Safety and the
28 requesting operator with a written copy of the variance
29 specifying the conditions imposed on the testing.

30 The commissioner shall also provide a copy of the variance
31 in writing to all contract operators and school districts.

32 The commissioner may grant up to one 12-month extension on
33 a variance.

34 Annually by June 30, the commissioner will review all
35 variances for adoption into the minimum standards.

36 Subp. 3. [See Repealer.]

1 3520.3701 VEHICLE DESCRIPTIONS.

2 Subpart 1. **Type I.** A Type I school bus means a school bus
3 of more than 10,000 pounds gross vehicle weight rating, designed
4 for carrying more than ten persons. A Type I school bus may be
5 either a conventional or forward control bus.

6 Subp. 2. **Type II.** A Type II school bus is a bus with a
7 gross vehicle weight rating of 10,000 pounds or less, designed
8 for carrying more than ten persons. It must be outwardly
9 equipped and identified as a school bus. It need not comply
10 with Type I standards unless specified in part 3520.5611.

11 Subp. 3. **Type III.** A Type III school bus is restricted to
12 a passenger car, station wagon, van, or bus with a maximum
13 manufacturer's rated seating capacity of ten persons including
14 the driver, and with a gross vehicle weight rating of 10,000
15 pounds or less. A "gross vehicle weight rating" or "GVWR" means
16 the value specified by the manufacturer as the loaded weight of
17 a single vehicle. Actual gross vehicle weight must not exceed
18 the manufacturer's gross vehicle weight rating.

19 A Type III school bus must not in any way be outwardly
20 equipped and identified as a school bus and must not operate as
21 a Type I or Type II bus and need not conform to standards for
22 Type I or Type II buses.

23 Subp. 4. **Standards are for new buses.** The minimum
24 standards apply to new school buses purchased for use in
25 Minnesota after the effective date of these standards. Buses
26 complying with these standards when purchased new for use in
27 Minnesota need not comply with standards established later
28 except as specifically provided by law.

29 Subp. 5. **Used buses.** A used school bus purchased for use
30 in Minnesota that has a current or expired Minnesota inspection
31 sticker must conform to the Minnesota minimum standards in
32 effect on the date the vehicle was purchased new. A used school
33 bus that has never been inspected in Minnesota must conform to
34 current Minnesota minimum standards.

35 Subp. 6. **"MN" designation.** School bus bodies manufactured

1 after January 1, 1986, and used on the streets and highways in
2 this state must bear the designation "MN" in the body
3 identification number. The manufacturer of the school bus body
4 certifies by the "MN" designation that the bus body has been
5 manufactured to meet the minimum standards required of school
6 bus bodies. A school bus body manufactured before January 1,
7 1986, that does not bear a current inspection sticker, must not
8 be used on the streets and highways in the state unless its
9 manufacturer recertifies that the school bus body meets the
10 minimum standards required of school bus bodies by law.
11 Recertification must be made on a form provided by the Minnesota
12 Department of Public Safety.

13 Automobiles, station wagons, and vans manufactured in a
14 single stage are exempt from the requirements of this subpart.

15 Subp. 7. **Inspection.** Pursuant to Minnesota Statutes,
16 section 169.451, school bus inspection procedures that indicate
17 specific criteria and tolerances for each standard must be
18 promulgated by the state patrol.

19 Subp. 8. **Interpretation.** The commissioner of the
20 department of education and the commissioner of the department
21 of public safety shall confer on interpretations and
22 clarifications of rules.

23 Subp. 9. **Restructured defined.** "Restructured" means a
24 vehicle produced by a chassis manufacturer which is converted
25 into a school bus by a second manufacturer and upon completion
26 shall meet or exceed the static load test code for school bus
27 body structure.

28 Subp. 10. **No depreciation; exception.** A new bus body may
29 be remounted on a chassis that is not more than three years old.
30 Permission must be obtained from the commissioner of education
31 in coordination with the commissioner of public safety before
32 the remounting is done. A used bus body must not be remounted
33 on a new or used chassis.

34 3520.3801 TYPE I CHASSIS.

35 The standards in parts 3520.3900 to 3520.4761 apply to Type

1 I bus chassis.

2 3520.3802 COMPLIANCE.

3 Compliance with these standards is the responsibility of
4 the chassis manufacturer.

5 3520.3900 AIR CLEANER.

6 The engine intake air cleaner shall be furnished and
7 properly installed by the chassis manufacturer to meet engine
8 specifications.

9 3520.4001 AXLES.

10 The front and rear axles, including the suspension
11 assembly, must have a gross weight rating at ground at least
12 equal to that portion of the load imposed by the chassis
13 manufacturer's maximum gross vehicle weight rating.

14 3520.4100 BATTERY.

15 Subpart 1. General requirement. The storage battery, as
16 established by the manufacturer's rating, must be of sufficient
17 capacity to care for starting, lighting, signal devices,
18 heating, and other electrical equipment in Minnesota.

19 A. In a bus with a gas-powered chassis, the battery
20 or batteries must provide a minimum of 800 cold cranking amperes.

21 B. In a bus with a diesel-powered chassis, the
22 battery or batteries must provide a minimum of 1,070 cold
23 cranking amperes.

24 Subp. 2. Options. The following battery systems are
25 optional.

26 A. A battery providing at least 550 cold cranking
27 amperes may be installed in the engine compartment if used only
28 in combination with a generator or alternator of at least 120
29 amperes.

30 B. A bus with a gross vehicle weight rating (GVWR) of
31 more than 10,000 pounds, but not over 15,000 pounds GVWR may be
32 equipped with a battery to provide a minimum of 475 cold
33 cranking amperes (CCA) if used only in combination with an
34 alternator of at least 80 amperes. This option does not apply

1 to those buses with wheelchair lifts.

2 Subp. 3. **Mounting of battery.** When a battery is to be
3 mounted on a sliding tray rather than the standard installation
4 provided by the chassis manufacturer, the battery must be
5 temporarily mounted on the chassis frame by the chassis
6 manufacturer. The final location of the battery and the
7 appropriate cable lengths shall agree with the SBMI Design
8 Objectives, January 1985 Edition.

9 Subp. 4. [See Repealer.]

10 3520.4201 BRAKES.

11 Subpart 1. **Adequate to control, stop, and hold.** A school
12 bus must have brakes adequate to control the movement of, and to
13 stop and hold the bus.

14 Subp. 2. **Federal brake standards.** A school bus must meet
15 federal brake standards in effect at the time of manufacture and
16 must include a service brake, a parking brake, and an emergency
17 brake system.

18 Subp. 3. **Emergency brake system.** A school bus must have
19 either:

20 A. emergency features in the service brake system; or

21 B. a system separate from the service brake system.

22 Subp. 4. **Control.** A control by which the driver applies
23 the emergency brake system must be located so that the driver
24 can readily operate it while being properly restrained by a seat
25 belt assembly provided for the driver's use. The control for
26 applying the emergency brake system may be combined with either
27 the control for applying the service brake system or the control
28 for applying the parking brake system. All three controls must
29 not be combined.

30 Subp. 5. **Interconnected systems.** If the brake systems
31 specified in subpart 2 are interconnected, they must be
32 designed, constructed, and maintained so that if part of the
33 operating mechanism of one or more of the systems fails, the
34 vehicle will have operative brakes capable of performing as
35 specified in Federal Motor Vehicle Safety Standard Number 105,

1 Code of Federal Regulations, title 49, part 571.

2 Subp. 6. Brake tubing and hose. The brake tubing and
3 brake hose must conform to Federal Motor Vehicle Safety Standard
4 Number 106, Code of Federal Regulations, title 49, part 571.

5 Subp. 7. Brake lining. The brake lining on a school bus
6 must be constructed and installed to avoid excessive fading and
7 grabbing. The brake lining must be adequate in thickness, means
8 of attachment, and physical characteristics to provide for safe
9 and reliable stopping of the motor vehicle.

10 Subp. 8. Reservoirs required. A school bus using air or
11 vacuum for braking must be equipped with reserve capacity or a
12 reservoir sufficient to ensure a full service brake application
13 with the engine stopped without depleting the air pressure or
14 vacuum below 70 percent of that pressure or degree of vacuum
15 indicated by the gauge immediately before the brake application
16 is made. For purposes of this subpart, a full service brake
17 application is made when the service brake pedal is pushed to
18 the limit of its travel.

19 Subp. 9. Warning devices and gauges. A school bus must be
20 equipped with a signal that provides a warning to the driver
21 when a failure occurs in the vehicle's brake system.

22 A. Buses having service brakes activated by hydraulic
23 fluid must be equipped with a warning signal that conforms to
24 Federal Motor Vehicle Safety Standard Number 105, Code of
25 Federal Regulations, title 49, part 571.

26 B. Buses having service brakes activated by air
27 pressure must be equipped with warning devices that conform with
28 Federal Motor Vehicle Safety Standard Number 121, Code of
29 Federal Regulations, title 49, part 571.

30 C. Buses having service brakes activated by vacuum
31 must be equipped with a device that provides a readily audible
32 or visible continuous warning to the driver whenever the vacuum
33 in the vehicle's supply reservoir is less than eight inches of
34 mercury and with a vacuum gauge that indicates to the driver the
35 vacuum in inches of mercury available for braking.

36 Subp. 10. Air or vacuum applied or assisted. A bus having

1 a braking system in which hydraulically activated service brakes
2 are applied or assisted by compressed air or vacuum must be
3 equipped with both a warning signal that conforms to the
4 requirements of subpart 9, item A and a warning device that
5 conforms to the requirements of subpart 9, item B or C.

6 3520.4301 FRONT BUMPER.

7 The front bumper must be furnished by the chassis
8 manufacturer as part of the chassis. The front bumper must
9 extend beyond the forwardmost part of the body, grille, hood,
10 and fenders and must extend to the outer edges of the fenders at
11 the bumper top line. The front bumper, except the breakaway
12 bumper ends, must be of sufficient strength to permit pushing a
13 vehicle of equal gross vehicle weight without permanent
14 distortion to the bumper, bumper braces, chassis, or body.

15 3520.4400 CERTIFICATION.

16 The chassis distributor or dealer, on request, must certify
17 to the State Department of Education that its product meets
18 minimum standards on items not covered by certification issued
19 under the requirements of the National Traffic and Motor Vehicle
20 Safety Act, United States Code, title 49, section 571.

21 3520.4500 CLUTCH.

22 Clutch torque capacity must be at least equal to engine
23 torque output.

24 3520.4510 COLOR.

25 Subpart 1. and 2. [See Repealer.]

26 Subp. 3. **New buses.** The chassis including front bumper
27 and wheels must be painted glossy black, the hood and cowl must
28 be painted National School Bus Yellow, except that the hood may
29 be either lusterless yellow or lusterless black.

30 Subp. 4. **Color options.** Items A to C list color options
31 for specific parts of a school bus.

32 A. Front fenders may be painted glossy yellow or
33 glossy black.

34 B. The following may be other than yellow or black:

1 wheel rims; chassis grills; mirror backs, rims, and mounting
2 brackets; reflector housings; window frames; accessories and
3 other minor trim items.

