

DEPARTMENT OF TRANSPORTATION

NOTICE OF PROPOSED RULES

- 1) Heading of the Part: Construction Standards for School Buses
- 2) Code Citation: 92 Ill. Adm. Code 440
- 3)

<u>Section Numbers:</u>	<u>Proposed Actions:</u>
440.1000	New Section
440.2000	New Section
440.3000	New Section
440.4000	New Section
440.5000	New Section
- 4) Statutory Authority: Implementing Article VIII of Chapter 12 of the Illinois Vehicle Code [625 ILCS 5/Ch. 12, Art. VIII] and Section 14-3(m) of the Criminal Code of 1961 [720 ILCS 5/14-3(m)] and authorized by Section 12-812 of the Illinois Vehicle Code [625 ILCS 5/12-812].
- 5) A Complete Description of the Subjects and Issues Involved: A new Part 440 is being introduced to replace the old Part. Simultaneous with this proposed Part, the Department will propose to repeal 92 Ill. Adm. Code 442 (Minimum Safety Standards for the Construction of Type II School Buses). The Department's goal for these proposed rulemakings is to reorganize Part 440 and combine the school bus construction standards for both Type I (Gross Vehicle Weight Rating (GVWR) of 10,001 lbs or more) and Type II (GVWR of 10,000 lbs or less) school buses into one Part. This Part is being named "Illinois Construction Standards for School Buses" to accommodate both types of school buses. Generally, Type I and Type II school buses meet the same Federal Motor Vehicle Safety Standards (FMVSS) as mandated by the National Highway Traffic Safety Administration (NHTSA). (Type II school buses are smaller vehicles with standards appropriately corresponding to smaller vehicles.) In this newly created Part 440, the Department is proposing to apply the same standards to both Type I and Type II school buses whenever possible. Exceptions and variances for smaller Type II buses are provided throughout this new Part.
- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: None
- 7) Will this rulemaking replace any emergency rule currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No

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- 9) Does this rulemaking contain incorporations by reference? Yes
- 10) Are there any other rulemakings pending on this Part? Yes. Part 440 is being repealed elsewhere in the *Illinois Register* in conjunction with these proposed rules.
- 11) Statement of Statewide Policy Objective: These proposed amendments affect units of local government (i.e., school districts) that own or operate school buses.
- 12) Time, Place and Manner in which interested persons may comment on this proposed rulemaking: Any interested party may submit written comments or arguments concerning these proposed amendments. Written submissions shall be filed with:

Greg Stucka, Rules Manager
Illinois Department of Transportation
Office of Chief Counsel
2300 South Dirksen Parkway, Room 317
Springfield IL 62764

Comments received within 45 days after the date of publication of this *Illinois Register* will be considered. Comments received after that time will be considered, time permitting.

- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities and not-for-profit corporations affected: These proposed amendments affect small businesses that manufacture school buses registered for use in Illinois. These proposed amendments also affect small businesses, small municipalities, and not-for-profit corporations that own or operate school buses.
- B) Reporting, bookkeeping or other procedures required for compliance: No impact is anticipated.
- C) Types of professional skills necessary for compliance: No impact is anticipated.
- 14) Regulatory Agenda on which this rulemaking was summarized: July 2017

The full text of the Proposed Rules begins on the next page:

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TITLE 92: TRANSPORTATION
CHAPTER I: DEPARTMENT OF TRANSPORTATION
SUBCHAPTER e: TRAFFIC SAFETY (EXCEPT HAZARDOUS MATERIALS)PART 440
CONSTRUCTION STANDARDS FOR SCHOOL BUSES

Section

440.1000	Applicability
440.2000	Definitions
440.3000	Incorporation by Reference
440.4000	Certification by Manufacturer
440.5000	Body and Chassis Requirements

AUTHORITY: Implementing Article VIII of Chapter 12 of the Illinois Vehicle Code [625 ILCS 5/Ch. 12, Art. VIII] and Section 14-3(m) of the Criminal Code of 1961 [720 ILCS 5/14-3(m)] and authorized by Section 12-812 of the Illinois Vehicle Code [625 ILCS 5/12-812].

SOURCE: Filed June 20, 1977; amended at 6 Ill. Reg. 7147, effective June 2, 1982; codified at 8 Ill. Reg. 15502; amended at 11 Ill. Reg. 15947, effective September 21, 1987; amended at 12 Ill. Reg. 8463, effective May 3, 1988; amended at 16 Ill. Reg. 1655, effective January 14, 1992; amended at 17 Ill. Reg. 3530, effective March 2, 1993; amended at 18 Ill. Reg. 14764, effective September 20, 1994; amended at 22 Ill. Reg. 19354, effective October 15, 1998; expedited correction at 23 Ill. Reg. 5918, effective October 15, 1998; emergency amendment at 24 Ill. Reg. 4993, effective March 10, 2000, for a maximum of 150 days; amended at 24 Ill. Reg. 12111, effective July 31, 2000; emergency amendment at 24 Ill. Reg. 16391, effective October 20, 2000, for a maximum of 150 days; amended at 25 Ill. Reg. 3307, effective February 20, 2001; amended at 26 Ill. Reg. 3219, effective February 19, 2002; amended at 31 Ill. Reg. 1881, effective January 8, 2007; amended at 32 Ill. Reg. 17983, effective November 10, 2008; former Part repealed at 41 Ill. Reg. _____, and new Part adopted at 41 Ill. Reg. _____, effective _____.

Section 440.1000 Applicability

This Part applies to the construction of any Type I or Type II school bus manufactured for use in Illinois or operated by or for an Illinois school K-12 (public or private). The Department's Bureau of Investigations and Compliance is responsible for the enforcement of this Part.

Section 440.2000 Definitions

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"Body" means the portion of a bus that encloses the occupant and cargo spaces and separates those spaces from the chassis frame, engine compartment, driveline, and other chassis components, except certain chassis controls used by the driver.

"Chassis" means every frame or supportive element of a vehicle whether or not a manufacturer's identification number, serial number, or other identifying numbers are present on that part. (IVC Section 1-111.1b)

"Child Check System" means an electronic monitoring system used for ensuring that no passengers remain on the school bus at the end of a route, a work shift, or the work day. The system shall require the school bus driver to walk to the rear of the bus to deactivate the system before the driver leaves the bus. The vehicle's interior lights shall illuminate when the ignition is turned off to assist the driver in seeing in and under the seats during a visual sweep of the bus.

"Code" or "IVC" means the Illinois Vehicle Code [625 ILCS 5].

"Curb Weight" means the weight of a motor vehicle with standard equipment; maximum capacity of engine fuel, oil, and coolant; and, if so equipped, air conditioning and additional weight optional engine. (49 CFR 571.3)

"Diameter" means a straight line passing from side to side through the center of a body or figure, especially a circle or sphere.

"Driver" means every person who drives or is in actual physical control of a vehicle. (IVC Section 1-116)

"Empty Weight" see "Curb Weight"

"FMVSS" means the rules and standards set forth in 49 CFR 571. The FMVSS are commonly known as the Federal Motor Vehicle Safety Standards.

