Title 6. Education

Chapter III. Division of Public School Academic Facilities and Transportation, Department of Education

Subchapter A. Generally

Part 335. Specifications Governing School Bus Design

Codification Notes. This part as promulgated prior to codification into the Code of Arkansas Rules provided as follows: "Regulatory authority[.] These Rules shall be known as the Commission for Arkansas Public School Academic Facilities and Transportation Rules for the Specifications Governing School Bus Design. These rules are enacted pursuant to the authority of Ark. Code Ann. § 6-21-304."

Subpart 1. Generally

6 CAR § 335-101. Purpose.

It is the purpose of this part to establish specifications governing school bus design for the State of Arkansas.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-102. Definitions of bus types.

As used in this part:

(1)(A) "Multifunction school activity bus (MFSAB)" means "A school bus whose purposes do not include transporting students to and from home or school bus stops", as defined in 49 C.F.R. § 571.3.

(B) This subcategory of school bus meets FMVSS 222 for school buses, except for the color (NSBY) and traffic control requirements (alternately flashing signal and stop arm);

(2)(A) "School bus" means a bus owned, leased, contracted to, or operated by a school or school district and regularly used to transport students to and from school

or school-related activities, but not including a charter bus or transit bus.

(B) A school bus must meet all applicable FMVSS and be readily identified by alternately flashing lamps, National School Bus Yellow paint, and the legend "School Bus", except as may be provided for the multifunction school activity bus;

(3) "Specially equipped" means a school bus designed, equipped, or modified to accommodate students with special needs;

(4) "Type A" means a school bus that is:

(A) A conversion or body constructed upon a van-type compact truck or a front-section vehicle with a gross weight rating of ten thousand pounds (10,000 lbs.) or less; and

(B) Designed for carrying more than ten (10) persons;

(5) "Type A-1" means a school bus that is a conversion or bus constructed utilizing a cutaway front-section vehicle with a left side driver's door with a gross vehicle weight rating (GVWR) of fourteen thousand five hundred pounds (14,500 lbs.) or less;

(6)(A) "Type B" means a school bus that is:

(i) A conversion or body constructed and installed upon a van or front-section vehicle chassis or stripped chassis with a vehicle weight rating of more than ten thousand pounds (10,000 lbs.); and

(ii) Designed for carrying more than ten (10) persons.

(B) Part of the engine is:

(i) Beneath or behind the windshield; and

(ii) Beside the driver's seat.

(C) The entrance door is behind the front wheels;

(7)(A) "Type C" means a bus that is:

(i) A body installed upon a flat back cowl chassis with a gross vehicle weight rating of more than ten thousand pounds (10,000 lbs.); and

(ii) Designed for carrying more than ten (10) persons.

(B) All of the engine is in front of the windshield.

(C) The entrance door is behind the front wheels; and

(8)(A) "Type D" means a bus that is:

(i) A body installed upon a chassis with the engine mounted in the front, midship, or rear with a gross vehicle weight rating of more than ten thousand pounds (10,000 lbs.); and

(ii) Designed for carrying more than ten (10) persons.

(B) The engine may be:

(i) Behind the windshield and beside the driver's seat;

(ii) At the rear of the bus;

(iii) Behind the rear wheels; or

(iv) Midship between the front and rear axles.

(C) The entrance door is ahead of the front wheels.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-103. Explanations.

(a) The following standards address modifications as they pertain to school buses that, with standard seating arrangement prior to modification would accommodate more than ten (10) persons.

(b) If by addition of a power lift, mobile seating device positions, or other modifications, the capacity is reduced such that vehicles become multipurpose vehicles (MPVs), the intent of these standards is to have these vehicles be required to meet the same standards they would have had to meet prior to such modifications, and such MPVs are included in all references to school buses and requirements for school buses which follow.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-104. School bus chassis requirements.

(a) All bus chassis shall meet Arkansas specifications included in this part.

(b) Chassis manufacturers shall, upon request, certify to the Division of Public School Academic Facilities and Transportation that their product meets minimum Arkansas standards.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-105. Air cleaner.

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

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

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-106. Axles.

The front and rear axle and suspension system shall have a gross axle weight rating (GAWR) at ground commensurate with the respective front and rear weight loads that will be imposed by the bus.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-107. Brakes.

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

(b)(1) Buses using air in the operation of the brake system shall be equipped with warning signals, readily audible and visible to the driver, that will give a continuous warning when the air pressure available in the system for braking is sixty pounds per square inch (60 psi) or less.

(2) An illuminated gauge shall be provided that will indicate to the driver the air pressure in pounds per square inch.

(3) Any brake system dry reservoir shall be so safeguarded by a check valve or equivalent device that, in the event of failure or leakage in its connections to the source of compressed air, the stored dry air shall not be depleted by the leakage or failure.

(4)(A) All school buses with a maximum design capacity of sixty-five (65) passengers or more, or a GVWR above twenty-six thousand one pounds (26,001 lbs.) shall be equipped with air brakes.

(B) A Bendix Air Dryer (AD9) or a prior approved equivalent with a heater shall be required on all air brakes.

(C) Air compressor shall be twelve cubic feet per minute (12 CFM) or greater.

(5) Brakes shall be designed to Federal Motor Vehicle Safety Standards (FMVSS) 105 or 121 as applicable.

(c) Buses using a hydraulic assist-brake system shall be equipped with warning signals, readily audible and visible to the driver, that will provide continuous warning in the event of a loss of:

(1) Fluid flow from primary sources; or

(2) Electric source powering the back-up system.

(d) The brake lines and the booster-assist lines shall be:

(1) Protected from excessive heat and vibration; and

(2) Installed in a manner which prevents chafing.

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

(f) Automatic slack adjusters:

(1) Are required on all air brake units; and

(2) Shall be of the same brand.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "GVWR" means gross vehicle weight rating.

6 CAR § 335-108. Front bumper.

(a) The front bumper shall be furnished by chassis manufacturers as part of the chassis unless energy absorbing or other bumper options necessitate installation by the body manufacturer.

(b)(1) Unless an energy absorbing bumper is used, the front bumper shall:

(A) Be of pressed steel channel or equivalent material at least three-sixteenths inch (3/16") thick and not less than eight inches (8") wide (high);

(B) Extend beyond the forward-most part of the body, grill, hood, and fenders; and

(C) Extend to outer edges of the fenders at the bumper's top line.

(2) Type A shall be to manufacturer standard.

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

(1) Bumper;

(2) Chassis; or

(3) Body.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-109. Rear bumper.

(a) The rear bumper shall be:

(1) Of pressed steel channel or equivalent material, at least three-sixteenths inch (3/16”) thick;

(2) A minimum of nine and one-half inches (9.5”) wide (high); and

(3) Of sufficient strength to permit being pushed by another vehicle without permanent distortion.

(b)(1) Rear bumper shall be wrapped around back corners of bus.

(2) It shall extend forward at least twelve inches (12”) measured from rear-most point of body at floor line.

(c)(1) Rear bumper shall be attached to chassis frame in such a manner that it may be easily removed.

(2) It shall be so braced as to withstand impact from a rear or side impact.

(3) It shall be so attached as to discourage hitching of rides.

(d) Rear bumper shall extend at least one inch (1") beyond the rear-most part of the body surface measured at floor line.

(e)(1) Tow eyes or hooks shall be furnished on the rear and attached so they do not project beyond the rear bumper.

(2) Tow eyes or hooks attached to the chassis frame shall be furnished by either the chassis or body manufacturer.

(3) The installation shall be in accordance with the chassis manufacturer's specifications.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-110. Color.

(a)(1) Chassis, including front bumper, shall be black.

(2) The hood, cowl, and fenders shall be National School Bus Yellow (NSBY).

(b) Hood may be painted with non-reflective NSBY paint.

(c)(1) Black wheels shall be standard.

(2) Yellow, silver, gray, or white wheels are optional.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-111. Drive shaft.

The drive shaft shall be protected by a metal guard or guards around circumferences of the drive shaft to reduce the possibility of it whipping through the floor or dropping to the ground if broken.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-112. Electrical system.

(a) **Battery.**

(1)(A) The standard on all Type B, Type C, and Type D diesel units will be a minimum of one thousand nine hundred cold cranking amps (1,900 CCA) at zero degrees Fahrenheit °0) F).

(B) Optional equipment, when specified, will be one (1) battery with a minimum of eight hundred fifty cold-cranking amps (850 CCA).

(C) Higher capacities may be required depending upon:

(i) Optional equipment; and

(ii) Local environmental conditions.

(2)(A) All batteries in Type B, Type C, and Type D buses are to be located in a sliding tray.

(B) Type A chassis with the battery outside the engine compartment shall have a sliding tray installed.

(3)(A) The body manufacturer shall securely attach the battery on a slide-out tray or door in a closed, vented compartment in the body skirt, so that the battery is accessible for convenient servicing from the outside.

(B) Battery compartment door or cover shall be:

(i) Hinged at the front or top; and

(ii) Secured by an adequate and conveniently operated latch or other type fastener.

(b) **Alternator.**

(1)(A) All Type A and Type B buses with a GVWR of fifteen thousand pounds (15,000 lbs.) or less shall have a minimum one hundred thirty-ampere (130 amp) alternator.

(B) Buses equipped with an electrically powered wheelchair lift and/or air conditioning shall be equipped with the highest rated capacity available from the chassis OEM.

(2)(A) Type B, Type C, and Type D buses shall be equipped with a heavy duty

truck, bus type, or pad mount alternator meeting SAE International J 180.

(B) Having a minimum output rating of two hundred amperes (200 amp.), the alternator shall be capable of producing a minimum of fifty percent (50%) of its maximum rated output at the engine manufacturer's recommended idle speed.

(C) The minimum alternator output for the air conditioning system is two hundred amperes (200 amp) minimum.

