ADOPTED REGULATION OF THE

STATE BOARD OF EDUCATION

LCB File No. R016-98

Effective April 14, 1998

EXPLANATION – Matter in *italics* is new; matter in brackets **[ ]** is material to be omitted.

AUTHORITY: §§2, 6-8, 15, 18, 19, 22, 24, 28, 34 and 35, NRS 385.080, 392.400 and 392.410; §§3-5, 9-14, 16, 17, 20, 21, 23, 25-27, 29-33, 36 and 37; NRS 385.080 and 392.400.

Section 1. Chapter 392 of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 9, inclusive, of this regulation.

Sec. 2. *As used in NAC 392.655 to 392.687, inclusive, of this regulation, unless the context otherwise requires, the words and terms defined in sections 3, 4 and 5 of this regulation have the meanings ascribed to them in those sections.*

Sec. 3. *"Strap" has the meaning ascribed to it in 49 C.F.R. § 571.209(S3).*

Sec. 4. *"Webbing" has the meaning ascribed to it in 49 C.F.R. § 571.209(S3).*

Sec. 5. *"Wheelchair" has the meaning ascribed to it in 49 C.F.R. § 571.222(S4).*

Sec. 6. *1. Each school bus must have a removable kit designed for the cleanup of bodily fluids that is resistant to moisture. The kit must be mounted in an accessible place within the driver's compartment. The place must be marked to indicate the location of the kit. The kit may be mounted in an enclosed compartment if the compartment is labeled with letters that are not less than 1 inch in height and that indicate the contents of the compartment.*

2. The kit must include, without limitation:

(a) One packet of a solution that contains a red-10 dye and that is used to solidify bodily fluids;

(b) Two antiseptic wipes;

(c) One antimicrobial wipe for cleansing hands;

(d) One disposal germicidal wipe;

(e) One pair of latex gloves;

(f) One safety shield; and

(g) One red bag that is marked "biohazard."

3. As used in this section, "biohazard" means a biological agent that may be hazardous to persons or the environment.

Sec. 7. *1. Each school bus must be equipped with at least three warning devices that:*

(a) Meet the requirements set forth in 49 C.F.R. § 571.125; and

(b) Are mounted in an accessible place in each school bus.

2. Any emergency equipment stored on a school bus may be mounted in an enclosed compartment if the compartment is labeled with letters that are not less than 1 inch in height and that indicate the contents of the compartment.

Sec. 8. *1. Each school bus designed to transport pupils with disabilities must be equipped with at least one durable instrument designed to cut a strap or webbing used to secure a wheelchair. The instrument must be:*

(a) Secured in a location that is accessible to the driver while he is secured in his seat; and

(b) Designed to prevent the operator of the instrument or other persons from being injured during its use.

2. Each item of equipment used for safety, mobility assistance or health support, including, without limitation, crutches, a wheelchair, walker, cane or other device used as an ambulatory aid, oxygen bottles, tanks, valves or equipment used to administer intravenous medication or to drain bodily fluids, must be:

(a) Secured in a manner to withstand a pulling force of five times the weight of the item; or

(b) Stored in an enclosed latched compartment that is capable of withstanding a force applied to its interior equal to five times the weight of its contents without damage to the integrity of the compartment.

3. The volume of such an oxygen bottle must be not more than:

(a) Twenty-two cubic feet if it contains liquid oxygen; and

(b) Thirty-eight cubic feet if it contains compressed gas.

4. A tank or valve must be positioned on the school bus in a manner that protects it from direct sunlight, heater vents or other sources of heat.

Sec. 9. *1. Except as otherwise provided in subsection 2, when determining the passenger capacity of a school bus, the area of a power lift or the area used to secure an occupied wheelchair may be considered four seating positions.*

2. The provisions of subsection 1 may not be used to determine the actual number of passengers on the school bus.

Sec. 10. NAC 392.500 is hereby amended to read as follows:

392.500 1. Every school bus purchased:

(a) After February 10, 1972, and before **[**June 1, 1986,**]** *March 1, 1996,* for the transportation of pupils must conform to the minimum national standards for school buses

established by the Secretary of Transportation pursuant to the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. §§ 1382 et seq.), and *any* more stringent standards adopted by the state board of education *that were* in effect at the time the *school* bus was purchased; or

(b) On or after **[**October 13, 1987,**]** *March 1, 1996,* must conform to the **[**minimum**]** national standards for school buses **[**established by the Secretary of Transportation pursuant to the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. §§ 1382 et seq.),**]** *set forth in 49 C.F.R. Part 571* and *the National Standards for School Transportation, 1995 edition* and the more stringent standards *set forth* in NAC 392.501 to 392.687, inclusive.

2. Nothing in this section shall be construed to prevent the Federal Government or the government of any state or political subdivision thereof from establishing a safety requirement applicable to motor vehicles or motor vehicle equipment procured for its own use if such requirement imposes a higher standard of performance than that required to comply with the otherwise applicable federal standard.

Sec. 11. NAC 392.501 is hereby amended to read as follows:

392.501 NAC 392.501 to **[**392.645,**]** *392.621,* inclusive, *and sections 6 and 7 of this regulation* apply to all school buses, unless **[**a**]** *:*

1. A different standard is required pursuant to NAC 392.655 to 392.687, inclusive, *and sections 8 and 9 of this regulation,* for school buses designed to transport **[**handicapped pupils.**]** *pupils with disabilities; or*

2. As set forth in paragraph (a) of subsection 1 of NAC 392.500, different standards were in effect at the time the school bus was purchased.

Sec. 12. NAC 392.503 is hereby amended to read as follows:

392.503 The **[**following are adopted**]** *state board of education hereby adopts* by reference:

1. **[**Standard Method of Salt Spray (Fog) Testing" B-117, which is available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, for a price of $5.

2. Federal Specification TT-C-520a,**]** *Military Specification MIL-PRS-62218,* which is available from the **[**General Services Administration, Specification and Consumer Information Distribution Center, Washington Navy Yard, Building 197, Washington, DC 20407,**]** *Defense Automated Printing Service, 700 Robbins, Building 4D, Philadelphia, Pennsylvania 19111,* for a price of **[**$5.50.

3. The standards for the:

(a) Location and length of cable for the battery;

(b) Capacity of the alternator;

(c) Length of the frame;

(d) Location of the front of the fuel tank and the filler spout;

(e) Position of instruments, gauges and indicators; and

(f) Rating of a heater, code 001,

of the School Bus Manufacturers Institute, January 1985 edition, which is available from the School Bus Manufacturers Institute, Division of Truck Body and Equipment Association, Suite 1220, #5530 Wisconsin Avenue, Washington, DC 20015, for a price of $5.75.

4. The standards for:

(a) Wiring;

(b) The horn, J-377;

(c)] *$5.00.*

2. The backup alarm [, SAE, 994b;

(d) Defrosters and defoggers, SAE J-381 and J-382; and

(e) The hose used in a heater, SAE J20c,] *standards, SAE J 994,* of the Society of Automotive Engineers, which are available from the Society of Automotive Engineers, [Inc.,] *International,* 400 Commonwealth Drive, Warrendale, [PA 15096,] *Pennsylvania 15096-0001,* for a price of [$8 for each standard.

5. Standards:

(a) Concerning the construction of a bus, 220 and 221;

(b) Concerning the location of the fuel tank, 301;

(c) Concerning the emergency door, 217, S5.4.2.1.(b),

of the Federal Motor Vehicle Safety Standards, which are available from the National Highway Traffic Safety Administration, Washington, DC 20590, for a price of $1 for each standard.] *$42.00, plus $4.50 for shipping and handling.*

3. The National Standards for School Transportation, 1995 edition, adopted at the National Conference of School Transportation which is available from the Central Missouri State University Safety Center, Humphreys 201, Warrensburg, Missouri 64093, for a price of $20.00.

Sec. 13. NAC 392.513 is hereby amended to read as follows:

392.513 *1.* The front bumper must:

[1.] *(a)* Be furnished by the manufacturer of the chassis as part of the chassis [;

2.] *unless the manufacturer of the chassis and the manufacturer of the body agree that the manufacturer of the body will furnish the front bumper;*

(b) Except for a bumper that is capable of absorbing energy, be constructed of pressed steel channel or an equivalent material at least 3/16 of an inch thick and at least 8 inches wide;

(c) Extend beyond the most forward part of the body, including*, without limitation,* the grille, hood and fenders **[**, and extend**]** *;*

(d) Extend to the outer edges of the fenders at the top line of the bumper; and

[3.**]** *(e)* Be of sufficient strength to permit:

[(a) Pushing**]** *(1) The pushing of* a *bumper of another* vehicle of equal gross **[**vehicle**]** weight without permanent distortion to the bumper, chassis or body; and

[(b)**]** *(2)* The *school* bus to be lifted **[**by a vertical force applied to the bottom of**]** *by a chain that passes under the bumper or that passes through* the bumper *if there are holes in the bumper for this purpose,* without damaging either the bumper or its mountings.

