New York State

Department of Transportation

Bus & Passenger Vehicle Regulations

Title 17

Official Compilation of

Codes, Rules and Regulations

of the State of New York

Parts 720, 721, 722, and 723

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PART 720.
BUS & PASSENGER CARRYING VEHICLE
SAFETY REGULATIONS
(Statutory authority: Transportation Law Sections 14, 138, 140, and ch. 202; Vehicle and Traffic Law Sections 375, 383 and 1223-a )

Sec.

720.0 APPLICABILITY

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(A) This Part is applicable to all passenger vehicles operating in New York State providing transportation of any of the types described in (B), (C), (D) or (E) below, which are subject to periodic safety inspections by the New York State Department of Transportation (the department). Such vehicles must meet the applicable requirements of the New York State Transportation Law, as well as pertinent requirements of the New York State Vehicle and Traffic Law and the Federal Motor Vehicle Safety Standards (FMVSS - Title 49 of the Code of Federal Regulations):

(B) **SCHOOL TRANSPORTATION**: all motor vehicles transporting passengers under the age of 21 years, to and from schools, for hire, or owned and/or operated by school districts or any public or private school. School transportation will also include the transportation of passengers under the age of 21 years between school programs and community residences (as such terms are defined in section 1.03 of the Mental Hygiene Law) and where such school programs are approved by the New York State Education Department. **Note**: For hire school transportation does not include parents who enter into a contract with a school to provide transportation exclusively for their own children in their own vehicle(s).

(C) **REGULATED PASSENGER TRANSPORTATION**: all motor vehicles, operated in this State, pursuant to or requiring a certificate or permit for the transportation of passengers from the United States Department of Transportation (USDOT) or the Commissioner of Transportation; and

(D) **MUNICIPAL PASSENGER TRANSPORTATION**: all buses operated pursuant to or requiring regulatory authority from any city that has adopted an ordinance, local law or charter to regulate a franchise, "bus line" operation pursuant to section 80 of the Transportation Law.

(E) **NEW YORK CITY DOUBLE-DECKER SIGHTSEEING BUSES**: effective April 1, 1998, Double-Decker Sightseeing Buses regulated by the New York City Office of Consumer Affairs shall be subject to the Department’s periodic inspection requirements pursuant to Chapter 202 of the Laws of 1997. Such vehicles shall be considered municipal passenger transportation as set forth in (D) of this section.
720.1 DEFINITIONS.

(A) Articulated bus means a two unit bus with flexible coupling connection between the units.

(B) Bus means a motor vehicle with motive power, except a trailer, designed for carrying more than 10 persons (including the driver), that is used to transport adults and/or children, unless otherwise noted. A bus shall not exceed 102 inches in width or 45 feet in length except for articulated buses which shall not exceed 62 feet in length. The types of buses are defined below.

(C) Certificated Service means the transportation of passengers pursuant to a certificate of public convenience and necessity issued by this department, a registration issued by the USDOT or a City Bus Line franchise issued pursuant to section 80 of the Transportation Law, or transportation for which such certificate or city regulatory authority is required.

(D) City service means the transportation of passengers in certificated service between termini within a city or within a territory embraced by a city and a contiguous city or village within New York State.

(E) Conspicuously lettered means of a color contrasting to the color of the vehicle and easily discernible.

(F) Contract service means the transportation of passengers pursuant to a permit issued by this department for passenger service by contract.

(G) Driver means any person who drives any motor vehicle.

(H) Fire block upholstery shall mean any exterior material that will not sustain flame. Note: Material must be capable of withstanding tests such as “Boston Bag Method” or equivalent without allowing flame to penetrate and ignite seat filler material.

(I) Intercity service means the transportation of passengers in certificated service on a route which is not defined as city service. It includes rural and suburban services, as well as interstate service.

(J) Interstate service means the transportation of passengers between a point in this State and a point in another state or a foreign country, or between points in this State through another state or foreign country, or between points in other states or foreign countries through this State.

(K) Motor vehicle means a vehicle of any description, including motor vehicles originally constructed for other purposes in which seats have been permanently installed for carrying passengers.

(L) NYC Historic Double-Decker Sightseeing Bus means a bi-level or double-decker bus designed to comfortably seat and carry at least eight passengers in a vehicle that is exempt from federal motor carrier safety standards due to either its age or historic nature. Such buses are to be used exclusively to provide transportation for compensation as a sightseeing service conducted pursuant to the regulatory control of New York City, when such service is performed wholly within New York City.

(M) Operator means the person, firm or corporation who has control or directs the operation of a motor vehicle as owner, lessee or otherwise.

(N) Passenger weight is computed at the rate of 150 pounds per adult and 120 pounds per child.

(O) Placed in service means the first time a vehicle is used for the transportation of passengers within the State of New York in service that is subject to Part 720 inspection requirements.
(P) **Power brakes** means a system using stored energy as the principal force in the application of the brakes.

(Q) **Push-out window** means a window, usually hinged at the top, that can be opened by exerting hand pressure on the interior surface of the window or by releasing a latching device and pushing the window outward.

(R) **Raised Floor** is a design that has a single, multi-level or inclining floor area.

