

First Time Inspection

This section contains items that usually are not specifically checked during an annual inspection.

Each item will be checked for conformity to the standards during the first time the bus is inspected by the State Patrol. This inspection will be in addition to the regular inspection and will be on a pass or fail basis.

Failure to pass the first time inspection will be cause to withhold the annual sticker until compliance is obtained. The body dealer will be allowed 30 days to comply if standards are not met and the bus may be operated on an interim sticker unless the deficient item poses a safety threat. In such case, the inspector will remove all stickers and the bus may not be operated until it is in compliance and re-inspected by the Patrol Inspector.

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If items are not present or up to listed standards, the school bus will not be allowed to be entered into service in the state of Minnesota.

1. Bumpers

The front and rear bumper must be present and securely fastened to vehicle chassis. There shall not be missing, torn, or broken parts or a protruding piece that could create a hazard. Both bumpers must be of sufficient strength to permit being pushed by another vehicle without permanent distortion to bumper, braces, chassis or body. The front bumper must extend beyond the most forward part of the bus, must be of pressed steel channel at least 3/16 inch thick and 8 inches in height. The rear bumper shall be a minimum of 8 inches high on Type A and a minimum of 9 1/2 inches on Type B, C, and D buses. It shall wrap around the back corners and extend 12 inches forward from rearmost point of body at floor line. It must also extend beyond rearmost part of body at least one inch. Type A buses under 14,500 must be equipped with OEM supplied bumper.

1. Ascertain that bumpers are securely attached and have no broken or missing parts. Front bumper must extend beyond the forward-most part of the body grille, hood and fenders and to the outer edges of the fenders at the bumper top line.

Measure rear bumper for compliance with height, wraparound and extension from body requirements.

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3. Fenders

The total spread of the outer edges of the front fenders, measured at the fender line, must exceed the total spread of the front tires when the wheels are in the straight ahead position. The front fenders must be properly braced.

3. Position front wheels in straight forward position. Wheels must not extend beyond outside line of fender.

M.S. 169.4501

4. Firewall Openings

All openings in floor board or firewall between chassis and passenger - carrying compartments, such as for gearshift lever and auxiliary brake lever, shall be sealed.

4. Observe floorboard and firewall area for unsealed openings.

M.S. 169.4501

5. Transmission

Mechanical transmission shall provide not less than three forward gears, second and higher must be synchronized, and at least one reverse gear. Shifting pattern must be in full view of the driver. Automatic transmissions shall provide three forward speeds and one reverse speed.

5. Ascertain that manual transmissions have at least three forward gears and that shifting pattern is in full view of driver. The pattern may be placed on the shifting knob if printed clearly. Otherwise pattern must be on dash in front or to front right of driver.

M.S. 169.4501

6. Rust Proofing

A. The entire underside of the bus body, including front fenders if not constructed of a non-corrosive material, floor sections, cross members, and below floor line side panels must be coated with a rust-proofing compound for which the compound manufacturer has issued notarized certification of compliance to the bus body builder that the compound meets or exceeds all performance requirements of

6. View underside of bus body for undercoating. Must be no voids in cured film. Metal front fenders also must be undercoated.

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Federal Specification
TT-C-520B using modified test
procedures for the following
requirements: 1) Salt spray
resistance - pass test
modified to five percent salt
and 1000 hours.

- B. The under coating compound must be applied with suitable airless or conventional spray equipment to recommended film thickness and must show no evidence of voids in cured film.

M.S. 169.4501

7. Aisles - Seats

- A. Minimum clearance of all bus length, width aisles, including the aisle or passageway between seats leading to emergency door, must be 12 inches. M.S. 169.4501
- B. Aisle supports of seat backs must be slanted away from the aisle sufficiently to give aisle clearance of 15 inches at the top of the seat backs.

M.S. 169.4501

8. Length - Width

The overall length of a school bus must not exceed forty feet.
The overall width of a school bus must not exceed 102 inches excluding mirror, stop arm, etc.

- 7. Measure aisle width and seat backs for compliance with aisle requirements. All passageways leading to emergency doors must be a minimum of 12 inches wide by 48 inches high, measured from the floor.

Emergency door openings must be a minimum of 24 by 45 inches for Type B, C, D, and 22 by 45 inches for Type A. See 571.217

- 8. Measure any bus that appears to be over maximum limits.

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9. Floor

The floor must be of prime commercial quality steel or other metal of at least 14 gauge. The metal floor must be covered with plywood. The plywood must be five-ply, at least 19/32 inch thick and it must equal or exceed properties of exterior-type softwood plywood, grade C.D., as specified in product standard PS 1-83 issued by the United States Department of Commerce. The floor must be level from front to back and from side to side except in wheel housing, toeboard, and driver's seat platform.