(D) With a combination of air conditioner and/or lift a minimum alternator output of two hundred seventy amperes (270 amp).

(3)(A) Direct-drive alternator is permissible in lieu of belt drive.

(B) Belt drive shall be capable of handling the rating capacity of the alternator with no detrimental effect on other driven components.

(c) **Electrical wires and terminals (body and chassis).**

(1)(A) All wiring shall comply with latest SAE International recommended practices.

(B) This shall include:

(i) SAE International J541a;

(ii) SAE International J1127;

(iii) SAE International J1708; and

(iv) SAE International J1128.

(2) Wiring shall be of sufficient size to carry the required load without excessive voltage drop.

(d)(1) Wires shall be permanently continuous color coded or permanently number coded to easily identify the various circuits.

(2) Use of taped numbers is not acceptable.

(e)(1) Wires shall be of sufficient length to provide a loop at terminals so as to permit ample slack for directional positioning.

(2) The length shall allow replacement of end terminals twice, without pulling, stretching, or replacing the wire.

(f)(1) Corrosion-resistant full-ring or interlocking terminals shall be used for terminating wire ends at components.

(2) All wires shall be continuous and terminate at appropriate connector.

(3) "T" or butt connectors shall not be used.

(4) Vehicles multiplex wiring system shall be to manufacturer standards.

(g) Battery cable terminals, component terminals, and connectors exposed to the ambient shall be coated with a terminal corrosion preventive compound.

(h)(1) Except for those on large wires, such as battery cables, terminals shall be machine crimped to the wiring.

(2) A ratchet-type hand crimper may be used where it is not possible to use a large machine crimper.

(i)(A) Wiring shall be arranged in circuits as required and each circuit protected by a:

(i) Fuse;

(ii) Field effect transistor (FET); or

(iii) Circuit breaker.

(B) A system of colors and numbers shall be used, and an appropriate identifying wiring diagram of each body as manufactured shall be provided to the end user.

(j) A daytime running lamp system meeting chassis manufacturer's specifications shall be provided.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "GVWR" means gross vehicle weight rating.

"OEM" means original equipment manufacturer.

6 CAR § 335-113. Engine.

(a)(1) Oil filter with replaceable element shall be provided and connected by flexible oil lines if it is not of built-in or engine mounted design.

(2) Oil filter shall have a capacity of at least one quart (1 qt.).

(b) **Engine (gross) horsepower (h.p.) rating.**

(1) Two hundred horsepower (200 h.p.) minimum for twenty-five to seventy-eight (25-78) passengers.

(2) Two hundred forty horsepower (240 h.p.) minimum for seventy-nine to ninety (79-90) passengers (two hundred fifty horsepower (250 h.p.) minimum with air conditioning).

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-114. Exhaust system.

(a) The exhaust pipe, after-treatment system, and tailpipe shall be:

(1) Outside the bus body compartment; and

(2) Attached to the chassis so any other chassis component is not damaged.

(b) The tailpipe and after-treatment system shall be constructed of a corrosion-resistant tubing material at least equal in strength and durability to sixteen-gauge steel tubing of equal diameter.

(c)(1) The tailpipe may be flush with, or shall not extend more than two inches (2″) beyond, the perimeter of the body for side-exit pipe or the bumper for rear-exit pipe.

(2) The exhaust system shall be designed such that exhaust gas will not be trapped under the body of the bus.

(d)(1) The tailpipe shall exit to the left or right of the emergency exit door in the rear of the vehicle or to the left side of the bus in front of or behind the rear drive axle, or the tailpipe may extend through the bumper.

(2) The tailpipe exit location on all Types A-1 or B-1 buses may be in accordance to the manufacturer's standards.

(3) The tailpipe shall not exit beneath any:

(A) Fuel filler location;

(B) Emergency door; or

(C) Lift door.

(e) The exhaust system shall be insulated in a manner to prevent any damage to

any fuel system component.

(f)(1) The design of the after treatment systems shall not allow active (nonmanual) regeneration of the particulate filter during the loading and unloading of passengers.

(2) Manual regeneration systems will be designed such that unintentional operation will not occur.

(g) For after treatment systems that require diesel exhaust fluid (DEF) to meet federally mandated emissions:

(1)(A) The composition of diesel exhaust fluid (DEF) must comply with international standard ISO 22241-1.

(B) Refer to engine manufacturer for any additional DEF requirements.

(2) The DEF supply tank shall be sized to meet a minimum ratio of three (3) diesel fills to one (1) DEF fill.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-115. Front fenders (Type C vehicles).

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

(b) Fenders shall be:

(1) Properly braced; and

(2) Free from any body attachments.

(c) Chassis sheet metal shall not extend beyond the rear face of the cowl on an incomplete chassis.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-116. Frame.

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

characteristics.

(b) Any primary (chassis manufacturer) or secondary manufacturer (body manufacturers) that modifies the original chassis frame shall guarantee the performance of workmanship and materials resulting from such modifications.

(c)(1) Any frame modification shall not be for the purpose of extending the wheelbase.

(2) Extensions of frame length are permissible only when such alterations are behind the rear hanger of the rear spring.

(d) Holes in the top or bottom flanges or side units of the frame, and welding to the frame, shall not be permitted except as provided or accepted by the chassis manufacturers.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-117. Fuel tank.

(a)(1) Fuel tank or tanks having a thirty-gallon minimum capacity with a twenty-five-gallon actual draw shall be provided by the chassis manufacturer on thirty-six (36) capacity units and smaller.

(2) The tank shall be filled and vented to the outside of the body, the location of which shall be so that accidental fuel spillage will not drip or drain on any part of the exhaust system.

(3) A fuel tank having a capacity of a minimum of sixty (60) gallons with a fifty-five-gallon actual draw shall be provided by the manufacturer on thirty-seven-capacity units and larger.

(b)(1) No portion of the fuel system which is located to the rear of the engine compartment, except the filler tube, shall extend above the top of the chassis frame rail.

(2) Fuel lines shall be mounted to obtain maximum possible protection from the chassis frame.

(c) A fuel filter with a replaceable element shall be installed between the fuel tank

and the carburetor or injector.

(d) Installation of an alternative fuel system shall comply with all applicable local, state, and federal fire codes and National Highway Traffic Safety Administration regulations.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-118. Governor (electronic control).

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

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-119. Horn.

A bus shall be equipped with dual electric horns of standard make, with each horn capable of producing complex sound in bands of audio frequencies between two hundred fifty (250) and two thousand (2,000) cycles per second and tested per SAE International standard J-377.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-120. Instruments and instrument panel.

(a) Chassis shall be equipped with the following instruments and gauges (lights in lieu of gauges are not acceptable except as noted):

(1) Speedometer;

(2) Odometer which will give accrued mileage (six (6) digits with trip odometer) including tenths of miles;

(3)(A) Voltmeter.

(B) An ammeter with graduated charge and discharge, with the ammeter

and its wiring compatible with generating capacities, is permitted in lieu of voltmeter;

(4) Oil-pressure gauge;

(5) Water temperature gauge;

(6) Fuel gauge;

(7) Upper beam headlight indicator;

(8)(A) Brake indicator gauge (air).

(B) A light indicator in lieu of gauge is permitted on a vehicle equipped with a hydraulic-over-hydraulic brake system;

(9) Turn signal indicator; and

(10) Glow-plug indicator light where appropriate.

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

(c) Instruments and gauges shall be mounted on an instrument panel in such a manner that each is clearly visible to driver while in normal seated position.

(d) Instrument panels shall have lamps of sufficient candlepower to illuminate all instruments and gauges and a shift selector indicator for automatic transmission.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-121. Openings.

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

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-122. Passenger load.

(a)(1) Gross vehicle weight (GVW) is the sum of:

(A) The chassis weight; plus

(B) The body weight; plus

(C) The driver's weight; plus

(D) Total seated pupil weight.

(2) For purposes of calculation, the driver's weight is one hundred fifty pounds (150 lbs.).

(3) For purposes of calculation, the pupil weight is one hundred twenty pounds (120 lbs.) per pupil.

(b) Actual gross vehicle weight (GVW) shall not exceed the chassis manufacturer's GVWR for the chassis.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "GVWR" means gross vehicle weight rating.

6 CAR § 335-123. Retarder system.

A retarder system, if used, shall maintain the speed of the fully-loaded school bus at nineteen miles per hour (19.0 mph) or thirty kilometers per hour (30 km/h) on a seven-percent grade for three and six tenths (3.6) miles or six kilometers (6 km).

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-124. Shock absorbers.

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

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-125. Springs.

The capacity of springs or suspension assemblies shall be commensurate with the chassis manufacturer's gross vehicle weight rating.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-126. Steering gear.

(a) Steering gear shall be:

(1) Approved by the chassis manufacturer; and

(2) Designed to ensure safe and accurate performance when the vehicle is operated:

(A) With maximum load; and

(B) At maximum speed.

(b) If external adjustments are required, the steering mechanism must be accessible to accomplish same.

(c) No changes shall be made in the steering apparatus which are not approved by the chassis manufacturer.

(d) There shall be clearance of at least two inches (2″) between steering wheel and:

(1) Cowl;

(2) Instrument panel;

(3) Windshield; or

(4) Any other surface.

(e) The steering system shall be designed to provide means for lubrication of all wear-points, if wear-points are not permanently lubricated.

(f)(1) A tilt steering wheel is required on Type B, Type C, and Type D vehicles.

(2) Tilt steering is optional on Type A vehicles.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-127. Tires and wheels.

(a) Tires and wheels of proper size and tires with load rating commensurate with chassis manufacturer's gross vehicle weight rating shall be provided.

(b) Dual rear tires shall be provided on Type A school buses.

(c) All tires on any given axle shall be of same size and the load range of said tires

shall meet or exceed the gross axle weight rating as required by FMVSS 120.