(S) **School** means every place of academic, vocational or religious services or instruction for persons under the age of 21 years, except places of higher education. It shall include every child care center, every institution for the care or training of the mentally or physically handicapped; and every day camp.

(T) **School activities** shall be defined as any program for the benefit of pupils, sponsored and supervised by school officials, and shall include, but shall not be limited to such activities as the following, when so supervised and sponsored:

i) extracurricular activities such as athletics, dramatics and musicals;

ii) field trips directly connected with subjects included in the school curriculum; and

iii) school dances and other similar activities.

(U) **School bus** is a bus, unless otherwise noted, used to transport children to or from school or school activities.

(V) **School service** means the transportation by motor vehicle of passengers under the age of 21 years to and/or from school or school activities, with or without adult supervisory personnel, either:

i) in vehicles owned and/or operated by a school districts or a private school; or

ii) by others for hire, except for parents who enter into a contract with a school to provide transportation exclusively for their own children in their own vehicle(s).

(W) **School vehicle** is any motor vehicle used to transport children to or from school or school activities, except for motor vehicle(s) operated by parents who enter into a contract with a school to provide transportation exclusively for their own children.

(X) **Type “A” Bus** is a bus with a conversion or body constructed upon a van-type or cutaway front-section vehicle with a left side driver’s door and designed to carry more than 10 persons.

The following are sub-categories of **Type “A” Bus**:

i) Type A-I GVWR over 10,000 pounds

ii) Type A-II GVWR 10,000 pounds or under

(Y) **Type “B” bus** is a bus with a conversion or body constructed and installed upon a van or front-section vehicle chassis, or stripped chassis, with a gross vehicle weight rating of more than 10,000 pounds and designed to carry more than 10 persons. Part of the engine is beneath and/or behind the windshield and beside the driver’s seat. The entrance door is behind the front wheels.

(Z) **Type “C” bus** is a bus with a body installed upon a flat-back cowl chassis with a gross vehicle weight rating of more than 10,000 pounds and designed to carry more than 10 persons. All of the engine is in front of the windshield and the entrance door is behind the front wheels.

(AA) **Type “D” bus** is a bus with a body installed upon a chassis or unitized type construction, with the engine mounted in the front, midship, or rear with a gross vehicle weight rating of more than 10,000 pounds and designed to carry more than 10 persons. The engine may be behind the windshield and beside the driver’s seat; it may be at the rear of the bus, behind the rear wheels; or midship between the front and rear axles. The entrance door is ahead of the front wheels.
(BB) **Unobstructed aisle in vehicles transporting wheelchair passengers** means no fixed items that could impede wheelchair movement.

(CC) **Unobstructed aisle in non-wheelchair motor vehicles** means no fixed items that could constitute a tripping hazard. Seats which can be folded easily and quickly or wheel housings that are able to be stepped on or over are not considered to be an aisle obstruction. Passenger restraint systems shall not constitute an aisle obstruction, providing they do not unreasonably block access.

(DD) **USDOT:** The United States Department of Transportation.

### 720.2 VEHICLE INSPECTION, RECIPROCITY AND CERTIFICATION.

(A) A motor vehicle subject to department inspection requirements shall not be operated unless it displays on the interior surface of the windshield, as close to the lower right hand corner as practicable*, an unexpired certificate of inspection issued to the current owner or operator by the department, or by another regulatory body certified by the department. In lieu of such certificate of inspection, the department shall recognize the display of a valid certificate of inspection issued within the preceding six months for a motor vehicle having a seating capacity of more than 10 passengers engaged in interstate commerce by the following:

1. The Commercial Vehicle Safety Alliance certificate of safety inspection. See Section 720.11(F) of this Part.

2. A certificate of inspection of any state recognized by the United States Department of Transportation as conducting periodic bus inspections in accordance with Federal standards, or

3. The Public Service Commission of the State of Delaware.

(B) Motor vehicles shall be presented for inspection at the time and place designated by a duly authorized representative of the department. Adequate inspection facilities must be provided by the operator of the vehicles to be inspected.

(C) A newly transferred vehicle shall not be operated by the new operator until subdivision (a) of this section has been complied with or has secured written approval from this Department.

(D) Motor vehicles failing to meet the inspection standards of the department as contained in the Out-of-Service criteria listed in Section 720.11 shall be declared and marked out-of-service by the Department inspector placing an “Out-of-Service Vehicle” Sticker on the windshield. Vehicles marked with an Out-of-Service Sticker shall not be operated with passengers until the defects noted have been repaired and checked by a department inspector. The out-of-service sticker shall be removed only by the department inspector certifying that the vehicle is safe to operate and issuing a valid certificate of inspection. “Out-of-Service Vehicle” stickers shall only be valid for 15 days after issuance for the purpose of moving the vehicle on public roadways for the purpose of repairing the vehicle. In the case where the department inspector determines that the motor vehicle may not be operated safely on a public highway without first being repaired, the inspector also shall place a “Highway Operation Prohibited” sticker on the windshield. Such vehicle shall not be operated until the critical safety defect(s) identified by the department inspector is repaired.

**Note:** Vehicles registered in states where it is illegal to place certificates on windshields shall have such certificates placed on the interior surface of the window as close to the right front side as permitted by law.
720.3 MOTOR VEHICLE IDENTIFICATION AND MARKINGS.

