CA TITLE 13 SCHOOL BUS COMPLIANCE INDEX

1) Chassis Manufactures Label's 13CCR 1272(a)
(a) Display of Data. Plates or *labels* displaying the following data shall be permanently attached in each school bus except Type 2 school buses manufactured before *July* 1, 1970, and shall be readily visible either in the driver's compartment or where prescribed in Part 567, Certification, of Title 49, Code of Federal Regulations:
(1) Gross vehicle weight rating (GYWR)
(2) Minimum tire size and minimum acceptable load range rating
(3) Gross axle weight rating (GAWR)-Front, intermediate (if applicable), and rear
(4) Unladen weight of vehicle as defined in Vehicle Code Section 660.
(5) For vehicles manufactured on or after September 1, 1989 and classed as multipurpose passenger vehicles (MPV) as defined in Part 571 of Title 49, Code of Federal Regulations, the statement: "This multipurpose passenger vehicle meets or exceeds the requirements of all Federal Motor Vehicle Safety Standards in effect on the date of manufacture for a school bus having a Gross Vehicle Weight Rating of (10,000 pounds or less) (More than 10,000 pounds)." The statement shall be completed with only one of the GVWR ranges shown in parentheses, not by including both and striking out one.

2) Steps-inches from Ground 13 CCR 1280(a)
(a) First Step. The first step to the entrance door in a Type 1 school bus shall be not more than **17 in**. high, and on a Type 2 school bus not more than 20 in. high, measured from the ground when the bus is unloaded.

3) Entrance Doors, Type 1 13 CCR 1281(a)
(a) Type 1 Buses. Doors on Type 1 school buses shall meet the following requirements:
(l) The entrance and exit door shall be on the right-hand side, toward the front of the bus, and directly within the view and under the control of the driver. The door will be deemed to be directly within the view of the driver only if the front of the opening is in front of a line drawn across the bus immediately in front of the driver's backrest. •
(2) Although not required, there may be a door beside the driver for the exclusive use of the driver.
(3) School buses constructed after January 1, 1950, shall comply with these additional requirements.
(A) The entrance and exit door shall provide an unobstructed opening at least 24 in. wide and 65 in. high.
(B) Approved safety glazing shall be installed in door panels. In the lower panel, the bottom of the glazing shall not be more than 35 in. from ground level with the bus unloaded. In the upper panel, the top of the glazing shall not be more than 6 in. from the top of the door.
(C) Flexible material shall be affixed to the vertical-closing edges of the door.
(b) Door Padding. On all Type 1 school buses, and Type 2 school buses manufactured on and after July 1, 1970, the inside top door frame shall be cushioned by soft padding at least 1/2 in. thick, to prevent head injuries.

4) Stanchions, Bar, Shield, Padding 13 CCR 1267, 1278(d)(2), 1281(b)
§ 1267. Bus Entrances and Exits.
The following requirements shall govern entrances and exits of all buses (except buses operated hy law enforcement agencies to transport prisoners) and farm labor vehicles:
(a) Door and Step Clearance-Doors and steps shall he kept clear at all times to permit safe entrance and exit of passengers.
(b) Grab Handles-Every Type 1 bus and farm labor truck shall be equipped with grab handles, stanchions, or bars at least lin. long and installed within convenient reach of persons boarding or leaving.
(c) Safety Bars-To prevent passengers from falling into the step well, Type 1 buses shall have a safety bar or panel directly behind each step well.
(d) Door Construction and Maintenance-Doors in all buses and farm labor trucks shall be substantially constructed, in accordance with acceptable standards, and maintained in good working order to permit safe entrance and exit. All doors shall afford easy release in case of emergency but shall be prevented from opening accidentally. Manually operated doors shall be constructed so that no parts thereof can come together with an exposed shearing action. Chains, cables, or bars may be used on farm labor trucks instead of doors provided they are:
(1) Secured at not more than 6 in. (152.4 mm) above or below a horizontal centerline of the opening, and
(2) Equipped with a quick release device that allows only enough slack to permit easy operation.
(e) Doors Not Adjacent to Driver-In Type 1 buses (except school buses) any passenger door not immediately adjacent to the driver shall meet the following requirements: For buses manufactured prior to January 1, 1993, the term "not immediately adjacent to the driver" shall mean that the door opening and steps are not within the direct, clear view of the driver, unassisted by mirrors or other devices. For buses manufactured

on and after January 1,] 993, the term "not immediately adjacent to the driver" shall mean that the front of the door frame opening is more than 12 inches to the rear of a transverse vertical plane at the front of the driver's seat back rest with the seat adjusted to its rearmost position and the back rest adjusted to its most vertical position. The front of the backrest is that point, on the vertical centerline of the front of the backrest, which is midway between the seat cushion and the top of the seat back, excluding any movable head rest.

(1) Doors closed by power actuators shall be:

(A) Equipped with a sensitive edge, designed and maintained to release the door-closing force, and to reopen sufficiently to fully release a person or object caught in the closing doors.

(i) Except as provided in (iii), doors on buses manufactured on or after January 1, 1993, shall release when the door closes on an object as small as a I/2-inch diameter smooth cylinder held perpendicular to the plane of the door opening at any point where the door halves meet, or if a single piece door, where the door edge meets the door frame.

(ii) The performance standard specified in (i) and (iii) shall not apply to the top two inches or the bottom two inches of the sensitive edge.

(iii) For buses equipped with a 4-inch or larger gap between the power-closed doors, the doors shall react as specified in (i) when closing on a I-inch diameter smooth cylinder.

(B) Designed and equipped to signal the dri ver if the doors completely close on any part of a person's body or any object.

(C) Adjusted and maintained, when operated or actuated by treadle steps, to close in not less than 2 1/2 seconds after a person steps off such treadle.

(2) Doors closed by return springs, counterweights, or other passive means shall be:

(A) Designed to permit at least 4-inches of clearance between the solid or metal edges of doors when fully closed.

§ **1278. Pupils' Seats.**

(d) Padding. All seats and seat backs shall be covered with padding. In addition, all school buses constructed after January I, 1973, shall be equipped with interior protective padding capable of minimizing injuries from impacts, as follows:

(2) Stanchions shall be padded to within 3 in. of the ceiling and thefloor.

§ **1281. Doors.**

(B) Approved safety glazing shall be installed in door panels. In the lower panel, the bottom of the glazing shall not be more than 35 in. from ground level with the bus unloaded. In the upper panel, the top of the glazing shall not be more than 6 in. from the top of the door.

5) Inspection Certificate Holder 13 CCR 1231(a)

1231. Vehicle Inspection Approval Certificate.

A vehicle inspection approval certificate designed and furnished by the department shall be displayed in each school bus, SPAB, youth bus, farm labor *vehicle,* and GPPV pursuant to Vehicle Code Sections 2807, 2807.], 2807.3, 31401, and 34501.8. The following provisions shall apply to vehicle inspection approval certificates:

(a) Display of Certificate. The certificate shall be placed in a certificate holder provided by the motor carrier and posted in an easy-to-reach and visible area of the driver's compartment of the vehicle for which it was issued. The certificate holder shall be designed so the certificate can be easily inserted and removed and is clearly legible under a transparent covering.

6) Speedometer/Odometer 13CCR 1262

§ 1262. Speedometer and Odometer.

School buses, school pupil activity buses, youth buses, and farm labor vehicles shall be equipped with an accurate speedometer and odometer. The speedometer shall be visible from the driver's seat and illuminated during darkness. School pupil activity buses may use means other than an odometer for determining accrued mileage.

9) Windows Type 1 Size 13 CCR1284

§ 1285. Windows-Type 1 School Bus.

The windows on Type 1 school buses shaH be as follows:

(a) Size of Opening. Windows shall open and lower vertically and shall provide unobstructed openings not less than 12 in. in height and 264 sq in. in area.
(b) Exceptions. These windows may be stationary and oflesser dimensions:
(1) Rear windows and the rearmost side windows.
(2) Windows in or immediately adjacent to an entrance or emergency door.
(3) Side windows located forward of the entrance door required by Section 1281.
(4) A window on the left side located between the driver's window and the window adjacent to the nearest passenger seat.
(c) Driver's Window. The foremost window to the left of the driver may be of lesser dimensions and may open and close horizontally.
(d) Banding. AH exposed edges of glass in windows shall be banded.
(e) Latches. On Type 1 school buses constructed on or after January 1, 1957, window latches shall be designed so that no sharp edges protrude

10) Mirrors 13 CCR 1258

§ 1258. Mirrors on School Buses.

All Type 1 school buses and Type 2 school buses constructed on and after July 1, 1970, shall be equipped with two exterior rearview mirrors, one on each side of the bus. Every school bus shall be equipped with across-view mirror mounted on the front exterior ofthe bus to provide the seated driver with a clear view of the area directly in front of the bus.
(a) Size of Rearview Mirrors. Type 1 school buses constructed after January 1, 1965, and Type 2 school buses constructed after April 1, 1977, shall have exterior side mounted rearview mirrors, each with at least 50 sq in. in the reflective area.
(b) Size of Cross View Mirrors. All front exterior crossview mirrors required on Type 1 school buses shall have at least 40 sq in. in the reflective area.

12) Drivers Seat and Seat Belt 13 CCR 1270(a)

§ 1270. Seats.

The following requirements govern seats on buses and all farm labor vehicles.
(a) Bus Driver's Seat. The driver's seat shall be positioned so that the driver may assume a natural position while driving and have a clear view of the road and mirrors and sufficient leg room to operate the brake, clutch, and accelerator pedals and all other controls without cramping or interference. The driver's seat shall be readily adjustable backward and forward and may be adjustable up and down or may incorporate up and down motion with forward and backward adjustabiJity. On school buses and school pupil activity buses, the driver's seat shall also be equipped with a locking device to prevent accidental separation of the adjustable seat components. In addition, a safety belt meeting the provisions of FMVSS 209 shall be provided for the driver in school buses and school pupil activity buses.

14) Steering Wheel 13 CCR 1291

§ 1291. Steering Components.

No change shall be made to the steering gear, linkage, or related parts that would alter the manufacturer's intended geometry, nor shall any addition be made that would unsafely affect the operation or stability of a school bus. On school buses constructed after January 1, 1950, the outer rim of the steering wheel shall be at least 3 in. from the instrument panel, windshield frame, and other obstructive surface or mechanical device except the tum signal lever and a gearshift mounted on the steering post.