4 C. Silver, black, or yellow retroreflective material
5 may be used on the front bumper for increased night visibility.

6 3520.4531 DRIVE SHAFT.

7 The drive shaft must be protected by adequate metal guard
8 or guards to prevent it from whipping through the floor or
9 dropping to the ground if broken.

10 3520.4540 ELECTRICAL SYSTEM.

11 Subpart 1. Battery. See chassis, part 3520.4100; and
12 body, part 3520.4820.

13 Subp. 2. Generator. See chassis, part 3520.4610.

14 Subp. 3. Lamp and signals. See body, parts 3520.5200 to
15 3520.5230.

16 Subp. 4. Wiring. See body, part 3520.5580.

17 Subp. 5. Electrical terminal. The chassis manufacturer
18 must install a readily accessible electrical terminal so that
19 the body and chassis electrical load may be recorded through a
20 chassis ammeter without dismantling or disassembling the chassis
21 component. The chassis wiring system to the terminal must have
22 a minimum of 100-ampere capacity. The chassis ammeter and
23 wiring must be compatible with the generating capacity, and the
24 ammeter must be capable of recording a continuous draw of 100
25 amperes.

26 Subp. 5a. Option. A voltmeter may be used in place of an
27 ammeter.

28 Subp. 6. Wiring codes, colors, diagram. All wiring must
29 use a standard color or number coding and each chassis must be
30 delivered with a wiring diagram that coincides with the wiring
31 of the chassis.

32 3520.4550 EXHAUST SYSTEM.

33 Subpart 1. General. The exhaust pipe muffler and tailpipe
34 must be outside the bus body and attached to the chassis with

1 adequate hangers of sufficient strength to maintain the position
2 of the exhaust system under all normal operating conditions.
3 The tailpipe must be constructed of seamless or electrically
4 welded tubing of 16-gauge steel or its equivalent and must
5 extend at least five inches beyond the chassis frame but should
6 not go beyond the rear bumper. See body, part 3520.5500. The
7 size of the tailpipe must not be reduced after it leaves the
8 muffler.

9 Subp. 2. Exception. The exhaust system on vehicles
10 designed for the transportation of special education pupils may
11 be routed to the left of the right frame rail to allow for the
12 installation of a lift on the right side of the vehicle.

13 Subp. 3. Insulation. The exhaust system on a gas-powered
14 chassis must be properly insulated from fuel tank and tank
15 connections by a securely attached metal shield at any point
16 where the exhaust system is within 12 inches of the tank or tank
17 connections.

18 Subp. 4. Corrosion-resistant. The muffler must be
19 constructed of corrosion-resistant material.

20 Subp. 5. Option; Type I school buses. Left side exhaust
21 systems are allowed on Type I school buses but must conform to
22 the following requirements:

23 A. The exhaust system pipe must be of nonflexible,
24 one-piece pipe and be a minimum of 16 gauge steel or its
25 equivalent. Diesel buses may use flex pipe on crossover pipes.

26 B. The exhaust system pipe must extend a minimum of
27 18 inches straight rearward from the muffler before a maximum
28 bend of 45 degrees is made in the pipe. More than one bend may
29 be made to attain a 45-degree maximum bend.

30 C. The exhaust system may extend to a maximum of one
31 inch beyond the body skirt.

32 D. The end of the exhaust pipe must be cut smooth.

33 E. An exhaust system that has its exit point behind
34 the rear wheels need not comply with the 45-degree bend
35 requirement.

1 3520.4560 FENDERS, FRONT.

2 Subpart 1. General requirements. The total spread of the
3 outer edges of the front fenders, measured at the fender line,
4 must exceed the total spread of the front tires when the front
5 wheels are in the straight ahead position. The front fenders
6 must be properly braced.

7 Subp. 2. Exception. The standard in subpart 1 does not
8 apply to forward control buses.

9 3520.4570 FRAME.

10 The frame or its equivalent must be designed to correspond
11 at least to standard practice for trucks that have the same
12 general load characteristics and that are used for highway
13 service. Any person or secondary manufacturer that modifies the
14 original chassis frame shall guarantee the performance of
15 workmanship and materials resulting from the modification. Any
16 frame modification must not be for the purpose of extending the
17 wheelbase. Extensions of frame lengths are permissible only
18 when such alterations are behind the rear hanger of the rear
19 spring or in front of the front spring hanger. Holes in top or
20 bottom flanges of the frame side rail must not be permitted
21 except as provided in the original chassis frame. There must be
22 no welding to frame side rails except as provided above.
23 Welding for installation of the trailer hitch is permissible.
24 Frame lengths shall be provided in accordance with School Bus
25 Manufacturers Institute design objectives.

26 3520.4600 FUEL TANK.

27 Subpart 1. Capacity of 30 gallons. The fuel tank or tanks
28 having a minimum capacity of 30 gallons must be provided by the
29 chassis manufacturer.

30 The fuel tank must be filled and vented to the outside of
31 the body so that accidental fuel spillage will not drip or drain
32 on any part of the exhaust system.

33 The portion of the fuel system that is located to the rear
34 of the engine compartment, except the filler tube, must not
35 extend above the top of the chassis frame rail. The fuel lines

1 must be mounted to obtain maximum possible protection from the
2 chassis frame in conformance with Federal Motor Vehicle Safety
3 Standard 301, Code of Federal Regulations, title 49, part 371.

4 The fuel filter with a replaceable element must be
5 installed between the fuel tank and the engine.

6 The fuel tank must meet the national standards that apply
7 for the type of fuel used.

8 Subp. 2. to 5. [See Repealer.]

9 Subp. 6. Rear engine powered buses. In rear engine
10 powered buses, the fuel system must have the fuel tank or tanks
11 located ahead of the engine compartment.

12 Subp. 7. Fuel, liquefied petroleum, compressed and
13 liquefied natural gas. Liquefied petroleum gas (LPG), or
14 compressed or liquefied natural gas installations on school
15 buses must meet National Fire Protection Association Standard
16 Number 58 for "Installation of LP Gas Systems on Vehicles," as
17 adopted by reference in the Minnesota Uniform Fire Code.

18 A school bus powered by liquefied petroleum or natural gas,
19 or compressed liquefied natural gas must display markings as
20 required by Minnesota Statutes, section 169.762 and parts
21 7510.4500 to 7510.4900.

22 3520.4610 GENERATOR OR ALTERNATOR.

23 Subpart 1. Output requirement. The generator or
24 alternator (negative ground only) with rectifier must have an
25 output of at least 100 amperes (in accordance with Society of
26 Automotive Engineers rating) with a minimum charging of 30
27 amperes at the manufacturer's recommended engine idle speed
28 (12-volt system) and must be ventilated and voltage-controlled
29 and, if necessary, current-controlled. A matched dual belt
30 drive must be used with the generator or alternator. A single
31 belt, with longitudinal multigrooves, may be used in place of a
32 dual belt drive. A heavy-duty full transistorized regulator
33 must be supplied. A direct-drive generator or alternator may be
34 used in place of a belt drive.

35 Subp. 2. More output if small battery. When a battery or

1 batteries of less than 800 cold cranking amperes (CCA) is
2 installed in the engine compartment, the generator or alternator
3 must have an output of at least 120 amperes. (See part
4 3520.4100, subpart 2.)

5 Subp. 3. and 4. [See Repealer.]

6 Subp. 5. Option; some Type I buses. Type I buses with a
7 gross vehicle weight rating of 15,000 pounds or less may be
8 equipped with a single belt drive alternator.

9 3520.4620 GOVERNOR.

10 Subpart 1. Permissible. An engine governor is permissible
11 and if used must be set at the manufacturer's recommended
12 maximum engine speed. If it is desired to limit road speed, a
13 road speed governor should be installed.

14 Subp. 2. Exception. If the engine is remotely located
15 from the driver, the governor must be installed to limit engine
16 speed to maximum revolutions per minute recommended by the
17 engine manufacturer, or a tachometer must be installed so engine
18 speed may be known to the driver.

19 3520.4630 HEATING SYSTEM.

20 The chassis engine must have plugged openings for the
21 purpose of supplying hot water for the bus heating system. The
22 opening must be suitable for attaching a 3/4-inch pipe
23 thread/hose connector. The engine must be capable of supplying
24 water having a temperature of at least 170 degrees Fahrenheit at
25 a flow rate of 50 pounds per minute at the return end of 30 feet
26 of one inch inside diameter automotive hot water heater hose.
27 See also School Bus Manufacturers Institute Standard Number
28 001-Standard Code for Testing and Rating Automotive Bus Hot
29 Water Heating and Ventilating Equipment.

30 3520.4640 HORN.

31 The bus must be equipped with a horn in good working order
32 and capable of emitting sound audible under normal conditions
33 from a distance of not less than 200 feet.

34 3520.4650 INSTRUMENTS AND INSTRUMENT PANEL.

1 Subpart 1. **Requirements.** The chassis must be equipped
2 with the instruments and gauges listed in this part. Lights in
3 place of gauges are not permitted unless indicated.

4 A. Speedometer.

5 B. Odometer that will give accrued mileage.

6 C. An ammeter, vane or shunt type, with graduated
7 charge and discharge. The ammeter and its wiring must be
8 compatible with the generating capacities and capable of
9 handling a continuous current draw of 100 amperes. A voltmeter
10 may be used in place of an ammeter.

11 D. Oil-pressure gauge.

12 E. Water-temperature gauge.

13 F. Fuel gauge.

14 G. Upper-beam headlamp indicator. A light indicator
15 is permitted.

16 H. Brake indicator (vacuum or air). A light
17 indicator in place of a gauge is permitted on a vehicle equipped
18 with an hydraulic-over-hydraulic brake system.

19 I. Turn signal indicator lights.

20 Subp. 2. **Accessibility, mounting, illumination.** All
21 instruments must be easily accessible for maintenance and repair.

22 All instruments and gauges must be mounted on the
23 instrument panel so that each is clearly visible to the driver
24 in a normal driving position. The instrument panel must have
25 lamps of sufficient candlepower to illuminate all instruments
26 and gauges and the shift selector indicator for the automatic
27 transmission.

28 3520.4670 OPENINGS.

29 All openings in the floorboard or the firewall between the
30 chassis and the passenger-carrying compartments, such as for
31 gearshift lever and auxiliary brake lever, must be sealed unless
32 they are altered by the body manufacturer.

33 3520.4680 PASSENGER LOAD.

34 Subpart 1. **Gross vehicle weight, defined.** Average actual
35 gross vehicle weight (GVW) is the sum of actual chassis weight,

1 plus average body weight, plus 150 pounds for driver's weight,
2 plus total seated pupil weight based on 120 pounds per pupil.

3 Subp. 2. Gross vehicle weight (GVW) limit. The actual
4 gross vehicle weight (GVW) must not be more than the chassis
5 manufacturer's gross vehicle weight rating (GVWR) for the
6 chassis.

7 3520.4701 SHOCK ABSORBERS.