(A) GENERAL REQUIREMENTS  (all vehicles)

(1) Display of Certificate: A valid certificate of registration and proof of inspection shall be carried on each motor vehicle subject to the Department’s Part 720 inspection requirements at all times while transporting passengers.

(2) Display of Operator Name: The exact name of the operator shall be conspicuously lettered on each longitudinal side of the exterior of the vehicle, in letters at least three inches high. Such name and designation shall be as nearly horizontal in form as practicable. If a trade or other name also appears on the vehicle, the exact name of the operator shall be followed by the words "OPERATOR" or "OPERATED BY".

(3) Display of Operator Number: An identifying number unique to that operator’s vehicle shall be conspicuously lettered on the exterior front, the exterior rear, each exterior side and the interior front of every vehicle. The identifying numbers on the exterior shall be at least three inches high and the identifying number on the interior shall be at least two inches high.

(4) Partial Use Vehicle: In lieu of complying with subdivisions (2) and (3) of this section, the operator of a motor vehicle, which is not operated exclusively in passenger transportation services for which inspection is required, may carry, within such motor vehicle, written evidence of the name or names and identifying number otherwise subject to prominent display. Such written evidence of the name or names and identifying number shall be available for examination at all times while such motor vehicle is being operated in such passenger transportation services; provided, however, that when such vehicle is being operated in passenger transportation services subject to the inspection requirements of this Part, such motor vehicle shall bear, on each exterior side, a magnetic or other removable sign stating the exact name of the operator in at least three inches high. If a trade or other name also appears on the vehicle, the exact name of the operator shall be followed by the words "OPERATOR" or "OPERATED BY".

(5) Hydrocarbon Gas Vehicles: Vehicles using hydrocarbon gas for primary or secondary power must meet the identification requirements of the Regulations of the Department of Motor Vehicles (15 NYCRR Part 70).

(6) Electric Powered Motor Vehicles: Vehicles that are electric powered must meet the identification requirements of Section 720.9 of this Part.

(7) Universal Disabled Symbol: The universal disabled symbol shall be conspicuously displayed on the exterior of every vehicle equipped with a wheelchair lift which transports children with disabilities. (See 720.8(B)(6). The symbol shall be placed on the rear of the vehicle.

(8) Lettering of capacity: The maximum seating and standing capacities of a bus shall be lettered near the floor line of the vehicle adjacent to the entrance door in easily discernible figures not less than 1 ½ inches high depicting adult capacity and child capacity. While adult capacity shall always be listed, child capacity shall be depicted only if the bus is used to transport children in school service.

(9) Destination Signs: Each bus with a maximum gross vehicle weight rating of 18001 lbs. or more, used in city service or intercity service, shall have an illuminated sign on the front of the bus that clearly displays its destination or type of service. Such sign shall be so designed and located as to be visible at all times at least 100 feet forward from the front of the bus.

(10) Route Signs: Each bus operated in city service, where more than two routes are operated, shall display
a number, symbol or letter to distinctly indicate the specific route or destination.

(B) SCHOOL VEHICLES WITH CAPACITY OF 8 OR MORE PASSENGERS

(1) School Vehicle Signs: Pursuant to the Section 375 of the Vehicle and Traffic Law, every vehicle having a seating capacity of 8 or more passengers, when used exclusively to transport pupils, teachers and other persons acting in a supervisory capacity to and from school or school activities, or to transport children, instructors or other persons acting in a supervisory capacity to and from camp or camp activities, or to transport children, instructors or other persons acting in a supervisory capacity to and from religious service or instruction shall be equipped with one sign on the front and sign on the rear, bearing the inscription “SCHOOL BUS”. Such sign must comply with the following:

(a) The letters of such signs shall be uniform capital block letters, not less than eight inches in height and each stroke of each letter shall be not less than one inch in width.

(b) The letters of such sign must be black and the background of each such sign shall be the color known pursuant to industry standards as “school bus yellow” or “national school bus chrome”.

(c) Signs may be painted on the vehicle, provided they comply with all the specifications contained in this Part.

(d) Aftermarket signs attached to the vehicle must comply with all the lettering requirements for a school bus sign and the width of any such sign shall not be more than 60 inches.

(e) The sign on the front of each such vehicle shall be mounted in such a manner that it shall not obstruct the vision of the driver of the vehicle and with the bottom of the sign no lower than the top of the windshield. The sign on the rear of each such vehicle shall be mounted in such a manner that the bottom thereof shall not obstruct any rear window of such vehicle.

(f) On school vehicles with a seating capacity of 15 passengers or less, such signs may consist of one two-faced sign, facing both front and rear, mounted on the top of the vehicle, in approximately the center of the roof. Any such optionally installed sign must comply with this Part.

(g) Any sign shall be mounted in such a manner that it will not interfere with the visibility of the flashing red signal lamps mounted on such vehicle.

(h) Each such sign must be visible and readable from a point at least 200 feet distant.

(i) In the event that any such vehicle is operated on a public highway during the period between one-half hour after sunset and one-half hour before sunrise, each such sign must be illuminated so as to be visible from a point at least 500 feet distant.

(j) Each such sign must be installed in such a manner that the faces of the sign does not deviate more than 10 degrees from vertical.