15) Heater, Defroster, Ventilation 13 CCR 1259, 1260

§ 1259. Heaters and Defrosters.

(a) Buses. Every bus shall have a safe, effective defroster and heating system, which shall produce sufficient heat to provide reasonable comfort for occupants. All heating system pipes and radiators shall be shielded to protect the occupants and their clothing, and the moving parts of all heaters and defrosters shall present no hazard to occupants. Air intakes shall be located to minimize the entrance of exhaust fumes into the bus. If combustion heaters are used, they shall be installed on new buses by the body or bus manufacturer, and on buses now in service, by authorized dealers or garages. Heaters and defrosters are not required for trailer-buses of open air construction.
(b) School Buses. Every school bus shall be equipped with an effective defrosting device of the hot air duct type.

(c) Trucks and Farm Labor Vehicles. Every truck and farm labor vehicle shall be equipped with an adequate mechanically operated defrosting device, or adequate air-circulating system that removes snow, ice,

§ 1260. Ventilation.
Requirements for ventilation are as follows:
(a) Buses and Farm Labor Vehicles. All buses and farm labor vehicles shall provide ventilation that is adequate for passengers in any weather. Openings for ventilation through the front of a vehicle shall be equipped with screens that prevent passage of insects, gravel, and other objects.
(b) School Buses. School bus bodies shall be equipped with a suitable ventilating system of sufficient capacity to maintain adequate ventilation Uling operation without the opening of windows except in extremely hot weather. Ventilation shall be adequate to assure a complete change of air at least once every 3 minutes while a school bus is moving

16) Interior-projections, Lined, Lighting 13 CCR 1263, 1273(b)(4)
§ 1263. Interior Lamps.
All buses operated during darkness shall be equipped with a sufficient number of interior lamps to illuminate the interior of the bus without interfering with the driver's vision.
§ 1273. School Bus Bodies.
School buses shall comply with the following requirements:
(4) Interior. The interior of school buses shall meet the following requirements:
(A) The ceiling shall be free of all projections likely to cause injury to a pupil.
(B) Except as otherwise provided, the ceiling over any aisle shall not have any projection that protrudes more than 3/4 inch or that reduces the minimum inside height requirements.
(C) Ceilings may have projections over the aisle for air conditioners provided that no portion of the projection is more than 35 inches from an emergency exit and no portion projects below the top of the emergency exit opening.
(D) Type 1 school bus ceilings shall not have any projection over any seat where the minimum distance from the highest point ofthe seat cushion to the projection is less than 40 inches.
(E) No ceiling projection over any seat shall project lower than the top of any window.
(F) The interior walls on Type 1 school buses and Type 2 school buses manufactured on or after July 1, 1970, shall be lined. Hoses, tubing, and piping installed on interior walls for air conditioning or heating shall be equipped with protective covering designed to prevent puncture or injury.
(G) Materials used on the interiors of school buses manufactured on or after September 1, 1972, shall comply with the specifications of Federal Motor Vehicle Safety Standard 302 in effect at the time of manufacture. Any material used in refurbishing bus interiors shall be fire resistant and shall comply with the standards in effect for new vehicles at the time of installation.

17) Floors, Isle 13 CCR 1273(b)(1), 1279
1273. School Bus Bodies.
(b) Constmction. A Type 1 school bus manufactured on and after January 1, 1957, and a Type 2 school bus manufactured on and after July 1, 1970, shall comply with the following additional requirements:
(l) Floors. Floors in Type 1 school buses constmcted after January 1, 1957, shall be at least 14-gage steel or equivalent or 5-ply, 5/8 in.laminated wood, marine type, and constmcted and maintained to prevent entrance of exhaust gases. Floors in Type 2 buses constmcted on and after July 1,1970, shall be strong enough to support loads and constmcted and maintained to prevent entrance of exhaust gases.
§ 1279. Aisles.
The aisle in Type 1 school buses shall be at least 12 in. wide; the aisle in Type 2 school buses manufactured on and after July 1, 1970, shall be at least 11 in. wide. Aisles shall provide unobstructed access to all seats on the aisle. The aisle on all Type 1 school buses and Type 2 school buses manufactured on and after April l, 1977, shall provide unobstructed access to the rear floor-level emergency door, if so equipped. Aisles shall be surfaced with a nonslip material.

18) Isle Width 13 CCR1279
§ 1279. Aisles.

The aisle in Type 1 school buses shall be **at least 12 in. wide**; the aisle in Type 2 school buses manufactured on and after July 1, 1970, shall be at least 11 in. wide. Aisles shall provide unobstructed access to all seats on the aisle. The aisle on all Type 1 school buses and Type 2 school buses manufactured on and after April l, 1977, shall provide unobstructed access to the rear floor-level emergency door, if so equipped. Aisles shall be surfaced with a nonslip material.

19) Inside Height Type 1 13 CCR 1273(b)(3)

§ 1273. School Bus Bodies.

School buses shall comply with the following requirements:
(b) Constmction. A Type 1 school bus manufactured on and after January 1, 1957, and a Type 2 school bus manufactured on and after July 1, 1970, shall comply with the following additional requirements:
(3) Inside Height. In a Type 1 school bus manufactured on or after January 1, 1965, the inside body height, measured at the centerline from the back of the door opening to the back of the next to the last row of seats, shall be a minimum of 70 in.

20) Pupil Seat Securement, Location, Spacing CCR 1278

§ **1278. Pupils' Seats.**

The following regulations apply to seating in school buses:
(a) Capacity and Weight Estimates. For the sale purpose of indicating the maximum capacity of a school bus, the manufacturer and purchaser shall allow a seating space 13 in. wide per pupil and shall estimate minimum weights of 120 Ibs per pupil and 150 Ibs for the driver. However, for Type 1 buses built before January 1, 1960, the weight of each elementary pupil may be estimated at a minimum of 80 Ibs, although the estimated weights of high school students remain at the minimum of 130 lbs each.
(b) Placement. Seats shall be positioned across the bus, not lengthwise. In Type 1 school buses, no pupil's seat shall be placed ahead of a line drawn across the bus and immediately behind the driver's seat. In Type 1 school buses constructed on or after July 1, 1968, there shall not be less than 25 in. between the front of the back of each seat and the rear of the back of the seat immediately ahead. In Type 2 school buses constmcted on or after July 1, 1970, there shall not be less than 24 in. between the front of the back of each seat and the rear of the back of the seat immediately ahead. The foregoing measurements refer to the level plane parallel to the centerline of the vehicle immediately above the highest portion of the seat cushion. The measured distance shall not include any indentation or depression.
(c) Securement. Pupils' seats shall be securely fastened, as follows:
(1) Frames. Legs of all seat frames shall be secured to the floor with bolts or self-tapping screws. Bolts shall be of at least l/4-in. diameter and of Society of Automotive Engineers Grade 3 designation or equivalent strength. Bolts shall be secured by a flat washer of at least 1 1/4-in. diameter, or equivalent securement, and a lock washer and nut or selflocking nut. Self-tapping screws shall be at least 5/16 in. in diameter and threaded through 12-gauge steel plating.
(2) Cushions. In Type 1 school buses constructed after January 1, 1957, and Type 2 school buses constructed after January 1, 1968, each seat cushion shall be fastened to the seat frame with a positive locking device at not less than two points on the front or rear of the cushion.
(d) Padding. All seats and seat backs shall be covered with padding. In addition, all school buses constructed after January I, 1973, shall be equipped with interior protective padding capable of minimizing injuries from impacts, as follows:
(1) All exposed passenger seat rails, except the rearmost seats, shall be padded down to seat-cushion level, and the top rail of the driver's seat shall be padded unless separated from passenger seating by a padded restraining barrier.
(2) Stanchions shall be padded to within 3 in. of the ceiling and the floor.
(3) Guard rails shall be padded from the bus wall to the farthest support.
(e) Modification. No modification of factory seating shall be permitted on Type 2 school buses purchased on or after July 1, 1966, and manufactured before July 1, 1970, except as follows:
(1) A Type 2 school bus constructed before July 1, 1970, shall not transport more than 12 passengers and the driver unless it meets all regulations relating to Type 2 school buses constructed on or after July 1, 1970.
(2) Modifications to increase the seating capacity to 12 passengers shall be allowed only upon the approval of the department. Such approval shall be contingent upon the manufacturer's gross vehicle weight rating.
(f) Exception. This section does not apply to seats consisting of wheelchairs used in accordance with the provisions for wheelchair school buses in this title.

(g) Federal Requirements. School buses manufactured and maintained in compliance with Federal Motor Vehicle Safety Standard 222 shall be deemed in compliance with the seating requirements of this section.

21) Emergency Exits 13 CCR 1282, 1283, 2184

§ 1282. Emergency Exits Type 1 School Buses.

Type 1 school buses constructed on and after January 1, 1950, shall comply with the following requirements:
(a) Location and Type. Each school bus shall be equipped with an emergency door located on the left side near the rear of the bus at floor level, and a center rear emergency exit, which may be either a floor level door or an emergency window. The location requirement for a left side emergency door shall not apply to buses manufactured on or after May 9,1996, in compliance with FMVSS 217 (49 CFR 571.217). If a bus is equipped with a center rear, floor level emergency door, the left side floor level emergency door may be located anywhere on the left side to the rear of the dri ver' s seat. A school bus equipped to transport fewer than 26 passengers may meet the requirement with a single, center rear, floor level emergency door.
(b) Openings. Each emergency door shall provide an unobstructed opening of not less than 24 inches wide and 45 inches high.
(c) Rear Emergency Windows. Each emergency window shall provide an unobstructed opening of not less than 16 x 54 inches, and shall be designed to ensure against accidental closing.

§ 1283. Emergency Exits Type 2 School Buses.

Type 2 school buses constructed on and after July 1, 1970, shall have at least one emergency exit to the rear of a line drawn crosswise to the bus directly to the rear of the driver's seat. When the required emergency exit is not located at the rear of the bus, emergency exits shall be provided on both the left and right sides. Emergency exits shall provide at least 564 sq in. of escape area with a minimum dimension of 12 in.