8 A school bus must be equipped with front and rear double
9 acting shock absorbers compatible with the manufacturer's rated
10 axle capacity at each wheel location.

11 3520.4711 SPRINGS.

12 Capacity of springs or suspension assemblies must be
13 commensurate with the chassis manufacturer's gross vehicle
14 weight rating. If rear springs are used on a chassis of 15,000
15 pounds and over, they must be of the progressive type.

16 3520.4720 STEERING.

17 The steering gear must be approved by the chassis
18 manufacturer and designed to assure safe and accurate
19 performance when the vehicle is operated with maximum load and
20 at maximum speed. The steering mechanism must provide for easy
21 adjustment for lost motion. Changes not approved by the chassis
22 manufacturer must not be made in the steering apparatus. There
23 must be a clearance of at least three inches between the
24 steering wheel and the cowl, instrument panel, windshield, or
25 any other surface. The steering system must be designed to
26 provide for means for lubrication of all wear-points, if
27 wear-points are not permanently lubricated. Power steering is
28 required and must be of the integral type with integral valves.

29 3520.4731 TIRES AND RIMS.

30 Tires and rims of proper size and tires with a load rating
31 commensurate with the chassis manufacturer's gross vehicle
32 weight rating must be provided.

33 Dual rear tires must be provided on Type I school buses.

34 Tires of different size or ply rating may be used except

1 that all tires on an axle must be the same size. Radial and
2 bias tires must not be used on the same axle. If a spare tire
3 is carried, it must be suitably mounted in an accessible
4 location outside the passenger compartment.

5 3520.4741 TRANSMISSION.

6 An automatic transmission is permissible.

7 If a manual transmission is used, second gear and higher
8 gears must be synchronized except if to do so would be
9 incompatible with engine power. A minimum of three forward
10 speeds and one reverse speed must be provided. The bus
11 transmission shifting pattern must be permanently displayed in
12 the driver's full view.

13 3520.4750 UNDERCOATING.

14 Unless fenders are constructed of a noncorrosion material,
15 the chassis manufacturer must coat undersides of front fenders
16 with a compound to prevent rust. The compound must meet or
17 exceed Federal Specifications TT-C-520B using modified test
18 procedures as defined under "Undercoating" of body standards.

19 3520.4761 WEIGHT DISTRIBUTION.

20 Weight distribution of a fully loaded bus on a level
21 surface must not exceed the manufacturer's front gross axle
22 weight rating and rear gross axle weight rating.

23 3520.4801 TYPE I BODY.

24 The standards in parts 3520.4811 to 3520.5580 apply to Type
25 I bus bodies.

26 3520.4811 AISLE.

27 Minimum clearance of all aisles, including the aisle or
28 passageway between seats leading to the emergency door, must be
29 12 inches. See part 3520.5010, subpart 2. Aisle supports of
30 seat backs must be slanted away from the aisle sufficiently to
31 give aisle clearance of 15 inches at the top of the seat backs.

32 3520.4831 BODY SIZES.

33 WATCH YOUR WEIGHT

1 RECOMMENDED BODY - CHASSIS SIZES FOR MINNESOTA SCHOOL BUSES

2

PASSENGER CAPACITY	WHEELBASE	Items to specify to get proper minimum gross vehicle weights.					GVWR ^{2/}
		FRONT AXLE	REAR AXLE	TIRE SIZE	FRONT GAWR ^{1/}	REAR GAWR ^{1/}	
29	151"	5000# Gas 7500# Diesel *	15000#	8.25 X 20 10 ply	5000# 7500#	14200#	19200# 21700#
35	151-170"	5000# Gas 7500# Diesel *	15000#	8.25 X 20 10 ply	5000# 7500#	14200#	19200# 21700#
41 ^{3/}	189-193"	7000# Gas 7500# Diesel *	15000#	8.25 X 20 10 ply	7000# 7500#	14200#	21200# 21700#
47 ^{3/}	189-193"	6000# Gas 7500# Diesel *	15000#	8.25 X 20 10 ply	6000# 7500#	14200#	20200# 21700#
53	216-218"	7000# Gas 8000# Diesel *	15000#	8.25 X 20 12 ply	7000# 8000#	15000#	22000# 23000#
59	235-237"	7000# Gas 8000# Diesel *	17000#	9.00 X 20 10 ply	7000# 8000#	16160#	23160# 24160#
65	254-255"	7500# Gas 8000# Diesel *	17500#	9.00 X 20 12 ply	7500# 8000#	17500#	25000# 25500#
71	274-276"	9000# Gas 9000# Diesel	19000#	9.00 X 20 14 ply	9000#	19000#	28000#
77	274-276"	9000# Gas 9000# Diesel	20000#	9.00 X 20 14 ply	9000#	20000#	29000#

12

* Applies to diesel engines larger than 6.9 liter such as 8.2 and 9 liter and larger.

13 ^{1/} GAWR (Gross Axle Weight Rating) means the weight carrying capacity of the lightest components of the front or rear axle assembly including axle, tires, wheels, springs, frame, etc.

14 ^{2/} GVWR (Gross Vehicle Weight Rating) means the total maximum carrying capacity of a bus including body weight; chassis weight, passengers, and fuel. Specify Front GAWR - Rear GAWR and Total GVWR in your bid, using the above chart to properly distribute loaded weights.

15 ^{3/} The shorter 41 passenger body puts more weight on the front axle than the longer 47 passenger.

16

17 A. The above recommendations are designed to allow

18 bidding of various body - chassis combinations and staying

19 within federal weight tolerances.

20 B. Stock bus bids. Due to the fact that the body -

21 chassis dealers know the exact weight of their units built for

22 stock, axles and tire sizes may be less than those listed above

23 and still be within the federal weight tolerances.

24 C. The following items add considerable weight and

25 may require heavier axles or longer chassis and body: diesel

26 engines; air brakes; luggage compartments; even size bodies such

27 as 54-60-66 passenger. Uneven sizes as 53-59-65 as listed above

28 are recommended over even sizes as they do not require a wasted

29 nine inch space behind the rear seat.

30 3520.4840 BOOK RACKS.

31 Subpart 1. Permitted. Book racks are permitted only in

32 buses with 72-inch or more headroom.

33 Subp. 2. Location. If book racks are permitted, they must

34 be located above the side windows and must not extend forward of

35 the foremost point of the front seat, across or above the

1 emergency door and must not exceed 16 inches in width.

2 Book racks must have only padded, rounded edges on all
3 surfaces exposed to school bus occupants. Padding must be at
4 least one inch thick. There must be an upward extending edge on
5 the aisle side of the rack that extends half the distance to the
6 ceiling of the bus from the bottom of the rack. A minimum of
7 two racks must have full height dividers above every seat to
8 prevent any book or object from sliding front and back. Each
9 rack must be padded on the aisle side.

10 3520.4850 BUMPER.

11 Subpart 1. Front. See part 3520.4301.

12 Subp. 2. [See Repealer.]

13 Subp. 3. Rear. Rear bumper must be of pressed steel
14 channel at least 3/16 inch thick and eight inches wide (high)
15 and be of sufficient strength to permit being pushed by another
16 vehicle without permanent distortion to bumper, bumper braces,
17 chassis, or body. It must be wrapped around back corners of the
18 bus. It must extend forward at least 12 inches, measured from
19 rearmost point of body at the floor line. The bumper must be
20 attached to the chassis frame so that it may be easily removed,
21 must be braced to develop full strength of bumper section from
22 rear or side impact, and must be attached to prevent hitching of
23 rides. The rear bumper must extend beyond rearmost part of body
24 surface, excluding lights, at least one inch, measured at floor
25 line.

26 Subp. 4. [See Repealer.]

27 3520.4900 COLOR.

28 Subpart 1. to 5. [See Repealer.]

29 Subp. 6. Body. The body including the hood and the cowl
30 must be painted National School Bus Yellow.

31 A. Rub rails: a minimum of three must be black.

32 B. Rear bumper, rubber rear fenders (if used), and
33 lettering must be black.

34 C. The belt line may be yellow with black lettering
35 or may be black with yellow lettering. Yellow or black

1 reflectorization may be used.

2 Subp. 7. Options. The following color options may be used.

3 A. The front fenders may be painted glossy yellow or
4 glossy black.

5 B. The hood may be lusterless yellow or black.

6 C. The following may be other than yellow or black:
7 wheel rims; chassis grills; mirror backs, rims, and mounting
8 brackets; reflector housings; window frames; accessories and
9 other minor trim items. See part 3520.4510.

10 D. The use of yellow or red reflective material may
11 be used on the rear bumper for increased night visibility.

12 Subp. 8 to 10. [See Repealer.]

13 3520.4910 CONSTRUCTION.

14 Construction must be of prime commercial quality steel or
15 other metal or other material with strength at least equivalent
16 to all-steel as certified by the bus body manufacturer and must
17 conform to Federal Motor Vehicle Safety Standard Number 220,
18 Code of Federal Regulations, title 49, part 571.

19 3520.4930 FLOOR CONSTRUCTION.

20 Subpart 1. Requirements. The floor must be of prime
21 commercial quality steel or other metal of at least 14-gauge.
22 The metal floor must be covered with plywood. The plywood must
23 be five-ply, at least five-eighths inch thick and it must equal
24 or exceed properties of exterior-type softwood plywood, grade
25 C-D, as specified in product standard PS 1-83 issued by the
26 United States Department of Commerce. The floor must be level
27 from front to back and from side to side except in wheel
28 housing, toeboard, and driver's seat platform areas.

29 Subp. 2. Option. The underside of the metal floor may be
30 undercoated with polyurethane floor insulation, foamed in
31 place. The polyurethane floor insulation must be combustible
32 resistant. This option does not replace the plywood required in
33 subpart 1.

34 3520.4980 OPENINGS.

1 All openings between chassis and passenger-carrying
2 compartment made due to alterations by body manufacturer must be
3 sealed.

4 3520.5000 DEFROSTERS.

5 Defrosters and two auxiliary fans with metal blades and
6 adequate guards shall be of sufficient capacity to keep the
7 windshield, window to left of driver, and glass in entrance door
8 clear of fog, frost, and snow. This may be done by taking the
9 heat directly from an approved heater or auxiliary heaters.
10 Defrosters must conform to Society of Automotive Engineers
11 Standards J-381 and 382.

12 3520.5010 DOORS.

13 Subpart 1. Service door. The service door must be power
14 or manually operated, under control of the driver, and designed
15 to afford easy release and prevent accidental opening.

16 The service door must be located on the right side of the
17 bus opposite the driver and within the driver's direct view.

18 The service door must have a minimum horizontal opening of
19 24 inches and a minimum vertical opening of 68 inches.

20 The service door must be of split type, sedan type, or
21 jackknife type. If a split type door is used the front section
22 must open outward.

23 The lower as well as upper glass panels must be of approved
24 safety glass. See part 3520.5551. The bottom of the lower
25 glass panel must not be more than 35 inches from the ground when
26 the bus is unloaded. The top of the upper glass panel must not
27 be more than six inches from the top of the door.