2. An eye or hook used for towing may be attached to the school bus if it does not extend beyond the front bumper. If such an eye or hook is attached to the frame of the chassis, it must be furnished by the manufacturer of the chassis and installed in accordance with the standards of the manufacturer of the chassis.

Sec. 14. NAC 392.559 is hereby amended to read as follows:

392.559 The manufacturer of the chassis **[**shall**]** *or an agent thereof may* coat the undersides of the front fenders *constructed of steel or metallic* with a rustproofing compound certified by its manufacturer to meet or exceed all requirements of **[**paragraph 3.4 of Federal Specification TT-C-520b, using the modified test.**]** *Military Specification MIL-PRS-62218.*

Sec. 15. NAC 392.565 is hereby amended to read as follows:

392.565 An audible alarm **[**may**]** *must* be installed behind the rear axle that will automatically sound when the *school* bus is in reverse. It must comply with the backup alarm standards **[**(SAE 994b)**]** *, SAE J 994,* of the Society of Automotive Engineers, specifying **[**97 plus or minus 4 decibels per an option unit**]** *a minimum of 97 decibels* for vehicles with rubber tires.

Sec. 16. NAC 392.569 is hereby amended to read as follows:

392.569 1. The rear bumper must:

(a) Be *constructed* of pressed steel channel or an equivalent material at least 3/16 of an inch thick and **[**8 inches wide;**]** *at least:*

(1) Eight inches wide for a school bus that is classified as a type A-II pursuant to the National Standards for School Transportation, 1995 edition; or

(2) Nine and one-half inches wide for a school bus that is classified as a type A-I, B, C or D pursuant to the National Standards for School Transportation, 1995 edition;

(b) Be of sufficient strength to permit pushing by another vehicle without permanent distortion;

(c) Be wrapped around the back corners of the *school* bus and extend forward at least 12 inches, measured from the most rear point of the body at the floor line;

(d) Extend at least 1 inch beyond the most rear part of the body surface measured at the floor line;

(e) Be attached to the frame of the chassis to permit easy removal;

(f) Be braced to protect against an impact from the side or rear; and

(g) Be attached so as to discourage hitching of rides.

2. **[**The bumper provided by the manufacturer of the chassis may be used on type A buses.**]** *A bumper that is capable of absorbing energy may be used for the rear bumper and must:*

(a) Be attached so as to discourage hitching of rides; and

(b) Be of sufficient strength to withstand repeated impacts without damage to the bumper, chassis or body in accordance with the applicable performance standards set forth in 49 C.F.R. Part 581.

3. Upon request by the original purchaser of a school bus, the manufacturer of a bumper that is capable of absorbing energy shall provide to the purchaser documentation from an approved test facility that indicates that the bumper meets the performance standards provided in paragraph (b) of subsection 2.

Sec. 17. NAC 392.571 is hereby amended to read as follows:

392.571 The body of the school bus **[**, to include the hood, cowl and fenders,**]** must be painted National School Bus Yellow, except:

1. The exterior trim of the body **[**, rub rails, wheels, front bumper, lamp hood, arrow for the emergency door, and any lettering**]** must be painted black.

2. The rear bumper may be painted black or covered with reflective material.

3. The **[**top**]** *portion of the roof between the front and rear roof caps* may be painted white **[**.**]** *extending down to the drip rails on the sides of the body.*

4. The hood may be painted with nonreflective paint.

Sec. 18. NAC 392.581 is hereby amended to read as follows:

392.581 1. Each *school* bus must be equipped with at least one pressurized, dry chemical fire extinguisher complete with hose. The fire extinguisher must be approved by the Underwriters Laboratories, Inc. with a rating of **[**2A10BC**]** *2A30BC* or greater. The extinguisher must be mounted in a bracket, located in the driver's compartment and readily accessible to the driver and passengers. A pressure gauge must be mounted on the extinguisher that is easily read without moving the extinguisher from its mounting.

2. The operating mechanism must be sealed with a seal which will not interfere with the use of the fire extinguisher. **[**The extinguisher must be all metal, except for the hose for the discharge.**]**

Sec. 19. NAC 392.583 is hereby amended to read as follows:

392.583 1. Each *school* bus must have a **[**sealed,**]** removable kit for first aid that is resistant to moisture and dust. **[**It**]** *Except as otherwise provided in subsection 2, the kit* must be mounted in an accessible place within the driver's compartment. The place must be marked to indicate **[**its location.**]** *the location of the kit.* A list of the contents must be affixed to the inside of the front cover of the kit.

2. *In a school bus that is classified as a type A-II pursuant to the National Standards for School Transportation, 1995 edition, the kit may be mounted in any accessible place.*

3. Each kit must include **[**:**]** *, without limitation:*

(a) Two rolls of adhesive tape, 1 inch x 2 1/2 yards;

(b) Twenty-four sterile gauze pads, 3 inches x 3 inches;

(c) One hundred adhesive bandages, 3/4 inch x 3 inches;

(d) **[**Twelve**]** *Eight* bandage compresses, 2 inches;

(e) **[**Twelve**]** *Ten* bandage compresses, 3 inches;

(f) Two sterile gauze roller bandages, 2 inches x 6 yards;

(g) Two triangular bandages, 40 inches x 36 inches x 54 inches, each with two safety pins;

(h) Three sterile gauze pads, 36 inches x 36 inches;

(i) Three sterile eye pads; **[**and**]**

(j) One pair of scissors, with rounded ends **[**.**]** *;*

(k) One pair of latex gloves; and

(l) One artificial airway for use in mouth-to-mouth resuscitation.

Sec. 20. NAC 392.593 is hereby amended to read as follows:

392.593 1. The ceiling and walls of the *school* bus must be insulated with material to deaden sound and reduce vibration to a minimum. If thermal insulation is **[**used,**]** *specified by the manufacturer,* it must be fire resistant **[**and**]** *,* approved by the Underwriters Laboratories, Inc. *and approximately 1 1/2 inches in thickness with a minimum R-value of 5.5. The insulation must be installed in a manner that prevents it from sagging.*

2. **[**If**]** *Except as otherwise provided in subsection 3, if* insulation for the floor is used it must be:

(a) **[**Five**]** *Plywood that is five* ply *nominal* and **[**at least**]** 5/8 of an inch thick; or

(b) **[**Equal**]** *A material that is equal* to or **[**exceed**]** *exceeds* the properties of softwood plywood for exterior uses of C-D grade as specified in standards issued by the Department of Commerce.

3. The insulation for the floor of a school bus that is classified as a type A-II pursuant to the National Standards for School Transportation, 1995 edition, must be plywood that is five ply nominal and 1/2 of an inch thick.

4. If plywood is used to insulate the floor of a school bus pursuant to subsection 2 or 3, each of the exposed edges must be sealed.

Sec. 21. NAC 392.595 is hereby amended to read as follows:

392.595 1. The interior of the *school* bus must not have projections which might cause an injury. All ceilings and walls must be lined. If the construction of the ceiling contains lapped joints, the forward panel must be lapped by the rear panel and any exposed edges must be beaded, hemmed, flanged or otherwise treated to reduce sharp edges.

2. *The interior of a school bus may have:*

(a) A compartment used for storage of tools, tire chains and tow chains; and

(b) An overhead compartment used for storage other than as provided in paragraph (a).

3. An overhead compartment used for storage must:

(a) Have a rated maximum capacity;

(b) Be attached to the school bus sufficiently to withstand a minimum force of 20 times the rated maximum capacity;

(c) Have rounded corners and edges that have a minimum radius of 1 inch; and

(d) Be free of any protrusions of more than 1/4 of an inch.

4. The driver's area forward of the foremost padded barriers must be large enough to mount the required safety and operating equipment.

[3.**]** *5.* Every *school* bus must be constructed so that the level of noise for the occupant nearest to the primary source of noise in the vehicle does not exceed **[**90**]** *85* decibels base audible.

Sec. 22. NAC 392.611 is hereby amended to read as follows:

392.611 1. Except as otherwise provided in subsection 4, each *school* bus must have the following rub rails:

(a) One rub rail located on each side of the *school* bus, approximately at the level of the seat, that extends from the rear side of the entrance door completely around the body of the *school* bus, except over the emergency door, to the point of curvature near the outside cowl on the left side.

(b) One rub rail located immediately below the bottom line of the window and protecting the same longitudinal area as the rub rail at the level of the seats except that it must only extend under all the windows along each side. This rub rail may be built in.

(c) One rub rail, located approximately at the line of the floor, that covers the same longitudinal area as the rub rail at seat level, except at the wheelhousings, and extends only from the rear of the entrance door completely around the body of the *school* bus.

(d) One rub rail, located at the bottom of the skirt panel, that protects the same longitudinal area as the rub rail at the line of the floor, except at the wheelhousing, and extends only to the radii of the right and left rear corners.