(d) If the vehicle is equipped with optional spare tire and wheel assembly, it shall be of the same size and type as those mounted on the vehicle.

(e) If a tire carrier is required, it shall be suitably mounted in accessible location outside of the passenger compartment.

(f) Steel-belted tubeless radial tires shall be standard equipment.

(g) Disc wheels are required on Type B, Type C, and Type D units.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-128. Tow eyes or hooks.

(a) Tow eyes or hooks shall be:

(1) Furnished at the front and rear; and

(2) Attached so as not to project beyond the front or rear bumpers.

(b) Tow eyes or hooks attached to the frame (chassis) shall be furnished by the chassis manufacturer.

(c) Type A shall be exempt.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-129. Transmission-differential.

(a)(1) When automatic or automated transmission is used, it shall provide for not less than:

(A) Three (3) forward speeds; and

(B) One (1) reverse speed.

(2) The shift selector, if applicable, shall provide a detent between each gear position when the gear selector quadrant and shift selector are not steering column mounted.

(3) The transmission shall meet the manufacturer's specifications.

(4) Automatic or automated transmission is a base specification on all units.

(b)(1) The gear ratio will need to be specified by the local school district representative.

(2) Otherwise, the manufacturer standard gear ratio will be delivered.

(3) District representative should consult with area mechanics to determine the proper gear ratio for local terrain and use of the unit.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-130. Turning radius.

(a) A chassis with a wheelbase of two hundred sixty-four inches (264″) or less shall have a right and left turning radius of not more than forty-two and one-half feet (42 1/2′), curb to curb measurement.

(b) A chassis with a wheelbase of two hundred sixty-five inches (265″) or more shall have a right and left turning radius of not more than forty-four and one-half feet (44 1/2′), curb measurement.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-131. Undercoating.

(a) The entire underside of the bus body, including floor sections, cross member, and below floor-line side panels, shall be coated with rust-proofing material for which the material manufacturer has issued to the bus body manufacturer a notarized certification that materials meet or exceed all performance requirements of SAE International J1959.

(b) The undercoating material shall:

(1) Be applied with suitable airless or conventional spray equipment to the undercoating material manufacturer’s recommended film thickness; and

(2) Show no evidence of voids in the cured film.

(c) The undercoating material shall not cover any exhaust components of the chassis.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-132. Weight distribution.

The weight distribution of a fully loaded bus on a level surface shall be such as not to exceed the manufacturer's:

(1) Front gross axle rating; and

(2) Rear gross axle weight rating.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-133. Bus body specifications.

All bus bodies shall meet Arkansas specifications and FMVSS:

(1) In effect as of the effective date of this part; or

(2) In force on the day of issuance of bid request.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-134. Passenger compartment air conditioning (optional).

(a)(1) The following specifications are applicable to all types of school buses that may be equipped with air conditioning.

(2) This section is divided into three (3) parts.

(A) Subsection (b) covers performance specifications;

(B) Subsection (c) covers test conditions; and

(C) Subsection (d) covers other requirements applicable to all buses.

(b) **Performance specifications.**

(1) **Standard performance.**

(A) The installed air conditioning system should cool the interior of the bus from one hundred degrees Fahrenheit ˚001) F) to eighty degrees Fahrenheit ˚08) F), measured at three (3) points (minimum) located four feet (4′) above the floor on the longitudinal centerline of the bus.

(B) The three (3) required points shall be:

(i) Three feet (3′) above the center point of the horizontal driver seat surface;

(ii) At the longitudinal midpoint of the body; and

(iii) Three feet (3′) forward of the rear emergency door or, for Type D rear engine buses, three feet (3′) forward of the end of the aisle.

(C)(i) Note for the Type A vehicles: placement of the rear thermocouple should be centered in the bus over the rear axle.

(ii) The independent temperature reading of each temperature probe inside the bus shall be within a range of plus/minus three degrees Fahrenheit ˚3) F) of the average temperature at the conclusion of the test.

(2) **High performance.**

(A) The installed air conditioning system should cool the interior of the bus from one hundred degrees Fahrenheit (100 (F˚ to seventy degrees Fahrenheit ˚07) F), measured at three (3) points (minimum) located four feet (4′) above the floor on the longitudinal centerline of the bus.

(B) The three (3) required points shall be:

(i) Three feet (3′) above the center point of the horizontal driver seat surface;

(ii) At the longitudinal midpoint of the body; and

(iii) Three feet (3′) forward of the rear emergency door or, for Type D rear engine buses, three feet (3′) forward of the end of the aisle.

(C)(i) The Type A vehicles′ placement of the rear thermocouple should be centered in the bus over the rear axle.

(ii) The independent temperature reading of each temperature probe

inside the bus shall be within a range of plus/minus three degrees Fahrenheit ˚3) F) of the average temperature at the conclusion of the test.

(c) **Test conditions.** The test conditions under which the above performance standards must be achieved shall consist of:

(1) Placing the bus in a room (such as a paint booth) where the ambient temperature can be maintained at one hundred degrees Fahrenheit ˚001) F);

(2) Heat-soaking the bus at one hundred degrees Fahrenheit ˚001) F) at a point measured two feet (2') horizontally from the top of the windows on both sides of the bus, with windows open for two (2) hours; and

(3) Closing the windows, turning on the air conditioner with the engine running at one thousand two hundred fifty (1,250) plus/minus fifty (50) RPM, and cooling the interior of the bus to eighty degrees Fahrenheit ,(F˚08) (standard performance) or seventy degrees Fahrenheit ˚07) F) (high performance), within thirty (30) minutes while maintaining one hundred degrees Fahrenheit ˚001) F) outside temperature.

(d) **Other requirements.**

(1) Evaporator cases, lines and ducting (as equipped) shall be designed in such a manner that all condensation is effectively drained to the exterior of the bus below the floor level:

(A) Under all conditions of vehicle movement; and

(B) Without leakage on any interior portion of the bus.

(2)(A) Evaporators and ducting systems shall be designed and installed to be free of projections or sharp edges.

(B) Ductwork shall be installed so that exposed edges:

(i) Face the front of the bus; and

(ii) Do not present sharp edges.

(3)(A) On school buses equipped with Type-2 seatbelts having anchorages above the windows, the ducting (if used) shall be placed at a height sufficient to not obstruct occupant securement anchorages.

(B) This clearance shall be provided along the entire length (except at

evaporator locations) of the passenger area on both sides of the bus interior.

(4) The body may be equipped with insulation, including sidewalls, roof, firewall, rear, inside body bows, and plywood or composite floor insulation to reduce thermal transfer.

(5) All glass (windshield, service and emergency doors, side and rear windows) may be equipped with maximum integral tinting allowed by federal, state, or American National Standards Institute standards for the respective locations, except that windows rear of the driver's compartment, if tinted, shall have approximately twenty-eight percent (28%) light transmission.

(6) Electrical generating capacity shall be provided to accommodate the additional electrical demands imposed by the air conditioning system.

(7) Roofs may be painted white to aid in heat dissipation.

(8) Air intake for any evaporator assembly or assemblies except for front evaporator of Type A-1, shall be equipped with a replaceable air filter or filters accessible without disassembly of the evaporator case.

(9) For all buses (except Type D rear engine transit) equipped with a rear evaporator assembly, the evaporator shall not encroach upon the head impact zone, but may occupy an area of less than twenty-six and five-tenths inches (26.5") from the rear wall and fourteen inches (14") from the ceiling.

(10) For Type D rear engine transit buses equipped with a rear evaporator over the davenport, the evaporator assembly may not:

(A) Interfere with the rear exit window; and

(B) Extend above the rear seating row.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-135. Aisle.

(a) All emergency doors shall be accessible by a twelve-inch minimum aisle.

(b) The primary aisle shall be unobstructed at all times by any type barrier or seat.

(c) The aisle to the left side of the emergency door, if so equipped, may have an

automatic folding seat.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-136. Back up warning device.

An automatic audible alarm shall:

(1) Be installed behind the rear axle; and

(2) Comply with the SAE International published Backup Alarm Standards (SAE International 994b).

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-137. Certification.

(a) A body manufacturer shall, upon request, certify to the state agency having pupil transportation jurisdiction that their product meets minimum Arkansas standards.

(b) A certification plate indicating maximum design capacity and equipped capacity shall be affixed to the bus body.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-138. Color.

(a)(1) The school bus body shall be painted uniform color, NSBY.

(2) The entrance door and window post may be black.

(b) The body exterior paint trim, bumpers, rub rails, lamp hoods, emergency door lettering, and arrow shall be black.

(c) The roof of the bus may be painted white extending down to the drip rails on the sides of the body or within approximately six inches (6") of the top of the windows except that front and rear roof caps shall remain NSBY.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "NSBY" means National School Bus Yellow.

6 CAR § 335-139. Communications.

(a) Buses may be equipped with AM/FM, CD and/or a two-way radio communication system.

(b) Speakers shall be flush mounted.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-140. Construction.

(a) **Side intrusion test.**

(1)(A) The bus body shall be constructed to withstand an intrusion force equal to the curb weight of the vehicle, but shall not exceed twenty thousand pounds (20,000 lbs.), whichever is less.

(B) Each vehicle shall be capable of meeting this requirement when tested in accordance with the procedures set forth below.

(2) The complete body structure, or representative seven-body section mock-up with seats installed, shall be load-tested at a location twenty-four inches (24") plus or minus two inches (2") above the floor line, with a maximum ten-inch diameter cylinder, forty-eight inches (48") long, mounted in a horizontal plane.

(3)(A) The cylinder shall be placed as close as practical to the midpoint of the tested structure, spanning two (2) internal vertical structural members.

(B) The cylinder shall be statically loaded to the required force of curb weight or twenty thousand pounds (20,000 lbs.), whichever is less, in a horizontal plane with the load applied from the exterior toward the interior of the test structure.