28 The vertical closing edges must be equipped with flexible
29 material to protect children's fingers.

30 There shall be no door to the left of the driver in the
31 front half of the bus.

32 Subp. 2. Emergency door and emergency window. An
33 emergency door must be located in the center of the rear end of
34 the bus or in the rear half of the left side of the bus.

35 The emergency door must have a minimum horizontal opening

1 of 24 inches and a minimum vertical opening of 48 inches
2 measured from floor level.

3 The emergency door must be hinged on the right side if it
4 is in the rear end of the bus and on the front side if it is on
5 the left side of the bus. The door must open outward and must
6 be labeled inside to indicate how it operates.

7 All the glass in the emergency door must be approved safety
8 glass. The exposed area of the safety glass must be not less
9 than 400 square inches. See part 3520.5551.

10 There must be no steps leading to the emergency door.

11 A seat or other object must not be placed in the bus to
12 restrict any part of the passageway leading to the emergency
13 door to an opening smaller than a rectangle 12 inches in width
14 and 48 inches in height, measured from floor level.

15 The words "EMERGENCY DOOR" or "EMERGENCY EXIT" both inside
16 and outside in letters at least two inches high, must be placed
17 at the top of or directly above the emergency door or on the
18 door in the metal panel above the top glass.

19 If the emergency door is located on the left side of the
20 bus, it must conform to Federal Motor Vehicle Safety Standard
21 Number 217, Code of Federal Regulations, title 49, part 571, and
22 the window at the rear must be designed as an emergency exit and
23 must be no smaller than 16 inches in height and 54 inches in
24 width on buses 80 inches or more in width; it must be no smaller
25 than 16 inches in height and 49 inches in width on buses less
26 than 80 inches in width. The window must be hinged from the top
27 and devised and operated to ensure against an accidental closing
28 in an emergency.

29 The emergency window in the rear must be equipped with a
30 latch or latches on the inside connected with an electrical
31 buzzer located in the driver's compartment that will go off when
32 the latch is being released.

33 The emergency window must also be equipped on the outside
34 with a nondetachable fastening device designed to prevent
35 hitching-to, but to permit opening from the outside.

36 Paneling is required to cover the space between the top of

1 the rear divan seat and the inside surface of emergency window
2 at rear.

3 The words "EMERGENCY EXIT" in letters at least two inches
4 high must be placed directly above the emergency window on the
5 inside and directly below the window on the outside.

6 The emergency door and emergency window must be designed to
7 be opened from the inside and the outside of the bus and must be
8 equipped with a fastening device that may be quickly released
9 but is designed to offer protection against accidental release.
10 The opening of the emergency door and window must not be
11 controllable from the driver's seat. The providing for opening
12 from the outside must consist of a nondetachable device designed
13 to prevent hitching-to but to permit opening when necessary.

14 The emergency door must be equipped with a slide-bar
15 cam-operated lock. The slide bar must have a minimum stroke of
16 one inch. The emergency door lock must be equipped with a
17 suitable electric plunger type switch connected with a buzzer
18 located in the driver's compartment. The switch must be
19 enclosed in a metal case, and the wires leading from the switch
20 must be concealed in the bus body. The switch must be installed
21 so that the plunger contacts the farthest edge of the slide bar
22 so that any movement of the slide bar immediately closes the
23 circuit on the switch and sets off the buzzer.

24 The emergency door lock must be equipped with an interior
25 handle that extends approximately to the center of the emergency
26 door. The handle shall lift up to release the lock.

27 The service door and the emergency door (side or rear) may
28 be equipped with vandal locks if the locks comply with Federal
29 Motor Vehicle Safety Standard Number 217, Code of Federal
30 Regulations, title 49, part 571.

31 3520.5111 FIRE EXTINGUISHER.

32 A minimum of one 2-1/2 pound dry chemical type fire
33 extinguisher, with not less than a 10-B-C rating, is required.
34 It must be approved by Underwriters Laboratories, Inc. or an
35 equivalent testing laboratory.

1 The extinguisher must be mounted in a bracket, located in
 2 the driver's compartment and readily accessible to the driver
 3 and passengers. A pressure indicator is required and must be
 4 easily read without removing the extinguisher from its mounted
 5 position.

6 3520.5120 FIRST AID KIT.

7 The bus must carry a removable Grade A metal, or other
 8 material of equal strength, dust-proof first aid kit, mounted in
 9 full view or in a labeled accessible place in the driver's
 10 compartment.

11 The first aid kit must have the following units and
 12 packages per unit:

- 13 A. ten units for vehicles of 16 or less capacity;
- 14 B. 24 units for buses with passenger capacity in
 15 excess of 16 and up to and including 42 passengers; or
- 16 C. 36 units for buses of passenger capacity in excess
 17 of 42.
- 18 D. The table of required items and packages for items
 19 A to C:

20	21	22 Unit	23 Size	Item	Required Packages		
					10	24	36
24					Unit	Unit	Unit
25	1			Compress Bandage, 4 inch	2	6	8
26	1			Compress Bandage, 2 inch	1	3	7
27	1			Adhesive Compress, 1 inch	2	2	4
28	1			Triangular Bandage, 40 inch			
29				with 2 safety pins	1	2	4
30	1			Gauze Bandage, 4 inch	-	2	4
31	1			Absorbant Gauze Compress	-	2	2
32	1			Gauze Compress, 24 by 72			
33				inches	1	2	2
34	1			Padded Tongue Blades	1	1	1
35	2			Adhesive Tape, 1 inch by			
36				2-1/2 yards	2	2	2
37	1			Wire Splint	-	2	2

38 3520.5141 FLOOR COVERING.

39 The floor in the underseat area, including the tops of
 40 wheel housings, driver's compartment, and toeboard, must be
 41 covered with rubber floor covering or its equivalent having a
 42 minimum overall thickness of 0.125 inch.

43 The floor covering in the aisle must be of aisle-type
 44 rubber or its equivalent, nonskid, wear-resistant, and ribbed.

1 Minimum overall thickness must be 0.187 inch measured from top
2 of ribs.

3 The floor covering must be permanently bonded to the floor
4 and must not crack if subjected to sudden change in
5 temperature. Bonding or adhesive material must be waterproof
6 and must be of a type recommended by the manufacturer of the
7 floor covering material. All seams must be sealed with
8 waterproof sealer.

9 3520.5151 HEATERS.

10 Heaters must be of the hot water or combustion type. If
11 the heater is of the hot water type, the heater system must be
12 equipped with a shutoff valve readily accessible to the driver.
13 If only one heater is used, it must be of fresh air or
14 combination fresh air and recirculating type. If more than one
15 heater is used, the additional heaters may be of recirculating
16 type. Each heater motor must be two speed.

17 All heaters installed by body manufacturers must bear a
18 name plate that must indicate the heater rating in accordance
19 with SBMI Code 001. The plate must be attached by the heater
20 manufacturer. The attachment certifies that the heater
21 performance is as shown on the plate.

22 All combustion-type heaters must be approved by the Federal
23 Highway Administration, Motor Carrier Safety Regulations, Code
24 of Federal Regulations, title 49, part 393.77.

25 If combustion-type heaters are used, they must be installed
26 on new buses by body manufacturers and on buses now in operation
27 by authorized dealers or by authorized garages.

28 Heaters must be capable of maintaining an inside
29 temperature of 50 degrees Fahrenheit at average minimum January
30 temperatures as established by the United States Department of
31 Commerce, Weather Bureau, for the area in which the heater is
32 required.

33 Heater lines inside the passenger compartment must be
34 guarded to prevent accidental contact by the driver or
35 passengers.

1 3520.5160 IDENTIFICATION.

2 Subpart 1. Requirements. The body must bear the words
3 "SCHOOL BUS" in black letters at least eight inches high on both
4 front and rear of the body or on attached signs . The lettering
5 must be placed as high as possible without impairment of its
6 visibility. The lettering must conform to "Series B" of
7 Standard Alphabets for Highway Signs.

8 Only signs and lettering approved by state law or rule,
9 limited to name of owner or operator and home post office
10 address, city, or town may appear on the sides of the bus, in
11 accordance with Minnesota Statutes, section 221.031, subdivision
12 6. Any number or symbol necessary for identification may also
13 appear on the sides of the bus.

14 Subp. 2. Options. Symbols or letters may be used on the
15 outside of the bus for student identification. The
16 manufacturer's name or logo may appear on the roof line. A
17 manufacturer's nameplate may be placed on the side of the bus
18 near the entrance door and on the rear.

19 3520.5171 INSIDE HEIGHT.

20 Inside body height must provide 72 inches of headroom,
21 measured from the metal floor to the center line of the metal
22 roof.

23 3520.5180 INSULATION.

24 Ceiling and walls must be insulated with proper material to
25 deaden sound and to reduce vibrations to a minimum, and must be
26 insulated to a minimum of one-inch fiberglass and installed so
27 that the insulation does not compact or sag. Thermal insulation
28 must be of fire-resistant material of a type approved by
29 Underwriter's Laboratories, Inc.

30 3520.5190 INTERIOR.

31 Subpart 1. Projections. The interior of the bus must be
32 free of all unnecessary projections likely to cause injury.
33 Ceilings and walls must have an inner lining. If the ceiling is
34 constructed so as to contain lapped joints, the forward panel

1 must be lapped by the rear panel and exposed edges must be
2 beaded, hemmed, flanged, or otherwise treated to minimize sharp
3 edges.

4 Subp. 2. **Speakers.** Interior speakers except in the
5 driver's compartment must not protrude more than one-half inch.
6 A two-way speaker in the driver's compartment need not be flush
7 mounted.

8 Subp. 3. **Flammability.** Flammability standards of interior
9 materials covered by Federal Motor Vehicle Safety Standard
10 Number 302, Code of Federal Regulations, title 49, part 571 must
11 be met.

12 3520.5200 LAMPS AND SIGNALS FOR NEW BUSES ONLY.

13 Subpart 1. **Compliance required.** Installation of an
14 eight-lamp alternately flashing warning signal system must
15 comply with this part.

16 Subp. 2. **Installation.** All lamps on the exterior of the
17 vehicle must conform with and be installed as required by
18 Federal Motor Vehicle Safety Standard Number 108, Code of
19 Federal Regulations, title 49, part 571.

20 Subp. 3. **Interior lamps.** Interior lamps that adequately
21 illuminate the aisle and the step well must be provided.

22 Subp. 4. **Red and amber signal lamps.** Each school bus must
23 be equipped with a system consisting of four red signal lamps
24 designed to conform to SAE Standard J887. "School Bus Red
25 Signal Lamps," and four amber signal lamps designed to that
26 standard, except for color, and except that their candlepower
27 must be at least 2-1/2 times that specified for red signal
28 lamps. Both red and amber signal lamps must be installed in
29 accordance with SAE Standard, J887, except that each amber
30 signal lamp must be located near each red signal lamp, at the
31 same level, but closer to the vertical centerline of the bus.