2. All rub rails must be:

(a) Attached at each post of the body and all other upright structural members;

(b) At least 4 inches in width in their finished form;

(c) Corrugated or ribbed;

(d) Painted black; and

(e) Constructed of 16 gauge steel or a similar material of equivalent strength.

3. The three lower rub rails must be applied on the outside of the body of the *school* bus, or outside of the posts of the body. Rub rails which are pressed in or snapped on do not satisfy this requirement.

4. The rub rails of **[**types A and B**]** *school* buses that use the body provided by the manufacturer of the chassis, or **[**types C and D**]** *school* buses that use a compartment for luggage or have the engine in the rear of the *school* bus, need not extend around the rear corners.

Sec. 23. NAC 392.621 is hereby amended to read as follows:

392.621 1. The tread of the steps must be constructed of at least 24-gauge, cold-roll steel designed with grooves which run perpendicularly to the length of the tread of the step.

2. The metal tread and the platform at the line of the floor must **[**be**]** *:*

(a) Be insulated from the heat of the engine if the engine of the school bus is located in the front of the school bus; and

(b) Be permanently bonded to a rubber floor covering or other material with a resistance to wear and abrasion equal to top grade rubber. The rubber floor covering *or other material that is bonded to the tread of the steps* must:

[(a)**]** *(1)* Be ribbed, 3/16 of an inch deep and have a white nosing of 1.5 inches as an integral piece without any joint;

[(b)**]** *(2)* Be specially compounded for resistance to abrasion and for a high coefficient of friction;

[(c)**]** *(3)* Be flexible enough to be bent around a mandrel of .5 inch at 130 degrees Fahrenheit and 20 degrees Fahrenheit without breaking, cracking or crazing; and

[(d)**]** *(4)* Have a hardness of 85 to 95 as indicated on a durometer.

Sec. 24. NAC 392.655 is hereby amended to read as follows:

392.655 Any *school* bus that is used for the transportation of pupils who are confined to a wheelchair or other restraining device, which restricts their use of the regular entrance door, must be equipped with a power lift or a ramp, whichever better meets the needs of the situation.

Sec. 25. NAC 392.657 is hereby amended to read as follows:

392.657 **[**All aisles**]** *The aisle* leading to **[**the**]** *at least one* emergency door from the area *of a power lift* for a wheelchair must be at least 30 inches wide.

Sec. 26. NAC 392.659 is hereby amended to read as follows:

392.659 A *school* bus designed to transport pupils with special needs for transportation may be equipped with **[**a radio**]** *an electronic system* which provides two-way communication **[**.**]** *throughout the entire route of the school bus.*

Sec. 27. NAC 392.661 is hereby amended to read as follows:

392.661 1. **[**Devices to fasten a wheelchair to the floor must be provided and attached to the floor or walls or both to secure wheelchairs in a bus used to transport pupils who are confined to wheelchairs. The devices must be of the type that are unlatched or disengaged manually. The devices must be designed to withstand forces up to 2,000 pounds for each

tiedown leg or clamping mechanisms or 4,000 pounds total for each wheelchair, whichever is less.

2. Additional fastening devices must be provided if required by the needs of the pupils using the bus.**]** *A securement system must be installed in a location that does not block access to the special entrance that the school bus is required to have pursuant to NAC 392.685 or the regular service entrance if the power lift is designed to operate within the regular service entrance.*

2. Unless a mechanism for releasing is activated, the securement system must secure the wheelchair so as to prevent an attachment or a coupling from becoming detached if:

(a) Any component of a wheelchair becomes impaired; or

(b) One or more of the tires deflate.

3. The interior of a school bus must have an accessible device used for storage of the securement system that keeps the system clean and securely contained in the passenger compartment.

4. Each piece of the attachment hardware and each component of the securement system must:

(a) Be free of sharp edges; and

(b) Meet the requirements for resistance to corrosion set forth in 49 C.F.R. § 571.209(S4.3).

5. Each securement device and seat belt assembly must be permanently and legibly marked or have a nonremovable label or tag which indicates that it complies with all the applicable

requirements of the National Standards for School Transportation, 1995 edition and the applicable requirements set forth in 49 C.F.R. § 571.222.

6. Upon request by the original purchaser of a securement system, the manufacturer of the securement system or its authorized representative shall provide an original or a copy of a notarized certificate that indicates that the securement system complies with all the applicable requirements of the National Standards for School Transportation, 1995 edition and the applicable requirements set forth in the 49 C.F.R. § 571.222.

7. A school bus equipped with a securement system must contain:

(a) A clear notation of the phone number where information can be obtained relating to the installation, repair and parts of the securement system; and

(b) Detailed instructions relating to the use of the securement system, including, without limitation, a diagram showing the proper placement and positioning of:

(1) A wheelchair; and

(2) Securement devices, including, without limitation, the correct angles of a strap or webbing.

8. The manufacturer of the securement system shall make available to the original purchaser training materials relating to the proper use and maintenance of the securement system.

9. Each securement system must have a method for identifying the components of the securement system and their functions, including, without limitation:

(a) Constructing a seat belt assembly and a wheelchair securement device in a different color or a different shade of the same color; or

(b) Marking a seat belt assembly and a securement device to indicate:

(1) The orientation of a wheelchair on the school bus; and

(2) The name of each component of a seat belt assembly or a securement device and the location in which the component should be used.

10. Each part of a securement system must be:

(a) Provided by the same manufacturer; or

(b) Certified as compatible by the manufacturer of the securement system.

11. A gurney or similar apparatus must be secured parallel to the side of a school bus.

12. As used in this section:

(a) "Attachment hardware" has the meaning ascribed to it in 49 C.F.R. § 571.209(S3).

(b) "Seat belt assembly" has the meaning ascribed to it in 49 C.F.R. § 571.209(S3).

(c) "Securement system" means a system used to secure a wheelchair and its occupant to a school bus.

(d) "Wheelchair securement device" has the meaning ascribed to it in 49 C.F.R. § 571.222(S4).

Sec. 28. NAC 392.665 is hereby amended to read as follows:

392.665 A *school* bus equipped with a *power* lift for wheelchairs used for transporting physically **[**handicapped pupils may**]** *disabled pupils must* display the **[**universal handicapped symbol on the front and rear of the vehicle**]** *international symbol of accessibility* below the windowline. The symbol must be white on blue, must not exceed 12 inches in size, and **[**may**]** *must* be reflectorized.

Sec. 29. NAC 392.667 is hereby amended to read as follows:

392.667 1. **[**If**]** *Except as otherwise provided in subsection 2, if* a power lift for a wheelchair is used, it must be located on the right side of the body, confined within the perimeter of the body of the *school* bus when it is not extended, and not attached to the exterior of the *school* bus.

2. **[**The platform of the lift must:

(a) Be fitted on both sides and the rear with shields which extend above the line of the floor of the platform;

(b) Have edges designed to restrain the wheelchair and to prevent the operator's feet from being entangled while the platform is being raised or lowered;

(c) Have a restraining device attached to the outer edge of the platform to prohibit the wheelchair from rolling off the platform when the lift is in any position other than fully extended to ground level;

(d) Have a self-adjusting, skid resistant plate attached on the outer edge to minimize the incline from the platform to the ground which may also meet the requirement of paragraph (c);

(e) Be resistant to skids;

(f) Be locked in position mechanically by means other than a support or lug in the door when the platform is in the full up position; and

(g) Accommodate a wheelchair which is 30 inches wide.

3.**]** *A power lift for a wheelchair may be located on the left side of the body of the school bus if the school bus is used primarily for the transportation of pupils to the left side of one-way streets.*

3. In addition to the requirements set forth in subsection 1, a power lift must:

(a) Incorporate an emergency method that requires not more than 2 minutes to lower an occupied wheelchair to ground level; and

(b) Be permanently and legibly marked or have a nonremovable label or tag which indicates that it complies with all the applicable requirements of the National Standards for School Transportation, 1995 edition.

4. Upon request by the original purchaser of a power lift, the manufacturer of the power lift shall provide an original or a copy of a notarized certificate that indicates that the power lift complies with all the applicable requirements of the National Standards for School Transportation, 1995 edition.

5. The lifting mechanism must be able to lift at least **[**800 pounds and must allow the platform to rest securely on the ground.

4.**]** *600 pounds.*

6. Controls must be provided to operate the *power* lift from inside or outside of the *school* bus. **[**There must be a means of:

(a) Preventing the platform from falling while in operation because of power failure; and

(b) Raising the lift manually during a power failure.

5.**]**

7. If electrical power is used, a circuit breaker **[**or fuse**]** *that can be reset* must be installed between the source of power and the motor of the **[**lift.