(k) Such signs may be placed either on the outside of the vehicle or incorporated into an illuminated sign box built into the vehicle.

(l) When illumination of such signs is required, the signs may be illuminated from in front of the sign,
or, if the background of the sign is translucent, then the light may be placed behind the sign. In any event, the sign must comply with the requirements as to color and size of letters and background.

(m) When required, sign illumination must be continuous and uniform. “School Bus” signs shall be displayed only when the vehicle is engaged exclusively in the transportation of pupils, teachers and other persons acting in a supervisory capacity to and from school or school activities. When the vehicle is not so engaged, such signs must be covered or removed. Such signs shall not be displayed or used when the vehicle is engaged in charter operations not related to school or school activities.

(n) Under no circumstances shall signs made of reflective material be substituted for or applied to the required illuminated “School Bus” signs.

(2) Telephone Number: All school buses purchased, leased or acquired on or after September 1, 1997, shall have the telephone number, including the area code, of the owner and/or operator printed in three inch bold type on the rear of such vehicle to the extent practical. Other school buses may have such information on the rear of the bus if so desired by the operator.

(C) EXCEPTIONS

Vehicles which do not receive or discharge passengers on or along the public highways: Such vehicles may be exempt from the requirements of subdivision B provided that the operator of such vehicle certifies to the department in writing that the vehicle does not receive or discharge passengers on or along any public highway. Such certification shall be provided to and shall only be approved by an authorized department representative if the intended use of such a vehicle is not inconsistent with the provisions of the National Traffic Motor Vehicle Safety Act of 1974 with respect to the use of new vans with a seating capacity of more than ten persons, including the driver, for school transportation.

720.4 VEHICLE SAFETY REQUIREMENTS.

Vehicles subject to requirements of this Part shall satisfy the following requirements as specified below.

720.4(A) SCHOOL BUSES SUBJECT TO SED OR OGS RULES.

Floor Plan and Model Certification: School buses subject to the statutory and regulatory requirements of the New York State Education Department (SED) and Office of General Services (OGS) shall comply with the following:

(1) Every manufacturer of a school bus body, as a pre-condition to obtaining approval of the Commissioner of Transportation, shall file on approved department forms the detailed specifications and design prints for each such body type.

(2) Manufacturers shall designate each body by a unique model number. Each model approved shall display
the NYSDOT approved model designation when delivered. Separate applications shall be submitted for any component change that affects grade ability, Gross Vehicle Weight Rating (GVWR) or weight distribution. Body manufacturers shall submit a floor plan and model designation. Approved school bus body models which fail to meet certain standards as contained in this Part, may be issued a temporary certificate pending departmental review, provided, that:

(a) at the initial inspection of any such school bus body, any deviation from this Part is not listed in the out of service criteria as an “A” item; (See Section 720.11 of this Part)

(b) the vehicle complies with all applicable FMVSS requirements as of the date of manufacture or modification;

(c) the manufacturer provide engineering and test data to the department, which clearly indicates the reason for not complying with the regulation; and

(d) the vehicle condition does not present an imminent safety hazard.

720.4(B) BODY REQUIREMENTS.

(1) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) The vehicle body shall be constructed to: (1) carry the authorized passenger load safely, (2) prevent crankcase fumes and other gases from entering the passenger section, and (3) be securely attached to the chassis frame. An inner lining of substantial construction shall be provided on the ceiling and walls. All component parts of the body shall be permanently installed in a workmanlike manner, and shall be free of any sharp or jagged edges, and protruding nails, screws and similar projections.

(b) All openings between chassis and passenger carrying compartment made due to alterations shall be sealed.

(c) The body shall be mounted on the chassis so that the overhang to the rear of the centerline of the rear axle shall not exceed 35 percent of the total length of the vehicle measured from the extreme front end to the extreme rear end, not including the front and rear bumpers.

(d) Pedals, levers, switches and gauges used by the driver shall be readily accessible and visible to the driver. An adjustable sun visor shall be so mounted as to provide driver protection from glare through the windshield.

(e) Steps: Any steps, including after-market steps, attached to vehicles shall be of solid surface construction.

(f) Fire Resistance: The bus floor shall be covered with fire-resistant material commonly used as floor covering in public transportation equipment.

(g) Water Resistance: All bus floor covering shall be permanently and completely bonded to the floor with a waterproof adhesive, and shall not crack, separate or expand and contract creating buckling when subjected to sudden and severe changes in temperatures. All seams shall be sealed with a waterproof sealer. Such seams shall be sealed in such a manner as to prevent tripping.
(h) **Raised Floors:** Raised floor options on any size bus, when located behind the driver area, shall have a white strip and be labeled “STEP UP” viewed upon entering aisle and a label “STEP DOWN” viewed upon exiting aisle. **Note:** See 720.4(C)(1)(a) for minimum head room requirement in aisles.
(2) SCHOOL BUSES (TYPE A, B, C, D)

(a) **Interior Panels**: Interior panels shall cover all bows, posts and braces and shall be securely attached to all side posts and roof bows. Panels shall be installed so that separations, if any, shall be toward the front. Edges of panels shall be constructed to minimize injury.