"Forward Control" means a configuration in which more than half of the engine length is rearward of the foremost point of the windshield base and the steering wheel hub is in the forward quarter of the vehicle length (includes mid-engine and rear-engine "pusher" buses). (FMVSS 3)

"Gross Vehicle Weight Rating" or "GVWR" means the value specified by the manufacturer as the loaded weight of a single vehicle. (IVC Section 1-124.5)

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"Incomplete Vehicle" means an assemblage consisting, at a minimum, of frame and chassis structure, power train, steering system, suspension system, and braking system, to the extent that those systems are to be part of the completed vehicle, that requires further manufacturing operations (other than the addition of readily attachable components such as mirrors or tire and rim assemblies or minor finishing operations, such as painting) to become a completed school bus for use in Illinois.

"Integral Type" bus means a completed vehicle either without separate body and chassis or with body and chassis joined into one unit.

"Manufacturer" (unless otherwise indicated at the point of use) means the person or organization whose name follows "MANUFACTURED BY" or "MFD BY" on the certification labels required in Section 440.4000.

"Multifunction School Activity Bus" or "MFSAB" means a school bus manufactured for the purpose of transporting 11 or more persons, including the driver, whose purposes do not include transporting students to and from home or school bus stops. An MFSAB is prohibited from meeting the special requirements for school buses in IVC Sections 12-801, 12-803, 12-805 and Section 12-802(a). (IVC Section 1-148.3a-5)

"Nonhitchable" means the rear of the bus being designed and maintained to prevent or discourage riding or grasping the rear of the bus so as to "hitch" rides.

"Passenger" means every bus occupant who is not the driver.

"Safety Equipment" means the fire extinguisher, first-aid kit, and warning devices.

"School Bus" or "Bus" means:

Every motor vehicle, except as provided in this definition, owned or operated by or for any of the following entities for the transportation of persons regularly enrolled as students in grade 12 or below in connection with any activity of that entity:

Any public or private primary or secondary school;

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Any primary or secondary school operated by a religious institution; or

Any public, private or religious nursery school.

This definition shall not include the following:

A bus operated by a public utility, municipal corporation or common carrier authorized to conduct local or interurban transportation of passengers when that bus is not traveling a specific school bus route but is:

On a regularly scheduled route for the transportation of other fare paying passengers;

Furnishing charter service for the transportation of groups on field trips or other special trips or in connection with other special events; or

Being used for shuttle service between attendance centers or other educational facilities.

A motor vehicle of the first division.

A multifunction school-activity bus. (IVC Section 1-182)

"Type I School Bus" means a school bus with a Gross Vehicle Weight Rating of more than 10,000 pounds. (IVC Section 1-213.4)

"Type I-A School Bus" means a term commonly used by school bus manufacturers to classify a Type I school bus that is a conversion or body constructed upon a van-type or cutaway front-section vehicle with a left side driver's door, designed for carrying more than 10 persons. The Type I-A school bus has a GVWR of more than 10,000 pounds.

"Type II School Bus" means a school bus with a Gross Vehicle Weight Rating of 10,000 pounds or less. (IVC Section 1-213.5)

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Section 440.3000 Incorporation by Reference

- a) Incorporation by Reference
 - 1) Each bus body and chassis shall conform to the applicable provisions of the FMVSS (October 1, 2016).
 - 2) Each bus body and chassis shall conform to the applicable provisions of 49 CFR 567 (Certification) and 49 CFR 568 (Vehicles Manufactured in Two or More Stages) (October 1, 2016) that were in effect on the first day of the month in which the chassis manufacturer completed the last manufacturing operation on the incomplete bus.
 - 3) Each school bus shall conform to the applicable Society of Automotive Engineers Standards and Practices (SAESP) (2016 edition).
- b) The incorporations by reference in this Section are as of the date stated and include no later amendments or editions.
- c) Copies of the materials incorporated by reference in this Section are available for inspection at the Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield IL 62764 or by calling (217)785-1181. The federal standards are available on the U.S. Government Publishing Office's website at <http://www.ecfr.gov>.

Section 440.4000 Certification by Manufacturer

- a) The manufacturer shall certify that the bus conforms to all applicable federal and State standards in effect on the first day of the month for the month and year of manufacture.
- b) The federal certification shall be in the form of a label that meets the requirements of 49 CFR 567. The federal certification label shall be affixed to the bus when the bus is delivered to the purchaser as well as when the bus is submitted for safety tests as required by IVC Section 13-109.
- c) For school buses originally manufactured for use in Illinois, the manufacturer shall also certify that the bus conforms to the requirements of this Part. The State certification label shall:

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- 1) Display the manufacturer's name;
- 2) Identify the bus by its Vehicle Identification Number (VIN);
- 3) State that the bus conforms to all applicable provisions of this Part; and
- 4) Be affixed to the bus when the bus is delivered to the purchaser.

Section 440.5000 Body and Chassis Requirements

- a) Aisle
 - 1) For Type I and Type I-A school buses, the floor to ceiling height shall be a minimum of 1.75 m (69") above the entire width of the aisle.
 - 2) For Type II school buses, the floor to ceiling height shall be a minimum of 1.52 m (60") above the entire width of the aisle.
 - 3) Optional: A dedicated aisle that conforms to FMVSS 217 may be adjacent to any side emergency door.
- b) Barriers, Guard
 - 1) Guard barriers that conform to FMVSS 222 are required on Type I, Type II, and Type I-A school buses.
 - 2) Guard barriers shall be installed in front of each forward facing passenger seat that does not directly face the rear surface of another passenger seat. The barrier shall measure the same height as the passenger seat back directly behind that barrier.
 - 3) See 92 Ill. Adm. Code 444 for special education school bus exceptions.
- c) Battery or Batteries
 - 1) At least one properly connected battery shall be installed.

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- 2) A battery disconnect switch shall be provided to shut power off from the battery or batteries. The switch shall be accessible from the exterior and labeled as prescribed in Section 440.5000(y)(17).
- d) Battery Compartment (Optional)
- 1) When the battery is mounted outside the engine compartment, it shall be attached securely in an exterior, closed, and vented compartment that is located and arranged so as to provide for convenient routine servicing.
 - 2) A latch or fastener shall be designed in such a fashion as to keep the door closed when in the latched position.
 - 3) Each electrical cable connecting the battery or batteries in this compartment to the body or chassis shall be one piece between the battery terminal connector and the first body or chassis terminal connector.
 - 4) Exception: For Type II and Type I-A school buses, the battery may be located in the interior of the bus in a closed, sealed, and ventilated compartment.
- e) Bumper, Front
- 1) The front bumper shall be channel-type cross-section formed from rolled steel at least 4.5 mm (.177") thick. The bumper shall have not less than a 20.32 cm (8") vertical face and shall extend to protect the outer edges of the fender (or the body of a forward control bus).
 - 2) The bumper shall be of sufficient strength to permit pushing another vehicle of equal gross weight without permanent distortion.
 - 3) Exception: Type II and Type I-A school buses may meet manufacturer's specifications.
- f) Bumper, Rear
- 1) The rear bumper shall be channel-type cross-section with the top edge at least 22.86 cm (9") above the bottom edge. The bumper shall be formed from rolled steel at least 4.55 mm (.177") thick, and shall wrap around the

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rear corners of the body to a point at least 30.48 cm (12") forward of the rearmost point of the body at floor line.