6.**]** *power lift. The circuit breaker must be located as close as possible to the source of power but it must not be located inside the school bus.*

8. The *design of the power* lift must **[**be equipped with adjustable switches or by-pass valves to**]** prevent excessive pressure **[**from building in the hydraulic**]** *that could damage the* system *of the power lift* when the platform **[**reaches the full up or full down position.**]** *is fully lowered or raised or could lift the school bus into the air.*

9. A school bus equipped with a power lift for a wheelchair must contain:

(a) A clear notation of the phone number where information can be obtained relating to the installation, repair and parts of the power lift; and

(b) Detailed instructions that are visible when the door of the power lift is open and that relate to the use of the power lift, including, without limitation, a diagram showing the proper placement and positioning of a wheelchair on the power lift.

10. The manufacturer of the power lift shall make available to the original purchaser of the power lift training materials relating to the proper use and maintenance of the power lift.

Sec. 30. NAC 392.669 is hereby amended to read as follows:

392.669 *1.* If a ramp **[**for a special device for the transportation or safety of a handicapped pupil**]** is used **[**,**]** *in lieu of a power lift,* it must:

[1.**]** *(a)* Be of sufficient strength and rigidity to support the **[**special device,**]** *ramp,* the occupant of the **[**device**]** *ramp* and the attendant, if any;

[2.**]** *(b)* Be equipped with a protective flange on each longitudinal side **[**to keep the special device on**]** *of* the ramp;

[3.**]** *(c)* Have a floor **[**of nonskid construction; and

4.**]** *constructed of nonskid material; and*

(d) Be designed and equipped with handles to permit one person to put the ramp in place for use **[**by the handicapped pupil**]** and return it to its place for storage.

2. A ramp that is installed by the manufacturer in a school bus with a raised floor may be used for an emergency evacuation, but it may not be used as a substitute for a power lift if, pursuant to NAC 392.655, a power lift better meets the needs of the situation.

3. An accessible ramp may be installed for use in an emergency evacuation. The ramp must:

(a) Not obstruct any aisle or exit while in its stowed position; and

(b) Be properly secured and located away from contact with passengers if it is stowed in the passenger compartment.

Sec. 31. NAC 392.671 is hereby amended to read as follows:

392.671 1. The frame of a seat may be equipped with attachments or devices to which belts, restraining harnesses or other devices may be attached.

2. If a restraining device is used, it must **[**:

(a) Have a strap at least 1 7/8 inches wide;

(b) Use a fabric of nylon web, similar to that used for seat belts in automobiles, or other fabric of comparable strength; and

(c) Be designed to provide the restraint necessary to transport the handicapped pupil.

3. No more than one handicapped pupil may be placed in any restraining device at one time.**]** *be made of materials that:*

(a) Will not stain, soil or tear the clothing of an occupant; and

(b) Are resistant to water and fraying.

3. Each floor or wall anchorage that secures a restraining device to the school bus and that is not permanently attached must:

(a) Be of a positive self-locking latch design; and

(b) Be incapable of becoming accidentally disconnected.

4. Each attachment or coupling used as part of the restraining device that is designed to be connected or disconnected frequently must be:

(a) Easily accessible; and

(b) Operable without the use of tools or other mechanical assistance.

Sec. 32. NAC 392.673 is hereby amended to read as follows:

392.673 *All seats must face forward.* The spacing of seats to accommodate any special devices for **[**handicapped children**]** *pupils with disabilities* may be altered if needs of the passengers so require.

Sec. 33. NAC 392.677 is hereby amended to read as follows:

392.677 Tinted glass may be installed in all doors, windows and the windshield **[**. Tinted plastic may be installed in the windows behind the driver's compartment if it permits a minimum of 50 percent outside light coming through the window.**]** *of the school bus consistent with the requirements of state and federal law.*

Sec. 34. NAC 392.683 is hereby amended to read as follows:

392.683 **[**In type C and D buses, there must be 3 steps of equal height in the regular entrance well. An additional fold-out step may be installed to provide a step not more than 6 inches from the ground.**]**

1. Each step on a school bus that is equipped with a power lift must be the full width of the step well, excluding the thickness of the doors in an open position.

2. The school bus must be equipped with a device that is easy to grasp or hold to assist passengers who are entering or exiting the school bus. The device must not have openings that could entangle clothing, accessories or limbs.

Sec. 35. NAC 392.685 is hereby amended to read as follows:

392.685 1. The **[**body of the bus may have**]** *school bus must be equipped with* a special *service* entrance to accommodate a *power* lift **[**to load and unload pupils in wheelchairs. The entrance must be of sufficient width and depth to accommodate the lift, related accessories and the lifting platform.**]** *unless the power lift:*

(a) Is designed to operate within the regular service entrance;

(b) Is capable of being stowed so that it does not block access to the regular service entrance; and

(c) Is located so that it does not impede a person from entering or exiting the school bus.

2. The door posts and headers of the *special service* entrance must be reinforced to provide support and strength equivalent to the areas of the side of the *school* bus not used for doors.

[2. The opening of that entrance:

(a) Must be at least 30 inches wide when the doors are open;

(b) May be at any convenient point**]**

3. The special service entrance and the special service entrance door must be located on the right of the *school* bus . **[**and far enough to the rear to prevent the door, when open, from obstructing the right front regular entrance door; and

(c) May**]** *The special service entrance door must be designed so that when it is open it does not obstruct the regular service entrance door. The opening of the special service entrance may* extend below the floor through the bottom of the skirt of the body, if reinforcements are installed at the front and rear of the opening in the floor to support the floor and give the same strength as other openings in the floor.

[3.**]** *4.* A drip molding must be installed above the opening of the *special service* entrance to divert water from the entrance.

5. A special service entrance door may be located on the left side of the body of the school bus if the school bus is used primarily for the transportation of pupils to the left side of one-way streets.

Sec. 36. NAC 392.687 is hereby amended to read as follows:

392.687 1. **[**Two doors must be used for the special entrance for wheelchairs if the width of the opening exceeds 40 inches.**]** *One door or double doors may be used for the special service entrance.*

2. The materials of the door and the panels and the structural strength must be equivalent to the regular entrance and emergency doors required for all *school* buses. Color, lettering on rub rails and other exterior features must match the adjacent sections of the body.

3. If two manually operated doors are used, the rear door must have a device to fasten it to the header at least at one point. The forward door must have *three-point fastening* devices to

fasten it to the header, to the line of the floor of the body and to the rear door. These devices must afford maximum safety when the doors are closed. The door and hinge mechanism must be of sufficient strength to provide the same type of use as that of a regular entrance door.

4. If power doors are used, they must allow for the release of the doors for opening and closing by the attendant from the platform inside the *school* bus.

5. *If one door is used, the door must be hinged to the forward side of the entrance unless doing so would obstruct the regular service entrance. If the door is hinged to the rearward side of the doorway, the door must use a safety mechanism to prevent it from swinging open if the primary door latch fails.*

6. If double doors are used, the doors must:

(a) Be designed to prevent them from being blown open by the wind; or

(b) Use a safety mechanism to prevent them from swinging open if the primary door latch fails.

7. All doors *used for the special service entrance* must:

(a) Open outward;

(b) Have positive fastening devices to hold doors open;

(c) Be sealed for protection against the weather *;* **[**and, on buses with two doors, be constructed with a flange on the forward door that overlaps the edge of the rear door when it is closed; and**]**

(d) Have a window set in rubber that is **[**within 1 inch of the lower line of any adjacent sash.

6.**]** *:*

(1) Visually similar in size and location to adjacent windows on the body of the school bus other than those windows located on the door; and

(2) Glazed with glazing of the same type and tinting as the fixed glass in other locations on the body of the school bus; and

(e) Be equipped with padding at the top edge of the door opening. The padding must be at least 3 inches wide and 1 inch thick and extend the full width of the door opening.

8. The door must have a device that will actuate *an audible or* a **[**red**]** flashing signal in the driver's compartment if the door is not securely closed and the ignition is in the "on" position.

[7.**]** *9.* A switch must be installed to prevent a lifting mechanism from operating if the *platform* door *of the power lift* is closed.

Sec. 37. NAC 392.505, 392.507, 392.509, 392.511, 392.515, 392.517, 392.519, 392.521, 392.523, 392.525, 392.527, 392.529, 392.531, 392.533, 392.535, 392.537, 392.539, 392.541, 392.543, 392.545, 392.547, 392.549, 392.551, 392.553, 392.555, 392.557, 392.561, 392.563, 392.567, 392.573, 392.575, 392.577, 392.579, 392.585, 392.587, 392.589, 392.591, 392.597, 392.599, 392.601, 392.603, 392.605, 392.607, 392.609, 392.613, 392.615, 392.617, 392.619, 392.623, 392.625, 392.627, 392.629, 392.631, 392.633, 392.635, 392.637, 392.639, 392.641, 392.643, 392.645, 392.663, 392.675, 392.679, 392.681 are hereby repealed.

TEXT OF REPEALED SECTIONS

392.505 Classification of school buses.

1. A type "A" school bus is a vehicle, converted from a van or a body constructed upon a compact truck similar to a van or a front-section vehicle, with a gross vehicle weight rating of 10,000 pounds or less, and that is designed for carrying more than 10 persons.