(b) **Exterior Panels**: Exterior panels constituting roof and sides shall be securely attached to roof bows and side posts.

(c) **Floor**: Type B, C and D buses shall be equipped with a floor of all metal construction with leak proof joints and of strength and rigidity of 14-gauge steel. Cross members or sills shall be securely welded or riveted to this floor. If the floor is attached to the main body sill, below the bottom surface of the floor, bolts and nuts may be used. The floor in passageways and passenger area shall be as level as practicable except in the wheel housing, toe-board, stepwell and driver’s platform area. **Note**: See 720.4(B)(2)(i) for Type A bus floors.

(d) **Aisles**: The covering in the aisle and in the entrance steps shall be, durable, wear resistant and of a rib type or nonskid surface.

(e) **Entrance Plate**: If a metal nonskid plate is used at the entrance, it shall be attached to the floor of the bus, cover the width of the entrance steps, extend into the passenger compartment, but not beyond the left side of the aisle floor strip, and extend rearward to approximately the leg of the first seat on entrance door side of the body. When used, it shall be matched against the floor covering in such way that there will be no difference in height between this metal plate and the floor covering which would create a hazardous condition.

(f) **Body Metal**: All metal used in construction of body of less than eight-gauge thickness, shall be mill-applied aluminum coated steel, aluminum, or equivalent. In determining equivalency, mill-applied zinc steel or aluminum coated steel shall be used as a basis for comparison. The results as provided by American Society for Testing Materials of the application of the 1,000 hours salt spray test will have to indicate at least the equivalent of results derived when mill-applied aluminum coated steel or mill-applied zinc steel is subjected to the test. In addition to the above requirements, all metal parts that will be painted shall be chemically cleaned, etched, zinc-phosphate coated, and zinc-chromate or epoxy-primed or conditioned by equivalent process. Final stage manufacturer must certify water test.

(g) **Body Skirting**: Body skirting shall be made of aluminum, steel, composite(s) or similar rigid material(s) and shall be fastened at the location of each body post and post extensions. Bottom of skirting shall be angled or rolled so as to prevent the accumulation of snow, moisture, dirt, etc. while also providing greater strength. In lieu of angled or rolled bottom skirting, a third rub rail positioned at bottom of panels shall be accepted.

(h) **Corners**: Rear corner reinforcements of vehicle body between floor and window sill and between emergency door posts and the last side posts shall be provided. Such structural members shall be securely attached at each end and shall provide impact and penetration resistance equal to that provided by frame members in areas of sides of body.

(i) **Insulation**: Type A buses shall have a plywood floor of a quality grade and installed over the original metal floor with a minimum thickness of one half inch. Buses constructed in accordance with provisions
720.4(C) AISLES.

(1) GENERAL REQUIREMENTS (ALL VEHICLES EXCEPT PASSENGER TYPE CARS, SCHOOL VEHICLES AND MINI VANS)

(a) **Main Aisle:** The main aisle shall include the part of a vehicle used as a passageway, which extends from the entrance doors to the rearmost seats and/or doors. A minimum aisle height of 75 inches is required for Type C and D buses and 72 inches for Type A-I and B buses. **Note:** See 720.4(C)(2)(a) for school bus aisle requirements.

(b) **Main Aisle Width:** All vehicles shall provide an unobstructed main aisle of at least 10 inches wide from each entrance door to the rearmost passenger positions (i.e., seat(s) or wheelchair stations).

(c) **Door Access:** The main aisle or passageway to any door shall be unobstructed and shall not be restricted to less than 10 inches wide from the floor to the ceiling.

(d) **Stanchions:** The aisle width between the stanchion poles, where required, shall not be less than 12 inches.

(e) **Passenger Loads:** The total weight of the passenger load plus the combined weight of the body and chassis shall not exceed the gross vehicle weight rating recommended by the chassis manufacturer. The percentage of standing passengers permitted shall not exceed the following limits:

<table>
<thead>
<tr>
<th>AISLE WIDTH IN INCHES</th>
<th>% OF TOTAL SEATED CAPACITY</th>
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<tr>
<td>20+</td>
<td>75</td>
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<td>14 &gt; 15</td>
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(f) **Standing passengers** shall not be carried in a bus with a main aisle less than 14 inches wide and 75 inches high, except as noted below for school buses. Passengers shall not be permitted to stand forward of the white marking or turnstile, as may be applicable, while the bus is in motion.

(2) **SCHOOL BUSES (TYPE A, B, C, D)**

(a) **Main Aisle:** The main aisle shall be not less than 12 inches wide and 72 inches high, except Type A-II school buses which shall have a minimum main aisle width of 10 inches and may have a height other...
than 72 inches.

(b) **Width:** The main aisle shall be a minimum of 12 inches in width from floor to the top of the seat cushion. Such aisle shall gradually increase to a minimum width of 14 inches from 30 inches above the floor to the ceiling.

(c) **Flip Seat:** A flip seat in the unoccupied (up) position shall not obstruct the 30 cm (11.8 inches) minimum aisle to any side emergency door required by FMVSS.

### (3) OTHER VEHICLE TYPES

(a) **Multi-Passenger Side Doors:** Vehicles with 2 or more doors on the passenger side may have a folding type seat adjacent to the rear door, provided such seat can be folded easily and quickly to provide access from the door to the rear seat at least 10 inches wide. Passenger restraint systems shall not constitute a obstruction when determining the 10 inch access.