(C) Once the minimum load has been applied, the penetration of the loading cylinder into the passenger compartment shall not exceed a maximum of ten inches (10") from its original point of contact.

(D)(i) There can be no separation of lapped panels or construction joints.

(ii) Punctures, tears, or brakes in the external panels are acceptable but are not permitted on any adjacent interior panel.

(b) **Kentucky Pole Test.**

(1) The Kentucky Pole Test shall be required on or before the acceptance date of the first bus of the respective configuration.

(2) **Test procedure.**

(A) The body shall be impacted at any point along the roof line on the outside surface, using an eight-inch diameter cylinder, forty-eight inches (48″) long at a thirty-to forty-five-degree angle, one inch (1″) to three inches (3″) above the top window line.

(B) The cylinder shall impact the roofline with the forty-eight inches (48″) dimension in a vertical plane with a force not to exceed ten inches (10″) maximum to eight inches (8″) minimum penetration of the body panels into the passenger compartment after impact.

(3) The manufacturer shall submit all appropriate certification information.

(c) **Colorado Rack Test.**

(1) The Colorado Racking Test shall be required on or before the acceptance of the respective configuration.

(2) **Test procedure.**

(A) A diagonal (racking) load test shall be performed on Type A, Type B, and Type C, and Type D school buses to ensure adequate shear stiffness and strength of the bus body.

(B) In addition to complying with the test procedures described in FMVSS 220, the body manufacturers shall record and report the downward vertical movement of the force at zero percent (0%), twenty-five percent (25%), fifty percent (50%), and one hundred percent (100%) of the maximum force (both loading and unloading).

(C) Each emergency exit of the vehicle provided in accordance with FMVSS 217 shall be capable of operation as specified in that standard:

(i) During the full application of the force; and

(ii) After the release of the force.

(D) Complete testing requirements of the Colorado Racking Load Test are available upon request from the Division of Elementary and Secondary Education.

(3) School bus body manufacturers shall:

(A) Record and report to the division the Colorado Racking Load Test results; and

(B) Specify which testing method was used.

(d) Body companies shall certify compliance with all test requirements, including test results, if requested.

(e) Construction shall be reasonably dust-proof and watertight.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-141. Crossing control arm.

(a)(1) Buses shall be equipped with a crossing control arm mounted on the right side of the front bumper.

(2) This arm when opened shall extend in a line parallel with the body side and positioned on a line with the right-side front tire.

(b) All components of the crossing control arm and all connections shall be weatherproofed.

(c) The crossing control arm shall:

(1) Incorporate system connectors (electrical, vacuum, or air) at the gate; and

(2) Be easily removable to allow for towing of the bus.

(d) The crossing control arm shall meet or exceed SAE International J1133.

(e) The crossing control arm shall be:

(1) Constructed of noncorrosive or nonferrous material; or

(2) Treated in accordance with the body sheet metal specification (See 6 CAR § 335-153, Metal treatment).

(f) There shall be no sharp edges or projections that could cause hazard or injury

to students.

(g) The crossing control arm shall extend approximately seventy inches (70”), measured from the bumper at the arm assembly attachment point, when in the extended position.

(h) The crossing control arm shall extend simultaneously with the stop arm or arms by means of the stop arm controls.

(i) An automatic recycling interrupt switch shall be installed for temporary disabling of the crossing control arm.

(j) The crossing control arm shall be equipped with a magnetic contact between the arm and front bumper except on air operated crossing controls.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-142. Defrosters.

(a)(1) Defrosting and defogging equipment shall direct a sufficient flow of heated air onto the windshield, the window to the left of the driver, and the glass in the viewing area directly to the right of the driver to eliminate:

(A) Frost;

(B) Fog; and

(C) Snow.

(2) The defroster unit shall have a separate blower motor in addition to the heater motors or plenum with single blower.

(3) Defrosting and defogging equipment for Type A vehicles shall direct a sufficient flow of heated air onto the windshield to eliminate:

(A) Frost;

(B) Fog; and

(C) Snow.

(b) The defroster and defogging system shall conform to SAE International Standard J381.

(c) The defroster and defogging system shall be capable of furnishing heated

outside ambient air, except that part of the system furnishing additional air to the windshield, entrance door, and stepwell may be of the recirculating air type.

(d) Auxiliary fans are not considered defrosting or defogging systems.

(e) Portable heaters shall not be used.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-143. Doors.

(a) **Service door.**

(1)(A) The service door shall be:

(i) Within the driver's control; and

(ii) So designed to afford easy release and provide a positive latching device on manual operating doors to prevent accidental opening.

(B) When hand lever is used, no parts shall come together so as to shear or crush fingers.

(2) Manual door controls shall not require more than twenty-five pounds (25 lbs.) of force to operate at any point throughout the range of operation, as tested on a ten percent (10%) grade both uphill and downhill.

(3) Service door shall be located on right side of bus, opposite and within direct view of the driver.

(4) Service door shall have a:

(A) Minimum horizontal opening of twenty-four inches (24”); and

(B) Minimum vertical opening of sixty-eight inches (68”).

(5) Service doors shall be:

(A) Split type;

(B) Sedan type; or

(C) Jack-knife type.

(6)(A) Lower as well as upper panels shall be of approved safety glass.

(B) The bottom of the lower glass panel shall not be more than ten inches (10”) from the top surface of the bottom step.

(C) The top of each upper glass panel shall not be more than six inches (6″) from the top of the door.

(7) Vertical closing edges on split type or folding type entrance doors shall be equipped with flexible material to protect the children's fingers.

(8)(A) All doors shall be equipped with padding at the top edge of each door opening.

(B) Padding shall:

(i) Be at least three inches (3″) wide and one inch (1″) thick; and

(ii) Extend the full width of the door opening.

(9) On power-operated service doors, the emergency release valve, switch, or device to release the service door must be:

(A) Placed above or to the immediate left or right of the service door; and

(B) Clearly labeled.

(b) **Emergency doors.**

(1)(A) The emergency door shall be hinged on the right side if in the rear end of the bus.

(B) It shall:

(i) Open outward; and

(ii) Be labeled inside to indicate how it is to be opened.

(C) If double emergency doors are used on Type A vehicles, they shall:

(i) Be hinged on the outside edge; and

(ii) Have a three-point fastening device.

(D) A device shall be used that holds the door open to prevent the emergency door from closing during emergencies and school bus evacuation drills.

(2)(A) The upper portion of the emergency door shall be equipped with approved safety glass, the exposed area of which shall be not less than four hundred square inches (400 sq. in.).

(B) The lower portion of the rear emergency door on Type B, Type C, and Type D vehicles shall be equipped with a minimum of three hundred fifty square inches (350 sq. in.) of approved safety glass.

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

(4) The words "EMERGENCY DOOR", in letters at least two inches (2″) high, shall be placed at the top of or directly above the emergency door or on the door in the metal panel above the top glass, both inside and outside of the bus.

(5)(A) The emergency door shall be equipped with padding at the top edge of each door opening.

(B) Padding shall:

(i) Be at least three inches (3″) wide and one inch (1″) thick; and

(ii) Extend the full width of the door opening.

(6) The side emergency door, if installed, must meet the requirements as set forth in FMVSS 217, regardless of its use with any other combination of emergency exits.

(7) There shall be no obstruction higher than one-fourth inch (1/4″) across the bottom of any emergency door opening.

(8) All exterior metal door hinges which do not have stainless steel, brass, or non-metallic hinge pins or other designs that prevent corrosion shall be designed to allow lubrication to be channeled to the center seventy-five percent (75%) of each hinge loop without disassembly.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-144. Emergency equipment.

(a) **Fire extinguisher.**

(1)(A) The bus shall be equipped with at least two (2) pressurized, dry chemical fire extinguishers, complete with hose to meet Underwriters' Laboratories Inc. approval.

(B) Extinguishers must be mounted in a bracket, one (1) located in the driver's compartment and one (1) located on the left side of the rear emergency door

exit, readily accessible to the driver and passengers.

(C) A pressure gauge shall be:

(i) Mounted on the extinguisher; and

(ii) Easily read without moving the extinguisher from its mounting position.

(D) The extinguisher shall be refillable.

(2)(A) The fire extinguisher shall be of a type approved by Underwriters' Laboratories Inc. with a total rating of 2A1OBC (five pounds (5 lbs.) each) or greater.

(B) The operating mechanism shall be sealed with a type of seal which will not interfere with the use of the fire extinguisher.

(b) **First-aid kits.**

(1)(A) The bus shall have a removable, moisture-proof and dust-proof first-aid kit mounted in an accessible place within the driver's compartment.

(B) This place shall be marked to indicate its location.

(2) Minimum contents shall include:

(A) Three-fourth inches by three inches (3/4" x 3") bandage with Telfa pad;

(B) Three-inch bandage compress with Telfa;

(C) Two-inch bandage compress with Telfa;

(D) Three inches by three inches (3" x 3") gauze compress;

(E) Thirty-six inches by thirty-six inches (36" x 36") gauze compress;

(F) Forty-inch triangular bandage, nonsterile;

(G) Gauze bandage, two inches by six yards (2" x 6 yds.);

(H) Eye pads, adhesive strips;

(I) Adhesive tape, one inch by two and one-half yards (1" x 2 1/2 yds.); and

(J) Four-inch blunt scissors.

(c) **Body fluid clean-up kit.**

(1) Each bus shall have a removable and moisture-proof body fluid clean-up kit.

(2) It shall be properly mounted and identified as a body fluid clean-up kit.

(d) **Warning devices**. Each school bus shall:

(1) Contain at least three (3) reflective triangle road warning devices; and

(2) Meet the requirements in FMVSS 125.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-145. Emergency exit requirements.

(a) All buses shall be equipped with a total number of emergency exits required by FMVSS 217.

(b)(1) Side emergency exit windows when installed may be vertically hinged on the forward side of the window.