2. A type "B" school bus is a vehicle, converted from a van or a body constructed and installed upon a van or the chassis of a front-section vehicle or a stripped chassis, with a gross vehicle weight rating of more than 10,000 pounds, and that is designed for carrying more than 10 persons. Most of the engine must be beneath or behind the windshield and beside the driver's seat. The entrance door must be behind the front wheels.

3. A type "C" school bus is a body installed upon a chassis with a flat back cowl, with a gross vehicle weight rating of more than 10,000 pounds, and which is designated for carrying more than 10 persons. All of the engine must be in front of the windshield, and the entrance door must be behind the front wheels.

4. A type "D" school bus is 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 10,000 pounds, and which is designed for carrying more than 10 persons. The engine may be behind the

windshield and beside the driver's seat, at the rear of the bus and behind the rear wheels, or midship between the front and rear axles. The entrance door must be in front of the front wheels.

5. If the number of persons a bus is designed to carry is less than 10 because of modifications required to transport pupils with special needs for transportation, the bus must conform to the standards required in NAC 392.501 to 392.687, inclusive.

392.507 Air cleaner. The system for cleaning the air taken into the engine must be furnished and properly installed by the manufacturer of the chassis to meet the specifications for the engine.

392.509 Axles.

1. The front and rear axles, including the suspension assemblies, must have a gross axle weight rating at ground equal to at least that portion of the load as would be imposed on the axles by the chassis manufacturer's maximum gross vehicle weight rating.

2. A bus may have an axle with two speeds.

392.511 Braking system.

1. Each bus must have a braking system, including a service brake and parking brake. An additional retarding system may also be used.

2. A bus equipped with a pneumatic (air) braking system must have:

(a) A signal, audible and visible to the driver, that gives a continuous warning when the air pressure in the system available for braking is 60 pounds per square inch or less;

(b) An illuminated gauge which indicates, in pounds per square inch, the air pressure in the system available for braking; and

(c) A compressor with a capacity of at least 12 cubic feet per minute.

3. A bus equipped with a braking system that uses a vacuum must have:

(a) A signal, audible and visible to the driver, that gives a continuous warning when the vacuum in the system available for braking is 8 inches of mercury or less;

(b) An illuminated gauge that indicates, in inches of mercury, the vacuum in the system available for braking; and

(c) A reservoir used only for the brakes that ensures a loss in vacuum of no more than 30 percent when the brakes are applied at a full stroke and the engine is not running. A braking system on a gas-powered engine must include a suitable and convenient connection for the installation of a separate reservoir for the vacuum.

4. A bus equipped with a hydraulic braking system must have a signal, audible and visible to the driver, that gives a continuous warning if there is a loss in the flow of fluid from the primary braking system or a loss of electric power for the secondary braking system.

5. A dry reservoir in a braking system must have a check valve or equivalent device to ensure that, in the event of failure or leakage in its connection to the source of compressed air or vacuum, the stored dry air or vacuum will not be depleted by the leakage or failure.

6. All lines for the braking system, including hydraulic lines, must be protected from excessive heat, vibration and chafing.

7. All braking systems must be designed to permit visual inspection of the wear on the brake lining without removal of any components of the chassis.

8. If the bus is equipped with a rear axle with two speeds, the parking brake must operate directly upon the rear axle or wheels so that the parking brake will not be disconnected from the wheels when the rear axle is in the neutral position.

392.515 Certification by manufacturer of chassis. The manufacturer of the chassis shall, upon the request of the department of education, certify to the department of education that its product meets the minimum standards prescribed in NAC 392.501 to 392.687, inclusive, for the items not included in the certification issued pursuant to the requirements of the National Traffic and Motor Vehicle Safety Act, 15 U.S.C. §§ 1381 et seq.

392.517 Clutch. The torque capacity of the clutch must be at least equal to the torque output of the engine.

392.519 Drive shaft. The drive shaft must be protected by a metal guard around the circumference of the drive shaft.

392.521 Battery.

1. The battery must have a minimum capacity rating for cranking when cold equal to the current for cranking required for 30 seconds at 0 degrees Fahrenheit and a minimum reserve capacity rating of 120 minutes at 25 amperes.

2. For types B, C and D buses, the battery must be temporarily mounted on the frame of the chassis by the manufacturer of the chassis. The final location of the battery and the appropriate length of cable must be made according to the objectives for the design of school buses of the School Bus Manufacturers Institute.

392.523 Alternator or generator.

1. The alternator must have the following rated capacities for the following types of buses:

(a) Type A bus, except as provided in paragraph (d), a minimum of 60 amperes per hour.

(b) Type B bus, a minimum of 100 amperes per hour.

(c) Type C or D bus, at least 120 amperes, with a minimum charging of 30 amperes at the manufacturer's recommended idle speed of the engine for a 12-volt system. The alternator must be ventilated and have controls of voltage and, if necessary, controls for current.

(d) Type A bus which is equipped with an electrical power lift, a minimum of 100 amperes per hour.

2. A direct-drive or belt driven generator or alternator may be used. A belt driven alternator or generator must handle the rated capacity of the alternator without a detrimental effect on other components of the engine.

3. The capacity of the alternator must be in accordance with the objectives for the design of the school busses of the School Bus Manufacturers Institute.

392.525 Wiring.

1. In addition to the requirements in this section, all wiring must conform to the applicable recommended standards of the Society of Automotive Engineers.

2. The manufacturer of the chassis shall:

(a) Use a standard color and coding by number for the wiring in the chassis and shall deliver with the chassis a diagram of the wiring of the chassis; and

(b) Install a readily accessible terminal strip or plug on the side of the cowl, towards the body, or at an accessible location in the engine compartment of a vehicle designed without a cowl, that contains the following terminals for the connections to the body:

(1) Main circuit for the body of 100 amperes.

(2) Tail lamps.

(3) Right turn signal.

(4) Left turn signal.

(5) Stop lamps.

(6) Backup lamps.

(7) Lights for the instrument panel with a rheostat controlled by the switch for the head lamp.

392.527 Exhaust system.

1. The tail pipe must be constructed of seamless or electrically welded and corrosion resistant tubing of at least 16 gauge.

2. The tail pipe may extend:

(a) Beyond the rear axle and at least 5 inches beyond the frame of the chassis and be mounted outside of the frame rail of the chassis at the end point; or

(b) To, but not beyond, the body on the left side of the bus, behind the driver's compartment, and to the left of the center of the chassis line and for the following buses end the following distance from the center line of the chassis:

(1) Types A and B buses, manufacturer's standard.

(2) Types C and D buses, 48.5 inches.

3. For a rear mounted engine, the exhaust system may go through the bumper. The inside dimensions of the tubing or the thickness of the wall of the exhaust system must not be reduced after it leaves the muffler.

4. The exhaust system must be properly shielded to prevent the exposure of the fuel tank to excessive heat. The shield must be constructed of sheet steel and be securely attached at any point where a tank for fuel is within 12 inches or less of the exhaust system.

5. The muffler must be constructed of a material resistant to corrosion.

392.529 Front fenders.

1. The front fenders and hood of a conventional bus must tilt forward to allow access to the compartment containing the motor.

2. The total spread of the outer edges of the front fenders, measured at the line of the fender, must be more than the total spread of the front tires when the front wheels are pointing straight ahead.

3. The front fenders must be properly braced and not attached to the body.

392.531 Frame.

1. The design and strength of the frame must be at least equivalent to the frame required for a truck of the same weight capacity that is used on a public highway.

2. A manufacturer who modifies the original frame of the chassis shall guarantee the workmanship and materials used in the modification.

3. A frame may not be modified to extend the wheelbase.

4. A hole in the top or bottom flanges or the side unit of the frame and any welding to the frame is not permitted except as provided or accepted by the manufacturer of the chassis.

5. The length of the frame must be in accordance with the objectives for the design of school buses of the School Bus Manufacturers Institute.

392.533 Fuel tank.

1. The manufacturer of the chassis shall provide a fuel tank with a capacity of at least 30 gallons and an actual draw of 25 gallons. The tank must be filled from and vented to the outside of the body, so that accidental spillage will not drip or drain on any part of the exhaust system.

2. No part of a fuel system located to the rear of the engine compartment, except the filler tube, may extend above the top of the frame rail of the chassis. Lines for fuel must be mounted to obtain maximum possible protection from the frame of the chassis.

3. The installation of the fuel tank and any auxiliary fuel tank must be in accordance with the objectives for the design of school buses of the School Bus Manufacturers Institute.

4. A primary filter for fuel with a replaceable element must be installed between the fuel tank and the engine. A separator for water must be included as part of the primary filter for a diesel engine.

5. The installation of a tank for the use of a fuel other than gasoline or diesel requires the approval of the department of education.

392.535 Governor. If the engine is remotely located from the driver, a tachometer or a governor to limit the speed of the engine to the maximum revolutions per minute recommended by the manufacturer of the engine must be installed. If the engine is not remotely located from the driver, a governor for the engine may be installed.