§ 2184. Refusal to Submit to Inspection Procedure.

The refusal by an owner or driver of a vehicle to submit to the test procedure in section 2182 or to the emission control system inspection in section 2183 constitutes a failure of the test procedure or inspection, unless the driver is cited by the California Highway Patrol for a violation of California Vehicle Code section 2813

22) Warning Devise-Floor-Level Doors Behind Driver 13 CCR 1281.1

§ 1281.1. Door Warning Devices.

On all school buses, except Type 2 buses manufactured prior to July 1, 1970, every emergency door and every fl oar level door located to the rear of the driver's seat shall have an electrical warning device that is both audible and visible from the driver's seating position while the ignition switch is on. The visible device shall be a green or red light. The warning device shall be activated as follows:
(a) On Type 1 school buses manufactured on or after January 1, 1950, and all school buses manufactured on or after April 1, 1977, when the • door latch is not in the closed position.
(b) On Type 2 buses manufactured on or after July 1, 1970, and prior to April 1, 1977, by opening the door. (c) On all school buses manufactured after January 1, 1993, when the latch mechanism is not fully engaged and securing the door in the closed position. The warning device shall be activated by movement of the latch mechanism and shall activate prior to the latch reaching a position which would allow the door to open. A warning device which can be deactivated by operating the door handle or latch mechanism without closing the door does not meet this requirement.

23) First Aid Kit 24 units 13 CCR 1243

§ 1243. First Aid Kits.

(a) Vehicles Required to Carry Kits. Every school bus, youth bus, farm labor vehicle, and GPPV shall carry a readily visible, accessible, and plainly marked first aid kit.
(b) Construction. The kit shall be constructed to prevent dust and moisture from reaching the contents and maintained in good condition. The kit shall be removable from the place secured.
(c) Minimum Requirements. The required contents of school bus first aid kits and the required number of units (determined by the number of passengers a school bus is designed to carry) are shown in Table I. Each youth bus and farm labor vehicle shall be equipped with a 10-unit first aid kit (Table I). First aid kits in use that conform to the former U. S. Department ofTransportation regulations on first aid kits for buses will continue to be accepted.
Vnit

I-in. adhesive compress .2-in. bandage compress .3-in. bandage compress .4-in. bandage compress .Eye dressing packet (3 cotton eyepads, 3 sets adhesive plasticstrips) ., .Plain gauze pads (3 x 3-in.) .Gauze roUer bandage (2 rolls, 2 in. x 6 yd.) .Plain absorbent gauze (1/2 sq. yd.) .Plain absorbent gauze(24 x 72-in.) .Tliangular bandages (40-in.) . Scissors, tweezers .

24) Fire extinguisher 4 B:C rating 13 CCR 1242

§ 1242. Fire Extinguishers.

Every motor vehicle or combination of vehicles (except those otherwise specified below) shall be equipped with one fully charged fire extinguisher having at least a 4B:C rating.

(a) Approvals. Each fire extinguisher shall have been rated and labeled by one of the following test labs approved by the State Fire Marshal to test and label portable fire extinguishers for sale in California.

(1) Underwriter's Laboratories, Northbrook, Illinois. All sizes and classifications.

(2) Factory Mutual Research Corporation, Norwood, Massachusetts. Sizes 10B:C, 1A l OB:C, 2A 40B:C, 3A 40B:C, and 4A 80B:C fire extinguishers filled with Halon 1211 or Halon 1301.

(b) Prohibited Extinguishers. Fire extinguishers using any carbon tetrachloride, chlorbromomethane, or methyl *bromide* as extinguishing agents shall not be carried for use in or about any vehicle.

(c) Exceptions. This section shall not apply to vehicles (except school buses, SPABS, youth buses, farm labor vehicles, and GPPVs) operated solely within a 5-mile radius of one or adjoining municipalities, vehicles subject to more restrictive provisions in this title or other code, or vehicles in any "driveaway-towaway operation" as defined in Section 303 of the Vehicle Code.

(d) Securement. Each fire extinguisher shall be securely mounted on the motor vehicle or trailer in a conspicuous place or a clearly marked compartment and readily accessible.

(e) Maintenance. Each fire extinguisher shall be maintained in efficient operating condition and equipped with some means of determining if it is fully charged.

(f) School Bus Fire Extinguishers. In addition to the other requirements of this section, school buses shall be equipped with one or two extinguishers having an aggregate rating of not less than 8B:C units, provided each extinguisher is rated at not less than 4B:C. A wheelchair school bus shall be equipped with two extinguishers, each one rated at not less than 8B*:C;* one to be placed in the dri ver' s compartment and the other at the wheelchair loading door or emergency exit.

(1) School bus fire extinguishers shall be inspected and serviced only by a person, firm, or organization authorized to do so by the State Fire Marshal.

(2) Inspection or servicing shall be done at yearly intervals or at intervals prescribed in regulations adopted by the State Fire Marshal, whichever intervals are shorter.

25) Emergency Reflectors 13 CCR 1292

§ 1292. Roadside Warning Devices.

Every school bus shall be equipped with and display emergency reflectors as specified in Vehicle Code Section 25300

27) Turn Signals Lamps VC 24951 13 CCR 1288

§ 1288. Turn Signal System.

Type 1 school buses, and Type 2 school buses constructed on and after July 1, 1970, shall be equipped with amber turn signal lamps. Front tum signal lamps shall be mounted below the windshield. Rear tum signal lamps shall be separated from the tail lamps, stop lamps, and rear reflectors. On Type 1 school buses, rear tum signal lamps shall be mounted be*low* the rear windows.

33) Red/Amber warning lamp system VC 25257, 13 CCR 696

§ 696. School Bus Warning Lamps.

(a) Number of Lamps and Required Locations. Four warning lamps are required on each school bus. Two alternately flashing lamps shall be rigidly mounted on the front, one at each side, at the same height above the top of the windshield; and two alternately flashing lamps shall be rigidly mounted on the rear, one at each side, at the same height, with the bottom edge of each lens not lower than the top line of the side window openings. A panel shall be installed to serve as a background for warning lamps that extend above the top of a school bus.

(b) Operating Switches. School bus warning lamp switches operated manually by the driver shall be located within easy reach of the driver's position.
(c) Pilot Indicator. A bright visible flashing signal not less than 12.7mm (0.5 in.) in diameter shall be included in the circuit to give a clear and unmistakable indication to the driver when the warning signals are turned on. The indicator shall not be obscured from the dri ver' s view by any pan of the vehicle.
(d) Spacing and Visibility. Front and rear warning lamps shall be spaced as far apart laterally as is practicable, and in no case shall the distance between lamps be less than 100 cm (39 in.). Visibility of front and rear warning lamps shall be unobstructed by any part of the vehicle from 5 deg above to 10 deg below horizontal and from 30 deg to the right to 30 deg to the left of the center line of the lamps.
(e) Warning Lamp Installation Dates. Warning lamps installed on school buses after 1965 shall be red Class C warning lamps. Those installed before 1966 and meeting requirements in effect at time of installation may continue to be used on the school buses on which they were installed.

34) Stop Signal Arm(s) VC 25257, 13 CCR 1256.5
§ **1256.5. School Bus Color and Signs.**
(a) Each school bus shall be identified as follows:
(1) Body and Trim Colors. Whenever in this section the color yellow is specified, it shall mean National School Bus Yellow unless otherwise stated. Exteriors (except bumpers, grilles, lamp bodies, and other accessories) shall be yellow. The following items may be black:
(A) Moldings and rub rails.
(B) Seals, scratch guards, and other components manufactured from rubber or similar flexible synthetic materials.
(C) A border no more than 4 inches wide around stop lamps, turn signal lamps, or flashing red/amber lamps. The border around tum signal lamps may incorporate an arrow indicating direction of tum.
(D) The wheels may be a color different from the body color, and the upper half of the engine hood may be black. The roof of a school bus may be painted white, but the words "SCHOOL BUS" shall have a yellow background.
(2) Identifying Signs and Numbers. Each school bus shall be identified with the exterior signs and numbers shown in subsection (b). Signs may be either adhesive decals or painted, and shall be maintained in legible condition. Letters and numerals of all signs required by subsection (b) shall be solid black on a yellow background unless otherwise specifically permitted or required, and width shall be proportionate to height. On
school buses manufactured on or after January 1, 1992, required signs applied to curved or slanted surfaces shall have a projected height and width that comply with the size requirements of this section.
(3) Trim, logos, accessories, and other minor appearance items installed as standard factory equipment may have bright metal finishes such as chrome plating or stainless steel.
(b) Required School Bus Signs
(1) School Bus. The words "SCHOOL BUS" or the word "SCHOOLBUS" shall be displayed as required in Vehicle Code Section 27906(a), in upper case lettering, and shall be located above the windshield and above the rear windows of the bus.
(2) Stop When Red Lights Flash. The words "Stop When Red Lights Flash" shall be displayed as required in Vehicle Code Section 27906(c).
(3) Carrier Name. The name of the motor carrier operating the school bus shall be displayed below the windows on both sides of the bus in letters not less than 4 inches nor more than 6 inches in height. As an alternative, a sign showing the name of the school in letters 4 to 6 inches in height and the name of the district or contractor 2 to 6 inches in height is permitted. Carrier names or lettering styles which constitute a registered trademark may include a registered trademark symbol displayed in close proximity to the carrier name. Addresses, telephone numbers, stripes, slogans, or graphic designs other than the lettering style of the carrier name shall not be considered part of the carrier name and are prohibited. Extremely ornate lettering styles which substantially reduce the legibility of the required sign from a distance of 50 feet shall not be used.
(4) Bus Number. The bus number assigned by the company or school shall be displayed in characters at least 4 inches in height in one of thefollowing manners:
(A) On all four corners of the bus body.
(B) On both front comers and centered on the rear of the bus body.
(C) On buses manufactured on and after January],] 992, on both sides and both ends of the bus. Each number display shall be at least 6 inches from any other sign or manufacturer's logo. The front and rear numbers shall be displayed below the bottom edge of the passengers' side window glass, and may be displayed on the bumpers of the bus only if the background behind the number is yellow and extends at least one inch above, below, and to each side