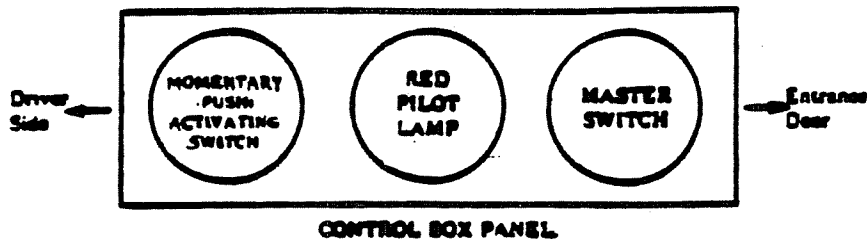
32 Subp. 4a. **Wiring, flashing.** The system must be wired so
33 that the amber signal lamps are activated only by hand
34 operation, and if activated, are automatically deactivated and
35 red signal lamps are automatically activated when the bus

1 entrance door is opened. Right and left signal lamps must flash
 2 alternately. Each signal lamp must flash not less than 60 nor
 3 more than 120 flashes per minute. The "on" period must be long
 4 enough to permit bulb filament to come up to full brightness. A
 5 brake-operated switch is not permitted.

6 There must be a red pilot lamp which must go on when the
 7 respective amber or red systems are actuated. The pilot must
 8 either go out or flash at an altered rate in the event the
 9 system is not functioning normally.

10 Subp. 5. [See Repealer.]

11 Subp. 6. Control box for signal lamps. The signal lamp
 12 system must include a closed control box. The box must be as
 13 small as practical, easily demounted or partially disassembled
 14 to provide simple access for maintenance purposes. The switches
 15 and red pilot lamp must be located in conformance with the
 16 following diagram.



17
 18
 19
 20
 21
 22 The control box must be securely mounted to the right of
 23 the steering wheel, in the near proximity of the entrance door
 24 control, within easy unobstructed reach of the driver. Switches
 25 and pilot lamp must be readily visible to the driver. The
 26 activating switch may be self-illuminated (glow type). Other
 27 warning devices or lamp controls must not be placed near the
 28 light lamp control.

29 Subp. 7. System and stop arm. The signal lamp system and
 30 stop arm must operate as follows:

31 The stop signal arm must be of an automatic type. It must
 32 automatically extend and retract in conjunction with the
 33 alternately flashing red lights and must be activated and
 34 deactivated by the entrance door switch.

35 With the master switch on and the entrance door closed,
 36 depress hand switch. The red pilot lamp and amber signals will

1 go on.

2 Open the entrance door. The pilot lamp and amber signal
3 lamps will go off, and the pilot lamp and red signal lamps will
4 go on. The stop arm will automatically extend.

5 Close the entrance door. The red pilot and signal lamps
6 will go off and the stop arm will automatically retract.

7 Open the entrance door without depressing the hand switch.
8 The red pilot lamp and red signal lamps will go on. The stop
9 arm will automatically extend.

10 With the master switch off, depressing the hand switch will
11 not actuate the amber signal system, nor will opening the
12 entrance door actuate the red signal system and stop arm.

13 Subp. 8. Installation requirements. Each alternately
14 flashing signal lamp must be mounted with its axis substantially
15 parallel to the longitudinal axis of the vehicle.

16 Front and rear alternately flashing signal lamps must be
17 spaced as far apart laterally as practicable.

18 Alternately flashing signal lamps must be mounted at the
19 front on the same horizontal center line and above the
20 windshield, and at the rear on the same horizontal center line
21 so that the lower edge of the lens is not lower than the top
22 line of the side window.

23 The vertical and lateral vision of the front and rear
24 alternately flashing warning lamps must not be obstructed by any
25 part of the body or lamp-house insofar as standard bus body
26 construction permits.

27 The area around the lens of each alternately flashing
28 signal lamp and extending outward approximately three inches
29 must be painted black. In installations where there is no flat
30 vertical portion of body immediately surrounding entire lens of
31 lamp, circular or square band of black approximately three
32 inches wide, immediately below and to both sides of lens, must
33 be painted on body or roof area against which signal lamp is
34 seen from distance of 500 feet along axis of vehicle.

35 A separate fuse or circuit breaker, adequate to prevent
36 damage to the system in the event of a dead short, must be

1 provided between the power source and the master switch.

2 All wiring must be a minimum of 14-gauge.

3 Subp. 9. Options. School buses may be equipped with the
4 following safety equipment devices.

5 A. A driver-activated student control warning system
6 to assist students in crossing roadways. The system must
7 contain one high-intensity flashing red signal, an audible
8 warning signal, and one high-intensity steady amber
9 proceed-with-caution signal lamp. Red and amber signal lamps
10 must be at least four inches in diameter and no larger than
11 4-1/2 inches in diameter.

12 The control system unit must be installed in a vertical
13 position, with the red signal on the top and the amber signal on
14 the bottom.

15 (1) One control system unit must be mounted on
16 the left side of the bus next to the driver and one unit must be
17 mounted on the right side just ahead of the entrance door. The
18 units must be wired to be activated and deactivated in
19 conjunction with the eight-lamp and stop arm, and to be
20 controlled by the entrance door switch.

21 (2) Amber walk lamps of the units must be on a
22 separate on/off switch controlled by the driver, but deactivated
23 when the entrance door is closed.

24 B. The use of a crossing guard gate mounted on the
25 front bumper to put students in view of the bus driver.

26 C. The use of an external public address system to
27 assist students in crossing roadways.

28 D. The use of a roof mounted white double flash
29 strobe light described in Minnesota Statutes, section 169.64,
30 subdivision 7.

31 E. The use of electronic sensing devices.

32 3520.5220 TURN SIGNAL LAMPS AND STOP LAMPS.

33 Subpart 1. Turn signal lamps. The school bus must have
34 turn signal indicators of an automatic type. The bus body must
35 be equipped with amber or red rear turn signal lamps that are at

1 least seven inches in diameter and meet specifications of the
2 Society of Automotive Engineers (SAE J588). The turn signal
3 lamps must be connected to the chassis hazard warning switch to
4 cause simultaneous flashing of turn signal lamps when needed as
5 a vehicular traffic hazard warning. The turn signal lamps must
6 be placed as wide apart as practical and their center line must
7 be approximately eight inches below the rear windows.

8 Subp. 2. **Stop lamps.** The school bus must be equipped with
9 red stop lamps. If round, the stop lamps must be seven inches
10 in diameter. If the stop lamps are a shape other than round,
11 they must have a minimum 38 square inches of illuminated area.
12 The stop lamps must be mounted on the rear of the bus just
13 inside the turn signals, at the same height.

14 The brake lights must be wired to combine stop and tail
15 lights.

16 Subp. 3. **Federal Motor Vehicle Safety Standard Number**
17 **108.** All lamps on the exterior of the vehicle must conform with
18 and be installed as required by Federal Motor Vehicle Safety
19 Standard Number 108, Code of Federal Regulations, title 49, part
20 571.

21 3520.5230 WARNING DEVICES.

22 Subpart 1. **Required.** The school bus must contain at least
23 three reflectorized triangle road warning devices mounted in an
24 accessible place in the driver's compartment. The mounting
25 location is optional.

26 Subp. 2. **Prohibited equipment.** The school bus must not be
27 equipped with liquid burning "pot type" flares or fuses.

28 3520.5300 METAL TREATMENT.

29 Subpart 1. **General requirements.** All ferrous metal less
30 than 12-gauge that is used in the construction of the bus body
31 must be zinc or aluminum coated, mill applied if it is used in
32 structural members, inside and outside panels, floor panels, and
33 floor sills. The metal need not be zinc or aluminum coated, mill
34 applied if it is used in door handles, grab handles, stanchions,
35 interior decorative parts, and other interior plated parts.

1 Subp. 1a. Painted parts. In addition to the requirement
2 in subpart 1, all metal parts to be painted must be chemically
3 cleaned, etched, zinc-phosphate-coated, and zinc-chromate or
4 epoxy-primed or conditioned by an equivalent process.

5 Subp. 1b. Particular attention. In complying with
6 subparts 1 and 2, particular attention must be given to lapped
7 surfaces, welded connections of structural members, cut edges,
8 punches or drilled hole areas in sheet metal, closed or box
9 sections, unvented or undrained areas, and surfaces subjected to
10 abrasion during vehicle operation.

11 Subp. 2. [See Repealer.]

12 Subp. 3. Test standard. As evidence that the requirements
13 of subparts 1, 1a, and 1b have been met, samples of materials
14 and sections used in the construction of the bus body, when
15 subjected to a 1000-hour salt spray test as provided for in the
16 latest revision of ASTM designation; B-117 "Standard Method of
17 Salt Spray (Fog) Testing" must not lose more than ten percent of
18 material by weight.

19 3520.5310 MIRRORS.

20 Subpart 1. Required equipment. The interior clear view
21 mirror must be at least 6 by 30 inches overall to afford good
22 view of pupils and roadway to rear. If not metal-backed and
23 framed, the mirror must be of laminated plate safety glass. It
24 must have rounded corners and protected edges.

25 Two exterior clear-view, rearview mirrors must be provided,
26 one to the left and one to the right of the driver. The area of
27 each mirror must be not less than 70 square inches overall.
28 Each mirror must be firmly supported and adjustable to give the
29 driver a clear view past the left rear and right rear of the bus.

30 Subp. 2. Optional equipment. Small convex mirrors may be
31 used in conjunction with the equipment required under subpart 1.

32 Subp. 3. Required convex mirrors. Four exterior convex
33 mirrors at least 7-1/2 inches in diameter must be located as
34 follows: two on the left and two on the right side of the bus
35 in such a manner that the seated driver may observe, through

1 their use, areas to front or side of bus where direct
2 observation, as prescribed in Federal Motor Vehicle Safety
3 Standard Number 17, Code of Federal Regulations, title 49, part
4 571, is not possible. The mirrors must comply with Federal
5 Motor Vehicle Safety Standard Number 111, Code of Federal
6 Regulations, title 49, part 571.

7 Transit-type buses must have at least three mirrors, two
8 crossover mirrors, one in each corner, and one rearview mirror
9 on the right side.

10 Subp. 4. Optional equipment. Elliptical or hemispherical
11 mirrors may be substituted for the equipment required in subpart
12 3 on a one-for-one basis if indirect visibility requirements are
13 met.

14 3520.5330 OVERALL LENGTH.

15 The overall length of a school bus must not exceed 40 feet.

16 3520.5340 OVERALL WIDTH.

17 The overall width of a school bus, excluding mirror
18 brackets and stop arm, must not exceed 96 inches.

19 3520.5361 RUB RAILS.

20 There must be one rub rail located on each side of the bus
21 approximately at seat level. The rub rail must extend from the
22 rear side of the entrance door completely around the bus body
23 (except for the emergency door) to the point of curvature near
24 the outside cowl on the left side.

25 There must be one rub rail located approximately at the
26 floor line which must cover the same longitudinal area as the
27 upper rub rail, except at the wheel housings, and must extend
28 only to the radii of the right and left rear corners.