392.537 Horn. Every bus must be equipped with a horn of standard make, capable of producing complex sound in bands of audio frequencies between 250 and 2,000 cycles per second and tested pursuant to the standard J377 of the Society of Automotive Engineers.

392.539 Instruments, gauges and indicators.

1. The chassis must be equipped with the following instruments, gauges and indicators:

(a) Speedometer.

(b) Odometer that will give accrued mileage including tenths of miles.

(c) Voltmeter or an ammeter with a graduated charge and discharge, if the ammeter and its wiring are compatible with generating capacities of the engine.

(d) Gauge for oil pressure.

(e) Gauge for water temperature.

(f) Gauge for fuel.

(g) Indicator for the high beam of the headlights.

(h) Indicator for the turn signal.

(i) Gauge for air pressure or vacuum and an audible indicator of low pressure as prescribed in subsection 2 of NAC 392.511 for a pneumatic braking system and in subsection 3 of NAC 392.511 for a braking system that uses a vacuum.

(j) Light indicator and an audible indicator as prescribed in subsection 4 of NAC 392.511 for a hydraulic braking system.

2. All instruments, gauges and indicators must be easily accessible for maintenance and repair.

3. Instruments, gauges and indicators must be mounted, in accordance to the objectives for the design of school buses of the School Bus Manufacturers Institute, on the instrument panel so that each is clearly visible to the driver while he is in a normal seated position.

4. All instruments, gauges and indicators, including the indicator for the shift selector for a bus with an automatic transmission, must be illuminated.

392.541 Oil filter. The manufacturer of the chassis shall provide an oil filter with a replaceable element or cartridge. The oil filter must:

1. Be connected by flexible lines or built into, or mounted on, the engine; and

2. Have a capacity of approximately 1 quart.

392.543 Openings in floorboard and firewall. Any opening in the floorboard and firewall between the chassis and the passenger compartment must be sealed.

392.545 Gross vehicle weight.

1. The actual gross vehicle weight of a bus is the sum of the weight of the chassis, the weight of the body of the bus, 150 pounds for the driver's weight and 120 pounds for each pupil.

2. The actual gross vehicle weight of a bus must not exceed:

(a) The manufacturer's gross vehicle weight rating for the chassis; or

(b) When the engine is operated at the manufacturer's recommended maximum revolutions per minute, 185 pounds for each unit of net horsepower.

392.547 Shock absorbers. Every bus must be equipped with double-action shock absorbers in the front and rear that are compatible with the manufacturer's rated capacity of the axle at each wheel.

392.549 Suspension.

1. The capacity of the springs or the suspension assemblies must be equal to the rating of the manufacturer of the chassis of the gross vehicle weight.

2. If rear springs are used, they must be of the progressive type.

392.551 Steering.

1. All buses must be equipped with power steering of the integral type with integral valves.

2. The steering gear must be approved by the manufacturer of the chassis and designed to assure safe and accurate performance when the vehicle is operated with a maximum load and at a maximum speed. Changes may not be made in the steering gear without the approval of the manufacturer of the chassis.

3. There must be clearance of at least 2 inches between the steering wheel and any other surface.

4. The steering gear must provide for:

(a) Accessible adjustment for lost motion; and

(b) Lubrication of all points of wear, except for a sealed unit.

392.553 Tires and rims.

1. Every bus must be equipped with tires and rims of the proper size and a load rating equal to the rating of the manufacturer of the chassis of the gross vehicle weight.

2. Front tires on a school bus must have minimum tread of 4/32 of an inch and rear tires must have a minimum tread of 2/32 of an inch.

3. All tires on a bus must be of the same size and ply rating.

4. If a bus is equipped with a spare tire and rim assembly, it must be of the same size as those mounted on the vehicle.

5. If a tire carrier is required it must be suitably mounted in an accessible location outside of the passenger compartment.

6. Dual rear tires must be provided on type B, C and D school buses.

392.555 Transmission.

1. If a bus is equipped with an automatic transmission, it must have at least three forward speeds and one reverse speed. If the gear selector is not mounted on the steering column, the gear selector must have a detent between each gear position.

2. If a bus is equipped with a manual transmission, second gear and higher must be synchronized unless it is incompatible with the power of the engine. It must have at least three forward speeds and one reverse.

392.557 Turning radius. A chassis with a wheelbase of:

1. Two hundred sixty-four inches or less must have a right and left turning radius of not more than 42 1/2 feet; or

2. Greater than 264 inches must have a right and left turning radius of not more than 44 1/2 fees.

392.561 Distribution of weight. The distribution of weight on a fully loaded bus on a level surface must not exceed the manufacturer's rating for the front gross axle weight and rear gross axle weight.

392.563 Aisle. Every aisle must be at least 12 inches wide at seat level and 15 inches wide at the top of the seat backs.

392.567 Installation of battery by manufacturer of body. If the battery furnished by the manufacturer of the chassis is installed by the manufacturer of the body, it must be securely attached to the tray in a closed, vented compartment in the body skirt. The tray must slide or swing out. The door or cover of the compartment for the battery must be hinged at the front or top and secured by an adequate and conveniently operated latch or other type of fastener.

392.573 Construction. Every bus must be constructed of prime, commercial quality steel or other metal or material with a strength at least equivalent to steel as certified by the manufacturer of the body. All other construction must be in accordance with the Federal Motor Vehicle Safety Standards 220 and 221.

392.575 System for defrosting or defogging windows.

1. Equipment to defrost and defog the windows of a type B, C or D bus must 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 reduce the amount of frost, fog and snow to allow the driver a clear view of each respective area. The defroster must have a separate motor for the blower, in addition to the motor for the heater. Equipment to defrost or defog the windows of a type A bus must direct a sufficient flow of heated air onto the windshield to eliminate frost, fog and snow.

2. The defrosting system must conform to standards J381 and J382 of the Society of Automotive Engineers.

3. That part of the defrosting or defogging system furnishing air to the windshield, entrance door and stepwell may use recirculated air. All other parts of the system must use heated air from outside the bus.

4. Auxiliary fans are not part of the defrosting or defogging systems.

5. Portable heaters may not be used.

392.577 Entrance door.

1. The entrance door must:

(a) Be under the control of the driver and designed to afford easy release, prevent accidental opening and, come together without shearing or crushing fingers when the hand lever is used;

(b) Be located on the right side of the bus opposite the driver and within his direct view;

(c) Have, in type B, C and D buses, a minimum horizontal opening of 24 inches and minimum vertical opening of 68 inches, and in type A buses, have a minimum opening area of 1,200 square inches;

(d) Be of the types known as sedan, split or jackknife or have a sectioned door which divides and opens inward, outward, or both inward and outward, with the front section opening outward;

(e) Have panels of approved safety glass with:

(1) The bottom of the lower panel not more than 35 inches from the ground when the bus is unloaded;

(2) The top of the panel not more than 6 inches from the top of the door; and

(3) An upper panel, if a type A bus, with an area of at least 350 square inches;

(f) If using a split door, have vertical closing edges of a flexible material to protect the children's fingers; and

(g) Be equipped with padding at the top edge of each door. The padding must be at least 3 inches wide and 1 inch thick and extend the full width of the opening of the door.

2. There may be no door to the left of the driver on type C or D buses. Type A and B buses may be equipped with the standard door furnished by the manufacturer of the chassis.

392.579 Emergency door. The emergency door must meet the following standards:

1. The emergency door must be hinged on the right side of the bus if it is installed in the rear end of the bus and on the front side of the bus if it is installed in the left side of the bus. It must open outward and be labeled inside to indicate how it is to be opened. If double emergency doors are used on type A buses, they must be hinged on the outside edge with a three-point fastening device.

2. The upper portion of the emergency door must be equipped with approved safety glazing with an exposed area of at least 400 square inches. The lower portion of the rear emergency door on types B, C and D buses must be equipped with at least 350 square inches of approved safety glazing.

3. There must not be any steps leading to the emergency door.

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

5. The emergency door must be equipped with padding at the top edge of each door opening. The padding must be at least 3 inches wide and 1 inch thick and extend the full width of the door opening.

6. If a side emergency door is installed, it must meet the requirements set forth in Federal Motor Vehicle Safety Standard 217, S5.4.2.1,(b), whether it is used with any other combination of emergency exits.

392.585 Floor covering.

1. The floor in the area under the seats, including the tops of the wheelhousing, the driver's compartment and the toeboard, must be covered with rubber floor covering, or the equivalent, with a minimum overall thickness of .125 inch.

2. The floor covering in the aisle must be of rubber that is:

(a) Designed for use in aisles, or the equivalent;

(b) Resistant to wear; and

(c) Ribbed.

The minimum overall thickness must be .187 inch measured from the top of the ribbing.

3. The floor covering must be permanently bonded to the floor and must not crack when subjected to sudden changes in temperature. The bonding or adhesive material must be waterproof and of a type recommended by the manufacturer of the material used to cover the floor. All seams must be sealed with waterproof sealer.