of the number. After January], 1992, any school bus, regardless of age, may be marked to comply with this subsection instead of subsection (A) or (B) above.
(D) Buses 30 feet in length or longer may display the bus number twice on each side, one display as close as possible to each end of the bus.
(E) No school bus shaH display a bus number in more locations than authorized by this section. Except for older school buses permitted to be marked as described in subsections (A) and (B), no school bus shall display number on a corner of the vehicle to serve as both a side and end number.
(5) Carrier Number. The carrier identification number assigned by the department shall be displayed in characters two inches in height on both sides of the bus, centered not less than two inches nor more than 24 inches below the carrier name. The display shall consist of the letters CA followed by the digits assigned to the carrier. A space may be inserted between the letters CA and the digits.
(A) School buses may display the carrier's valid operating authority or identification number assigned by the Interstate Commerce Commission, the California Public Utilities Commission, or the United States Department of Transportation, in the manner specified above for carrier identification numbers, instead of the carrier identification number assigned by the department.
(B) Carrier identification numbers assigned by the department or identification numbers assigned by the Public Utilities Commission and displayed on school buses prior to September 1,1989, may continue to be displayed irrespective of the size and location requirements of subsection
(b)(5) of this section.
(6) Emergency Exit. A sign reading "EMERGENCY EXIT" in upper case letters 2 inches in height shall be on the exterior of the bus on or above each emergency exit. Exterior emergency exit signs may have a white background if located above the emergency exit in the white area of school buses with white roofs. A sign reading "EMERGENCY EXIT" in upper case letters at least 2 inches in height shall be on the interior of the bus on or above each emergency exit. Interior emergency exit signs shall be of any color that contrasts sharply with the background. Interior emergency exit signs may be backlighted if no glaring light is projected into the dri ver' s eyes either directly or by reflection from any surface forward or to either side of the driver.
(A) For exterior or interior emergency exit signs, the words "EMERGENCY DOOR" in uppercase letters may be used to identify floor-level emergency doors instead of the words "EMERGENCY EXIT".
(B) Roof emergency exits shall be identified as described in subsection
(b)(6) for other emergency exits, except that emergency exit signs for roof exits need not meet the size and color requirements of that subsection if they are clearly identified as emergency exits on the interior and exterior of the emergency exit assembly as supplied by its manufacturer.
(C) School buses manufactured prior to January 1, 1992 may have emergency exit signs applied as decals on the window glass of the emergency exit. If this option is exercised, the emergency exit decals shall
meet the size and wording requirements of this subsection, but need not meet the color requirements.
(7) Stop Signal Arm. School buses manufactured on or after September 1, 1992, shall be equipped with at least one stop signal arm. School buses manufactured prior to September L 1992, may be equipped with stop signal anns. Stop signal arms shall meet the requirements of Federal Motor Vehicle Standard No. 131 (49 CFR 571.131) and the following:
(A) Size. The stop signal arm shall be a regular octagon which is at least 17.72 inches x 17.72 inches and not more than 18.25 inches x 18.25 inches in diameter.
(B) Color. The stop signal arm shall be red on both sides except as provided in subsection (C). The Stop Signal Arm shall have a white border of 0.47 inches on both sides. The word "STOP" shall be displayed on both sides, in white upper-case letters. The letters shall be a minimum of 5.9 inches in height, and a maximum of8.0 inches in height, with a minimum stroke width of 0.79 inches and a maximum stroke width of 1.0 inches.
(C) Location. The stop signal arm shall be installed on the left side of the bus, as close as practical to the rear of the bus. The stop signal arm may not be located on a door or emergency exit door, or in any location where it can be contacted by a door or an emergency exit door when the stop signal arm is deployed or retracted. A second stop signal arm may be installed on the left side of the school bus, as close as practical to the front of the bus. When two stop signal arms are installed on a school bus, the rearmost stop signal arm shall not contain any lettering, symbols, or markings on the forward side, and the forward side shall not be reflectorized. Each stop signal arm shall be located such that, when in the extended position:
1. The arm is perpendicular to the side of the bus, plus or minus fivedegrees;
2. The top edge of the stop signal arm is parallel to and not more than 6 inches from a horizontal plane tangent to the lower edge of the frame of the passenger window immediately behind the driver's window; and
3. The vertical center line ofthe stop sign is at least 9 inches away from the side of the school bus.

(D) Warning Lamps. Each side of the arm shall be equipped with two alternately flashing red lamps meeting the requirements of SAE 11133, April 1984. The lamps shall be centered on the vertical centerline of the stop signal arm. One of the lamps shall be located at the extreme top of the stop arm and the other at its extreme bottom.
(E) Strobe Lamps. **In** lieu of warning lamps, each side of the arm may be equipped with two alternately flashing red strobe lamps meeting the requirements of SAE 11133, April 1984. If strobe lamps are used in lieu of required warning lamps, the existing lamps shall be removed, and the strobe lamp shall be installed in compliance with subparagraph (D) of this section.
(F) Reflectorization. Except as provided in subsection (C), if reflectorization is used the entire surface of both sides of the stop signal arm shall be reflectorized with type **III** retroreflectorized material that meets the minimum specific intensity requirements of FMVSS 131, S6.1.
(G) In lieu of incandescent or strobe warning lamps otherwise required by this section, each side of the stop signal arm may be equipped with flashing light emitting diodes (LEDs) that spell out the word "STOP,"meeting the requirements ofFMVSS 131 (49 CFR 571.131). IfLEDs are used in lieu of required warning or strobe lamps, the existing lamp-type stop signal arm(s) shall be removed, and the LED stop signal arm(s) shall be installed in compliance with subparagraph (C) of this section.
(H) Operation. The stop signal arm shall be operated by electricity, air or vacuum. Manual operation of the stop signal arm is prohibited. The stop signal arm shall be automatically extended whenever the alternately flashing red signallarnp switch is activated as required by Vehicle Code Section 22 112. The stop arm shall not be activated or deployed at any other time.
(c) Optional school bus markings. The following signs, when displayed as specified, are permitted on school buses:
(I) An additional bus number may be placed on the rooffor aerial identification. If used, this number shall be black on a white or yellow background. No size requirement shall apply to this number.
(2) Handicapped Sign. A white-an-blue international handicapped (wheelchair) sign may be displayed on any school bus equipped to transport pupils confined to wheelchairs. One sign may be displayed on each side and on the rear of the bus. Each sign shall be no larger than 12 inches in height and the width shall be proportional to the height. The sign shall not obscure any required sign on the bus.
(3) Additional Signs. Signs consisting of numbers, letters or illustrations with contents limited to special identification, bus routing information,warning against unauthorized entry, or an acknowledgment of a sponsor's donation of a school bus may be displayed. No color restrictions apply to this sign. The display area shall be a maximum of 12 inches by 12 inches on the sides of a school bus below the bottom edge of the passengers' side window glass and not closer than 12 inches from any required sign.
(4) Route ldentification. A changeable sign designating the current route assignment of a school bus may be displayed on the right side of the bus above the entrance door or through the windshield as described in Vehicle Code Section 26708(b)(5). The sign, when installed above the entrance door, shall not exceed 6 inches in height and 16 inches in length, and shall not obstruct any required light. The face ofthe sign may be any color, and the body or housing of the sign shall be black or yellow. Such signs shall not emit any light. Any electrically changed signs shall be installed with all control cables protected by grommets where they pass through body panels, and shall be provided with a separate fuse or circuit breaker which does not supply power to any other device. Body or roof panels shall not be cut to recess such signs into the body or roof unless written concurrence is first obtained from the body manufacturer, stating that the proposed modification will not adversely affect the compliance of the bus with any Federal Motor Vehicle Safety Standard applicable at the time the bus was manufactured.
(d) On school buses operated for demonstration purposes and which are not certified by the department for pupil transportation pursuant to Vehicle Code Section 2807(b), the name of the manufacturer, dealer or owner may be displayed in any manner that clearly indicates the entity responsible for the operation of the bus.
(e) On a school bus leased, rented or lent to a school district, private school or contractor, for periods of not more than 30 days in anyone school year, temporary signs bearing the carrier name and identification number of the *school* or contractor may be displayed on both sides of the bus near the name of the bailor in lieu of the permanent signs otherwise required by this section. Such temporary signs need not meet the color requirements set forth in subsection (a) of this section, but shall be displayed in characters of not less than 2 inches in height and in sharp contrast with the background. The temporary signs shall be removed immediately upon return of the bus to the bailor.
(f) Limitations on school bus markings. Colors, signs, bumper stickers, numbers or reflectorizing material not required or specifically permitted by this article shall not be permitted on school buses. A school bus operated for demonstration purposes which is not certified pursuant to Vehicle Code Section 2807(b) is not subject to the limitations of this subsection. However, prior to certification by the department for the transportation

of school pupils, all signs, colors, and other graphic devices not required or permitted by this section shall be removed, and all required signs shall be applied. (I) The rear bumper of a school bus may be marked with diagonal ref1ectorized material in accordance with Vehicle Code Section 25500. The rear of a school bus body may be marked with a strip of retroreflective yellow material no greater than 2 inches in width. The strip must be placed from the left lower corner of the required "School Bus" lettering, across to the left side of the bus, then vertically down to the top of the bumper, across the bus on a line immediately above the bumper to the right side, then vertically up to a point even with the strip placement on the left side, and concluding with a horizontal strip terminating at the
right lower corner of the "School Bus" lettering. The upper horizontal strip of retroreflective material may be continued below the "School Bus" lettering to connect with the strip on the left side if the body design permits. Retroretlective tape may have interruptions to avoid and/or accommodate functional components such as rivets, rubrails, curved surfaces, hinges and handles, provided the tape is immediately adjacent to the these components.
(2) Emergency exits on school buses manufactured on or after May 2, 1994, shall meet the requirements of Federal Motor Vehicle Standard No. 217, S5.5.3 (49 CFR 571.217 S5.5.3) in effect at the time of manufacture. School buses manufactured prior to May 2, 1994, may be marked in accordance with FMVSS 217. Emergency exit markings in compliance with FMVSS 217 S5.5.3 shall have precedence over any other retroreflective marking permitted by this section.
(3) One reflectorized yellow horizontal stripe of any length and not exceeding 12 inches in width may be on each side of a school bus. The carrier's name may be superimposed over the stripe, but if so, shall not be reflectorized as otherwise permitted in subsection (4) below.
(4) The characters of any required sign may be formed from or painted with black material, which may reflect white light. Optional signs and their backgrounds shall not be reflectorized, except that the optional roof aerial identification number permitted in subsection (c)(l) may reflect white light. The background of the roof number shall not be reflectorized.
(5) Interior signs. Posting of safe driving and riding instructions in the driver's compartment is permitted if it does not restrict the driver's view of traffic or the instrument panel.
(6) Vehicle lnformation Labels. Small exterior tags or labels with lettering of not more than one inch in height indicating operational information such as, but not limited to, type of fuel, tire pressure, air reservoir drain locations, coolant filler location, etc. are not considered signs for the purposes of this section. Markings on fuel containers and fuel filler locations for liquefied petroleum gas (LPG), compressed natural gas (CNG), and liquefied natural gas (LNG) shall comply with the marking requirements for those containers as specified in this title and Vehicle Code Section 27909 regardless of the requirements of this subsection. Vehicle markings required by National Fire Protection Association Standard 52 for CNG-powered vehicles are permitted as specified in NFPA 52-1988 published by that organization. (7) Logos. Logos of the manufacturer(s) of a school bus are not considered signs for the purposes of this section; however, logos shall not be displayed within 6 inches of any required sign. Exterior signs of any size representing the dealer or distributor of the bus are not permitted unless the dealer or distributor is either the manufacturer of the bus or, in the case of school buses manufactured in two or more stages, the final stage manufacturer. Signs on step well risers that are visible through door glass are not considered to be on the exterior of the bus.