9. Check for plywood floor by opening rear door and observing raise in floor area above metal floor line. Observe levelness of floor and covering. Seams must be sealed and covering bonded to floor.

Floor must be covered with rubber floor covering or its equivalent. Aisle covering must also be non-skid, wear resistant and ribbed. All seams must be sealed.

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Option: The underside of the metal floor may be undercoated with polyurethane floor insulation. This does not replace the plywood requirement.

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10. Storage Compartment

Metal container of adequate strength and capacity for storage of tire chains and/or tow chains and such tools must be provided if such items are carried on the bus. Such storage container may be located either inside or outside of passenger compartment. If inside, it shall be fastened to the floor convenient for either the service or emergency door of the bus and have a cover. Chains should also be checked for excessive rusting and kept oiled when not in use.

Option: In place of the container required above, an overhead storage compartment may be placed in the front of the cab for storage of emergency equipment and labeled as the location of this equipment. It must be properly secured.

M.S. 169.4501

11. Headroom

Inside body height must provide for 72 inches of headroom, measured metal to metal, at any point on longitudinal center line from front vertical bow to rear vertical bow.

Inside body height of Type A buses shall be 62 inches or more.

M.S. 169.4501

10. Underseat = Check for anchorage to floor. Cover is required but cannot be part of seat.

11. Inside headroom measurement should be at least 71¼ inches measured at centerline of bus.

In side headroom measurement for Type A buses should be at least 61 1/4 inches measured at centerline of bus.

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12. Rub Rails

- A. There must be one rub rail located on each side of the bus approximately at seat level. The rub rail must extend from the rear side of the entrance door completely around the bus body (except for the emergency door) to the point of curvature near the outside cowl on the left side.
- B. There must be one rub rail located approximately at the floor line which must cover the same longitudinal area as the upper rub rail, except at the wheel housings, and must extend only to the radii of the right and left rear corners.
- C. For buses using a rear luggage or rear engine compartment, the rub rails need not extend around rear corners. There must be a rub rail at the base of the skirt of the bus. All rub rails must be attached at each body post and all other structural members.
- D. All rub rails must be four inches or more in width, must be of 16 gauge steel, and must be constructed in corrugated or ribbed fashion. Pressed in or snap-on rails do not satisfy this requirement.

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- 12. Check for one (1) rub rail at approximately seat level, one at the floor line and one at the base of the skirt of the bus.

Ascertain that rub rails are positioned as required unless extra rails are installed that further protect from impact.

Rails must be four inches in width, be of 16 gauge steel, and securely fastened. A minimum of three must be painted black.

Type A buses do not need a rub rail located at the base of the skirt of the bus.

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13. Traction Assisting Devices

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

- A. Be of hopper cartridge-valve type.
- B. Have a metal hopper with all interior surfaces treated to prevent condensation of moisture.
- C. Be at least 100 pound capacity.
- D. Have a cover on the filler opening of the hopper which screws into place sealing the unit airtight.
- E. Have discharge tubes extending to the front of each rear wheel under the fender.
- F. Have no-clogging discharge tubes with slush proof, non-freezing rubber nozzles.
- G. Be operated by an electric switch with a telltale light mounted on the instrument panel.
- H. Be exclusively driver controlled.
- I. Have a gauge to indicate the hoppers need refilling when they are down to one-quarter full.
- J. Automatic traction chains may be installed.

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13. If Sanders are provided, ascertain their compliance with

M.S 169.4501

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14. Steps

- A. The first step at the service door must be not less than 10 inches and not more than 14 inches from the ground, based on standard chassis specifications. Type D vehicles first step shall be 12 to 16 inches from ground.
- B. Step risers shall not exceed a height of 10 inches. When plywood floor is used on steel, the riser height may be increased by thickness of plywood used. Steps must be enclosed to prevent accumulation of ice and snow.
- C. Steps must not protrude beyond side body line.
- D. Grab handle not less than 20 inches in length must be provided in unobstructed location inside doorway.
- E. All steps, including the floor line platform area, must be covered with elastomer floor covering at least 0.187 in.
- F. Step covering shall be permanently bonded to a durable backing material resistant to corrosion.
- G. Steps including floor line platform shall a 1 1/2 inch white-nosing as an integral piece.

- 14. First step must measure more than 10 and less than 14 inches from the ground.

Type D vehicles must measure 12 to 16 inches from ground.

Steps must be enclosed and not protrude beyond body line.

Grooves in covering must run at 90° to long dimension of step. Must have 1½ inch white nosing as an integral piece without joints.

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15. Stirrup Steps

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

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15. Check for stirrup step and handle on each side of body front. Step may be cut in or placed on the bumper on transit buses.