392.587 Heaters.

1. Each heater must use hot water to heat the air. The manufacturer of the body shall install a shutoff valve in the pressure and return lines at or near the engine in an accessible location. A valve to regulate the flow of water must be installed in the pressure line for convenient operation by the driver while seated. If only one heater is used, it must use fresh air or a combination of fresh air and recirculating air. If more than one heater is used, it may use recirculating air.

2. The system for heating must maintain the temperature of the bus at a minimum of 40 degrees Fahrenheit when the outside temperature is the average minimum temperature for

January as established by the U.S. Department of Commerce, Weather Bureau, for the area in which the bus is operated.

3. The hoses for the heater:

(a) Must be adequately supported to guard against vibration;

(b) May not dangle or rub against the chassis or any sharp edges;

(c) May not interfere with or restrict the operation of any function of the engine;

(d) Must conform to Standard J20c of the Society of Automotive Engineers; and

(e) Must be shielded to prevent scalding of the driver or passengers.

5. Accessible bleeder valves must be installed by the manufacturer of the body in the return lines of a heater to remove air from the lines of the heater.

6. The motors, cores and fans of the heater must be accessible for service, using panels for access, if needed.

7. The manufacturer of the body shall affix a plate that indicates the rating of the heater in accordance with standard No. 001 of the School Bus Manufacturers Institute. The date shall be deemed a certification that the performance of the heater is as shown on the plate.

8. A combustion heater must be approved by the Underwriters Laboratories, Inc., and must be in compliance with current federal motor carrier safety regulations.

392.589 Signs and lettering.

1. The body of the bus must have the words, “SCHOOL BUS,” in black letters at least 8 inches high painted on both the front and of the rear of the body of the bus or on signs attached to the front and rear of the bus. The lettering must be placed as high as possible without

impairing the visibility of the lettering and must conform to “Series B” of the standard alphabets for signs on a highway.

2. The ownership of the bus must be indicated on both sides of the bus immediately below the bottom line of the window. The sign must have black letters at least 6 inches high with a stroke of 5/8 of an inch. Yellow letters on a black background do not meet this requirement.

3. Any other sign or lettering on a bus is limited to:

(a) The name of the school district;

(b) Any number necessary for identification; and

(c) The name of the donor of the bus, if applicable, identified by lettering 1 inch high in an area of 1 square foot beside the side door of the bus.

392.591 Height inside body. For types B, C and D buses, the height inside the body must be at least 72 inches, measured from the metal of the floor to the metal of the ceiling, at any point on the longitudinal center line from front vertical bow to rear vertical bow. For type A buses, the inside height of the body must be at least 62 inches.

392.597 Lamps to identify vehicle as school bus.

1. Each bus must have the following lamps mounted horizontally which identify a vehicle as a school bus and inform other users of the highway that the bus is stopped or about to stop on the highway to take on or discharge children:

(a) Two red lamps at the rear of the vehicle and two red lamps at the front of the vehicle that are controlled by a switch which is manually activated or automatically activated when the door of the bus is opened. The lamps must flash alternately at a rate of 60 to 120 cycles per

minute. The period during which the lamp is on must be long enough to permit the filament of the bulb to reach full brightness. A lamp operated by a switch for the brake is not permitted.

(b) One amber lamp or strobe light that flashes independently from the red lamp, located near each red lamp, at the same level, but closer to the vertical center line of the bus. The amber lamp or strobe light must be activated manually and turned off automatically when the door of the bus is opened.

All eight lamps must have a sealed beam and a minimum of 60 candlepower.

2. The area around the lens of each lamp must extend outward 3 inches and must be painted black. If there is no flat part of the body surrounding the entire lens of the lamp, a circular or square band of black approximately 3 inches wide, immediately below and to both sides of the lens, must be painted on the area of the body or roof against which the lamp is mounted. Visors or hoods with an appropriate black background to fit the shape of hoods or visors and roof cap may also be used.

3. The flashers for the lamps must be enclosed in the body of the bus in a readily accessible location.

4. A single light with a red lens must be mounted in full view of the driver to indicate that the system of lights is activated.

392.599 Signal lamps; stop and tail lamps; triangular reflectors; monitoring device; strobe light.

1. The body of the bus must be equipped with rear turn signal lamps that are at least 7 inches in diameter and meet the specifications of the Society of Automotive Engineers. These signals must be connected to the switch that warns of hazards to cause simultaneous flashing of

the lamps when needed as a warning. The lamps are to be placed as wide apart as practical and their centerline must be approximately 8 inches below the rear windows. The lamps for a type A bus must have a lens of at least 21 square inches.

2. A bus must be equipped with four red lamps which are a combination of stop and tail lamps. Two such lamps with a minimum diameter of 7 inches or, if a shape other than round, a minimum of 38 square inches of illuminated area must be mounted on the rear of the bus just inside the turn signals. Two such lamps with a minimum diameter of 4 inches or, if a shape other than round, a minimum of 12 square inches of illuminated area must be placed on the rear of the body of the bus between the beltline and the floor line. A lamp for the rear license plate may be combined with one lower tail lamp. A stop lamp must be activated by the brakes and must emit a steady light when illuminated. A type A bus with a body supplied by the manufacturer of the chassis may have the manufacturer's standard stop and tail lamps.

3. Each bus must have at least three reflectorized devices in the shape of a triangle to be placed on the road to warn of a hazard. They must be mounted in an accessible place in the driver's compartment, except the location for the mounting in a type A vehicle is optional.

4. On all buses equipped with a monitor for the front and rear lamps of the bus, the monitor must be mounted in full view of the driver. If the full circuit current passes through the monitor, each circuit must be protected by a fuse or circuit breaker.

5. A white strobe light may be installed on the roof of a bus no more than one-third of the length of the body forward from the rear edge of the roof. The light must have a single clear lens emitting light 360 degrees around its vertical axis and may not extend above the roof more

than 6 1/2 inches. A manual switch and a light must be furnished to indicate when the light is in operation.

392.601 Interior lamps.

1. Each bus must have interior lamps to illuminate the aisle and stepwell.

2. The lights for the instrument panel for the body of the bus must be controlled by an independent rheostat.

392.603 Treatment of metal.

1. All metal used in the construction of the body, except interiors parts that are required to be plated, must be coated with zinc or aluminum, or treated by an equivalent process before the bus is constructed. In addition, any metal parts that are painted must be chemically cleaned, etched with zinc phosphate and primed with zinc chromate or epoxy, or conditioned by an equivalent process.

2. Particular attention must be given to lapped surfaces, welded connections of structural members, cut edges, areas where holes have been punched or drilled in sheet metal, closed or box sections, unvented or undrained areas and surfaces subjected to abrasion during the operation of the bus.

3. When treated as required and tested for 1,000 hours pursuant to standard B-117, "Standard Method of Salt Spray (Fog) Testing" of the American Society for Testing and Materials, samples of the material used in the construction of the bus must not lose more than 10 percent, by weight, of the material.

392.605 Mirrors.

1. Each interior mirror must be clear-view safety glass with a metal back and frame. The mirror must have rounded corners and protected edges. A type A bus must have a mirror which is at least 6 inches by 16 inches. A type B, C or D bus must have at least one mirror which is 6 inches by 30 inches.

2. Each bus must have at least the following exterior mirrors:

(a) One rear view mirror on the left side and one on the right side of the bus. For types C and D buses, each mirror must be at least 50 square inches of flat, mirror glass. Types A and B buses may use the standard mirrors furnished by the manufacturer of the body. Each mirror must be firmly supported and adjustable to give the driver a clear view past the left rear and right rear of the bus.

(b) One convex mirror of at least 35 square inches located on the right side of the bus to provide a view of the right side of the bus.

(c) For a type A, B or C bus, a crossover mirror or elliptical or hemispherical mirror mounted on each fender and for a type D bus, one crossover mirror or elliptical or hemispherical mirror mounted on the right side of the windshield. The mirror must be mounted so that when a rod 30 inches long is placed upright on the ground at any point along a traverse line 1 foot forward of the most forward point of the bus and extending the width of the bus, at least 7 1/2 inches of the length of the rod is visible to the driver, either by direct view or by means of a crossover or convex mirror.

3. The following is a chart that illustrates the types of exterior mirrors required:

	Left side Convex Rear view	Left side Convex Crossview	Right side Convex Crossview	Right side Convex Rear view
Type A	X	X	X	X

Type B	X	X	X	X
Type C	X	X	X	X
Type D	X		X	X

Note: Elliptical or hemispherical mirrors may be substituted on a two-for-one basis if indirect visibility requirements are met.

392.607 Mounting body on chassis.

1. The frame of the chassis must support the rear cross member of the body. The body of the bus must be attached to the frame of the chassis at each main floor sill, except where the components of the chassis interfere, to prevent shifting or separation of the body from the chassis during severe operating conditions.

2. For a type B, C, or D bus, insulation must be placed at all points of contact between the body and the frame of the chassis and attached to the body or the frame of the chassis so that it will not move under severe operating conditions.