29 For buses using a rear luggage or rear engine compartment,
30 the rub rails need not extend around rear corners.

31 There must be a rub rail at the base of the skirt of the
32 bus.

33 All rub rails must be attached at each body post and all
34 other upright structural members.

1 All rub rails must be four inches or more in width, must be
2 of 16-gauge steel, and must be constructed in corrugated or
3 ribbed fashion.

4 All rub rails must be applied outside the body or outside
5 the body posts.

6 Pressed-in or snap-on rails do not satisfy this requirement.

7 3520.5370 SANDERS.

8 Sanders are not required equipment, but if used, sanders
9 must:

10 A. be of hopper cartridge-valve type;

11 B. have a metal hopper with all interior surfaces
12 treated to prevent condensation of moisture;

13 C. be of at least 100-pound (grit) capacity;

14 D. have a cover on the filler opening of the hopper
15 that screws into place sealing the unit airtight;

16 E. have discharge tubes extending to the front of
17 each rear wheel under the fender;

18 F. have no-clogging discharge tubes with slush-proof,
19 nonfreezing rubber nozzles;

20 G. be operated by an electric switch with a telltale
21 light mounted on the instrument panel;

22 H. be exclusively driver controlled; and

23 I. have a gauge to indicate the hoppers need
24 refilling when they are down to one-quarter full.

25 3520.5380 SEAT BELT FOR DRIVER.

26 A seat belt for the driver must be provided. The belt and
27 mounting must comply with Federal Motor Vehicle Safety Standard
28 Numbers 207 to 210, Code of Federal Regulations, title 49, part
29 571. Each belt section must be booted so as to keep the buckle
30 and latch off the floor and within easy reach of the driver.
31 The belt must be anchored or guided at the seat frame so as to
32 prevent the driver from sliding sideways under the belt.

33 3520.5401 SEATS AND CRASH BARRIERS.

34 The school bus seats must be based on 13-inch rump room for

1 each passenger. All seats must face forward, except that
2 variations may be made to accommodate handicapped students.
3 Seats, seat back cushions, and crash barriers must be covered
4 with a material having 42-ounce finished weight, 54 inches
5 width, and finished vinyl coating of 1.06 broken twill, or other
6 material with equal tensile strength, tear strength, seam
7 strength, adhesion strength, resistance to abrasion, resistance
8 to cold, and flex separation. All seats and crash barriers must
9 conform to Federal Motor Vehicle Safety Standard Number 222,
10 Code of Federal Regulations, title 49, part 571.

11 3520.5450 STEPS.

12 Subpart 1. General requirements. The first step at the
13 service door must be not less than 12 inches and not more than
14 18 inches from the ground, based on standard chassis
15 specifications.

16 The service door entrance may be equipped with two-step or
17 three-step step-well. Risers in each case must be approximately
18 equal. When plywood floor is used on steel, differential may be
19 increased by thickness of plywood used.

20 Steps must be enclosed to prevent accumulation of ice and
21 snow.

22 Steps must not protrude beyond side body line.

23 Grab handle not less than ten inches in length must be
24 provided in unobstructed location inside doorway.

25 Subp. 2. [See Repealer.]

26 Subp. 3. Step treads. All steps, including the floor line
27 platform area, must be covered with 3/16-inch rubber floor
28 covering or other material equal in wear resistance and abrasion
29 resistance to top grade rubber.

30 The metal back of the tread must be a minimum of 24-gauge
31 cold roll steel and must be permanently bonded to ribbed rubber.
32 The grooves in the grooved design must run at a 90-degree angle
33 to long dimension of the step tread.

34 The 3/16-inch ribbed step tread must have a 1-1/2 inch
35 white nosing as an integral piece without any joint.

1 The rubber portion for the step treads must have the
2 following characteristics:

3 A. special compounding for good abrasion resistance
4 and a high coefficient of friction;

5 B. flexibility to be bent around a 1/2-inch mandrel
6 both at 130 degrees Fahrenheit and 20 degrees Fahrenheit without
7 breaking, cracking, or crazing; and

8 C. show a durometer hardness of 85 to 95.

9 3520.5461 STIRRUP STEPS.

10 There must be at least one folding stirrup step or recessed
11 foothold and suitably located handles on each side of the front
12 of the body for easy accessibility for cleaning the windshield
13 and lamps except when the windshield and lamps are easily
14 accessible from the ground. Steps are permitted in or on the
15 front bumper, in place of the stirrup steps, if the windshield
16 and lamps are easily accessible for cleaning from that position.

17 3520.5471 STOP SIGNAL ARM.

18 Subpart 1. The stop signal arm. The stop signal arm must
19 be installed on the left side of the bus and must be octagonal
20 in shape. It must meet the applicable requirements of the
21 Society of Automotive Engineers J1133. The stop signal arm must
22 be of an automatic type. See part 3520.5200.

23 It shall display a stop signal on both sides, the word
24 "STOP" in white or silver-white letters at least one-third the
25 height of the signal, and have a red background.

26 The stop arm must be equipped with two alternately flashing
27 double faced (front and rear) red warning signals and must be
28 activated and deactivated by the entrance door switch. The sign
29 need not be reflectorized.

30 Subp. 2. The stop signal. The stop signal must be of the
31 shape, size, legend, and colors specified by the "Manual on
32 Uniform Traffic Control Devices for Streets and Highways,"
33 Federal Highway Administration.

34 The stop signal may be 18 or 24 inches in height.

1 3520.5481 STORAGE COMPARTMENT.

2 Subpart 1. Location, cover. If tools, tire chains, or tow
3 chains are carried on the bus, a container of adequate strength
4 and capacity must be provided for them. The storage container
5 may be located inside or outside the passenger compartment. If
6 inside, it must have a cover capable of being securely latched
7 and must be fastened to the floor convenient to either the
8 service or emergency door. A seat cushion must not be used as
9 the cover.

10 Subp. 2. Option. In place of the container required in
11 subpart 1, an overhead storage compartment may be placed in the
12 front of the cab for storage of emergency equipment and labeled
13 as the location of this equipment. It must be properly secured.

14 3520.5490 SUNSHIELD.

15 An interior, adjustable transparent sunshield not less than
16 6 by 30 inches in size with a finished edge must be installed in
17 a position convenient for use by the driver.

18 3520.5500 TAILPIPE.

19 Subpart 1. Tailpipe. The tailpipe must extend to the body
20 perimeter and must extend no more than one-half inch beyond the
21 rear bumper. See part 3520.4550.

22 Subp. 2. Trailer hitch. The trailer hitch, if used, must
23 be of a flush mounted type and must not extend beyond the rear
24 bumper when not in use.

25 3520.5510 UNDERCOATING.

26 Subpart 1. Required. The entire underside of the bus
27 body, including floor sections, cross members, and below floor
28 line side panels, must be coated with a rust-proofing compound
29 for which the compound manufacturer has issued notarized
30 certification of compliance to the bus body builder that the
31 compound meets or exceeds all performance requirements of
32 Federal Specification TT-C-520a using modified test procedures
33 for the following requirements:

34 A. salt spray resistance - pass test modified to five

1 percent salt and 1,000 hours;

2 B. abrasion resistance - pass; and

3 C. fire resistance - pass.

4 Subp. 2. **Modified test procedures.** Test panels are to be
5 prepared in accordance with Federal Specification TT-C-520a
6 paragraph 4 6.12 with a modified procedure requiring that tests
7 be made on a 48-hour air cured film at thickness recommended by
8 the compound manufacturer.

9 The undercoating compound must be applied with suitable
10 airless or conventional spray equipment to recommended film
11 thickness and must show no evidence of voids in cured film.

12 3520.5520 VENTILATION.

13 Subpart 1. **General requirement.** The body must be equipped
14 with a suitable, controlled ventilating system of sufficient
15 capacity to maintain proper quantity of air under operating
16 conditions without opening of windows except in extremely warm
17 weather.

18 If static-type exhaust roof ventilators are desired, they
19 must be installed in a low-pressure area of the roof panel.

20 Subp. 2. **Option.** In addition to the ventilation equipment
21 required in subpart 1, the body may be equipped with
22 multi-position roof ventilators of sufficient number and
23 capacity to maintain proper quantity of air under normal
24 operating conditions without opening of windows except in
25 extremely warm weather.

26 Subp. 3. **Exhaust vent.** Roof ventilators may include a
27 leak resistance static-type exhaust vent as an integral part of
28 the design.

29 Subp. 4. **Rear roof ventilator.** The rear roof ventilator
30 must not be installed beyond the rear axle.

31 Roof ventilators may also include auxiliary release handles
32 to permit operation as emergency exits in compliance with
33 Federal Motor Vehicle Safety Standard Number 217, Code of
34 Federal Regulations, title 49, part 571.

35 Exit release handles, if used, must be equipped with an

1 electric plunger-type switch connected with a buzzer located in
2 the driver's compartment to indicate when the exit is opened.

3 3520.5531 WHEEL HOUSING.

4 Wheel house openings must allow for easy tire removal and
5 service.

6 Wheel housings must be attached to floor sheets so as to
7 prevent any dust, water, or fumes from entering the body.

8 The wheel housing must be constructed of 16-gauge steel or
9 other material of equal strength.

10 The inside height of the wheel housings above floor line
11 must not exceed 12 inches.

12 Wheel housings must provide clearance for dual installation
13 and use of tire chains on dual drive wheels.

14 No part of a raised wheel housing may extend into the
15 emergency door opening.

16 3520.5551 WINDSHIELD AND WINDOWS.

17 Subpart 1. Glazing. Laminated or tempered glass is
18 permitted in all side windows. Windshield, entrance, and rear
19 emergency exit doors must be of approved safety glass and be
20 federally approved and marked as provided in Minnesota Statutes,
21 section 169.74.

22 Subp. 2. Tint. The windshield may be of uniform tint
23 throughout or may have a horizontal gradient band starting
24 slightly above the line of the driver's vision and gradually
25 decreasing in light transmission to 20 percent or less at the
26 top of the windshield.

27 Subp. 3. Side and rear windows. The first two sections of
28 the side windows, rear door, and rear windows must be of clear
29 glass. The use of approved tinted glass is permitted on other
30 side windows.

31 Each full side window must provide an unobstructed
32 emergency opening at least nine inches high and 22 inches wide,
33 obtained by lowering of the window.

34 3520.5560 WINDSHIELD WASHERS.

1 A windshield washer system must be provided.

2 3520.5570 WINDSHIELD WIPERS.

3 A windshield wiping system, two-speed or more, must be
4 provided.

5 The wipers must be operated by one or more air or electric
6 motors of sufficient power to operate wipers. If one motor is
7 used, the wipers must work in tandem to give full sweep of the
8 windshield.

9 3520.5580 WIRING.

10 Subpart 1. Standard. All wiring must conform to the
11 current standards of the Society of Automotive Engineers.

12 Subp. 2. Circuits. Wiring must be arranged in at least
13 eight regular circuits, as follows: head, tail, stop (brake),
14 and instrument panel lamps; clearance lamps; dome and step-well
15 lamps; starter motor; ignition and emergency door signal; turn
16 signal lamps; alternately flashing red signal lamps; and horn.