35) Side Lamps (permitted) VC 25102, 13 CCR 695

§ 695. School Bus Sidelamps.

School bus sidelamps shall be installed as follows:
(a) Location. Two lamps shall be installed on each side, one toward the front and one toward the rear, with the front sidelamp as near as practicable to the front wheel. A third lamp may be installed near the center on buses 9.1 m (30 ft) or more in length.
(b) Spacing. Lamps on each side shall be as far apart as practicable and no closer together than 183 cm (72 in.).
(c) Height. All lamps on one side shall be at the same level, not lower than 61 cm (24 in.) nor higher than 107 cm (42 in.).
(d) Width. The lamps shall be installed so as not to exceed a total vehicle width of 2.44 m (96 in.). Installations that cause buses less than 2.03m (80 in.) wide to equal or exceed 2.03 m (80 in.) will make necessary the installation of clearance and sidemarker lamps.
(e) Pilot Indicator. The system shall have an amber pilot indicator that is visible to the bus driver in his normal driving position and that is lighted when the sidelamps are lighted.

36) Strobe Lamps (permitted) VC 25257.7, 13 CCR 695.5

§ 695.5. School Bus Strobe Lamp.

School bus strobe lamps shall be installed as follows:
(a) Location. The lamp shall be installed on the rooftop at or behind the center of the roof and equidistant from each side.
(b) Height. The top of the light-generating element inside the lamp shall not extend above the rooftop more than 1/20th of its horizontal distance from the rear of the bus. For the purpose of this section, the rear of the bus is defined as the vertical plane in contact with the rear most portion
of the body. If a bus is equipped with roof mounted school bus signs or other vertical obstructions, the light-generating element may extend above the level of the signs or obstructions not to exceed 1/20th of its distance from the rear of the bus. **In** no case shall strobe lamps be mounted so as to exceed the maximum height limits specified in Vehicle Code Section 35250.
(c) Mounting. The vertical axis of the lamp shall be installed perpendicular to the surface of the road.
(d) Switch and Pilot Indicator. The lamp shall be activated by a manual switch labeled with the word "strobelamp," "strobe lamp," "strobe light," "strobe," or some other readily understood term which clearly and unambiguously identified the strobe light function and distinguishes it from other warning lamps and devices with which the vehicle is equipped, and independent of all other switches. **In** addition, the system shall have a nonglaring amber or white pilot indicator that is clearly visible to the driver and that is lighted whenever the strobe lamp is lighted.

38) Color, Signs, Permitted Reflectorization 13 CCR 1256.5

Refer to # 34 Stop Signal Arms

39) Wiring 13 CCR 1249, 1250

§ 1249. Wiring.

Wiring and fuses on vehicles shall be as follows:
(a) Specifications. Wiring for circuits shall be constructed and installed to conform with mechanical and electrical requirements not less than those recommended for automobile wiring in the 1952 or ariy later edition of the SAE Handbook. Required lamps shall be connected to the source of power with stranded wire. This shall not prohibit use of the frame or other metal parts of a motor vehicle as a ground-return system, provided there is adequate electrical grounding between towing and towed vehicles.
(b) Wiring Protection. Wires shall be grouped together and protected either by nonmetallic tape, braid, or other covering capable of withstanding severe abrasion or a metallic sheath or tube. Wiring shall be properly supported and located so as to avoid becoming charred, overheated, or enmeshed in moving parts. Insofar as is practical, wiring shall not be adjacent to any part of the fuel system. Unless the wiring is metal covered, the edges of all holes in metal through which the wiring passes shall be rolled or bushed with a grommet of rubber or other suitable material.
(c) Wire Size and Connectors. Wires shaH be of sufficient size toeliminate excessive voltage drop and to prevent overheating. All joints shall be soldered or fastened both mechanically and electrically with equally effective connectors and shall be insulated. Voltage at the bulb sockets when lamps are burning shall be at least 85% of the design voltage of the bulb with the engine running.
(d) Detachable Connections. The electrical wiring of detachable connections between towing and towed vehicles shall be contained in a cable, cables, or other substantially constructed protective device, and shall be mechanically and electrically adequate and free of short or open circuits. Suitable provisions shall be made for the prevention of an incorrect connection or an accidental disconnection. Any detachable connection made by twisting wires together from the towed and towing units is prohibited. Wires or cables shall have sufficient slack to accommodate all normal motion of the parts to which they are attached without damage to the connection.
(e) Spare Fuses. Each combination of vehicles or each motor vehicle if operated singly shall be equipped with at least one spare fuse or other overload protective device, if the devices used are not of a reset type, for each kind and size used. In driveaway-towaway operations, spares located on anyone of the vehicles will be deemed adequate.

§ 1250. School Bus Wiring.

Additional requirements for school bus wiring are as follows:
(a) All school buses shall be equipped with spare fuses of each size used.
(b) All interior wiring for Type 1 school buses constructed after January 1, 1953, and Type 2 school buses constructed on and after July 1, 1970, shall be concealed, and all exposed wiring shall be protected with a waterproof insulation.

(c) The wiring of each Type 1 school bus constructed after January J, 1953, shall be arranged in at least ten circuits:
(l) starting,
(2) ignition,
(3) headlamps, taillamps and dash lamps, (4) stop lamps, (5) flashing red! amber lamps, (6) mrn signal lamps, (7) clearance lamps and/or sidemarker lamps and stepwelllamps, (8) interior lamps, (9) heaters, defrosters, etc., and (10) horn. Each circuit except ignition circuits shall be protected by a separate fuse or circuit breaker with a rating no greater than the safe capacity of the circuit. Fuses, circuit breakers, flashers, pilot lamps, and switches shall be mounted in accessible locations. Head lamps and tail lamps shall be illuminated by a common switch.
(d) Ignition circuits on all school buses manufactured after July 1, 1980, shall incorporate a key-type switch that will stop the engine when the switch is turned to the off position.

40) Wheel Clearance 13 CCR 1289

§ 1289. Wheel Clearance.

School bus wheelhousings shall clear the wheels regardless of load, and permit the installation of chains; wheelhousings shall not project above the 1100r into leg space more than 11 in. Leg space is the area immediately forward of the front edge of a seat cushion to the 11oor.

41) Chassis mounting 13 CCR 1275

§ 1275. Chassis Mounting.

The rear end of the chassis frame or any extension thereof on Type 1 school buses constructed after January 1, 1950, and on all Type 2 school buses constructed on or after July 1, 1970, shall support the rearmost sill of the bus body.

42) Body Construction 13 CCR 1273

1273. School Bus Bodies.

School buses shall comply with the following requirements:
(a) Engine Compartment. The engine compartment shall be sealed from the passenger space, to prevent entrance of exhaust gases, and insulated with fireproofing or other materials to prevent the floor from overheating and the passengers from being injured. All closures between the engine compartment and the bus body shall be fitted with gastight gas-kets, and pedal openings shall be closed by bellows, or self-closing gastight boots or gaskets.
(b) Constmction. A Type 1 school bus manufactured on and after January 1, 1957, and a Type 2 school bus manufactured on and after July 1, 1970, shall comply with the following additional requirements:
(l) Floors. Floors in Type 1 school buses constmcted after January 1, 1957, shall be at least 14-gage steel or equivalent or 5-ply, 5/8 in.laminated wood, marine type, and constmcted and maintained to prevent entrance of exhaust gases. Floors in Type 2 buses constmcted on and after July 1,1970, shall be strong enough to support loads and constmcted and maintained to prevent entrance of exhaust gases.
(2) Body. The bus body shall be reasonably dustproof and watertight and constmction (except of the floor) shall be of prime commercial quality steel or other material with strength at least equivalent to all steel as certified to the department by the bus body manufacturer. If nonmetallic materials are used, they also shall meet the flammability specifications for interior materials in FMVSS 302. In addition, the bus body (including roof bows, body posts, and floor) shall:
(A) Be of sufficient strength to support the entire weight of the fully loaded vehicle on its top or side if overturned.
(B) Have sufficient strainers in the roof stmcture and corners to provide adequate safety and to resist damage on impact.
(C) As evidence that Type 1 school bus bodies manufactured prior to April 1, 1977, meet these standards, the manufacturer shall furnish to the department for each current body model certification that the bus body meets the "Static Load Test Code for School Bus Body Stmcture" as issued by the School Bus Body Manufacturers Association.
(3) Inside Height. In a Type 1 school bus manufactured on or after January 1, 1965, the inside body height, measured at the centerline from the back of the door opening to the back of the next to the last row of seats, shall be a minimum of 70 in.
(4) Interior. The interior of school buses shall meet the following requirements:
(A) The ceiling shall be free of all projections likely to cause injury to a pupil.
(B) Except as otherwise provided, the ceiling over any aisle shall not have any projection that protrudes more than 3/4 inch or that reduces the minimum inside height requirements.
(C) Ceilings may have projections over the aisle for air conditioners provided that no portion of the projection is more than 35 inches from an emergency exit and no portion projects below the top of the emergency exit opening.