(2) No side emergency exit window will be located above a stop arm.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-146. Floor.

(a) Floor in under seat area, including the tops of wheel housings, driver's compartment, and toe board, shall be covered with a rubber floor covering or equivalent, having a minimum overall thickness of one hundred twenty-five thousandths of an inch (.125").

(b)(1) The floor covering in the aisle shall be:

(A) Of aisle-type rubber or equivalent;

(B) Wear-resistant; and

(C) Ribbed.

(2) Minimum over-all thickness shall be one hundred eighty-seven thousandths

of an inch (.187”) measured from the tops of the ribs.

(c)(1) The floor covering must:

(A) Be permanently bonded to the floor; and

(B) Not crack when subjected to sudden changes in temperature.

(2) Bonding or adhesive material shall be:

(A) Waterproof; and

(B) Of a type recommended by the manufacturer of the floor-covering material.

(3) All seams shall be sealed with waterproof sealer.

(d)(1) Body manufacturer shall provide a screw-down plate that is secured and insulated to access the fuel tank sending unit.

(2) Type A is excluded from this requirement.

(e) All special needs school buses shall have five-eighths-inch treated or marine-grade plywood floors.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-147. Heating system.

(a) The heater shall be:

(1) Hot water combustion type;

(2) Electric heating element; or

(3) Heat pump.

(b) If only one (1) heater is used, it shall be fresh-air or combination fresh-air and recirculation type.

(c) If more than one (1) heater is used, additional heaters may be recirculating air type.

(d) The heating system shall be capable of maintaining bus interior temperatures, as specified in test procedure SAE International J2233.

(e) Auxiliary fuel-fired heating systems are permitted, provided they comply with the following:

(1) The auxiliary heating system shall utilize the same type fuel as specified for the vehicle engine;

(2) The heater or heaters may be:

(A) Direct;

(B) Hot air-type; or

(C) Connected to the engine coolant system;

(3) An auxiliary heating system, when connected to the engine coolant system, may be used to:

(A) Preheat the engine coolant; or

(B) Preheat and add supplementary heat to the heating system;

(4) Auxiliary heating systems must be installed pursuant to the manufacturer's recommendations and shall not direct exhaust in such a manner that will endanger bus passengers;

(5) All combustion heaters shall be in compliance with current Federal Motor Carrier Safety Regulations;

(6)(A) The auxiliary heating system shall require low voltage.

(B) Auxiliary heating systems shall comply with FMVSS No. 301, Fuel System Integrity, and all other applicable FMVSS, as well as with SAE International test procedures;

(7)(A) All forced-air heaters installed by body manufacturers shall bear a name plate that indicates the heater rating in accordance with SBMTC-001, Standard Code for Testing and Rating Automotive Bus Hot Water Heating and Ventilating Equipment.

(B) The plate shall be affixed by the heater manufacturer and shall constitute certification that the heater performance is as shown on the plate;

(8)(A) Heater hoses shall be adequately supported to guard against excessive wear due to vibration.

(B) The hoses shall not:

(i) Dangle or rub against the chassis or any sharp edges; and

(ii) Interfere with or restrict the operation of any engine function.

(C) Heater hoses shall conform to SAE International J20c, Coolant System

Hoses.

(D) Heater lines, cores, and elements on the interior of the bus shall be shielded to prevent scalding or burning of the driver or passengers;

(9) Each hot water system installed by a body manufacturer shall include one (1) shut-off valve in the pressure line and one (1) shut-off valve in the return line, with both valves at the engine in an accessible location, except that on Type A and Type B buses, the valves may be installed in another accessible location;

(10)(A) All heaters of hot water type in the passenger compartment shall be equipped with a device installed in the hot water pressure line which regulates the water flow to all passenger heaters.

(B) The device shall be conveniently operated by the driver while seated.

(C) The driver and passenger heaters may operate independently of each other for maximum comfort;

(11) On hot water-type systems, accessible bleeder valves for removing air from the heater shall be installed in an appropriate place in the return lines of body company-installed heater; and

(12)(A) Access panels shall be provided to make heater motors, cores, elements, and fans readily accessible for service.

(B) An exterior access panel to the driver's heater may be provided.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

"SMBTC" means School Bus Manufacturers Technical Committee.

6 CAR § 335-148. Identification.

(a)(1) The body shall bear the words "SCHOOL BUS" in black letters at least eight inches (8") high on:

(A) Both the front and rear of the body; or

(B) Signs attached thereto.

(2) Lettering shall be placed as high as possible without impairment of its visibility.

(3) Lettering shall:

(A) Conform to "Series B" of Standard Highway Signs and Markings; and

(B) Be on a retro reflective area of approximately twelve inches by forty-five inches (12" x 45") meeting United States Department of Transportation Federal Highway Administration FP-85 Type 2A or Type 3A.

(b) Permit numbers and the school district name on the side and rear of the bus and school identification on each side shall:

(1) Be a minimum of six inches (6″) in height and three-fourths inch (3/4") wide; and

(2) Conform to the assigned number of the Division of Public School Academic Facilities and Transportation.

(c)(1) Except as allowed in 49.04, only signs and lettering approved by state law or rule, limited to the name of the owner or operator and any numbers necessary for identification, shall appear on a school bus.

(2) The school logo or mascot may only appear above the drip rail on either side of the bus or between the bottom two (2) rub rails not to exceed five hundred forty square inches (540 sq. in.).

(d)(1) An antibullying sign and a no tobacco use sign shall be affixed to the interior bulkhead of the bus.

(2) A "no unauthorized entry" sign shall be affixed on the exterior of bus immediately rear of the service door below the window and above the rub rail.

(e) A magnetic or adhesive sticker of an American or Arkansas flag no larger than four inches by six inches (4″ x 6″) may be displayed directly below the driver's window or directly above the driver's window above the drip rail.

(f) School buses purchased after May 16, 2012, will be identified by either:

(1) A printed notice, with lettering not less than two inches (2″) high, stating "ARKANSAS LAW: STOP WHEN RED LIGHTS ARE FLASHING"; or

(2) An electronic warning device as specified by Arkansas Code § 6-19-124, and displayed in accordance with Arkansas Code § 6-19-125.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-149. Inside height.

(a) Inside body height shall be seventy-two inches (72") or more, measured metal-to-metal, at any point of longitudinal centerline from front vertical bow to rear vertical bow.

(b) Inside body height of Type A buses shall be sixty-two inches (62") or more.

(c) Seventy-seven inches (77") or more of headroom is optional.

(d) Inside height measurement does not apply to air conditioning equipment.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-150. Insulation.

(a)(1) Ceiling and walls shall be insulated with proper material to deaden sound, and to reduce vibration to a minimum.

(2) If thermal insulation is specified, it shall be fire-resistant and meet the requirements of FMVSS 302.

(b)(1) If floor insulation is required, it:

(A) Shall be either five-ply, nominal five-eighths-inch thick plywood, or a material of equal or greater strength and insulation R value; and

(B) Will meet or exceed properties of exterior-type softwood plywood, C-D Grade as specified in the standard issued by the United States Department of Commerce.

(2) When plywood is used, all exposed edges shall be sealed.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-151. Interior.

(a)(1) The interior of the bus shall be free of all unnecessary projections, which include luggage racks and attendant handrails likely to cause injury.

(2) This standard requires inner lining on ceilings and walls.

(3) If the ceiling is constructed to contain lapped joints, the forward panel shall be lapped by the rear panel.

(4) All interior panels, except access panels, shall have hemmed edges.

(5) All access panels shall be hemmed or beaded.

(b) The driver's area forward of the foremost padded barriers shall permit the mounting of required:

(1) Safety equipment; and

(2) Vehicle operation equipment.

(c) Every school bus shall be constructed so that the noise level taken at the ear of the occupant nearest to the primary vehicle noise source shall not exceed eighty-five decibels (85 dB) when tested according to the noise test procedure.

(d) Radio speakers shall be flush mounted, if installed.

(e)(1) A padded shoulder rail may be installed on both sides below the side windows.

(2) Shoulder rails shall be covered in the same material as the seats.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-152. Lamps and signals.

(a)(1) Interior lamps shall be provided which adequately illuminate the aisle and stepwell.

(2) The stepwell light shall be illuminated by a service door operated switch to illuminate only when headlights and clearance lights are on and the service door is opened.

(b) The body instrument panel lights shall be controlled by a rheostat switch.

(c)(1) School bus alternately flashing signal lamps shall be a non-sequential operating system.

(2) The bus shall be equipped with two (2) red lamps at the rear of vehicle and two (2) red lamps at the front of vehicle.

(3) In addition to the four (4) red lamps described in subdivision (c)(2) of this section, four (4) amber lamps shall be installed as follows:

(A) One (1) amber lamp shall be located near each red signal lamp, at the same level, but closer to the vertical centerline of bus;

(B) The system of red and amber signal lamps shall be wired so that the amber lamps are energized manually; and

(C) Red lamps are automatically energized (with amber lamps being automatically de-energized) when the:

(i) Stop signal arm is extended; or

(ii) Bus service door is opened.

(4)(A) The area around the lens of each alternately flashing signal lamp and extending outward a minimum of three inches (3″) shall be black in color.

(B) In installations where there is no flat vertical portion of body immediately surrounding the entire lens of the lamp, a circular or square band, approximately three inches (3″) wide and one inch (1″) underneath, immediately below and to both sides of the lens, shall be painted black in color on the body or roof area against which the signal lamp is seen (from distance of five hundred feet (500′) along the axis of the vehicle).

(C) Visors or hoods, black in color, with a minimum depth of four inches (4″) may be provided.

(5) The red lamp shall flash at any time the stop signal arm is extended.

(6) All controlling devices for alternately flashing red and amber signal lamps shall be enclosed in the body in a readily accessible location.

(7) All the above lamps and signals shall be LED.