2) The rear bumper shall be nonhitchable as defined in Section 440.2000.

g) Cameras, Exterior and Interior (Optional)

1) Exterior. If equipped, exterior cameras shall be black, school bus yellow, or gray and shall not obstruct any required lettering or lamps.

2) Interior. If equipped, interior cameras shall not be located on the dash or in the driver's field of view. The cameras shall not obstruct any required lettering or lamps.

3) See Lettering at subsections (y)(18) and (19) for applicable decal requirements.

h) Certificate and Registration Card Holder

At least 1 card holder with a transparent face no less than 15.24 cm (6") by 10.16 cm (4") shall be securely affixed to the interior front bulkhead.

i) Child Check System

If a child check system is installed, the system shall assist the driver by illuminating an interior light or lights on the bus when the ignition is turned off or when the ignition is turned to the "accessories" position. (See IVC Section 12-816.)

AGENCY NOTE: A manual child check system may be utilized by the school bus owner.

j) Communication Device

Each school bus shall contain either a cellular radio telecommunication device (i.e., cell phone) or an operating two-way radio while the school bus driver is in possession of the bus.

AGENCY NOTE: The manufacturer may elect to install a two-way radio at the time of manufacture; however, a communication device (i.e., two-way radio or cellular radio telecommunication device) can also be installed by the owner after the school bus is purchased.

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- k) Crossing Control Arm
- 1) Shall meet or exceed the wiring requirements of SAESP J1133 (Revised June 2011).
 - 2) Shall be capable of full operation between, and including, the temperatures -40° F and 160° F.
 - 3) The arm, when activated, shall extend a minimum of 5 feet from the front face of the bumper.
 - 4) The arm shall be mounted on the far right side (entry side) of the front bumper.
 - 5) Appropriate brackets shall be used to attach the arm to the front bumper for proper operation and storage.
 - 6) All component parts shall meet or exceed any applicable federal motor vehicle safety standards in effect at the time of manufacture.
 - 7) The arm shall extend at the same time the stop arm panel extends. An independent on/off switch is prohibited.
 - 8) If the driver can stop the arm from extending with the use of an optional momentary override switch, the arm sequence shall automatically reset once the service door is closed.
 - 9) Red lights and/or red reflectors are prohibited.
- l) Dash
The dash area below the windshield shall be free of all obstructions. This includes, but is not limited to, two-way radios, GPS systems, pencil holders, decorations, or any other obstacle that may obstruct a school bus driver's field of view.
- m) Drive Shaft Guard
A suitable guard shall be provided for each segment of the drive shaft to prevent accident or injury if the shaft breaks or becomes disconnected.

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- n) Emergency Exits
- 1) All emergency exits shall conform to the applicable requirements of FMVSS 217.
 - 2) Each emergency exit shall be equipped with an interior opening device that may be quickly released but that is designed to offer protection against accidental release. Each rear emergency door exterior release handle shall be nonhitchable as defined in Section 440.2000.
 - 3) All requirements of FMVSS 217 shall be met; however, only yellow retroreflective tape is to be displayed on the exterior surface of the bus (excluding the roof). Yellow retroreflective tape can be located on the rear bumper or on or immediately beneath the rub rail provided the space under the emergency exit door or emergency exit window is not adequate to accommodate the tape, or, provided rivets are present that prohibit the tape from being applied properly. Emergency roof exits shall be outlined in red, yellow, or white retroreflective tape.
 - 4) Continuous audible and visible alarms shall alert the driver when the engine is running and any emergency exit door either:
 - A) Is not fully latched; or
 - B) Is locked and not readily operated manually.
 - 5) A continuous audible alarm shall alert the driver when the engine is running and any emergency exit window is not fully latched.
 - 6) The engine starting system shall not operate while any emergency exit door is locked from either inside or outside the bus. "Locked" means that the release mechanism cannot be activated and the exit cannot be opened by a person at the exit without a special device such as a key or special information such as a combination.
 - 7) An alarm cut-off or "squelch" control is prohibited.
 - 8) Exception: No alarm is required for emergency roof exits.

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- o) Exhaust System
- 1) The exhaust pipe, muffler, and tail pipe shall be outside the bus body and attached to the chassis.
 - 2) The exhaust system shall be insulated from any insulated wire, flammable material, brake hose or line, or fuel system component by a securely attached metal shield at any point where the exhaust system is 30.48 cm (12") or less (10.16 cm (4") or less if diesel powered engine) from the component.
 - 3) For Type I school buses, the engine exhaust tail pipe shall discharge at the rear of the bus and shall extend to no more than 2.54 cm (1") beyond the rear bumper. The tail pipe cannot be located under any rear emergency exit door.
 - 4) For Type II and Type I-A school buses, the following shall be met:
 - A) The exhaust system of a bus powered by a gasoline engine shall discharge to the atmosphere at or within 15.24 cm (6") forward of the rearmost part of the bus.
 - B) The exhaust system of a bus using fuels other than gasoline shall discharge to the atmosphere either:
 - i) At or within 38.1 cm (15") forward of the rearmost part of the bus; or
 - ii) To the rear of all doors or windows designed to be open except windows designed to be opened solely as emergency exits.
 - 5) The auxiliary heating system shall direct its exhaust discharge outside the perimeter of the bus body. The exhaust shall discharge on the driver's side of the bus and shall not discharge under any door.

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- 6) Exhaust components, except flexible components, shall be made of either stainless steel or a commercial heat and corrosion-resistant material. All flexible components shall be made of stainless steel.
- p) Fire Extinguisher
- 1) Except when carried in the storage compartment, a dry chemical fire extinguisher, with pressure gauge, shall be mounted in an automotive-type quick release bracket and located in the view of, and readily accessible to, the driver.
 - 2) The fire extinguisher shall be approved by the Underwriters' Laboratories, Inc., with a rating not less than 10-B:C.
 - 3) If the extinguisher's operating mechanism is sealed, the seal shall not interfere with the operation of the fire extinguisher.
 - 4) Halon fire extinguishers (10-B:C) are permitted.

AGENCY NOTE: A fire extinguisher is required to be carried on each school bus transporting students. The manufacturer may elect to install the fire extinguisher at the time the school bus is manufactured; however, a fire extinguisher can also be installed by the owner after the school bus is purchased.

- q) First-Aid Kit
- 1) The first-aid kit shall be readily identifiable and readily accessible to the driver. The kit shall be dust tight and substantially constructed of durable material. If the kit is not carried in the storage compartment as authorized in subsection (nn), it shall be in view of the driver.
 - 2) The first-aid kit shall include, at a minimum, the following:
 - A) 4" bandage compresses – 2 compresses
 - B) 2" bandage compresses – 8 compresses
 - C) 1" bandages or adhesive compresses – 32 bandages or compresses

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- 3) A tourniquet or any type of ointment, antiseptic, or other medicine cannot be included.
- 4) An epinephrine auto-injector or injectors may be present in the first-aid kit. (See 105 ILCS 5/22-30(f).)