### 720.4 (D) DEFROSTERS.

(a) Defrosting and defogging equipment shall be provided in accordance with federal and/or state requirements to afford adequate driving vision.

(b) All such equipment shall be maintained in good operating condition and shall be protected to prevent injury.

### 720.4 (E) DOORS.

#### (1) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) All doors, rear tailgates and rear transom windows shall be designed to close securely.

(b) **Vertical Clearance:** Vehicle doors may be sedan, sliding, folding, accordion, pivot, or split type, unless specifically required or prohibited by this Section. All doors shall provide a vertical opening clearance of at least 72 inches, except for sedan or sliding type doors, which shall be at least 50 inches. Vehicles equipped with split or folding type doors shall have the vertical closing edges equipped with flexible material to protect passengers.

(c) **Horizontal Clearance:** All door(s) shall have an horizontal open clearance of 24 inches from near top to the bottom. Door controls shall not restrict opening to less than 22 inches.

(d) **Entrance Door Area:** The door shall fully enclose the stepwell or entrance area and be equipped with suitable weather stripping to prevent leaks. All entrance doors shall be designed to provide the driver with an unobstructed view while the vehicle is in motion.

(e) **For Hire Vehicles:** Every motor vehicle operated for hire upon the public highways of New York
State shall be equipped with handles or other devices that permit the door (s) to the passenger compartment to be readily opened from the interior of the vehicle.

(f) **Power Assisted**: Every power assisted door shall have an easily accessible emergency release device located in the passenger entrance/exit area, designed to allow door operation regardless of all other controls. This device shall be identified and instructions for its use shall be posted thereon or adjacent thereto. The device shall be of a positive stop design. The device must allow the door closing mechanism to release with the absence of electrical, pneumatic, or hydraulic power.

(g) **Door Controls**: The entrance doors and door controls shall be designed and constructed so as to prevent injury and accidental opening of doors. The door controls shall be mounted in a position readily accessible to the driver.

(h) **Secondary Door Locking Systems**: All non-coach type vehicles equipped with a secondary door locking device(s) that does not function with a door opening/closing mechanism shall incorporate an interlocking system that will prevent the propulsion unit from being started when a door is locked. An audible or visible warning device shall be provided to alert the driver if such door is locked when the vehicle propulsion unit is active.

(i) **Exit Doors**: Vehicles equipped with a separate exit door used to discharge passengers at points between termini shall be equipped with the following:

   (i) If equipped with push-type exit doors, a sensitized edges shall not be required provided the door control mechanism is designed to delay release of the brake interlock until after the doors are fully and completely closed; prevents the doors from being unlocked by driver’s door control while pressure is applied on the inside of the doors; locks the doors closed mechanically in case of electric power failure; and illuminates a light located above the door which will indicate that the door is operable.

   (ii) Every bus equipped with a separate exit door and operated in certificated service, which discharges passengers at points between termini, shall be equipped with an audible signal device to enable passengers to signal the driver. A separate passenger signal device shall be located adjacent to an exit door used for general exit purposes unless all passengers are required to leave by this door, or it is constructed to open simultaneously with the entrance door, or the bus is equipped with a treadle pad to automatically open the exit door.

   (iii) The words “EXIT DOOR” shall be conspicuously lettered on the interior of the door or immediately adjacent thereto, in letters at least 1 inches high.

   (iv) An interlocking device shall be provided that prevents the bus from moving when the exit(s) door is open. The switch controlling such interlocking device shall not be accessible from the driver’s position.

   (v) An easily accessible emergency opening device located adjacent to the exit door, designed to operate the door regardless of all other controls. This device shall be identified and instructions for its use shall be posted on or adjacent thereto. The operation of this device shall be interlocked so as to actuate the brakes to effect a smooth stop at a rate of deceleration of 75 feet per second per second from a speed of 20 miles per hour.

   (vi) The pliant edges of a folding-type exit door shall be sensitized so as to actuate reverse action of the door, and such edges shall be connected to a warning signal.
(2) SCHOOL BUSES (Type A, B, C, D)

(a) All school bus entrance/exit door(s) shall be equipped with an opening device controlled by the driver.

(b) Padding: All doors shall be equipped with padding at the interior top edge of each door opening. Padding shall be at least three inches wide and one inch thick and extend the full width of door opening.

(c) Door Location: Entrance/exit door shall be located on the right side of the vehicle, opposite and within direct view of the driver. Exception: Vehicles operated within the five boroughs of New York City may be equipped with a left side entrance/exit door provided such door meets the following:

(i) it is designed and constructed like all other school bus doors;

(ii) a mirror system shall be provided so as to allow the driver full interior view of the entrance/exit step and door; and

(iii) it is located in the section immediately behind the driver.

(d) Type B, C, D buses shall be equipped with lower, as well as, upper door panels of approved safety glass. The bottom of each lower glass panel shall not be more than approximately 10 inches from the top surface of the bottom step. The top of each upper glass panel shall not be more than approximately 6 inches from the top of the door. Type A buses shall have an upper panel (window) of 350 square inches.