16. Sunshield

An interior, adjustable, transparent sunshield not less than 6 by 30 inches in size, with a finished edge, must be installed in a position convenient for use by the driver on Types B, C, and D buses.

16. Interior sun visor shall measure at least 6 X 30 with finished edge or on Type A and small B buses a solid sunvisor or a 6 X 16" sunshield.

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Type A sunshield (visor) shall be installed by chassis manufacturer.

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17. Ventilation

- A. The body must be equipped with a suitable, controlled ventilating system of sufficient capacity to maintain proper quantity of air under operating conditions without opening of windows except in extremely warm weather.
- B. If static-type exhaust roof ventilators are desired, they must be installed in a low pressure area of the roof panel.

Option: In addition to the ventilation equipment, the body may be equipped with multi-position roof ventilators of sufficient number and capacity to maintain proper quantity of air under normal operating conditions without opening of windows except in extremely warm weather. Multi-position roof ventilators may be used in conjunction with emergency roof hatches.

- 1) Roof ventilators may include a leak resistance static-type non-closable exhaust vent as an integral part of the design.
- 2) The rear roof ventilator may be installed beyond the rear axle.
- 3) Roof ventilators may also include auxiliary release handles to permit operation as emergency exits in compliance with Federal Motor Vehicle Safety Standard Number 217, Code of Federal Regulations, Title 49, Part 571.

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17. Multi-position roof ventilators must be wired to buzzer in drivers compartment if used as emergency exit.

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18. Wheel Housing

- A. Wheel house openings must allow for easy tire removal and service.
- B. Wheel housings must be attached to floor sheets so as to prevent any dust, water, or fumes from entering body.
- C. The wheel housing must be constructed of 16 gauge steel or other material of equal strength.
- D. The inside height of the wheel housings above floor line must not exceed 12 inches.
- E. Wheel housing must provide clearance for dual installation and use of tire chains on dual drive wheels.
- F. No part of a raised wheel housing may extend into the emergency door opening.

M.S. 169.4501

18. Housing must be sealed to prevent dust, water or fumes from entering bus. Housing cannot extend into emergency door opening.

19. Windshield Washer

A windshield washer system must be provided.

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19. Must be provided.

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20. Windshield Wiper System

20. Must be provided. Minimum of two speed.

- A. A windshield wiping system, two speed or more, must be provided.
- B. The wipers must be operated by one or more air or electric motors of sufficient power to operate wipers. If one motor is used, the wipers must work in tandem to give full sweep of the windshield.

M.S. 169.4501

21. Wiring

21. Wiring diagram must be provided and be available.

- A. All wiring must conform to the current standards of the Society of Automotive Engineers.
- B. Wiring must be arranged in at least six regular circuits as follows: head, tail, stop, instrument panel lamps, clearance lamps, dome and step-well lamps, ignition and emergency door signal, turn signal lamps, alternately flashing red signal lamps.
- C. Any of the circuits may be subdivided into additional independent circuits.
- D. If heaters and defrosters are used, at least one additional circuit must be installed.
- E. If installed, all other electrical functions must be provided with independent and properly protected circuits.

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- F. Each body circuit must be coded by number or letter on a diagram of circuits. The diagram must be attached to the body in a readily accessible location.
- G. If wires pass through metal openings, they must be protected by a grommet. Wires not enclosed within the body must be fastened securely at interval of not more than 18 inches. All joints must be soldered or joined by equally effective connectors.
- H. The entire electrical system of the body must be designed for the same voltage as the chassis on which the body is mounted.
- I. All wiring must have an amperage capacity equal to or exceeding the designed load. All wiring splices are to be done at an accessible location and noted as splices on the wiring diagram.
- J. The body power wire must be attached to the special terminal on the chassis.

M.S. 169.4501

22. Master Switch

- A. If a master switch is installed, any portion of the brake system that relies on electrical current for operation may not be wired through the same switch.

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22. Master switch must not include any electrical brake operation.

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23. Gauges

Instruments and gauges must have:
(Lights not acceptable except
as noted.)

1. Speedometer
2. Odometer
3. Ammeter or voltmeter
4. Oil pressure gauges
5. Water temperature gauge
6. Fuel Gauge
7. Upper beam headlight
8. Brake indicator
9. Turn signal indicator
10. Glow plug indicator when appropriate

23. Ascertain proper gauges
and instruments and lights
are present.

24. Shock Absorbers

Must have front and rear double
acting shocks.

24. Must have double acting shocks
front and rear.

25. Steering Wheel

Must be 2 inch clearance between
steering wheel and cowl, instru-
ment panel windshield, etc.
Power steering is required.