AGENCY NOTE: A first-aid kit is required to be carried on each school bus transporting students. The manufacturer may elect to install the first-aid kit at the time the school bus is manufactured; however, a first-aid kit can also be installed by the owner after the school bus is purchased.

r) Floor Covering

- 1) All portions of the floor that come in contact with passengers' or driver's footwear shall be covered with a waterproof material. This floor covering shall not crack when subjected to sudden temperature change and shall be bonded securely to the floor with a waterproof substance. All seams and openings shall be filled with a waterproof sealer.
- 2) The floor covering in the aisles and entrance area shall be of non-skid, wear-resistance type material commonly used in commercial passenger transportation vehicles.

s) Footholds and Grab Handles

- 1) One grab handle and one recessed foothold (or folding stirrup) shall be installed on each side of the bus at the front of the body so as to provide easy access to the windshield for cleaning purposes.
- 2) Exception: Type II and Type I-A school buses are exempt.

t) Heaters

- 1) An interior temperature of not less than 10° Celsius (50° F) shall be maintained throughout the bus while the bus is moving at 75 kilometers per hour (46.6 miles per hour) in calm air at the average minimum January temperature, as established by the National Weather Service, U.S. Department of Commerce, for the area in which the bus is to be operated.

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- 2) Each heater shall bear a nameplate that identifies the heater manufacturer and the heater capacity rating when tested as recommended in the SAESP J638 (Revised June 1982), or when tested in accordance with another nationally recognized standard or code. The recommended practice, standard, or code under which the heater is rated shall be identified on the nameplate. The nameplate shall constitute certification by the heater manufacturer that the heater performance is as shown on the plate.
- 3) The primary heater shall be a high output, fresh-air type.
- 4) The secondary heater may be of a recirculating type, and located so as not to interfere with aisle space. Each secondary heater shall display a nameplate that identifies the manufacturer and the heater capacity rating.
- 5) Auxiliary fuel-fired heating systems are permitted, provided they comply with the following:
 - A) The auxiliary heating system fuel shall utilize the same type of fuel as specified for the vehicle engine;
 - B) The heater or heaters may be direct hot air or connected to the engine's coolant system;
 - C) An auxiliary heating system, when connected to the engine's coolant system, may be used to preheat the engine coolant or preheat and add supplementary heat to the bus' heating system;
 - D) Auxiliary heating systems shall be installed pursuant to the manufacturer's recommendations and shall not direct exhaust in such a manner that will endanger bus passengers. The system shall direct the exhaust discharge outside the perimeter of the bus' body on the driver's side. The system shall not discharge under any door;
 - E) Auxiliary heating systems that operate on diesel fuel shall be capable of operating on:
 - i) a hot water and/or combustion type heater;

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- ii) if only one heater is used, a fresh-air or combination fresh-air and recirculation type heater; or
 - iii) blended diesel fuel without the need for system adjustment; and
- F) The auxiliary heating system shall be low voltage.
- 6) Stepwell heaters are optional.
- u) Horn
- 1) At least one horn shall be installed that is *capable of emitting sound audible under normal conditions from a distance of not less than 200 feet.* (IVC Section 12-601). The horn shall be controlled conveniently by the seated driver and tested in accordance with SAESP J377 (Revised December 2007).
 - 2) An optional exterior air horn is permitted.
- v) Instrument Panel
- The bus shall be equipped with an illuminated instrument panel that contains the following:
- 1) Air pressure or low vacuum pressure (when air pressure or vacuum is utilized either to apply or to assist in applying the service brakes) (gauge and low air pressure or vacuum warning device);
 - 2) Ampere meter, volt meter, or discharge indicator lamp;
 - 3) Engine coolant temperature (gauge or indicator lamp);
 - 4) Engine oil pressure (gauge or indicator lamp);
 - 5) Fuel gauge;
 - 6) High beam indicator lamp;
 - 7) Odometer (may be combined with speedometer);

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- 8) Parking brake indicator lamp;
 - 9) Speedometer that measures miles per hour;
 - 10) Service brake indicator lamp; and
 - 11) Turn signal indicator lamp.
- w) Insulation
The ceiling and sidewalls shall be thermally insulated with a fire-resistant material that reduces heat transfer and the interior noise level.
- x) Lamps and Signals
- 1) General. Light emitting diode (LED) lamps that meet applicable FMVSS or SAESP standards are acceptable. Two or more lamps or reflectors may be combined if the requirements for each lamp or reflector are met. However, no clearance lamp shall be combined with a tail lamp. (See FMVSS 108.)
 - 2) Alternately Flashing Signal Lamps. Each bus shall be equipped with an eight lamp alternately flashing signal system that conforms to FMVSS 108 and IVC Section 12-805. A separate circuit breaker and a separate master switch located on the instrument panel shall be provided for the signal system. When in its "off" position, this master switch shall prevent operation of the eight lamp system; shall prevent operation of any lamps mounted on the stop signal arm panel required under subsection (mm); and shall prevent operation of any electrically controlled mechanism that would cause the stop signal arm panel to extend. No system shall override the yellow (amber) flashing lamps and proceed directly to the red flashing lamps. The controls for the eight lamp flashing signals, the stop signal arm panel, and the service entrance door shall be arranged so as to provide for the following sequence of operations while the engine is running:
 - A) Place the alternately flashing signal system master switch in its "off" position. Close and secure the service entrance door. Actuate the alternately flashing signal system hand or foot control.

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The alternately flashing signal lamps of either yellow or red color shall not go on.

- B) With the master switch "off" and the hand or foot control actuated, open the service door. The alternately flashing signals of either color shall not go on and the stop signal arm panel shall not extend.
- C) Deactivate the hand or foot control. Place the alternately flashing signal system master switch in its "on" position. Close and secure the service door. Then open the service door. The alternately flashing signal lamps of either color shall not go on and the stop signal arm panel shall not extend.
- D) Close and secure the service door. Actuate the alternately flashing signal system by hand or foot control. A yellow pilot lamp in the view of the driver and the yellow alternately flashing signals shall go on.
- E) De-secure but do not open the service door. The yellow pilot and the yellow alternately flashing signals shall go off. A red pilot lamp in the view of the driver and the red alternately flashing signals shall go on. The stop signal arm panel shall extend.
- F) Fully open the service door. The red pilot and red signals shall remain on and the stop arm shall remain extended.
- G) Close but do not secure the service door. The red pilot and red signals shall remain on and the stop arm shall remain extended.
- H) Open the service door. The red pilot and red signals shall remain on and the stop arm shall remain extended.
- I) Close and secure the service door. The red pilot and red signals shall go off and the stop arm shall retract.
- J) Open the service door. Alternately flashing signals of either color shall not go on and the stop arm shall not extend.