(D) Type 1 school bus ceilings shall not have any projection over any seat where the minimum distance from the highest point ofthe seat cushion to the projection is less than 40 inches.
(E) No ceiling projection over any seat shall project lower than the top of any window.
(F) The interior walls on Type 1 school buses and Type 2 school buses manufactured on or after July 1, 1970, shall be lined. Hoses, tubing, and piping installed on interior walls for air conditioning or heating shall be equipped with protective covering designed to prevent puncture or injury.
(G) Materials used on the interiors of school buses manufactured on or after September 1, 1972, shall comply with the specifications of Federal
Motor Vehicle Safety Standard 302 in effect at the time of manufacture. Any material used in refurbishing bus interiors shall be fire resistant and shall comply with the standards in effect for new vehicles at the time of installation. (5) Modifications. No person shall render inoperative, in whole or in part, any device or element of design or equipment of a school bus in compliance with FMVSS 220.

43) Batteries 13 CCR 1248
§ 1248. Storage Batteries.
Every storage battery on a motor vehicle first sold and registered after January 1, 1967, unless located in the engine compartment, shall be protected by a substantial and securely fastened enclosure or removable cover. Battery compartments and all adjacent metal parts subject to corrosion from battery leakage shall be finished with an acid-resistant substance, and the compartments shall be vented to provide adequate battery ventilation and drainage. Cables passing through a metal compartment to the starting motor shall be insulated against grounding by acid proof and waterproof bushings. When both the battery and the fuel tank are installed under the driver" s seat, they shall be separated by a partition, and each compartment shall be provided with independent covering, ventilation, and drainage.

44) Bumpers 13 CCR 1290
§ 1290. Bumpers.
Bumpers on Type 1 school buses constructed after January 1, 1950, and on Type 2 school buses constructed on and after July], 1970, shall be installed front and rear and shall be attached directly to the chassis frame or other structural members of sufficient strength. Bumpers shall be strong enough to permit the bus to push a vehicle of equal gross loaded weight or be pushed without permanent distortion of bumper, chassis, or body. Rear bumpers of Type 1 school buses shall be designed to prevent anyone from getting a toehold and hitching a ride. A rear bumper is not required when a vehicle is equipped on the rear with a wheelchair loading device that, when retracted, meets or exceeds the protection provided by the original bumper.

45) Tires Rims, Wheels VC 27465, 13 CCR 1244
§ 1244. Tires, Rims, and Wheels.
AU tires, rims, and wheels used on vehicles subject to these regulations shall comply with the requirements of Article 14, Chapter 4, of this title, beginning with Section 1080, and the following provisions:
(a) Aluminum Wheels. No aluminum alloy disc wheel demountable at fhe hub and manufactured on or before September 30, 1955, shall be used on the front or steering axle(s) of a motor vehicle or the leading vehicle of a vehicle combination.
(b) Spare Tires. Extemally mounted spare tires shall be contained and supported by tire carriers or other means specifically designed for the purpose and secured to prevent accidental release of the tires.
(c) School Bus Tires and Rims. All tires and rims used on school buses shall comply with the following requirements:
(l) All tires on a school bus shall be of the same size, except as otherwise specified on the Federal data plate or label.
(2) All Type 1 school buses shall have dual *tires* on the rear axle.
(3) No tire shall be permitted inside a Type 1 school bus, nor shall any tire compartment project into the passenger compartment. Spare tires shall be secured to the vehicle and shall not be placed across a *window*, entrance, or any exit, or in any posi~ion that may endanger the occupants.

46) Fuel System 13 CCR 1254, 1255
§ 1254. Liquefied and Compressed Gas Fuel Systems.
Motor vehicles fueled by compressed or liquefied natural gas or liquefied petroleum gas shall be equipped with fuel containers and systems that comply with Article 2, commencing with Section 930 of this title. A school bus that has

been modified to use compressed or liquefied natural gas or liquefied petroleum gas shall not be used to transport pupils until the fuel system installation has been inspected by the department

§ 1255. Fuel Tanks and Fuel Lines.

(a) Fuel lines shall not enter or pass through the passenger compartment of any bus, except to provide fuel to a combustion heater installed in compliance with Section *1259.*

(b) Fuel tanks on school buses shall be located entirely outside the passenger compartment.

(c) Type 1 Buses. Fuel tanks on Type I school buses constructed after January I, 1950, and prior to April 1, 1977, shall have a capacity of not less than 18 gal and shall be mounted between the front axle and a point not less than 18 in. from the rear end of the frame or body and to the right side. However, if insufficient space is available on the right side of a short wheel base chassis designed to carry fewer than 30 pupils, the tank may be placed on the left side. The tank shall not extend above the side member of the chassis or beyond the outer edge of the body. Filler, vent, and drain openings shall be outside the bus body. The filler shall not project beyond body panels. Except for diesel fuel systems, fittings through which fuel is drawn shall be located above the normal "full" line of tanks installed after January 1, *1974.* (d) Type 2 Buses. For fuel tanks on Type 2 school buses manufactured on and after July 1, 1970, those specifications set forth in the regulations of the Department of Transportation, National Highway Traffic Safety Administration, Federal Motor Vehicle Safety Standards applicable at time of manufacture shall apply.

47) Exhaust System 13 CCR 1261

§ 1261. Exhaust Systems.

Exhaust systems shall comply with the Vehicle Code and the following:

(a) Every motor vehicle propelled by an internal combustion engine shall be equipped with a system to direct the discharge of combustion exhaust gases.

(b) No part of an exhaust system shall be located where its position would likely result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.

(c) No exhaust system shall discharge to the atmosphere at a location directly below the fuel tank or the fuel tank filler pipe unless a shield is installed in a manner that prevents spilled fuel from contacting the exhaust system.

(d) The exhaust system of a Type 1 bus, other than a school bus, powered by a gasoline engine shall discharge to the atmosphere at or within 6 inches forward of the rearmost part of the bus.

(e) The exhaust system ofa Type l bus, other than a school bus, using fuels other than gasoline shall discharge to the atmosphere either:

(1) At or within IS inches forward of the rearmost part of the vehicle,or

(2) To the rear of all doors or windows designed to be opened, except windows designed to be opened solely as emergency exits.

(f) The exhaust system of every truck and truck tractor shall discharge to the atmosphere at a location to the rear of the cab or, if the exhaust projects above the cab, at a location near the rear of the cab. This requirement shall not apply to airport tank trucks used exclusively to fuel aircraft.

(g) Exhaust system repairs shall permit no leakage or discharge of exhaust gases at any location other than the discharge location required or permitted by this section.

(h) The exhaust system shall be securely fastened to the vehicle.

(i) Exhaust systems may use hangers which permit required movement due to expansion and contraction caused by heat of the exhaust and relative motion between engine and chassis of a vehicle.

(j) School Buses. The exhaust pipe of each Type 1 school bus and each Type 2 school bus constructed on or after July 1, 1970, shall project beyond the rear or side of the body of the bus but not beyond the bumper and shall not discharge near an entrance or exit, except that exhaust pipes may discharge near, but not directly under, doors designed to be opened solely as emergency exits. No flexible pipe or tubing shall be used except where necessary to prevent breakage.

48) Drive Shaft Guards 13 CCR 1266(a)

§ 1266. Drive Shaft Protection.

A drive shaft guard to prevent broken shafts from whipping through the floor or dropping to the ground shall be required on:

(a) School Buses-On all Type 1 school buses constructed after January 1, 1950, and all Type 2 school buses constructed on or after July 1, 1970, each segment of the drive shaft shall be equipped with a guard

49) Brakes-General VC26301-26522, 13 CCR 1245, 1246

§ 1245. Brakes-All Vehicles.

(a) Reciprocating Compressor Discharge Line-Every part of the first 24-inch length of a reciprocating air compressor discharge line, measured from the compressor discharge port, shaU be designed to withstand at least 450 degrees Fahrenheit for continuous service and, if flexible hose, shall be reinforced by at least one layer of *wire* braid. The entire air discharge line and its couplings shall show no leakage under a pressure of 200 pounds per square inch for 5 minutes. This provision does not ap-ply to school buses manufactured prior to January *1,* 1968. or to vehicles manufactured on and after March 1, 1975. in compliance with FMVSS*121* (49 CFR 571.121).

(b) Check Valves-Motor vehicles equipped with a check valve in compliance with Vehicle Code Sections 26507 and 26522 shall have a readily accessible means for testing proper operation of the valve, and tools needed for the test shall be carried in the vehicle. The means shall not consist of loosening any connection between the source of compressed air or vacuum and the check valve. This provision does not apply to Type *1* school buses manufactured prior to January 2. 1968.

(1) In air brake systems, the means shall be a manually operated drain cock or other device between the check valve and the compressor.

(2) In vacuum systems, the means may be the stopping of the engine.

(c) Air Reservoirs-Property-carrying vehicles first sold and registered after January L *1967,* school buses, farm labor vehicles, and Type *1* buses, equipped with air or vacuum brakes, shall have a reserve capacity sufficient to ensure a full service brake application with the engine stopped without depleting the air pressure or vacuum below 70 percent of that indicated by a gauge immediately before the brake application. Such vehicles manufactured on and after March 1, 1975, and equipped with air brakes shall have a reserve capacity sufficient to ensure a full brake application with the engine stopped without depleting the air pressure *below* 85 percent of that indicated by a gauge immediately before the application.

(1) Air Reservoir Specifications-Air brake reservoirs installed as original equipment on vehicles manufactured in compliance with FMVSS *121* (49 CFR 571.121) are not required to be marked. Replacement air brake reservoirs shall met SAE 110 in the 1965 or later edition of the SAE Handbook and be marked with the manufacturer's initials followed by "SAE 110 150 psi Rated Working Pressure" and the date of manufacture. Auxiliary air tanks shall meet the requirements of Section 1252 of this title.

(2) Air Reservoir Drains-Air reservoirs used in brake systems shall have means other than a plug for draining water and contaminants from the lowest portion of the reservoir. Multicompartment air brake reservoirs shall provide such means for draining each compartment.