17 Any of the circuits may be subdivided into additional
18 independent circuits.

19 If heaters and defrosters are used, at least one additional
20 circuit must be installed.

21 If installed, all other electrical functions must be
22 provided with independent and properly protected circuits.

23 Each body circuit must be coded by number or letter on a
24 diagram of circuits. The diagrams must be furnished with the
25 bus body.

26 Subp. 2a. Additional requirements. If wires pass through
27 metal openings, they must be protected by a grommet.

28 Wires not enclosed within the body must be fastened
29 securely at intervals of not more than 18 inches. All joints
30 must be soldered or joined by equally effective connectors.

31 The entire electrical system of the body must be designed
32 for the same voltage as the chassis on which the body is mounted.

33 All wiring must have an amperage capacity equal to or
34 exceeding the designed load. All wiring splices are to be done
35 at an accessible location and noted as splices on the wiring

1 diagram.

2 The body power wire must be attached to the special
3 terminal on the chassis.

4 Subp. 3. [See Repealer.]

5 3520.5600 TYPE II SCHOOL BUSES.

6 The standards in part 3520.5611 apply to Type II school
7 buses.

8 3520.5611 EQUIPMENT.

9 Subpart 1. Standards. All related equipment provided on
10 Type II school buses must comply with Type I school bus
11 equipment standards except as specified in this part.

12 Subp. 2. Age of bus. Type II buses have no maximum age
13 limit and may continue to transport school children as long as
14 the bus passes inspection.

15 Subp. 3. Alternator. The alternator must be a minimum of
16 60 amperes (12 volts). When the bus is equipped with a power
17 lift, at least an 80-ampere alternator is required.

18 Subp. 4. Battery. The battery must provide a minimum of
19 475 cold cranking amperes (CCA).

20 Subp. 5. Bumpers. Bumpers must meet manufacturer's
21 standards.

22 Subp. 6. Color. The color must comply with Type I school
23 bus equipment standards except that only two rub rails must be
24 painted black.

25 Subp. 7. Defrosters. Defrosters of sufficient capacity to
26 clear the windshield, window to the left of the driver, and
27 glass in the entrance door of condensation, ice, and snow must
28 be provided. Defrosters must conform to Society of Automotive
29 Engineers Standards J-381 and 382. Auxiliary fans with metal
30 blades and adequate guards may be used.

31 Subp. 8. Door. The entrance door must be under the
32 control of the driver, and designed to afford easy release and
33 prevent accidental opening. The door opening must provide a
34 minimum opening area of 1,200 square inches.

35 Subp. 9. Emergency door. The emergency door must comply

1 with Type I school bus equipment standards except that the
2 emergency door may be a double door.

3 Subp. 10. **Exhaust system.** The exhaust system must meet
4 the manufacturer's standard and is not required to extend out
5 the rear. It must have an exit point behind the rear wheels.
6 The exhaust system on a gas-powered chassis must be properly
7 insulated from fuel tank connections by a securely attached
8 metal shield at any point where it is 12 inches or less from
9 tank or tank connections.

10 Subp. 11. **First aid kit.** The bus must carry a removable
11 Grade A metal, or other material of equal strength, dust-proof
12 first aid kit, mounted in full view or in a labeled accessible
13 place in the driver's compartment. Required units and required
14 packages per unit first aid kit is to include: ten units for
15 Type II vehicles of 16 or less capacity; and 24 units for Type
16 II buses with passenger capacity in excess of 16.

17 Subp. 12. **Floor.** The floor must be of prime commercial
18 quality steel or other metal and must be covered with a minimum
19 one-half inch thick exterior type plywood.

20 Subp. 13. **Fuel tanks.** Tank size and location may be
21 manufacturer's standard and must conform with Federal Motor
22 Vehicle Safety Standard Number 301, Code of Federal Regulations,
23 title 49, part 571.

24 Subp. 14. **Glazing.** Laminated or tempered glass is
25 permitted in all side windows except that windshield, entrance,
26 and rear emergency exit doors must be of approved safety glass
27 and be federally approved and marked.

28 The use of approved tinted glass is permitted.

29 Subp. 15. **Headroom.** The bus must provide at least a
30 minimum 62-inch headroom, measured from metal floor to center
31 line of metal roof.

32 Subp. 16. **Heater.** The heater must comply with Type I
33 school bus minimum standards except that the opening for
34 supplying hot water must be suitable for attaching a pipe
35 thread/hose connector. The heater shut-off valve does not have
36 to be located in the driver's compartment.

1 Subp. 17. **Lamps and signals.** An eight-lamp alternately
2 flashing warning signal system must be installed and operate in
3 conformance with Type I buses.

4 All lamps on the exterior of the vehicle must conform with
5 and be installed as required by Federal Motor Vehicle Safety
6 Standard Number 108, Code of Federal Regulations, title 49, part
7 571.

8 Subp. 18. **Metal treatment.** Type II school buses do not
9 have to comply with Type I school bus equipment standards for
10 metal treatment.

11 Subp. 19. **Mirrors.** The mirrors must comply with Type I
12 school bus equipment standards except that the interior clear
13 view mirror must only be at least six inches by 16 inches
14 overall.

15 The area of each exterior clear view mirror must be not
16 less than 50 square inches overall.

17 Subp. 20. **Rub rails.** There must be one rub rail located
18 on each side of the bus approximately at seat level which must
19 extend from the rear side of the entrance door to the rear
20 corner of the bus body.

21 There must be one rub rail located approximately at the
22 floor line which must cover the same longitudinal area as the
23 upper rub rail, except at the wheel housings, and must extend to
24 the right and left rear corners.

25 All rub rails must be attached in conformance with federal
26 standards.

27 All rub rails must be four inches or more in width, must be
28 of 16-gauge steel, and must be constructed in corrugated or
29 ribbed fashion.

30 Pressed-in or snap-on rails do not satisfy this requirement.

31 Additional rub rails may be used.

32 Subp. 21. **Seat belt; driver.** The bus must have a seat
33 belt and shoulder harness for the driver that comply with
34 Federal Motor Vehicle Safety Standard Numbers 208, 209, and 210,
35 Code of Federal Regulations, title 49, part 571.

36 Subp. 22. **Seats and barriers.** School bus seating provided

1 must be based on 13-inch rump room for each passenger. All
2 seats must face forward, except variations may be made to
3 accommodate handicapped students. Seats and seat back cushions
4 must be covered with a material having 42-ounce finished weight,
5 54 inches width, and finished vinyl coating of 1.06 broken
6 twill, or other material with equal tensile strength, tear
7 strength, seam strength, adhesion strength, resistance to
8 abrasion, resistance to cold, and flex separation. All seats
9 and seat belts must conform to Federal Motor Vehicle Safety
10 Standard Number 222, Code of Federal Regulations, title 49, part
11 571.

12 A school bus of 10,000 pounds gross vehicle weight or less
13 must be equipped with a barrier or padded stanchion on the right
14 side forward of the foremost seat.

15 Subp. 23. **Shock absorbers.** Type II school buses must be
16 equipped with front and rear shock absorbers that comply with
17 manufacturer's standard.

18 Subp. 24. **Steps.** The step or steps must comply with Type
19 I school bus equipment standards except that Type II school
20 buses with cab doors do not have to have the step or steps
21 enclosed. The first step at the service door must not be less
22 than ten inches and not more than 18 inches from the ground.

23 Subp. 25. **Sunshield.** Type II school buses do not have to
24 comply with Type I school bus equipment standards for
25 sunshields. A standard manufacturer's sunshield must be
26 provided for the driver.

27 Subp. 26. **Undercoating.** Type II buses, except for the
28 heat shield area, must be undercoated.

29 Subp. 27. **Ventilation.** If any ventilation is provided, it
30 must comply with Type I school bus equipment standards.

31 Subp. 28. **Wheel housing.** The wheel housing must meet the
32 manufacturer's standard.

33 Subp. 29. **Wheels.** Type II school buses may be equipped
34 with either single or dual rear wheels.

35 Subp. 30. **Windows.** The windows must comply with Type I
36 school bus equipment standards except that all windows may have

1 approved tinted glass.

2 3520.5700 TYPE III SCHOOL BUSES.

3 The standards in part 3520.5710 apply to Type III school
4 buses.

5 3520.5710 EQUIPMENT.

6 Subpart 1. Standards. All related equipment provided on
7 the vehicle must comply with federal motor vehicle safety
8 standards where applicable. If no federal standard applies,
9 equipment must be manufacturer's standard.

10 Subp. 1a. Age of vehicle. Vehicles ten years or older
11 must not be used as Type III vehicles to transport school
12 children, except those vehicles that are manufactured to meet
13 the structural requirements of Federal Motor Vehicle Safety
14 Standard 222, Code of Federal Regulations, title 49, part 571,
15 for Type II school buses.

16 Subp. 2. Color. Vehicles must be painted a color other
17 than National School Bus Yellow or Minnesota Golden Orange.

18 Subp. 2a. Fire extinguisher. A minimum of one 2-1/2 pound
19 dry chemical type fire extinguisher, with not less than a 10-B-C
20 rating, is required. It must be approved by Underwriters
21 Laboratories, Inc. or an equivalent testing laboratory.

22 The extinguisher must be mounted in a bracket, and must be
23 located in the driver's compartment and be readily accessible to
24 the driver and passengers. A pressure indicator is required and
25 must be easily read without removing the extinguisher from its
26 mounted position.

27 Subp. 2b. First aid kit. A minimum of a ten unit first
28 aid kit is required. The bus must have a removable, moisture-
29 and dust-proof first aid kit mounted in an accessible place
30 within the driver's compartment and must be marked to indicate
31 its location.

32 Subp. 3. Identification. The vehicle must not have the
33 words "School Bus" in any location on the exterior of the
34 vehicle, or in any interior location visible to a motorist.

35 The vehicle must display to the rear of the vehicle this

1 sign: "VEHICLE STOPS AT RR CROSSINGS."

2 The lettering (except for "AT," which may be one inch
3 smaller) must be a minimum two-inch "Series D" as specified in
4 Standard Alphabets for Highway Signs as specified by the Federal
5 Highway Administration. The printing must be in a color giving
6 a marked contrast with that of the part of the vehicle on which
7 it is placed.

8 The sign must have provisions for being covered, or be of a
9 removable or fold down type.

10 Subp. 4. **Lamps and signals.** Installation and use of the
11 eight-lamp warning system is prohibited.

12 All lamps on the exterior of the vehicle must conform with
13 and be installed as required by Federal Motor Vehicle Safety
14 Standard 108, Code of Federal Regulations, title 49, part 571.

15 Subp. 5. **Stop signal arm.** Installation and use of a stop
16 signal arm is prohibited.

17 Subp. 6. **Mirrors.** The interior clear rearview mirror must
18 afford a good view of pupils and roadway to the rear.

19 Two exterior clear rearview mirrors must be provided, one
20 to the left and one to the right of the driver.

21 Each mirror must be firmly supported and adjustable to give
22 the driver clear view past the left rear and the right rear of
23 the bus.