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- 3) Interior. At a minimum, the nosings of the service entrance steps, the stepwell, the entire aisle, and each emergency door and emergency exit shall be illuminated by at least two lamps emitting a white light. The nosings of the service entrance steps and the floor around the stepwell shall be illuminated automatically by opening of the service door while the headlights are on.
- 4) Rear Turn Signals. Yellow turn signal lamps shall be mounted on the rear as far apart as practical and as high as practical but below the rear window. The effective projected illuminated area of these turn signal lamps shall be no less than required for the yellow alternately flashing signal lamps required under subsection (x)(2); i.e., .0122 m² (19 in²).
- 5) Side Turn Signals. Two yellow side turn signal lamps conforming to SAESP J914 (Revised August 2014) shall be installed. The lamps shall be mounted on the body between the rub rails. The right lamp shall be within 1 m (39.4") of the rear of the service entrance but, on a forward control bus, not forward of the front axle. The left lamp shall be approximately the same distance from the front bumper as the right lamp. Additional (optional) side turn signals shall be yellow (amber).
Exception: Type II and Type I-A school buses are exempt.
- 6) Stop Signals. Red stop lamps shall be mounted on the rear as far apart as practical but closer to the vertical centerline of the bus than the rear turn signal lamps required under subsection (x)(4), and at the same height as those turn signal lamps. The effective projected illuminated area of these stop lamps shall be no less than required for the red alternately flashing signal lamps required under subsection (x)(2); i.e., .0122 m² (19 in²).
- 7) Strobe
 - A) *One per bus;*
 - B) *Shall emit white or bluish-white light;*
 - C) *Shall be visible from any direction;*
 - D) *Shall flash 60 to 120 times per minute;*

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- E) *Shall be visible in normal sunlight;*
 - F) *Shall be mounted on the rooftop of the bus with the light generating element in the lamp located equidistant from each side and either at or behind the center of the rooftop.* (IVC Section 12-815) The location of the lamp from the rear of the bus will be calculated by measuring the height of the filament and multiplying it by 30 inches (i.e., filament height measured from the base of the filament x 30 = distance from rear of bus where lamp is to be located);
 - G) If a roof exit, air conditioner, or the size of the bus interferes with the placement of a strobe as required by subsection (x)(7)(F), shall be placed to the rear of the roof exit or air conditioner as near as practicable above the rear axle, horizontally centered between the rear tires.
- 8) Supplemental Warning Lights (Optional)
Supplemental warning lights that measure approximately 127 mm (5") long with a depth of 17.27 mm (.68") may be installed on the front and rear of the bus. If present, the front supplemental lights shall be red and installed directly above the bumper between and as close to the headlight assemblies as practicable. If present, the rear supplemental lights shall be red and installed above the bumper and as far as practicable to the edge of the school bus. The lights shall activate when the stop arm panel is deployed.
- y) Lettering
- 1) General. Except where otherwise required or allowed, lettering on the exterior of the body shall be black against a national school bus glossy yellow background. All required letters and numerals shall conform to Series "B", or heavier series, of the Standard Alphabets for Highway Signs issued by the Federal Highway Administration. Decals may be used instead of paint. Signs, numbers, or letterings, other than those either required by IVC Section 12-802 or required or permitted by this Part, shall not be affixed permanently on either the exterior or the interior of the bus. All lettering shall contrast with its background.

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- 2) The words "SCHOOL BUS" shall be displayed against a national school bus glossy yellow background as high as practical and approximately centered on the front and rear of the bus body, in letters at least 20.32 cm (8") high. (See IVC Section 12-802.) These words may be painted on or applied to the bus body or displayed on a sign firmly attached to or built into the body. The background of an illuminated sign shall resemble the national school bus glossy yellow color.
- 3) A school bus identification number shall be displayed as high as practical on the front and rear of the bus in numerals not less than 10.16 cm (4") high. The number may be displayed on the sides of the bus as specified by the purchaser. As an option, identification numbers may also be located on the rooftop.
- 4) *The name of the owner or the entity or both for which the school bus is operated shall be painted in black on both sides, centered as high as practicable below the window line, in letters at least 4 inches high. (IVC Section 12-802) The lettering shall be located on one line.*
- 5) The body and/or chassis manufacturer's name, emblem, or other identification may be displayed, colorless or in any color, on any unglazed surface of the bus so as not to be mistaken for the name required in subsection (y)(4), and so as not to interfere with any required letters or numerals.
- 6) The words "EMPTY WEIGHT", or the abbreviation "EMPTY WT.", or the letters "E.W.", followed by the empty weight (i.e., curb weight) of the bus, as defined in Section 440.2000, stated in pounds, shall be displayed on the exterior of the body near the rear edge of the service entrance in numerals and letters at least 5 cm (2") high. (See IVC Section 12-802.)
- 7) The word "CAPACITY", or the abbreviation "CAP.", and the rated passenger capacity followed by the word "PASSENGERS", or the abbreviation "PASS.", shall be displayed on the exterior of the body near the rear edge of the service entranceway, and on the interior front bulkhead above the windshield, viewable from the passenger area and in numerals and letters at least 5 cm (2") high. (See IVC Section 12-802.) The driver's seat is not counted as a passenger space.

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- 8) The words "NO STANDEES" or "NO STANDEES PERMITTED" shall be displayed on the interior front bulkhead viewable from the passenger area in letters at least 5 cm (2") high.
- 9) The words "EMERGENCY DOOR" or "EMERGENCY EXIT" in letters at least 5 cm (2") high shall be displayed on the interior and exterior of the bus. "EMERGENCY DOOR" shall be displayed at the top of, or directly above, any emergency exit door. "EMERGENCY EXIT" shall be displayed at the top of, or directly above, or at the bottom of, any emergency exit window. Any emergency exit lettering (interior or exterior) that is applied directly to glazing shall be displayed on a separate colorless background (such as white, aluminum, or silver) that extends no more than 1.27 cm (.5") above or below the words and no more than 2.54 cm (1") to the right or left of the words.
- 10) For roof exits, the words "EMERGENCY EXIT" in letters at least 5 cm (2") high shall be displayed on the interior of the bus in a color that contrasts with its background. The label shall be located on an inside surface of the exit, or within 30 cm (11.8") of the roof exit opening.
- 11) A black arrow, curved or straight, at least 15.24 cm (6") in length and 1.27 cm (.5") in width, showing the direction each exterior emergency exit release mechanism is to be moved to open the emergency exit, shall be painted or permanently affixed on the exterior yellow portion of the bus within 15.24 cm (6") of each release mechanism.
- 12) An arrow showing the direction each interior emergency exit release mechanism is to be moved to open the emergency exit shall be painted or permanently affixed on the interior of the bus within 15.24 cm (6") of each emergency exit release mechanism. Each interior arrow shall contrast with its background and, where suitable space is limited, may be smaller than the exterior arrows but must be conspicuous.
- 13) Alternate Fuel
 - A) If the bus is powered by an alternate fuel (e.g., propane, CNG), the bus shall be marked with an identifying decal. The decal shall be diamond shaped with white or silver scotchlite letters 2.54 cm (1")

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in height on a black background with a white or silver scotchlite border bearing either the words or letters:

"PROPANE" – If propelled by liquefied petroleum gas; or

"CNG" – If propelled by compressed natural gas.

The sign or decal shall be maintained in good legible condition.