(d) **Turn signal and stop/tail lamps.**

(1)(A) The bus body shall:

(i) Be equipped with rear turn signal lamps that are at least seven inches (7″) in diameter, or if a shape other than round, a minimum thirty-eight square inches (38 sq. in.) of illuminated area; and

(ii) Meet the specifications of SAE International.

(B)(i) These signals must be connected to the chassis hazard wiring switch to cause simultaneous flashing of turn signal lamps when needed as vehicular traffic hazard warning.

(ii) Turn signal lamps are to be placed as wide apart as practical and their centerline shall be approximately seven inches (7″) to eight inches (8″) below the rear windows.

(C) Type A vehicle lamps must be:

(i) Twenty-one square inches (21 sq. in.) in lens area; and

(ii) In the manufacturer's standard color.

(2)(A) Buses shall be equipped with four (4) combination red stop/tail lamps.

(B) Two (2) combination lamps with a minimum diameter of seven inches (7″), or if a shape other than round, a minimum of thirty-eight square inches (38 sq. in.) of illuminated area shall be mounted on the rear of the bus just inside the turn signals.

(C)(i) Two (2) combination lamps with a minimum diameter of four inches (4″), or if a shape other than round, a minimum twelve square inches (12 sq. in.) of illuminated area shall be placed on the rear of the body between the beltline and the floor line.

(ii) The rear license plate lamp may be combined with one (1) lower tail lamp.

(iii) Stop lamps shall:

(a) Be activated by the service brakes; and

(*b*) Emit a steady light when illuminated.

(iv) Type A buses with bodies supplied by a chassis manufacturer may have the manufacturer's standard stop and tail lamps.

(3)(A) Armored clearance lights may be installed.

(B) Receded or flush mounted lights are acceptable.

(4) All Type B, Type C, and Type D units shall be equipped with an exterior/interior access panel with a lock and key or trip lever on the inside of the unit for access to the electrical panel.

(5) Side mounted directional signals shall be installed on the left side mounted rearward of the stop signal arm and on the right side mounted rearward of the service door of all type buses.

(e)(1) On all buses equipped with the optional sixteen-unit light monitor for the front and rear lamps of the school bus, the monitor shall be mounted in full view of the driver.

(2) If the full circuit current passes through the monitor, each circuit shall be protected by a fuse or FET against any short circuit or intermittent shorts.

(f)(1) A white flashing strobe lamp shall be installed on the roof of a school bus at a location not closer than twelve inches (12″) or more than six feet (6′) from the rear of the roof edge.

(2) However, if the bus is equipped with a roof hatch or other roof-mounted equipment falling within the above-mentioned measurements, the strobe lamp may be located directly behind that equipment.

(3) The lamp shall have a single clear lens emitting light three hundred sixty degrees (°063) around its vertical axis, meeting the requirements of SAE International J845.

(4) It may not extend above the roof more than the maximum legal height.

(5) A manual switch and a pilot lamp shall be included to indicate when the lamp is in operation.

(6) Optionally, the strobe lamp may be:

(A) Wired to activate with the amber alternately flashing signal lamps, continuing through the full loading or unloading cycle; and

(B) Equipped with an override switch to allow activation of the strobe at any time for use in inclement weather.

(g) All the above turn signals, lamps, and lights shall be LED.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FET" means field effect transistor.

"LED" means light-emitting diode.

6 CAR § 335-153. Metal treatment.

(a)(1) All metal used in construction of a bus body shall be zinc-coated or aluminum-coated or treated by an equivalent process before a bus is constructed.

(2) Included are such items as:

(A) Structural members;

(B) Inside and outside panels; and

(C) Door panels and floor sills.

(3) Excluded are such items as:

(A) Door handles;

(B) Grab handles;

(C) Interior decorative parts; and

(D) Other interior plated parts.

(b) All metal parts that will be painted shall be, in addition to the above requirements, chemically cleaned, etched, zinc-phosphate-coated, and zinc-chrome or epoxy-primed or conditioned by an equivalent process.

(c) In providing for these requirements, particular attention shall be given to:

(1) Lapped surfaces;

(2) Welded connections of structural members;

(3) Cut edges;

(4) Punched or drilled hole areas in sheet metal;

(5) Closed or box sections unvented or undrained areas; and

(6) Surfaces subjected to abrasion during vehicle operation.

(d) As evidence that above requirements have been met, samples of materials and sections used in construction of a bus body shall be subjected to a cyclic corrosion testing as outlined in SAE International J1563.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-154. Mirrors.

The mirror system shall comply with FMVSS 111 Rearview and Crossview Mirrors.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-155. Mounting.

(a)(1) The chassis frame shall support the rear body cross member.

(2) The bus body shall be attached to the chassis frame at each main floor sill, except where chassis components interfere, in such a manner as to prevent shifting or separation of the body from the chassis under severe operating conditions.

(b) Insulating material shall be:

(1) Placed at all contact points between the body and chassis frame on all type buses; and

(2) So attached to the chassis frame or body that it will not move under severe operating conditions.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-156. Noise suppression switch.

Each bus shall be equipped with a switch mounted in the driver's compartment to turn off all noise-producing accessories simultaneously, including heater blowers, air conditioning, defroster fans, and auxiliary fans and radios, if so equipped.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-157. Overall length.

Overall length of a bus shall not exceed forty-five feet (45').

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-158. Overall width.

Overall width of a bus shall not exceed one hundred two inches (102"), excluding accessories.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-159. Retroreflective material.

(a) The front and/or rear bumper may be marked diagonally forty-five degrees (°54) down to the centerline of the pavement with two and one-fourth inch (2 1/4") wide strips of noncontrasting retroreflective material.

(b)(1) The rear of the bus body shall be marked with strips of retroreflective National School Bus Yellow (NSBY) material to outline the perimeter of the back of the bus using material which conforms with the requirements of FMVSS 131, Table 1.

(2) The perimeter marking of rear emergency exits per FMVSS 217 and/or the use of retroreflective "SCHOOL BUS" signs partially accomplishes the objective of this requirement.

(3) To complete the perimeter marking of the back of the bus, strips of at least one inch (1") retroreflective NSBY material shall be applied horizontally above the rear windows and above the rear bumper, extending from the rear emergency exit perimeter, marking outward to the left and right rear corners of the bus.

(4) Vertical strips shall be applied at the corners connecting these horizontal strips.

(c) "SCHOOL BUS" signs, if not of lighted design, shall be marked with retroreflective NSBY material comprising background for lettering of the front and/or rear "SCHOOL BUS" signs.

(d) Sides of the bus body shall be marked with at least one and three-fourths-inch retroreflective NSBY material, extending the length of the bus body and located (vertically) between the floor line and the beltline.

(e) Signs, if used, placed on the rear of the bus relating to school bus flashing signal lamps or railroad stop procedures may be of retroreflective material.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-160. Rub rails.

(a)(1) There shall be four (4) rub rails, each black, located on each side of the bus:

(A) One (1) at seat level which shall extend from the rear side of the entrance door completely around the bus body (except for emergency door, engine door, and grill) to the point of curvature near the outside cowl on left side (except windows and access doors);

(B) One (1), no more than ten inches (10") above, at the floor line;

(C) One (1) located below the side windows; and

(D) One (1) at the bottom of the body skirt.

(2) Only the rub rail at (no more than ten inches (10") above) the seat level must extend around the bus body.

(b) All rub rails shall be attached at:

(1) Each body post; and

(2) All other upright structural members.

(c) All rub rails shall be approximately two and five-tenths inches (2.5") to four and five-tenths inches (4.5") in width, and shall be:

(1) Of approximately twenty-gauge or larger steel; and

(2) Constructed in corrugated or ribbed fashion.

(d)(1) All rub rails shall be applied outside body or outside body posts.

(2) Pressed-in or snap-on rub rails do not satisfy this requirement.

(3) For Type A buses using chassis manufacturer's body or for Type B, Type C, and Type D buses using a rear luggage or rear engine compartment, rub rails need not extend around rear corners.

(e)(1) Rub rails are to be one-piece except for end caps when used.

(2) Rear-end wrap around pieces are excluded from the one-piece rub rail.

(3) Rear-end wrap around pieces shall not extend more than twelve inches (12") forward beyond where the flat side panel begins.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-161. Seat and seat belt for drivers.

(a)(1) A Type 2 lap belt/shoulder harness seat belt shall be:

(A) Provided for the driver; and

(B) Of a high visibility fluorescent color.

(2) The assembly shall be equipped with an emergency locking retractor (ELR) for the continuous belt system.

(3) The lap portion of the belt shall be guided or anchored where practical to prevent the driver from sliding under it.

(b)(1) The driver's seat supplied by the body company shall be a six-way adjustable high back seat with a minimum seat back adjustable to fifteen degrees ,(°51) without requiring the use of tools, and head restraint to accommodate a ninety-fifth percentile adult male, as defined in FMVSS 208.

(2) The driver's seat shall be secured with:

(A) Nuts;

(B) Bolts and washers; or

(C) Flanged-head nuts.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-162. Seating for passengers.

(a)(1) All seats shall have a minimum cushion depth of fifteen inches (15") and must comply with all requirements of FMVSS 222.

(2) School bus design capacities shall be in accordance with FMVSS 222.

(b) Upholstery shall conform with FMVSS 302.

(c)(1) Each seat leg shall be secured to the floor by a minimum of two (2) bolts, washers, and nuts.

(2) Flange-head nuts may be used in lieu of nuts and washers, or seats may be track-mounted in conformance with FMVSS 222.

(3) If track seating is installed, the manufacturer shall supply minimum and maximum seat spacing dimensions applicable to the bus, which comply with FMVSS 222.

(4) This information shall be on a label permanently affixed to the bus.

(d) All seat frames attached to the seat rail shall be fastened with a minimum of two (2):

(1) Bolts;

(2) Washers and nuts; or

(3) Flange-head nuts.