(e) Power Assisted: All school buses equipped with power assisted door(s) shall have an emergency release device, located in the passenger entrance/exit area that is easily accessible and designed to allow door operation regardless of all other controls. This device shall be identified and instructions for its use shall be posted thereon or adjacent thereto. The device shall be of a positive stop design. The device must allow the door closing mechanism to release with the absence of electrical, pneumatic, or hydraulic power. All school buses manufactured after January 1, 2001, equipped with power assisted door(s) shall have an emergency release device located in the passenger entrance/exit area that is easily accessible to students of all ages.

(3) OTHER VEHICLE TYPES

Under 10,000 lbs. GVWR: Standard production model vehicles with a GVWR under 10,000 lbs. with one or more sliding entrance/exit door/s shall be equipped with a power door lock capable of manual release, and audible or visible signal to indicate to the driver when the door is ajar.

720.4(F) GRAB HANDLE OR RAIL.

(1) SCHOOL BUSES (Type A, B, C, D)
(a) A suitable grab handle or rail shall be provided at the stepwell, securely mounted inside the body. The grab handle lower end shall be as close as practical to the bottom step.

(b) Grab handles shall be stainless steel clad or metal covered with bonded plastic or chrome. In addition, grab handle shall be constructed and installed to eliminate the possibility of passengers clothing or personal items becoming lodged or caught upon exiting the vehicle. Note: All grab handles or rails must pass the nut/drawstring test to be in compliance with this requirement.

720.4 (G) GUARDRAILS.

(1) GENERAL REQUIREMENTS (ALL VEHICLES EQUIPPED WITH A MULTIPLE STEP STAIRWELL)

All vehicles must either adhere to the requirements contained in Federal Motor Vehicle Safety Standard 222 on the subject of barriers or comply with (a) or (b) below:

(k) **Stairwell Guardrail:** A guardrail, securely fastened to the side of the vehicle, with a panel approximately 30 inches above the floor, extending the approximate width of the seat(s) immediately to the rear of such panel and supported by a vertical stanchion securely fastened to floor and ceiling, shall be provided between the first seat(s) and the stairwell. The panel may extend to not more than approximately one-half inch above the floor and there shall be a minimum distance of nine inches between the front edge of the front seat(s) and the guardrail and panel.

(k) **Stairwell Barrier:** A panel approximately 30 inches above the floor, extending the approximate width of the seat(s) immediately to the rear of such panel and securely fastened to the floor, shall be provided between the first seat(s) and the stairwell. The panel may extend to not more than approximately one-half inch above the floor and there shall be a minimum distance of nine inches between the front edge of the front seat(s) and the panel.

(2) SCHOOL BUSES ( TYPE A, B, C, D )

**Padding:** Guardrail and vertical stanchion shall be padded with energy-absorbing material and shall be securely fastened to floor and ceiling. Panel backs (facing the passenger compartment) shall be padded with energy-absorbing material.

720.4 (H) GLAZING AND WINDOW CONSTRUCTION.

(1) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) **DMV Approved:** All glazing shall be properly mounted and be of a type approved by the New York State Department of Motor Vehicles (DMV) and mounted so its identification mark is legible when required.

(b) **Tinting:** Tinted glazing may be installed in all doors, windows, and windshields consistent with federal, state and local regulations.
(c) **Windshield:** The windshield shall be so designed and constructed to reduce glare, be of sufficient size and installed to permit the driver to see the highway clearly, with a minimum of obstruction. Windshields may have a horizontal gradient band.

(d) **Bars:** Bars on the windows of a passenger carrying motor vehicle are prohibited.

(2) **SCHOOL BUSES (TYPE A, B, C, D)**

(a) **Window Locations:** A window shall be provided in each body section of the passenger compartment, except for the rearmost section, where it will be optional to provide any windows.

(b) **Split Sash Windows:** All side windows, except at the immediate left of the driver, stationary windows, door and rear sections shall be split sash, except for those which provide emergency exits. The lower section shall be stationary and sealed.

(c) **Window Opening:** The top sections of all split sash side windows shall raise and lower in vertical grooves to provide an unobstructed opening of not more than five inches, and be controlled by a manually operated mechanism at either side of the sash.

(d) **Driver Window:** The window at the immediate left of the driver may be installed to lower the horizontal window drop sill level or may be divided vertically with the front and back sections sliding in grooves.

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### 720.4 (I) HEATERS.

(1) **GENERAL REQUIREMENTS (ALL VEHICLES)**

(a) **Temperature:** Heater(s) shall be provided capable of maintaining an inside temperature of at least 50 degrees F when the outside air is at the average minimum January temperature for that area, as established by the U.S. Department of Commerce, National Weather Service.

(b) **Exhaust Gas:** Heating systems using propulsion system exhaust gas to heat air carried within the passenger section or exhaust gas passing through conductors within the passenger section are prohibited.

(c) **FMVSS:** Heating devices using gasoline, or other fuel, must have an independent testing laboratory certification that the device meets all applicable FMVSS for the type of vehicle in which the device is stored. Proper certifications by Underwriter’s Laboratories, Inc., as evidenced by displaying the UL listed trademark, shall be deemed to comply with the foregoing requirement. The original laboratory certification and report must be in English. When the heating device is installed as original equipment by the vehicle manufacturer, such manufacturer is certifying that the vehicle and all components meet FMVSS at the date of manufacture. Such standards are contained in 49 CFR Section 393.77.