- B) The alternate fuel decal shall be displayed near the rear bumper and visible from the rear of the bus. (See IVC Section 12-704.3.)
- 14) The vehicle's length (rounded up to nearest whole foot) preceded by the word "Length" or "LENGTH" shall be displayed on or adjacent to the interior front bulkhead clearly within the driver's view. (For example: vehicle length of 39.1 feet will be displayed as LENGTH or Length 40 FEET or feet.) Each letter or numeral shall be at least 5 cm (2") high and in a color that contrasts with its background. The measurement shall be taken from the front bumper to the rear bumper.
- 15) A "Stop Line" in contrasting color is required between 14.9 cm (5.9") and 15.4 cm (6.1") below the top of each side window opening. The line shall be located between each window that slides downward and may be intermittent.
- 16) The decal described in this subsection (y)(16) is required to be displayed on every school bus registered in Illinois. The school bus manufacturer may elect to apply the decal at the time the school bus is manufactured or the decal may be applied by the school bus owner after the school bus is purchased. A white decal with black lettering and numerals that measure 2.5 cm (1") high shall be displayed on the rear of the bus. The decal shall display the words "TO COMMENT ON MY DRIVING CALL" followed by the area code and phone number of the bus owner. The decal shall be located on the rear window glazing below the rear seat back or on the bus body below the rear window line. The decal shall be visible to the motoring public from the rear of the bus and cannot obstruct any required lettering or numerals. The decal cannot be located on any emergency door glazing or any emergency window glazing. Magnetic signs are prohibited. Optional lettering may be present that requests the bus identification

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number, along with the date and time of the alleged violation. (See IVC Section 12-821.)

- 17) A black 2.54 cm (1") label identifying the location of the battery disconnect switch shall be on the exterior surface of the bus.
- 18) If an audio and/or visual recording will be made of the interior of the school bus, decals indicating the recording shall be displayed on the bus. The school bus manufacturer may elect to apply the decals at the time the school bus is manufactured or the decals may be applied by the school bus owner after the school bus is purchased. Two white decals with black lettering measuring 2.5 cm (1") high shall be displayed, one on the exterior of the bus' body adjacent to the service entrance door and a second one on the front interior bulkhead, viewable from the passenger area. The exterior decal shall be located between 1.01 m (40") and 1.65 m (65") from the road surface. The interior decal shall not obstruct any other required lettering on the front bulkhead. Magnetic signs are prohibited. (See 720 ILCS 5/14-3(m).)
- 19) If the school bus is equipped with an exterior camera that monitors stop arm panel violations, a decal shall be located on the exterior left rear window glazing, below the seat back, or on the bus' body, below the window line. The decal shall display "TRAFFIC ENFORCEMENT CAMERA IN USE". The decal shall be visible to the motoring public from the rear of the bus and cannot obstruct any required lettering or numerals. The decal shall not be located on the rear bumper or on any emergency window or door (includes glazing). Magnetic signs are prohibited. The decal shall be white with black lettering that measures 2.54 cm (1") high.
- 20) The interior storage compartment shall be labeled to indicate its contents. The label or labels shall measure at least 2.54 cm (1") high and contrast with their background. "SAFETY EQUIPMENT" may be displayed to include the fire extinguisher, first-aid kit, and warning devices or the following may be displayed on the compartment door:
 - A) "FIRE EXTINGUISHER" may be displayed if the fire extinguisher is located in the storage compartment.

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- B) "FIRST-AID KIT" may be displayed if the first-aid kit is located in the storage compartment.
 - C) "WARNING DEVICES" may be displayed if the warning devices are located in the storage compartment.
- 21) Optional: A decal designating the type of fuel used in the bus may be displayed on the exterior surface of the bus. If present, the decal shall display black lettering that measures 2.54 cm (1").
- 22) Optional: A "No Smoking" decal may be posted on the interior surface of the bus in 2.54 cm (1") lettering that contrasts with its background.
- 23) Optional: A route identification marker (holder or bracket) is allowed on the right side of the bus. The holder or bracket may be located on the body of the bus directly behind the service entrance door or in the first window directly behind the service entrance door. The holder or bracket shall be no larger than 20.32 cm (8") high x 30.48 cm (12") wide.
- 24) Optional: A decal or decals may be present that prohibit trespassing on the bus. If present, the decal or decals shall display "NO TRESPASSING" on the first line and "Offenders will be prosecuted to the fullest extent of the law!" on the second line. The lettering shall be black and measure 2.54 cm (1") on a white background. If present, the decal or decals shall be posted on the exterior surface of the bus's body adjacent to the service entrance door or on the interior riser of the top stair or both. If present, the exterior decal shall be located between 53.34 cm (21") and 1.65 m (65") from the road surface.
- z) Mirrors
- 1) Interior Mirror:
 - A) For Type I school buses, a mirror that measures at least 15.24 cm (6") x 76.2 cm (30") overall shall be located inside the bus.
 - B) For Type II and Type I-A school buses, a mirror that measures at least 15.24 cm (6") x 30.48 cm (12") overall shall be located inside the bus.

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- C) Interior mirrors shall not obstruct any required lettering. The interior mirror shall afford the driver a view of the bus' interior and portions of the roadway to the rear. The mirror shall be firmly supported and constructed of clear-view safety glass. The mirror shall be securely backed and framed with rounded corners and padded edges.
 - 2) All exterior mirror systems shall conform to the applicable requirements of FMVSS 111.
 - 3) Optional: If specified by the purchaser, additional convex mirrors may be installed.
- aa) Paint, Exterior
The exterior of each school bus shall be national school bus glossy yellow except as follows:
- 1) The rooftop may be white. An optional white roof shall terminate at any point from the top of the drip rail to 15.24 cm (6") above the drip rail. The front and rear roof caps shall remain national school bus glossy yellow.
 - 2) Body trim, rub rails, lettering other than on a stop signal arm, and bumpers shall be glossy black.
 - 3) The hood and upper cowl may be lusterless black or lusterless school bus yellow.
 - 4) Grilles on the front and lamp trim may be a bright finish. Grille covers (i.e., winter fronts) shall be yellow, black, or white.
 - 5) Hubcaps may be a bright finish. Hubcap color is manufacturer's option. Wheels and rims shall be black, gray, or aluminum.
 - 6) The name or emblem of a manufacturer may be colorless or any color. (See IVC Section 12-801.)
- bb) Pedals

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- 1) Original Equipment Manufacturer (OEM) or comparable aftermarket pedal extensions are permitted. Makeshift pedal extensions are prohibited.
 - 2) The brake pedal and any brake pedal extension shall be a rigid nonslip design.
- cc) Projections
- 1) Exterior
The entire rear and bumper area of the bus shall be nonhitchable as defined in Section 440.2000.
 - 2) Interior
 - A) Projections (e.g., external speakers and air conditioners) located in the student seating area and within 1.50 m (59") from the floor shall be padded to prevent injury, including the inner lining of the ceiling and walls. All exposed lapped joints shall be connected and/or treated to reduce the likelihood of injury from exposed edges.
 - B) Any component that is located in the front bulkhead area of the bus and not flush with the interior walls shall not:
 - i) interfere with passengers entering or exiting the bus;
 - ii) be located in the driver's head impact zone; nor
 - iii) obstruct any required lettering.
 - C) Flush mounted speakers are exempt from padding requirements.
- dd) Rack, Book/Storage
Overhead book and/or storage racks are prohibited.
- ee) Reflectors
- 1) Front