(e) All school buses (including Type A) shall be equipped with restraining barriers, which conform to FMVSS 222.

(f)(1) A flip-up seat may be installed at any side emergency door, provided that it conforms with FMVSS 222 and the aisle clearance requirements of FMVSS 217.

(2) The flip-up seat shall be free of sharp projections on the underside of the seat bottom.

(3) The underside of the flip-up seat bottoms shall be padded or contoured to reduce the possibility of:

(A) Clothing being snagged; or

(B) Personal injury during use.

(4) Flip-up seats shall be constructed to prevent passenger limbs from becoming entrapped between the seat back and the seat cushion is in the upright position.

(5) The seat cushion shall be designed to rise to a vertical position automatically when it is not occupied.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-163. Seat belts.

Type II lap/shoulder belts meeting FMVSS 209, 210, and 222 may be added to any bus.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-164. Steps.

(a)(1) The first step at the service door shall be not less than ten inches (10") and not more than fourteen inches (14") from ground, based on standard chassis specifications.

(2) Type D vehicles shall have the first step at the service door twelve inches (12") to sixteen inches (16") from the ground.

(b)(1) Step risers shall not exceed a height of ten inches (10").

(2) When plywood floor is used on a steel floor or step, the riser height may be increased by the thickness of the plywood.

(c) Steps shall be enclosed to prevent accumulation of ice and snow.

(d) Steps shall not protrude beyond side bodyline.

(e)(1) Handrails not less than twenty inches (20″) in length shall be provided in an unobstructed location inside the doorway.

(2) At least one (1) handrail shall be installed.

(3) The handrail or handrails shall assist passengers during entry or exit, and be designed to prevent entanglement, as evidenced by the passage of the National Highway Traffic Safety Administration string and nut.

(f) All Type B, Type C, and Type D units shall be equipped with a three-step riser.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-165. Step treads.

(a) All steps, including floor line platform area, shall be covered with three-sixteenths inch (3/16″) ribbed or studded elastomeric floor covering that exhibits:

(1) Good resistance to abrasion; and

(2) High coefficient of friction.

(b) Step covering shall be permanently bonded to a durable backing material that is resistant to corrosion.

(c)(1) The steps, including the floor line platform area shall have a one and one-half-inch (1 1/2″) nosing that contrasts in color by at least seventy percent (70%) measured in accordance with the contrasting color specification in 36 C.F.R., pt. 1192, Americans with Disabilities Act Accessibility Guidelines for Transportation Vehicles.

(2) The nosing shall be an integral piece without any joint extending to the leading edge of the nosing turndown.

(d)(1) Step tread covering shall have the following characteristics:

(A) Special compounding for:

(i) Good abrasion resistance; and

(ii) High coefficient of friction;

(B) Tread material weight loss shall not exceed forty percent (40%), as tested under ASTM D-4060, Standard Test Method for Abrasion Resistance of Organic

Coatings by the Taber Abraser, (CS-17 Wheel, one thousand-gram, one-thousand-cycle);

(C) Step treads shall not break, crack, or check after ozone exposure (seven (7) days at fifty miles per hour (50 mph) at forty degrees Celsius ˚04) C) and weatherometer exposure (ASTM D-750, Standard Test Method for Rubber Deterioration in Carbon-Arc Weathering Apparatus, seven (7) days); and

(D) Step treads shall have a calculated burn rate of one-hundredth (.01) or less using the test methods, procedures, and formulas listed in FMVSS 302, Flammability of Interior Materials.

(2) **Note.**

(A) A spray-on application type material may be used in lieu of subsection (a) of this section, that meets the requirements of subsections (b) and (c) of this section and this subsection.

(B) The material shall be applied not only to the interior surfaces of the service doorstep treads but also to the exterior, if not covered by undercoating.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-166. Stirrup steps.

(a) There shall be at least one (1) 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 windshield and lamps are easily accessible from the ground.

(b) Steps are permitted in or on the front bumper, in lieu of the stirrup steps, if the windshield and lamps are easily accessible for cleaning from that position.

(c) Type A buses are exempt.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-167. Stop signal arm.

(a) There shall be a stop signal arm installed on left outside of body.

(b) It shall meet applicable requirements of FMVSS 131.

(c) The arm shall be of an octagonal shape with white letters and border and a red background and may be of reflective material meeting United States Department of Transportation Federal Highway Administration FP-85 Type 2A or Type 3A.

(d) The flashing strobe lights are standard (LED lights are an allowable option) and shall be connected to the alternating red flashing signal lamp circuit.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

"LED" means light-emitting diode.

6 CAR § 335-168. Storage compartment.

(a)(1) If tools, tire chains, and/or tow chains are carried on the bus, a container of adequate strength and capacity may be provided.

(2) Such storage container may be located either inside or outside the passenger compartment but, if inside, it shall:

(A) Have a cover (a seat cushion may not serve this purpose) capable of being securely latched; and

(B) Be fastened to the floor convenient to either the service or the emergency door.

(b)(1) Optional underneath storage space shall have a minimum of fifteen cubic feet (15 cu. ft.) of usable storage.

(2) A locking device shall secure each entrance to storage.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-169. Sun shield.

An interior adjustable transparent sun shield not less than six inches by thirty inches (6" x 30") for Type B, Type C, and Type D vehicles, and not less than six inches by sixteen inches (6" x 16") for Type A vehicles with a finished edge shall be installed in a position convenient for use by the driver.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-170. Tail pipe.

(a)(1) The tailpipe shall not exit beneath any fuel filler location or beneath any emergency door.

(2) The tailpipe may be flush with, but shall not extend out more than two inches (2”) beyond:

(A) The perimeter of the body for a side-exit pipe; or

(B) The bumper for a rear-exit pipe.

(b)(1) The tailpipe shall exit:

(A) To the left of the emergency exit door in the rear of the vehicle; or

(B) To the left side of the bus in front or behind the rear drive axle.

(2) The tailpipe exit location on all Type A buses may be according to the manufacturer’s standard.

(3) The tailpipe shall not exit beneath any:

(A) Fuel filler location; or

(B) Emergency door.

(4) Rear engine buses are exempt from left side tailpipe requirement.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-171. Undercoating.

(a) The entire underside of the bus body, including floor sections, cross member

and below floor line side panels, shall be coated with rust-proofing material for which the material manufacturer has issued a notarized certification of compliance to the bus body builder that materials meet or exceed all performance requirements of SAE International J1959.

(b) The undercoating material shall:

(1) Be applied with suitable airless or conventional spray equipment to the undercoating material at the manufacturer recommended film thickness; and

(2) Show no evidence of voids in the cured film.

(c) The undercoating material shall not cover any exhaust components of the chassis.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-172. Ventilation.

(a) Auxiliary fans shall meet the following requirements:

(1) A right hand and left hand mount driver defroster fan shall be installed in all Type B, Type C, and Type D units;

(2) A fan for the left side shall be placed in a location where it can be adjusted to its maximum effectiveness;

(3) A fan for the right side shall be in a location where it can be adjusted to its maximum effectiveness;

(4) The fan shall be a minimum six-inch diameter; and

(5)(A) The fan shall be covered with a protective cage.

(B) A separate switch shall control the fan motor.

(b) The body shall be equipped with a suitably controlled ventilating system of sufficient capacity to maintain the proper quantity of air under operating conditions without opening windows except in extremely warm weather.

(c) Static-type nonclosable exhaust ventilation shall be installed in a low-pressure area of the roof.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-173. Warranty.

(a)(1) The body shall have a five-year (from the date the unit is put into service) per one hundred thousand (100,000) miles warranty.

(2) The limited warranty shall include:

(A) The main body structural components;

(B) Rust perforation of interior and exterior sheet metal paint adhesion; and

(C) Passenger/driver seat frames.

(b)(1) A written engine warranty is required.

(2) A minimum of five (5) years – one hundred thousand (100,000) miles (one hundred percent (100%) parts and labor) on the diesel engine for Type B, Type C, and Type D units is required.

(3) Type A is manufacturer's standard.

(c)(1) Diesel engines shall be standard.

(2) Other engines shall have the manufacturer's standard warranty.

(d) The remaining items manufactured by the final stage manufacturer shall have a two-year (from date bus is put into service) per unlimited miles warranty.

(e) All items supplied by an outside vendor shall be warranted by the final stage manufacturer for one (1) year (from date bus is put into service) per unlimited miles.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-174. Wheelhousing.

(a) The wheel housing opening shall allow for easy tire removal and service.

(b)(1) Wheel housing shall be attached to floor sheets in such a manner to prevent any dust, water, or fumes from entering the body.

(2) Wheel housing shall be constructed of minimum sixteen-gauge steel.

(c) The inside height of the wheel housing above the floor line shall not exceed

twelve inches (12”).

(d) The wheel housing shall provide clearance for installation and use of tire chains on dual power-driving wheels.

(e) No part of a raised wheel housing shall extend into the emergency door opening.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-175. Windows.

(a)(1)(A) An adjustable split sash window shall be mounted inside of the bus body between each framing post.

(B) Safety glass shall be set in an acceptable manner in a sturdy, extruded, or die-formed frame to provide adequate support for the glass.

(C) A permanent mark showing the grade of glass shall be visible and glass shall be a minimum of one-eighth inch (1/8”) thick.

(2)(A) A minimum clear vertical opening of not less than nine inches (9”) shall be provided by lowering the top sash.

(B) The bottom sash shall be stationary.

(C) A movable window shall:

(i) Be controlled by an approved latch having finger-touch opener providing for ease of operation; and

(ii) Have a minimum of injury-prone projections.

(D) Window latches must be replaceable or rebuildable without:

(i) Disassembling the complete window frame; or

(ii) Removing the window from the body.

(E) Also, individual window latches or repair parts must be available and part numbers included in the required body parts catalog.