(d) Air Flow Restriction-Any valve or other mechanism of an air brake system that restricts the free flow of compressed air between the brake application control and the brake actuators at application pressures above 10 pounds per square inch under normal operating conditions shall comply with the brake equipment requirements in Article 12, Chapter 4, of this title, beginning with Section 1061, except as provided in Vehicle Code Section 26311 (b) governing reduced braking effort on front wheels.

(e) Detachable Connections-Detachable air or vacuum connections shall be constructed, installed, and maintained to ensure against accidental disconnection. When connections at the end of flexible air lines are left detached, they shall be adequately protected against the entrance of dirt.

(f) Brake Tubing and Hose Requirements-Tubing, pipe, and hose used in air, vacuum, or hydraulic brake systems shall be:

(l) designed and constructed in a manner that ensures proper, adequate, and continued functioning,

(2) sufficiently long and flexible to accommodate without damage all normal motions of the parts to which it is attached,

(3) suitably secured against chafing, kinking, or other mechanical damage,

(4) installed in a manner that prevents contact with the vehicle's exhaust system or other source of high temperature, and

(5) installed in a manner that ensures proper continued functioning and that is free of leaks, constrictions, or other defects.

(A) Tubing or pipe shall be supported to minimize fatigue.

(B) Metal-ta-metal contact shall be avoided by the use of soft nonmetallic cushions at points of support.

(C) Tubing or pipe shall be protected against road hazards either by a protected location or adequate shielding at exposed areas.
(D) Protective loom, where used, shall be both water and acid resistant.
(E) Vacuum brake systems shall be connected to the engine manifold with fittings at least 3/8 inch in inside diameter. e (g) Brake Tubing and Hose Connections-Connections for air, vacuum or hydraulic brake systems shall:
(1) be adequate in material and construction to ensure proper continued functioning.
(2) be designed. constructed, and installed to ensure an attachment free of leaks, constrictions, or other defects when properly connected, and
(3) use fittings that meet SAE J5 l 2 OCT 80, Automotive Tube Fittings, or SAE 1246 MAR 81. Spherical and Flanged Sleeve (Compression) Tube Fittings, for tubing splices made on a vehicle on or after July 1, 1992. (h) Brake Tubing-Metallic tubing shall only be used where relative movement in the line does not occur.
(1) On vehicles manufactured after July 1, 1992, and on any replacements made to the brake line on any vehicle after this date, nonmetallic (plastic) brake tubing shall only be used where relative movement does not occur or through an articulation point provided movement is less than 4.5 degrees in a vertical plane and 7.4 degrees in a transverse horizontal plane. Plastic tubing shall not touch or be attached to leaf, coil, or air suspension springs.
(2) Brake Hose and Coiled Nonmetallic Tubing-Brake hose and coiled nonmetallic brake tubing is for use where substantial relative movement in the line occurs or the line is exposed to potential tension or impact such as between the frame and axle in a conventional suspension system. Only coiled nonmetallic brake tubing or brake hose may be used for connections between towed and towing vehicles or between the frame of a towed vehicle and the sliding subframe of an adjustable axle of that vehicle. If coiled nonmetallic brake tubing is used in these locations it shall be encased in a spring guard or similar device which resists kinking of the tubing at the fittings to which it is attached.
(i) Air Brake Tubing Standards-Air brake tubing that is original e equipment on a vehicle at time of manufacture is not required by FMVSS to meet any requirement but is subject to National Highway Traffic Safety Administration (NHTSA) recall if it become a safety defect. Replacement brake tubing installed on or after July 1, 1992, shall meet the following Society of Automotive Engineers Standards:
(1) Metallic Tubing-Metallic tubing shall be copper tubing or galvanized steel pipe meeting SAE 11149, Metallic Air Brake System Tubing and Pipe. Copper tubing shall be permanently and legibly marked "Air Brake."
(2) Nonmetallic Tubing-Nonmetallic tubing shall meet SAE J844, Nonmetallic Air Brake System Tubing, Type B (reinforced). Such tubing shall be identified in contrasting color with the markings "Airbrake, SAE J844 Type B," the nominal outside diameter of the tubing in inches, and the tubing manufacturer's name or symbol.
(j) Brake Hose Standards-Air, hydraulic, and vacuum brake hoses installed on and after September 1,1974, shall comply with FMVSS 106, Brake Hoses (49 CFR 571.106), except S12 and S13.
(1) Original Equipment Components-Components that are original equipment on a vehicle at time of manufacture are not required by FMVSS to be identified in any manner but are subject to NHTSA recall for noncompliance with the performance requirements of the standards.
(2) Brake Hose-Air, hydraulic, and vacuum brake hose manufactured on or after September 1,1974, shall be marked in letters at least 1/8 inch high with "DOT", the hose manufacturer's designation, the month and year of manufacture, and the nominal inside diameter of the hose. FMVSS 106 does not require these markings to be visible on a completed brake hose assembly.
(3) Replacement Air Brake Hose Assemblies-Replacement air brake hose assemblies manufactured on or after September 1, 1974, with end fittings attached to the hose by crimping or swaging shall have at least one end fitting etched, stamped, or embossed with a designation at least 1/16 inch high that identifies the hose assembly manufacturer.
(4) Air Brake Hose Fittings-Air brake hose fittings manufactured on or after September 1, 1974, that are not crimped or swaged shall have at least one component etched, stamped, or embossed in block capital letters, numerals, or symbols at least 11*1*6 inch high with "DOT", a designation that identifies the manufacturer of that component of the fittings, "A" for nonreusable fittings at "AI" or "All" for reusable fittings, and the nominal inside diameter in inches or millimeters (or outside diameter of plastic tubing) to which the fitting is properly attached.
(5) Hydraulic Brake Hose Assemblies-Hydraulic brake hose assemblies manufactured on and after September 1, 1974. shall have at least one end fitting etched, stamped, or embossed with a designation at least 1/16 inch high that identifies the manufacturer of the assembly. Each hose shall have at least two clearly identifiable stripes at least *1*/16 inch wide placed on opposite sides of the hose parallel to its longitudinal axis, except where the end fittings prevent its installation in a twisted orientation on either side of the vehicle.

(6) Vacuum Brake Hose Assemblies-Vacuum brake hose assemblies manufactured on or after September 1, 1974, with end fittings that are attached to the hose by crimping or swaging, or to plastic tubing by heat shrinking or interference fit, shall have at least one end fitting etched, stamped, or embossed with a designation at least 1/16 inch high that identifies the manufacturer of the assembly.
(7) Manufacturer's Option-At the manufacturer's option, brake hose assemblies may instead be marked by a band around the assembly with the letters "DOT" and with a designation that identifies the hose assembly manufacturer, in letters, numerals, or symbols at least 1/16 inch high.
(k) Air Leakage Rates-Air leakage with the engine stopped and the air reservoir pressure at governor cutout as specified in Section 1061 (b) of this title shall not exceed the following rates.
(1) With service brake released and air or spring parking brakes applied:
2 pounds per square inch per minute for single vehicles, 3 pounds per square inch per minute for combinations of two vehicles, and 5 pounds per square inch per minute for combinations of three or more vehicles.
(2) With service brakes applied and air or spring parking brakes released: 3 pounds per square inch per minute for single vehicles, 4 pounds per square inch per minute for combinations of two vehicles, and 6 pounds per square inch per minute for combinations of three or more vehicles.
(3) No leakage shall occur in tubing or hose even if the overall leakage is less than the specified limit.
(l) Hydraulic Brakes-The pressure of hydraulic brakes shall not be higher than the manufacturer's rated capacity of the hose assemblies.

§ 1246. Brakes-School Buses and Farm Labor Vehicles.

The following additional brake requirements shall apply to school buses and farm labor vehicles:
(a) Air Brakes-Type 1 school buses having 10 or more rows of seats and manufactured after January 1, 1970, and prior to April 1, 1977, shall be equipped with full compressed air brakes. Type I school buses equipped with air brakes and manufactured after January 1, 1953, shall have at least two *reservoirs* connected in series. On all school buses manufactured on or after July 1, 1970, the air-actuated devices outside the service and emergency brake systems shall also be provided with a reservoir equal to at least six times the total volume at full travel of all auxiliary devices supplied by the reservoir. The reservoir requirement for the airactuated devices outside the service and emergency brake systems shall not apply to school buses manufactured on or after March 1, 1975, incompliance with FMVSS 121 (49 CFR 571.121).
(b) Warning Devices-Type 1 school bus brake systems shall have warning devices as follows:
(1) Air brakes shall have a buzzer or other audible warning signal and a visual, air-operated, flag-type warning device, both used exclusively for the brake system. Both devices shall give a continuous warning when the air supply pressure in the first reservoir to receive air from the compressor, or any service reservoir, drops below a fixed pressure as specified by Vehicle Code Section 26506. The flag-type device is not required on vehicles manufactured on or after March 1, 1975, in compliance with FMVSS 121 (49 CFR 571.121).
(2) Vacuum brakes shall have a buzzer or other audible warning signal and a visual, vacuum-operated, flag-type warning device, both used exclusively for the brake system. They shall provide continuous warning to the driver when the vacuum in the supply system drops to 8 inches of mercury and less. *The* requirement for the flag device shall not apply to vehicles manufactured with a dual or split type service brake system powered by power-assist vacuum chambers.
(3) The visual warning devices required in (1) and (2) shall be readily visible to the driver when seated in the normal driving position.
(4) Override switches are prohibited for audible warning devices required in (l) and (2).
(5) The requirements in (1) and (2) for warning devices to be used exclusively for the brake system shall not be construed to prohibit multichannel warning devices that monitor other vehicle systems in addition to the brake system if such devices provide a clear brake system warning that cannot be activated by any of the other monitored vehicle systems.
(c) Brake System Modification-Brakes on Type 1 school buses may be modified only with the written approval ofthe school bus chassis manufacturer or by using brake system options of a type available from the bus manufacturer and represented by the bus manufacturer as suitable for use on the specific model school bus. Modifications shall not render the brake system in violation ofthe provisions of this title or of any other law or regulation. Modifications shall not render inoperative any item of brake- related equipment nor diminish any aspect of performance of a brake system manufactured in compliance with FMVSS 121, except as permitted by written ruling of the National Highway Traffic Safety Admjnistration.
(l) Air system cleaning devices, such as automatic condensate drains and air dryers, are not considered a modification of the brake system if they are installed in accordance with the component manufacturer's instructions.