24 Subp. 7. **Warning device.** A Type III bus must contain at
25 least three red reflectorized triangle road warning devices.
26 Fuses may also be used. Liquid burning "pot type" flares are
27 not allowed.

28 Subp. 8. **Emergency doors.** The doors on Type III buses
29 must remain unlocked when carrying passengers.

30 Subp. 9. **Option.** Passenger cars and station wagons may
31 carry fire extinguisher, first aid kit, and warning triangles in
32 the trunk or trunk area of the vehicle, if a label in the driver
33 and front passenger area clearly indicates the location of these
34 items.

35 3520.5900 CONSTRUCTION OF VEHICLES FOR CHILDREN WITH MOBILITY

1 PROBLEMS.

2 Subpart 1. **Standards.** The standards in this part apply to
3 vehicles constructed to transport children with mobility
4 problems so severe as to prohibit them from using the regular
5 service door entrance. Vehicles constructed for transporting
6 these children must meet all federal and Minnesota school bus
7 construction standards.

8 Subp. 2. **Alteration of vehicle.** The interior of the
9 vehicle may be altered if all seats and barriers, component
10 parts, anchorages, wheelchair securement devices, and placement
11 of seats and barriers and wheelchair securement devices comply
12 with federal standards as of the date of manufacture. All
13 equipment must be supplied by the original component equipment
14 manufacturer or authorized dealer, be installed according to the
15 original equipment manufacturer's specification, and must meet
16 state specifications. Alterations that remove all wheelchair
17 securement devices that return the vehicle to conventional
18 passenger seating must also make the power lift and special
19 service door inoperable.

20 Subp. 3. **Power lift or ramp.** A school bus purchased
21 specifically or partially for the transportation of these
22 children must be equipped with a power lift or ramp located on
23 the right side of the bus body.

24 Subp. 4. **Seating capacity.** A statement of the actual
25 seating capacity, excluding wheelchairs, following the
26 modification of a vehicle, must be placed above the windshield
27 on the interior of the body.

28 Subp. 5. **Special service opening.** An enclosed service
29 opening must be located on the right side of the body. The door
30 opening must be not less than 38 inches wide and 52 inches high.

31 Subp. 6. **Reinforcement.** Door posts, headers, and all
32 floor sections around the special opening must be reinforced to
33 provide strength and support equal to adjacent side wall and
34 floor construction of an unaltered model.

35 Subp. 7. **Drip mold.** A drip mold must be installed above
36 the opening so as to effectively channel the water away from the

1 entrance.

2 Subp. 8. Header pad. A header pad, at least three inches
3 wide, extending the width of the special service door, must be
4 placed above the opening on the inside of the bus or on the lift
5 if it has a top cross bar.

6 Subp. 9. Special service door enclosure. The lift may be
7 enclosed by either one or two doors. All doors must open
8 outwardly.

9 Subp. 10. Two-panel door. If the door is made of two
10 panels, the standards in this subpart apply.

11 A. The forward panel must be provided with an
12 overlapping flange to close the space where the door panels
13 meet, and a weather seal must be provided around the doors or
14 opening to eliminate water leakage or heat loss.

15 B. Each door must have a safety glass window, set in
16 rubber and aligned with the lower line of the adjacent sash.
17 The window must be, as nearly as practical, of the same size as
18 other bus windows.

19 C. Each door panel must open outwardly and a positive
20 fastening device must be installed to hold the doors in an open
21 position.

22 Subp. 11. One-piece construction door. If the door is
23 made of one-piece construction, the standards in this subpart
24 apply.

25 A. The door must open outwardly and a positive
26 fastening device must be installed to securely hold the door in
27 an open position.

28 B. The door must be equipped with a slide-bar,
29 cam-operated type locking device.

30 C. Weather stripping must be installed around the
31 entire door or opening to eliminate water leakage or heat loss.

32 D. The door must have a safety glass window, set in
33 rubber and aligned with the lower line of the adjacent sash.
34 The window must be, as nearly as practical, of the same size as
35 other bus windows.

36 Subp. 12. Door equipment. The door must be equipped with

1 a device that actuates a flashing visible signal, located in the
2 driver's compartment, when the door is not securely closed, and
3 the emergency brake is not on. An audible signal must not be
4 used.

5 Subp. 13. Door construction. All doors must be
6 constructed to meet the standards in law, in strength and
7 materials for other school bus doors.

8 Subp. 14. Power lift. The power lift must be of at least
9 a 750 pound capacity rating and capable of lifting the
10 wheelchair, occupant, and attendant.

11 Subp. 15. Power lift controls. All power lift controls
12 must be portable and conveniently located on the inside of the
13 bus lift door. A master cut-off switch must be located in the
14 driver's compartment.

15 Subp. 16. Power lift platform. The power lift platform
16 must be covered with skid-resistant material or be so designed
17 so as to prevent slipping. The lift platform must be
18 constructed to permit vision through that portion of the
19 platform covering the window of the special service door when
20 the platform is in the "up" position. The power lift must be
21 designed so that the lift does not operate unless the special
22 service door is opened.

23 Subp. 17. Ramp. A self-adjusting ramp made of steel or
24 equivalent material, if needed, must be attached to the lift
25 platform or to the bus and be of sufficient length to minimize
26 the incline. The ramp must be equipped with skid-resistant
27 surface. The ramp must be in a secured position while the bus
28 is in motion. The ramp must be of sufficient width on the
29 surface to accommodate a standard wheelchair.

30 Subp. 18. Barriers. A padded crash barrier meeting
31 federal manufacturing requirements for school bus seats and
32 crash barriers must be properly installed between the special
33 service door and passenger seats to the rear of the door.

34 In vehicles of 10,000 pounds gross vehicle weight rating
35 and less, padded stanchions may be used.

36 Subp. 19. Elevator-type lift. In the event that an

1 elevator-type lift is used with the body floor section serving
2 as lift platform, both the forward and rear sides of the
3 platform must be protected with crash barriers extending from
4 the wall of the body toward the aisle. A covered chain must be
5 fastened to the rear barrier adjacent to the lift platform, and
6 must extend across the platform opening and attach with hook and
7 eye to the forward barrier adjacent to the lift platform.

8 Subp. 20. **Wheelchair securement devices.** Wheelchair
9 securement devices must be as provided by Minnesota Statutes,
10 section 299A.11.

11 Subp. 21. **Special student restraining devices.** Special
12 restraining devices such as shoulder harnesses, lap belts, and
13 chest restraint systems may be installed to the seats if the
14 devices do not require the alteration in any form of the seat,
15 seat cushion, framework, or related seat components. The
16 restraints must be for the sole purpose of restraining
17 handicapped students.

18 Subp. 22. **Seats.** All seats and related components shall
19 comply with applicable federal standards on date of
20 manufacture. Seat frames may be equipped by the school bus body
21 manufacturer with rings or other devices to which passenger
22 restraint systems may be attached if seat anchorages can handle
23 the increased load demands that may occur.

24 **3520.5910 MOTOR COACH USED FOR SCHOOL ACTIVITIES.**

25 Subpart 1. **Definitions.** A motor coach owned by a school
26 district or an area vocational technical institute is a bus that
27 has been designed or used for intercity transit or charter
28 service. The motor coach must have a capacity of 20 or more
29 persons.

30 A motor coach used for school activities must comply with
31 this part and must have been acquired before March 26, 1986.

32 A school activity is any activity involving students under
33 the sponsorship of a school district.

34 Subp. 2. **Standards.** Equipment standards for motor coaches
35 must conform to the Federal Motor Carrier Safety Regulations,

1 Code of Federal Regulations, title 49.

2 Relevant standards are in chapter III, subpart D, sections
3 393.61, 393.62, and 393.63; subpart E, section 393.67; subpart
4 G, sections 393.78, 393.79, 393.80, 393.81, 393.82, 393.83,
5 393.84, 393.89, 393.90, 393.91, 393.92, and 393.93; and subpart
6 H, section 393.95.

7 Subp. 3. Identification. Motor coaches must not be
8 outwardly equipped and identified as a school bus and must be
9 identified as provided in Minnesota Statutes, section 168.012.

10 Subp. 4. Inspection. Motor coaches must be inspected
11 annually by the Minnesota State Patrol using vehicle standards
12 for motor carriers in Minnesota Statutes, section 221.031,
13 subdivision 1.

14 Subp. 5. Certification. Upon passing an annual
15 inspection, a motor coach will be issued a motor carrier safety
16 sticker.

17 3520.5920 OPERATION OF MOTOR COACHES USED FOR SCHOOL ACTIVITIES.

18 Subpart 1. Comply with this part. A driver of a motor
19 coach used for school activities must have the qualifications
20 referred to in subpart 2 and follow the rules referred to in
21 subpart 3.

22 Subp. 2. Driver qualifications. The driver of a motor
23 coach operating within Minnesota must have a minimum Class B
24 driver license with a school bus endorsement.

25 Subp. 3. Driving rules. The driver must comply with the
26 rules for driving of motor coaches in chapter III, part 392 of
27 the Federal Motor Carrier Safety Regulations, Code of Federal
28 Regulations, title 49.

29 Subp. 4. Operation. A motor coach must not be used for
30 activities that are eligible for state transportation aid.

31 A motor coach must not be leased to another entity.

32

33 REPEALER. Minnesota Rules, parts 3520.0500; 3520.0700;
34 3520.0800; 3520.0900; 3520.1100; 3520.1700; 3520.1900;
35 3520.2000; 3520.2100; 3520.2200; 3520.2300; 3520.3700, subparts

1 2 and 3; 3520.3800; 3520.4000; 3520.4100, subpart 4; 3520.4200;
2 3520.4210; 3520.4220; 3520.4230; 3520.4240; 3520.4250;
3 3520.4260; 3520.4300; 3520.4510, subparts 1 and 2; 3520.4520;
4 3520.4530; 3520.4580; 3520.4600, subparts 2, 3, 4, and 5;
5 3520.4610; subparts 3 and 4; 3520.4660; 3520.4690; 3520.4700;
6 3520.4710; 3520.4730; 3520.4740; 3520.4760; 3520.4770;
7 3520.4800; 3520.4810; 3520.4820; 3520.4830; 3520.4850, subparts
8 2 and 4; 3520.4860; 3520.4870; 3520.4900, subparts 1, 2, 3, 4,
9 5, 8, 9, and 10; 3520.4920; 3520.4940; 3520.4950; 3520.4960;
10 3520.4970; 3520.4990; 3520.5020; 3520.5100; 3520.5110;
11 3520.5130; 3520.5140; 3520.5150; 3520.5170; 3520.5200, subpart
12 5; 3520.5210; 3520.5300, subpart 2; 3520.5320; 3520.5350;
13 3520.5360; 3520.5400; 3520.5410; 3520.5420; 3520.5430;
14 3520.5440; 3520.5450, subpart 2; 3520.5460; 3520.5470;
15 3520.5480; 3520.5530; 3520.5540; 3520.5550; 3520.5580, subpart
16 3; 3520.5610; and 3520.5800 are repealed.