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- A) One yellow (amber) tinted reflector shall be present on the front of the body near the lower left and right hand corners of the vehicle. (See IVC Section 12-202.)
- i) The front reflectors shall be located between 38.1 cm (15") and 1.52 m (60") above the roadway and at either the fender, cowl, or body and installed so as to mark the outer edge of the maximum width of the bus.
 - ii) No part of the required reflecting material shall be obscured by a lamp, mirror, bracket, or any other portion of the bus.
 - iii) No part of the required reflecting material shall be more than 30 cm (11.8") inboard of the outer edge of the nearest rub rail.
 - iv) The reflector may be any shape (e.g., square, rectangle, circle, oval, etc.). A rigid type reflex reflector may be any size if permanently marked either DOT, SAE A, or SAE J 594; otherwise, it shall display at least 45 cm² (7 in²) of reflecting material (about 7.62 cm (3") diameter if a solid circle).
- B) A sheet type (tape) reflex reflector that conforms to FMVSS 108 may be used but its forward projected reflecting area shall be at least 51.61 cm² (8 in²).
- 2) Left Side. On buses over 6.10 m (20'), one yellow (amber) reflector no more than 30.48 cm (12") from the front and one red reflector no more than 30.48 cm (12") from the rear shall be present. The reflectors shall be mounted at a height not less than 38.1 cm (15") and not more than 1.52 m (60") above the surface of the road. (See IVC Section 12-202.) On buses 9.14 m (30') or more in length, one amber reflector located at or near the midpoint between the front and rear side reflectors shall also be present. (FMVSS 108 – Table 1) The reflectors shall measure a minimum of 7.62 cm (3") in diameter.
- 3) Right Side. On buses over 6.10 m (20'), one yellow (amber) reflector located no more than 30.48 cm (12") from the front and one red reflector

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located no more than 30.48 cm (12") from the rear shall be present. The reflectors shall be mounted at a height not less than 38.1 cm (15") and not more than 1.52 m (60") above the surface of the road. (See IVC Section 12-202.) On buses 9.14 m (30') or more in length, one amber reflector located at or near the midpoint between the front and rear side reflectors shall also be present. (FMVSS 108 – Table 1) The reflectors shall measure a minimum of 7.62 cm (3") in diameter.

- 4) Rear. *Two red reflectors on the rear of the body not more than 12 inches from the lower left and right hand corners shall be present.* (IVC Section 12-202) The reflectors shall measure a minimum of 7.62 cm (3") in diameter.

ff) Rub Rails

- 1) Type I and Type I-A school buses shall meet the following:
- A) A minimum of two rub rails are required. Both rails shall be 10.16 cm (4") or more in width in their finished form. The rub rails shall be constructed of 16-gauge steel, or suitable material of equivalent strength, and shall be constructed in corrugated or ribbed fashion. The rails shall be securely fastened to the body by bolts, rivets, or welding.
 - B) There shall be one rub rail located approximately at seat level that shall extend from the rear of the service entrance completely around the exterior of the bus' body without interruption to a point of curvature near the front of the body on the left side. Exception: Rub rails are not required at areas on the bus where no interior designated seating positions are located.
 - C) There shall be one rub rail on each side located approximately at floor line that shall extend over the same longitudinal distance as the rub rail required under subsection (ff)(1)(B), except:
 - i) This rub rail need not extend across a wheel housing; and
 - ii) This rub rail may terminate at the radii of the right and left rear corners of the body.

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- D) Optional: More than two rub rails may be installed on a side and/or the rear of a bus.
- 2) Type II school buses shall meet the following:
 - A) A minimum of one rub rail is required. The rub rail shall be 10.16 cm (4") or more in width in its finished form. The rail shall be constructed of 16-gauge steel or suitable material of equivalent strength and shall be constructed in a corrugated or ribbed fashion. The rail shall be securely fastened to the body by bolts, rivets, or welding.
 - B) The rub rail shall be located approximately at seat level and shall extend from the rear of the entrance door on both sides to a point of curvature at the rear of the body. Exception: Rub rails are not required at areas on the bus where no interior designated seating positions are located.
 - C) Optional: More than one rub rail may be installed on a side and/or the rear of a bus.
- gg) Rust/Corrosion Inhibitor
 - 1) The underside of the body, including the floor members and the side panels below the floor, shall be coated with a fire-resistant rust inhibiting compound so as to seal, insulate, reduce corrosion, and reduce interior noise.
 - 2) The entire underside of front fenders or wheel wells shall be coated with a fire-resistant rust inhibiting compound in order to seal joints and to reduce corrosion and noise.
 - 3) Nonmetallic components are exempt from coating.
 - hh) Seat, Driver's

The driver's seat shall be rigidly positioned and have a forward and backward adjustment without the use of tools or other nonattached devices. Seat cushions shall be securely fastened to the seat frame.

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- ii) Seat Belt, Driver's
 - 1) Buses shall be equipped with a lap and shoulder harness seat belt for the driver.
 - 2) Optional: Buses may be equipped with a durable seat belt webbing cutter with a full-width handgrip and a protected, replaceable, or noncorrodible blade. The webbing cutter shall not be mounted on the dash but shall be mounted in a location accessible to the seated driver in an easily detachable manner.

- jj) Seats, Passenger
 - 1) Each passenger seat shall conform to FMVSS 222.
 - 2) A flip-up seat may be located only immediately adjacent to any side emergency door on a Type I school bus. If so equipped, the flip-up seat shall conform to the following:
 - A) The seat shall be designed so that, when in the folded position, the seat cushion is flat against the seat back to prevent a child's limb from becoming lodged between the seat cushion and seat back.
 - B) The seat shall be designed to discourage a child from standing on the seat cushion when in the folded position.
 - C) The working mechanism under the seat shall be covered to eliminate any tripping hazard.
 - D) All sharp metal edges on the seat shall be padded to prevent any snagging hazard.
 - E) No portion of the door latch mechanism can be obstructed by a seat.
 - F) There shall be at least 30.48 cm (12") measured from the door opening to the seat back in front.