25. Must have 2 inch clearance around
steering wheel.

26. Steering - Power

26. Must have power steering.

27. Entrance Door

27. Bottom of lower glass panel must
not measure more than 10 inches
from the top surface of bottom
step. Top of top glass panel shall not
be more than 3 inches from the
top of the door.

28. Trailer Hitch

If installed, it must be flush
mount and cannot extend beyond
rear bumper when not in use.

28. Must be flush mount if installed.
Cannot extend beyond rear bumper
when not in use.

M.S. 169.4502

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29. Alternator

Type A-2, B buses over 15,000 GVWR and all C and D buses alternator must have output of at least 130 amps. It must have dual drive belts unless equipped with single belt with longitudinal multigrooves. A Type A-2, B bus under 15,000 GVWR be equipped with an alternator of at least 130 amp..

Option: 120 amp alternator required with battery of 550 CCA or more.

30. Battery

Gas powered must have a battery of at least 800 CCA. Option: Must have 550 CCA battery if battery is installed in the engine compartment if used in combination with a 130 amp alternator.

Diesel Powered must have battery of at least 1050 CCA.

M.S. 169.4501
M.S. 169.4502

31. Drive train Guard

Drive shaft must be protected by adequate metal guards to prevent it from whipping through the floor or dropping to the ground if broken.

M.S. 169.4501

29. Attempt to verify alternator sizes as well as options.

30. Attempt to verify battery size as well as options.

31. Ascertain that an adequate guard for each section of drive shaft is securely installed.

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32. Fuel tank

A metal protection cage around the gas tank is required by federal rule. Metal shields must be installed any place the exhaust system is within 12 inches of the tank or tank connections.

M.S. 169.4501

33. Defroster Fans.

Two auxiliary defroster fans are required. They must be sufficient capacity to keep the windshield, window to left of driver and glass in the entrance door clear of fog, frost and snow. The blades must be of metal and the guards adequate to prevent injury. Type A and B bus under 15,000 GVWR may be equipped with one fan.

M.S. 169.4503

34. Strobe Light

If so equipped, the strobe light must conform with 169,64, Subp. 7.

35. Stop light - Tail light

Two stop lamps are required. They must be 7 inches in diameter if round and a minimum of 38 square inches if other than round. They must be mounted just inside the turn signals at the same height. They must be mixed to combine stop and tail lights.

M.S. 169.4501

32. Observe fuel tank and lines for shields in place where connections are within 12 inches of exhaust. Check for presence of fuel tank protection cage.

33. Two are required. Must have metal blades. Guards may be metal or plastic but of adequate strength and design to prevent injury.

34. Check for:

- a. 360 degree flashing white strobe
- b. Double flash type
- c. Weatherproof
- d. Mounted on longitudinal centerline of bus not less than 2 feet nor more than 7 feet forward of rear roof edge.

35. Check for minimum size and required location. Must be wired to combine stop lamp function of tail lights. Must be wired with tail lights for both stop and tail light function.

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36. Mirrors

- A. Must have interior rearview mirror of at least 6 x 30 inches for Type B over 15,000 GVWR, C, and D buses.

Type A interior mirror of at least 6 X 16.

- B. Exterior Mirror

- C. Crossover Mirror

M.S. 169.4501

M.S. 169.4503

36. Check for interior rear view mirror of at least 6 X 30 inches 6 X 16 inches.

Check that exterior and crossover mirror system meet visibility requirements of FMVSS 111.

37. Seat Belt - Driver

A Type 2 lap belt/shoulder harness seatbelt shall be provided. The assembly shall be equipped with an emergence locking retractor (ELR).

Belt must be anchored or guided at the seat frame to prevent driver from sliding sideways.

M.S. 169.4501

37. Each section of belt must be either:

1. Booted in order to keep belt off the floor and close to the driver's seat or
2. Anchored or girded at seat frame.

38. Black Background. Eight light system.

38. The area around each lens of the eight light system must be painted black. The black area must extend outward around the lens approximately three (3) inches.

39. Tires and Rims

Tires and rims must meet load rating commensurate with MFG GVWR. Duals required on Type B, C, and D buses. All tires on the vehicle must be of same size. Radials and bias cannot be mixed on same axle.

M.S. 169.4501

39. Check for adequate size tires - must be of same size and of same type (bias or radial).

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40. Seats and Barriers

- A. Passenger seats and barriers must be either fire retardant or fire block characteristics.

M.S. 169.4503

- 40. Ascertain that seats and barriers are fire retardant or fire block.

41. Windows

- A. Thermal glass required in entrance door and drivers window on types B over and C, and D buses. Type A buses need not have thermal pane in drivers window.

- B. Use of tinted windows is allowed.

M.S. 169.4503

- 41. Ascertain thermal glass is present.