392.609 Overall length and width. The overall length of the bus must not exceed 40 feet. The overall width of the bus must not exceed 96 inches, excluding any accessories.

392.613 Seat belt for driver. A seat belt with a locking retractor must be provided for the driver. Each section of the belt must be booted to keep the buckle and latch off the floor and within easy reach of the driver. The belt must be anchored or guided at the seat frame to prevent the driver from sliding sideways.

392.615 Seats and crash barriers.

1. The bottom and back of the seat and the crash barrier must be covered with:

(a) A material having a 42-ounce finished weight, a width of 54 inches and a finished vinyl coating of 1.06 broken twill; or

(b) Another material with a resistance to puncturing, resistance to tearing, strength at the seams, strength at points of adhesion, resistance to abrasion and resistance to cold and to separation when flexed equal to the material described in paragraph (a).

2. All seats must:

(a) Be secured to the floor by at least two bolts, washers and nuts;

(b) Be fastened to the rail of the seat with two bolts, washers and nuts; and

(c) Have a depth of at least 15 inches.

3. In determining the seating capacity of a bus, the average width of the rump of the pupil shall be deemed to be:

(a) Thirteen inches if three pupils are seated on each side of the aisle; or

(b) Fifteen inches if three pupils are seated on one side of the aisle and two pupils on the other.

392.617 Stepwell.

1. The entrance door on a type A, B or C bus may be equipped with a stepwell of two or three steps. The entrance on a type D bus must have a stepwell of three steps. The risers must be approximately equal. If a plywood floor is used on steel, the difference may be increased by the thickness of the plywood.

2. If a stepwell of two steps is used, except for buses with all-wheel drive, the first step must be 12 to 16 inches from the ground when the bus is empty. If a stepwell of 3 steps is used, the first step must be 10 to 14 inches from the ground when the bus is empty.

3. The steps must be enclosed to prevent an accumulation of ice and snow and must not extend beyond the line of the side of the body. A handle at least 20 inches in length must be provided in an unobstructed location inside the doorway.

392.619 Step for use in cleaning windshield and lamps. Unless the windshield and lamps are easily reached from the ground, each bus must be equipped with at least one:

1. Folding stirrup step;

2. Recessed foothold; or

3. Step in or on the front bumper,

and suitably located handles on each side of the front of the body for use in cleaning the windshield and lamps.

392.623 Stop signal arm. Each bus must have stop signal arm installed on the left side of the body. The word "STOP" must appear on both sides of the arm in white reflective letters at least 6 inches high. The stop signal arm must:

1. Be a red octagon with red alternating or strobe lights connected to the red flashing signal lamp circuit;

2. Operate electrically, pneumatically or by a vacuum; and

3. Meet the standards for wiring of the Society of Automotive Engineers.

392.625 Container for storage. If tools, tire chains or tow chains are carried on the bus, a container of adequate strength and capacity to hold the items must be provided. The container may be located either inside or outside of the passenger compartment. If it is inside, it must be fastened to the floor near the entrance or emergency door and have a cover capable of being securely latched. A seat cushion may not be used as a cover.

392.627 Sun shield. Each bus must have an adjustable, transparent shield for protection against the sun installed inside the bus in a position convenient for use by the driver. The shield must have a finished edge and for:

1. Types B, C and D buses, must be at least 6 inches by 30 inches.

2. Type A buses, must be at least 6 inches by 16 inches.

392.629 Tail pipe. The tail pipe may not extend beyond the rear bumper.

392.631 Device for assistance with traction.

1. If a sander is used with the bus, it must:

(a) Use a hopper and cartridge valve;

(b) Have a metal hopper with all interior surfaces treated to prevent condensation of moisture;

(c) Have a capacity of at least 100 pounds;

(d) Have a cover on the filler opening of the hopper that screws into place to form an airtight seal;

(e) Have discharge tubes extending to the front of each rear wheel under the fender;

(f) Have discharge tubes that are resistant to clogging and have slush-proof, nonfreezing rubber nozzles;

(g) Be operated by an electric switch with an indicator light mounted on the instrument panel;

(h) Be controlled by the driver; and

(i) Have a gauge to indicate when the hopper is one- quarter full.

2. Automatic traction chains may be installed, in addition to snow tires, when permitted by other laws of this state.

392.633 Rustproofing compound.

1. The entire underside of the body of the bus, including the floor, cross member and side panels below the line of the floor, must be coated with a rustproofing compound. The manufacturer of the compound shall certify to the builder of the body of the bus that the compound meets or exceeds all requirements of paragraph 3.4 of the Federal Specification TT-C-520b for resistance to:

(a) Salt spray, using a test modified to 5-percent salt and 1,000 hours;

(b) Abrasion; and

(c) Fire.

2. The test panels must be prepared in accordance with paragraph 4.6.12 of TT-C-520b using the modified procedure which requires that tests be made on a 48-hour, air-cured film at the thickness recommended by the manufacturer of the compound.

3. The undercoating must be applied with airless or conventional spray equipment to the recommended thickness of film and show no evidence of voids in the cured film.

392.635 Ventilation.

1. The body must have a ventilating system of sufficient capacity to maintain the proper quantity of air while the bus is operating without opening the windows, except in extremely warm weather.

2. Static exhaust ventilation that cannot be closed must be installed in the low-pressure area of the roof.

3. If an auxiliary fan is used, each fan must:

(a) Be placed where it can be adjusted to its maximum effectiveness;

(b) Have a diameter of at least 6 inches;

(c) Have blades which are covered by a protective cage; and

(d) Be controlled by a separate switch.

392.637 Wheelhousing. The wheelhousing of each bus must:

1. Allow for easy removal of tires and service;

2. Be attached to the sheets of the floor to prevent any dust, water or fumes from entering the body;

3. Be constructed of at least 16-gauge steel;

4. Have an inside height above the line of the floor of no more than 12 inches;

5. Provide clearance for the installation and use of tire chains; and

6. Not extend into the opening for the emergency door.

392.639 Windows.

1. The full side window of each bus must provide an unobstructed emergency opening that is at least 9 inches high and 22 inches wide when the window is lowered.

2. Windows with a split sash or which may be pushed out may be used.

392.641 System to clean windshield. Each bus must be equipped with a system to clean the windshield that has a reservoir with a capacity of 24 ounces and a pump operated electrically or by compressed air.

392.643 Windshield wipers. Each bus must be equipped with windshield wipers of two or more speeds. The motor must be operated electrically or pneumatically and of sufficient

power to move the wipers across the windshield. If only one motor is used to operate the windshield wipers, the wipers must work in tandem.

392.645 Circuits.

1. Each circuit in the body must be:

(a) Coded by color and number or letter; and

(b) Protected by a fuse or circuit breaker.

2. A diagram of the circuits must be attached to the body in a readily accessible location.

3. The wiring must be arranged in at least six regular circuits controlling the:

(a) Head, tail and stop lamps and the instrument panel's lamps;

(b) Clearance lamp and a lamp for the stepwell which must be activated when the service door is opened;

(c) Dome lamp;

(d) Ignition and a signal for the emergency door;

(e) Turn signal lamps; and

(f) Alternately flashing signal lamps.

4. Additional circuits must be used:

(a) If a heater or defroster is installed; and

(b) Whenever possible for all other electrical functions, such as sanders and electric windshield wipers.

5. A main switch to disconnect the power must be installed in an area accessible to the driver when he is in a normal seated position.

6. Wire that supplies power to the body must be attached to a special terminal on the chassis. Each wire that passes through a metal opening must be protected by a grommet. Any wire not enclosed within the body of the bus must be fastened securely at intervals of not more than 18 inches. Each joint must be soldered or joined by equally effective connectors.

7. The entire electrical system of the body must be designed for the same voltage as the chassis on which the body is mounted. All wiring must have a capacity equal to or exceeding the designated load. Any splice in the wiring must be done at an accessible location and noted as a splice on the diagram of the wiring.

392.663 Installation of additional heaters. If an additional heater is installed in a bus which transports physically handicapped pupils, it must be installed in the rear of the bus or on or behind the wheel wells.

392.675 Illumination of lift. A light must be placed inside the bus to illuminate the area of a lift. The light must be activated from the area of the door.

392.679 Exhaust system.

1. Except as provided in subsection 2, the exhaust system must be attached to the chassis and routed to the left of the right frame rail to allow for the installation of a lift that travels through the floor on the right side of the vehicle. No part of the exhaust system may enter any portion of the passenger's or driver's compartment. The tail pipe must be constructed of seamless or electrically welded steel tubing of not less than 16 gauge.

2. On a type B bus, the tail pipe may be routed to the left or right for the exhaust to be emitted behind the left or right rear wheels.

392.681 Fuel tank. A fuel tank meeting the Federal Motor Vehicle Safety Standard 301 must be mounted by the manufacturer on the left or right side of the frame of the chassis or between the rails of the frame of the chassis.