(F) Window seals and visors or drip molding shall be installed and the unit shall provide ample protection from leakage in the hardest rain.

(b) For ventilation purposes, the driver's window shall be:

(1) Adjustable; and

(2) Equipped with a positive latch that can be secured from the inside of the bus.

(c)(1)(A) There shall be installed, in the rear door, two (2) windows (one (1) upper, one (1) lower) installed in a waterproof manner.

(B) Glass shall be the same type as for side windows.

(2)(A) Rear side windows located at each side of the emergency door shall be installed in a waterproof manner.

(B) The glass area shall be:

(i) Large enough to provide desirable vision to the rear; and

(ii) Of the same quality and grade as for side windows.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-176. Windshield washers.

(a) A windshield washer system shall be provided.

(b)(1) Windshield washers shall be electrically operated.

(2) The washer reservoir shall:

(A) Be made of hard plastic or other approved material; and

(B) Have a capacity of at least one-half gallon (1/2 gal.).

(3) Flexible plastic bags are not acceptable.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-177. Windshield wipers.

(a) A windshield wiping system, two-speed or more, shall be provided.

(b) The wipers shall:

(1) Be operated by one (1) or more electric motors of sufficient power to operate wipers; and

(2) Meet FMVSS 104.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FMVSS" means Federal Motor Vehicle Safety Standards.

6 CAR § 335-178. Wiring.

(a) All wiring shall conform to current standards of SAE International.

(b) **Circuits.**

(1) Wiring shall be arranged in circuits as required with each circuit protected by a fuse or circuit breaker or FET.

(2) A system of color and number coding shall be used and an appropriate identifying diagram shall be provided to the end user along with the wiring diagram provided by the chassis manufacturer.

(3) A system of color and number coding shall be used on buses manufactured after January 1, 1993.

(4)(A) The following body interconnecting circuits shall be color-coded as noted:

FUNCTION	**COLOR**
Left rear directional light	Yellow
Right rear directional light	Dark green
Stoplights	Red
Back-up-lights	Blue
Taillights	Brown
Ground	White
Ignition feed, primary feed	Black

(B) The color of the cables shall correspond to SAE International J1128.

(5) Wiring shall be arranged in at least six (6) regular circuits as follows:

(A) Head, tail, stop (brake), and instrument panel lamps;

(B) Clearance and stepwell lamps (stepwell lamp shall be actuated when service door is opened);

(C) Dome lamp (dual row – three (3) per side minimum on Type B, Type C, and Type D units);

(D) Ignition and emergency door signal;

(E) Turn signal lamps; and

(F) Alternately flashing signal lamps.

(6) Any of the above combination circuits may be subdivided into additional independent circuits.

(7) Whenever heaters and defrosters are used, at least one (1) additional circuit shall be installed.

(8) Whenever possible, all other electrical functions, such as sanders and electric-type windshield wipers, shall be provided with independent and properly protected circuits.

(9) Each body circuit shall be:

(A) Coded by number or letter on a diagram of circuits; and

(B) Attached to the body in a readily accessible location.

(c)(1) All wiring shall have an amperage capacity equal to or exceeding the designed load.

(2) All wiring splices are to be done at an accessible location and noted as splices on the wiring diagram.

(d) A body wiring diagram of easily readable size shall be:

(1) Furnished with each bus body; or

(2) Affixed in an area convenient to the electrical accessory control panel.

(e) The body power wire shall be attached to special terminal on the chassis.

(f) All wires passing through metal openings shall be protected by a grommet.

(g)(1) Wires not enclosed within body shall be fastened securely at intervals of not more than eighteen inches (18”).

(2) All joints shall be soldered or joined by equally effective connectors.

(h) See 6 CAR § 334-112(c), Electrical wires and terminals, for additional

information.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "FET" means field effect transistor.

6 CAR § 335-179. Child safety alarm system.

(a) All school buses shall be equipped with an electronic child safety alarm system.

(b) The system shall be armed by the operation of the eight-way light system.

(c) When the key is placed in the off position, the dome lights shall be activated.

(d) The driver will have sixty (60) seconds to:

(1) Walk to the rear of the bus; and

(2) Deactivate the system by either:

(A) Raising the rear emergency door handle; or

(B) Pressing a button on the rear bulkhead.

(e) The system will confirm the system deactivation by turning off or flashing the dome lights.

(f) If the driver fails to deactivate the system, the headlights will flash and the horn will honk intermittently.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-180. Miscellaneous.

(a) Type A, Type B, and Type C units shall be furnished with an operator's manual and a body parts manual.

(b) Each order of Type D units shall be supplied with:

(1) An owner's manual;

(2) A body parts manual; and

(3) A chassis parts book.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-181. General requirements for specially equipped school buses.

School buses designed for transporting children with special transportation needs shall comply with specifications set forth by the National Congress on School Transportation, in addition to Arkansas minimum standards, in effect on the date of manufacture.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

6 CAR § 335-182. Required qualifications for bidders.

(a) The dealership shall have:

(1) A direct franchise agreement with the final stage manufacturer for buses sold in Arkansas;

(2) An adequate building and facilities for repair and servicing of buses;

(3) An adequate inventory of parts for warranty and repair work;

(4) Trained personnel located in Arkansas, qualified for service and warranty repair on equipment covered by the final stage manufacturer; and

(5) An adequate lot for the storage of buses.

(b) All shipping shall be F.O.B. dealership's warranty and service location in Arkansas.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "F.O.B." means Free on Board.

6 CAR § 335-183. Alternative fuels.

(a) Alternative fuel school buses shall meet the following requirements:

(1) The chassis shall meet all specifications previously mentioned in bus

chassis specifications, 6 CAR § 335-104;

(2) The chassis shall meet all applicable Federal Motor Vehicle Safety Standards (FMVSS); and

(3) The fuel system integrity shall meet the specified leakage performance standards when impacted by a moving contoured barrier in accordance with test conditions specified in FMVSS No. 301, Fuel System Integrity, or FMVSS No. 303, Fuel System Integrity of Compressed Natural Gas Vehicles, as applicable.

(b)(1) Original equipment manufacturers (OEMs) and conversion systems using compressed natural gas (CNG) shall comply with National Fire Protection Association Specification 52-2013, Compressed Natural Gas Vehicular Fuel Systems.

(2) Fuel systems using liquefied petroleum gas (LPG) shall comply with National Fire Protection Association Specification 58-2014, Liquefied Petroleum Gases Engine Fuel Systems.

(c)(1) A fuel tank or tanks for vehicles of less than fifty-four-passenger capacity powered by LPG or CNG shall have a minimum forty-gallon capacity.

(2) A fuel tank or tanks for vehicles of fifty-four (54) or more passenger capacity powered by LPG or CNG shall have a minimum sixty-gallon capacity.

(d)(1) Natural gas-powered buses may be equipped with an interior/exterior gas detection system.

(2) All natural gas-powered buses may be equipped with an automatic or manual fire detection and suppression system.

(e) All materials and assemblies used to transfer or store alternative fuels shall be installed outside the passenger/driver compartment.

(f) All Types C and D buses using alternative fuels shall meet the same base requirements of bus chassis specifications, 6 CAR § 335-104, for passenger load.

(g) The total weight shall not exceed the vehicle's GVWR when loaded to rated capacity.

(h) The manufacturer supplying the alternative fuel equipment must provide the owner and operator with adequate training and certification in fueling procedures, scheduled maintenance, troubleshooting, and repair of alternative fuel equipment.

(i) All fueling equipment shall be:

(1) Designed specifically for fueling motor vehicles; and

(2) Certified by the manufacturer as meeting all applicable federal, state, and industry standards.

(j) All on-board fuel supply containers shall meet all appropriate requirements of the American Society for Mechanical Engineering (ASME) code, United States Department of Transportation regulations or applicable FMVSSs and National Fire Protection Association standards.

(k) All fuel supply containers shall be securely mounted to withstand a static force of eight (8) times their weight in any direction.

(l)(1) All safety devices that discharge to the atmosphere shall be vented to the outside of the vehicle.

(2) The discharge line from the safety relief valve on all school buses shall be located in a manner appropriate to the characteristics of the alternative fuel.

(3) Discharge lines shall not pass through the passenger compartment.

(m)(1) CNG buses shall have a positive, quick-acting (one-fourth (1/4) turn) shut-off control valve installed in each gaseous fuel supply line, as close as possible to the fuel supply containers.

(2) The valve controls shall be placed in a location easily operable from the exterior of the vehicle.

(3) The location of the valve controls shall be clearly marked on the exterior surface of the bus.

(n) An electrical grounding system shall be required for grounding of the fuel system during maintenance-related venting.

(o) Fuel systems identified as compatible with biodiesel must be provided with components compatible with biodiesel conforming to the specifications of ASTM D6751, Standard Specification for Biodiesel Fuel Blendstock (B100) for Middle Distillate Fuels.

(p) **High voltage-powered vehicles.** Buses utilizing a high voltage propulsion system (more than forty-eight (48) nominal volts) shall meet the requirements of FMVSS 305, Electric Powered Vehicles: Electrolyte Spillage and Electrical Shock

Protection, except for the following:

(1) The propulsion power source (batteries, fuel cells, etc.) shall be located outside the passenger compartment.

(2) The propulsion power source enclosure shall be constructed to conform to the power source manufacturer's requirements and recommendations.

(3) Due to the much larger size and quantities of the propulsion power sources on larger vehicles, buses over ten thousand pounds (10,000 lbs.) are permitted to exceed the five liter (5.0 L) spillage constraint of Section 5.1, electrolyte damage from propulsion batteries and the requirements to statically rotate the vehicle on its longitudinal axis post-test.

Authority. Arkansas Code §§ 6-19-101, 6-21-304.

Codification Notes. "GVWR" means gross vehicle weight rating.