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kk) Service Entrance Door and Area

- 1) The service entrance door shall be located on the right side near the front, in unobstructed and convenient view of the driver. The service entrance door shall have a minimum vertical opening of 1.7 m (67") and a minimum horizontal opening of 61 cm (24").
- 2) A steel handrail that measures not less than 25.4 cm (10") in length shall be firmly attached in an unobstructed location on the left side of the entranceway as a person enters the bus. An optional handrail can also be located on the right side of the entranceway.
- 3) The bottom step in the entranceway shall not extend beyond the exterior of the body. With all seats empty, the bottom step shall be not less than 30 cm (11.8") and not more than 40 cm (15.7") from the roadway. At least two steps shall be provided. The steps shall be enclosed. Risers shall be approximately equal. Each step, including the floor at the top riser, shall be surfaced with a nonskid material with a 4 cm (1.6") to 8 cm (3.1") white or yellow nosing as an integral piece.
- 4) The service door shall be either manually or power operated by the seated driver. When in the closed and secured position, the door operating mechanism shall prevent accidental opening but shall afford prompt release and opening by the driver. Exposed parts of a door operating mechanism shall come together so as to prevent injury. The vertical closing edges of a service door shall be padded to lessen chance of injury.
- 5) A power operated door shall be equipped for emergency manual operation in case of power failure. Instructions for emergency operation of a power operated door shall be affixed permanently within 16 cm (6") of the release mechanism in letters at least 12 mm (.5") high.
- 6) A single-section service door shall be hinged at the front of the service entrance.
- 7) Glazed panels shall be installed in the service door to afford the driver a view of small children outside the door, traffic signs, and intersecting roadways. The bottom of each lower glass panel shall be not more than 25.4 cm (10") from the top surface of the bottom step. The top of each

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upper glass panel when viewed from the interior shall be not more than 7.62 cm (3") below the interior door control cover or header pad.

- 8) Service Door Lock (Optional)
If ordered by the purchaser, a lock may be installed on or at the service door. Any type service door locking system installed in the bus shall conform to at least one of the following requirements:
 - A) Requirement 1: A locking system shall not be capable of preventing the driver from easily and quickly opening the service door;
 - B) Requirement 2: A locking system that is capable of preventing the driver from easily and quickly opening the service door shall include an audible and visible alarm to alert the driver when the engine is running and the service door is locked. No alarm disconnect, "squelch control", or other alarm defeating or attenuating device shall be installed; or
 - C) Requirement 3: A locking system shall not be capable of preventing the driver from easily and quickly opening the service door except when, and only when, a person outside the bus uses a key that is not capable of locking more than one of at least 1,000 of the door manufacturer's key locking systems.
- ll) Spare Tire (Optional)
Each spare tire and rim shall be mounted outside the passenger compartment.
- mm) Stop Signal Arm Panel
 - 1) A stop signal arm panel shall be installed on the left side of the bus that conforms to FMVSS 131. Strobe lamps are acceptable on stop signal arm panels.
 - 2) For buses manufactured on or after January 2, 2018, a second stop signal arm panel that meets the requirements of FMVSS 131 shall be located on the left side of a school bus that measures 8.53 m (28') long or more from bumper to bumper. The second panel shall operate in conjunction with the

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panel required in subsection (mm)(1) and be located adjacent to the rearmost window.

- 3) Optional: Additional stop signal arm panels may be installed on school buses that measure less than 8.53 m (28') long. Any optional second stop signal arm panel shall meet the requirements of FMVSS 131.

nn) Storage Compartments (Optional)

- 1) A fire extinguisher, first-aid kit, warning devices, or other items may be stored in an interior, unlocked storage compartment. There shall be no locking mechanism on the storage compartment. (See subsection (y)(20) for labeling requirements.)
- 2) An exterior, fire resistant storage compartment of adequate strength and capacity used for the storage of miscellaneous items and equipment may also be provided. The compartment shall provide reasonable security for its contents.
- 3) If an interior storage compartment is located under a passenger seat, seat cushions alone shall not serve as the cover for the compartment. The compartment shall not extend into the aisle or seating area.

oo) Sun Visor

- 1) An interior, adjustable, transparent, tinted sun visor that measures not less than 15.24 cm (6") high by 76.26 cm (30") wide shall be so installed that it can be turned up and will remain up when not in use.
- 2) The visor may be supported so that it can be moved for use on the driver's left, but when used in front of the driver and in a position approximately parallel to the windshield, it shall be supported at or near each of its ends so as to minimize its vibration.
- 3) Exception: For Type II and Type I-A school buses, the sun visor may meet manufacturer's specifications.

pp) Tow Hooks, Front and Rear (Optional)

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- 1) Front
A front tow hook may not extend beyond the front of the front bumper. Each front tow hook not fastened securely to the chassis frame shall be connected to the frame by suitable braces.
 - 2) Rear
A rear tow hook may be attached or braced to the chassis frame or to an equivalent structural member of an integral type bus. A tow hook shall not extend beyond the rear face of the rear bumper.
- qq) Ventilation
- 1) The body shall be equipped with a controlled ventilation system of sufficient capacity to maintain a satisfactory ratio of outside to inside air under cool and cold operating conditions without opening windows.
 - 2) If the ventilation system is powered, air outlet openings shall be located, sized, and manufactured so that, with doors and windows closed, a positive pressure is maintained in the driver and passenger spaces to lessen chances of dangerous gas entering those spaces.
 - 3) Fresh air inlets shall be located so as to minimize the entrance of either dangerous engine gas or obnoxious engine fumes.
- rr) Warning Devices
Warning devices shall consist of (at a minimum):
- 1) 3 liquid-burning flares or 3 red electric lanterns or 3 portable red emergency reflectors that meet FMVSS 125;
 - 2) 3 red burning 15 minute fusees. (If red electric lanterns or portable red reflectors are used, fusees are not required.); and
 - 3) 2 red cloth flags or 2 portable red emergency reflectors that conform to FMVSS 125 (in addition to the 3 portable emergency reflectors). (See IVC Section 12-702(a).)

AGENCY NOTE: The bus purchaser may elect to install the warning devices after the bus is purchased.

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- ss) Windows
 - 1) General
 - A) All window glazing shall meet the requirements of FMVSS 205.
 - B) Laminated safety glass is optional.
 - 2) Rear
 - A) Fixed windows shall be installed in the rear of the bus to provide the seated driver a view through the rear of the bus as wide and as high as practicable. Rear emergency exit windows are not fixed.
 - B) The rear emergency door shall have an additional lower glazed panel to provide the driver an additional view of at least the width of the required aisle and as low and as high as practicable.
 - 3) Side
 - A) Subsection (ss)(3) does not apply to a window or glazed panel installed forward of a front passenger seat. Subsection (ss)(3) does not apply to a window installed in a special service or side emergency exit door.
 - B) All side windows shall open from the top only and shall operate freely.
 - C) There shall be one window that opens vertically for each seat.
 - D) The window latches shall be recessed.
- tt) Wiring
 - 1) All wiring for lamps and other electrical devices shall be as recommended for automobiles, motor coaches, and heavy duty starting motor circuits in SAESP J1292 (Revised January 2008) and in other practices or standards referenced in J1292, unless preempted by FMVSS.

DEPARTMENT OF TRANSPORTATION

NOTICE OF PROPOSED RULES

- 2) Alternately flashing signal lamps and stop signal arm panel lamps shall have independent circuits.
- 3) Wires not enclosed within the body shall be fastened securely at intervals of not more than 45.72 cm (18").
- 4) A noise suppression switch that is capable of turning off noise producing accessories, including, but not limited to, heater blowers, defroster fans, auxiliary fans and radios, shall be provided. Exception: Two-way radios and emergency exit alarms are exempt from the noise suppression switch. (See IVC Section 12-815.2.)