(2) A conversion from an air brake chamber that has an air applied parking brake or emergency stopping system function to a brake chamber that has a spring applied parking brake or emergency stopping system function, or vice versa, is not considered a modification if the conversion is made in accordance with the substitute component manufacturer's instructions.
(3) Any advisory recommendations by the component manufacturer shall be considered mandatory. The instructions shall be retained by the *school* bus operator for reference by California Highway Patrol personnel for comparison with the completed installations.
(d) Service Brake System-Type I school buses manufactured on and after January 1, 1968, shall comply with the following requirements:
(1) Foot Pedal Travel-The travel of hydraulic brake foot pedals shall not exceed 60 percent of the available travel when measured statically at the minimum pedal force required for compliance with Vehjcle Code Sections 26454 on stopping distance.
(2) Air or Vacuum Reservoirs-The combined volume of all service
reservoirs shall be at least 12 times the combined volume of all service brake chambers at maximum travel of the pistons or diaphragms. Referenced in Section 1245(b) of this title shall meet the following requirements: *(A)* Air Brake System-At least half of the required air reservoir capacity shall be safeguarded to prevent the stored air from being depleted by any failure or leakage in the connection to the source of compressed air. Air supply for the service brakes shall be protected so that failure of the air-actuated devices outside the service brake system will not drop the service brake supply system pressure to less than 60 pounds per square inch.
(B) Vacuum Brake System-The required vacuum brake system reservoir capacity shall be safeguarded to prevent the stored vacuum from being depleted by any failure or leakage in its connection to the source of vacuum. The supply of vacuum for all devices or systems other than the brake system shall be drawn from between the brake system check valve and the source of vacuum.
(e) Emergency Stopping System-Type 1 school buses manufactured after January L 1968, shall comply with the following emergency stopping system requirements:
(I) The brakes shall be capable of being applied, released, and reapplied by the driver but shall not be capable of being released from the driver's seat after any reapplication unless energy is available for an immediate reapplication.
(2) The brakes shall be manually applied and released under modulated control by the driver to maintain directional stability during a complete emergency stop.
(3) Failure or malfunction of any part in either the emergency stopping system or the service brake system shall not leave the vehicle without operative brakes capable of stopping the vehicle loaded up to the manufacturer's gross vehicle weight rating within the requirements of California Vehicle Code Section 26508(k)(3). This provision does not apply to a failure in the mechanical parts of the wheel brake assemblies or the brake pedal and linkage to the brake valve or master cylinder.
(4) School buses manufactured on or after March 1, 1975, in compliance with FMVSS 121 (49 CFR 571.121) and maintained in compliance with that standard, shall be deemed in compliance with this subsection.
(f) Reservoir Capacity-The reservoir capacity of school buses and farm labor vehicles shall be sufficient to complete one operation of the doors after the engine has stopped and the brakes have been fully applied.

Wheelchair School Buses

54) Entrance Exit Doors 13 CCR1293(a)

§ 1293. Wheelchair School Buses.

Provisions of this section shall apply to all school buses transporting pupils in wheelchairs.
(c) Entrance Doors. Entrance doors used by pupils in wheelchairs shall be installed and maintained as follows:
(1) Type 1 school buses equipped with entrance doors that conform with Section 1281 of this subchapter may also be equipped with an additional entrance door which conforms to the provisions of this section. Each door shall be installed by the body manufacturer or with his written approval and statement, or the written statement of an approved independent engineering testing firm, that the installation of the door will not adversely affect the structural integrity of the vehicle.
(2) All such doors shall afford easy manual operation from inside or outside the vehicle in case ofemergency and shall be protected from accidental opening, except that a means of opening the door from the inside is not required on doors with wheelchair loading devices obstructing the passageway.
(3) Instructions for the manual operation of the door and wheelchair loading device from outside the vehicle shall be displayed in clear view on the exterior of the vehicle at the exit.

(4) The door shall provide an opening not less than 24 in. wide. There shall be a soft head cushion at least 1/2 in. thick on the inside of the bus at the lower edge of the top of the door opening.

55) Emergency Exits 13 CCR 1293(d)
(d) Wheelchair Emergency Exits. School buses transporting pupils in wheelchairs shall have at least two 11oor-Ievel doors. One door shall be used for the regular loading and unloading of wheelchairs as described in subsection (c). The additional floor-level door shall be an emergency door for the evacuation of pupils in wheelchairs. The additional door shall be equipped and installed at one of the locations specified in Section 1282 for emergency exits. The door shall provide an unobstructed opening not less than 24 in. wide. If a pupil's physical condition prevents that pupil from being readily evacuated through a door 24 in. wide, the door shall be as wide as necessary to permit rapid evacuation of that pupil during an emergency. Type 1 school buses transporting pupils in both wheelchairs and seats shall comply with the requirements of 1282 and 1284 of this subchapter.

56) Isles 13 CCR 1293(a)
(a) Construction of Body-Basic Provisions. Notwithstanding other provisions of this subchapter, a school bus body that is constructed, altered, or modified for the purpose of installing and operating equipment approved for loading, unloading, and transporting physically handicapped pupils and pupils in wheelchairs shall comply with this section and Section 1231. This requirement applies only to those portions of a school bus used to transport pupils in wheelchairs. Pupils not seated in wheelchairs shall be provided aisles, passageways, and exits that conform to all other provisions of law.

57) Loading Device Installation 13 CCR 1239(e)
(e) Wheelchair Loading Devices. Loading devices for the ingress and egress of pupils in wheelchairs shall be installed, maintained, and operated as follows:
(1) Any installation of a wheelchair loading device that requires modification of the vehicle chassis shall be performed by the chassis manufacturer or with the manufacturer's written approval and statement that the chassis modification will not adversely affect the structural integrity of the vehicle.
(2) No loading device shall be constructed or operated in a manner that requires the driver to leave a pupil unattended on the loading device outside the passenger compartment, nor shall any driver permit a pupil to be unattended on a loading device outside the passenger compartment.
(3) Each hoist or elevator-type loading device shall be constructed with a positive method of preventing an unbraked wheelchair from rolling off during the lifting operation.
(4) Any loading device stored inside the vehicle shall be secured to the vehicle in a manner that will prevent hazardous movement during normal operation or in the event of an emergency stop, traffic accident, or vehicle overturn.
(5) Any loading device stored inside the vehicle shall be equipped with padding capable of minimizing injury-producing impact forces, and all exposed edges or other hazardous protrusions shall be padded to within 3 in. of the bus floor.
(6) The travel surface of all loading devices shall be covered with nonskid material.

58) Wheelchair Securement devises 13 CCR 1239(f)
(f) Securement of Pupils and Wheelchairs. Passengers shall be secured to wheelchairs by a restraining belt specified in subsection (g) while being loaded, unloaded, and transported. Wheelchairs shall be secured as follows:
(l) Wheelchairs shall be secured with fasteners of sufficient strength to prevent the chairs from rotating, prevent the chair wheels from leaving the floor in case of sudden movement, or support the chairs in the event the vehicle is overturned.
(2) Fasteners shall contact the wheelchair on at least three points and shall be spaced to provide the most effective securement. No fastener shall be attached to any door. No fastener shall project more than 1 ½ in. above the floor in the area between the wheel wells of the vehicle.
(3) Fasteners shall consist of either two webbed belts described in subsection
(A) or two all-metal devices described in subsection (B), or one each of such devices, installed in conformance with this subsection.
(A) Webbed safety belts shall meet or exceed federal specifications for Type 2 pelvic restraint seat belts or be certified by the manufacturer to meet or exceed assembly strengths of 5,000 Ib in loop fashion or 2,500Ib on each anchorage leg. Certification may be the manufacturer's specifications listed in catalogs or publications. All new construction of webbed fasteners and repairs to webbing shall conform with standards established by the

manufacturer of the webbing. Webbed belts attached directly to the vehicle and securement track used for webbed fastener attachments shall be secured to the vehicle at not less than two separate points with bolts, nuts, and lock washers or self-locking nuts. Bolts used shall provide holding strength equal to or greater than that of two bolts *3/8* in. in diameter and of National Fine Thread SAE grade 5. All fastening of webbing and securement tracks shall be in accordance with the manufacturer's specifications provided that no standard established herein may be violated. Where mounting bolts do not pierce the vehicle frame, subframe, body posts, or equivalent metal structure, a reinforcement plate or washer not less than 1/16 in. in thickness and 2 1/2 in. in diameter is required. Smaller diameter washers may be used to install wheelchair securement track provided a minimum of four fasteners and four washers are used for each track installation. These washers shall be not less than 1 *1/4* in. in diameter, not less than *1/16* in. in thickness, and have an appropriate inside diameter. In no event shall interior paneling constitute anchorage for a point of securement. When not in use, webbed belts shall be removed or retracted.

(B) All-metal fasteners shall be secured to the vehicle with bolt nuts and lock washers or self-locking nuts ofNational Fine Thread SAE grade 5 or equivalent. Such devices shall have two points of securement requiring bolts *3/8* in. in diameter or equivalent, or one point of securement requiring a bolt of 1/2 in. in diameter or equivalent. Where mounting bolts do not pierce the vehicle frame, subframe, body post, or equivalent metal structure, a reinforcement plate or washer not less than 1/16 in. in thickness x 2 1/2 in. in diameter is required. In no event shall interior paneling constitute anchorage for a point of securement.

(g) Equipment of Wheelchairs. Wheelchairs shall be equipped as follows:

(1) Brakes and Restraining Belt. Wheelchairs shall be equipped with brakes and a restraining belt properly maintained by the owner of the chair. Electric wheelchairs transported on school buses shall be capable of being locked in gear when placed in a school bus or shall have an independent braking system capable of holding the wheelchair in place.

(2) Batteries. Batteries used to propel electric wheelchairs transported on school buses shall be both leak resistant and spill resistant or shall be placed in a leak resistant container. Batteries shall be secured to the wheelchair frame in such a manner as to prevent separation in the event of an accident.