(d) **Fuel Line:** The fuel line connection shall be located outside of the passenger section.
(e) **Air Intake**: Any air intake for a heater or ventilation system shall be installed so as to minimize the intrusion of exhaust into the passenger compartment. Heaters and hot water lines installed within the passenger section shall be shielded, where necessary, to prevent injury to the driver and passenger in the event any part thereof is defective.

(f) **Intake Grille**: Only under-seat heaters placed forward of the rear axle may draw their air from the outside of the vehicle through an intake grille located in or immediately adjacent to the body belt line. Front heater shall take the outside air from an intake grille located at the side of a cowl or driver’s panel or through the floor of vehicles with the propulsion source unit located at the rear. There shall not be more than one connection inside the body between the firewall and the first heater other than the connection at the heater.

(k) **Heater Pipes and Hoses**: Heater pipes or hoses inside the body shall be covered or shielded. All pipes or hoses shall be continuous between engine and heaters, and between heaters, except where pipes or hoses are required to go over the wheel housing, where only two connections are permitted. Connections shall be made in such a manner as to prevent separation.

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### 720.4 (J) HORN.

One or more horns shall be provided which conform to the Society of Automotive Engineers (SAE) Standard J377.

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### 720.4 (K) SCHOOL BUS INSULATION (TYPE A, B, C, D).

School buses shall have insulation material of a fire-resistant nature placed between the panels from the floor to the top of the roof. The insulating material shall be thermo type and permanently sealed in place. The insides of all exterior and interior panels shall be coated with asphalt base, rubber base or other approved material, applied by spray method, in order to seal, deaden sound, insulate and prevent oxidation.

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### 720.4 (L) LAMPS, SIGNALS AND REFLECTORS.

#### (1) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) **NYSV&T**: All lamps, signals and reflectors shall conform with and be installed as required by Section 375 of the New York State Vehicle and Traffic Law (NYSV&T) and this Part.

(b) **Glare**: All lights shall be designed or shaded so as to minimize reflection and glare on the windshield.
(c) **Interior Lights:** Interior lights shall be provided on each vehicle and must operate independently of all other lights. Such lights may be on a separate switch or switches and shall be sufficient in number and power to give suitable and evenly distributed illumination throughout the passenger compartment. The stepwell shall also be adequately illuminated.

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**2) SCHOOL VEHICLES WITH A CAPACITY OF 8 OR MORE PASSENGERS**

(a) **Red Signal Lamps:** Every vehicle having a seating capacity of eight or more passengers, when used exclusively to transport pupils, teachers and other persons acting in a supervisory capacity to and from school or school activities, or to transport children, instructors or other persons acting in a supervisory capacity to and from child care centers maintained for migrant farm and food processing laborers or to transport children, instructors or other persons acting in a supervisory capacity to and from camp or camp activities, or to transport children, instructors or other persons acting in a supervisory capacity to and from religious service or instruction, shall be equipped as follows:

There shall be colored flashing signal lamps conforming to regulations prescribed by the Commissioner of Motor Vehicles on the front and on the rear thereof, including at least one flashing red signal lamp on the front thereof and at least one flashing red signal lamp on the rear thereof.

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(3) SCHOOL BUSES ( TYPE A, B, C, D )

(a) **Red Signal and Amber Lamps:** The body shall be equipped with system of four red signal lamps designed to conform with SAE Standard J887 “School Bus Red Signal Lamps” and four amber signal lamps designed to conform to the same standard except for color. Both red and amber lamps shall be installed as follows:

(i) Each amber signal lamp shall be located near each red signal lamp at the same level, but closer to the vertical centerline of bus.

(ii) The system shall be wired so that the amber signal lamps are activated manually and, when activated, are automatically deactivated when the red lamps are activated.

(iii) Red lamps are activated when the entrance door is opened and deactivated when the entrance door is closed.
(iv) These lights shall have a separate master switch and pilot lamp within reach and view of the driver while in a seated, and belted position.

(b) **Tail Lights:** All school buses manufactured after January 1, 2000 shall be equipped with tail lights designed to prevent hitching to or riding thereon.

**Note:** Vehicles which do not receive or discharge passengers on or along the public highways may be exempt from the requirements of this subdivision, provided that the operator of such vehicle certifies to the department that the vehicle does not receive or discharge passengers on or along any public highway. Such certification shall be provided to and approved by a duly authorized department representative.

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**720.4 (M) MIRRORS.**

**(1) GENERAL REQUIREMENTS (ALL VEHICLES)**

(a) All mirrors shall be easily adjustable, but shall be rigidly braced so as to prevent movement from vibration. No mirror shall be obscured by any component or vehicle structure.

(b) **Interior Mirror:** At least one interior rear view mirror shall be provided to afford the driver a clear view of the interior of the vehicle and shall be protected so as to be free of sharp corners and edges.

(c) **Left Exterior Mirror:** An exterior rear view mirror shall be provided on the left side and so adjusted that the driver shall have a clear and full view of the road and condition of traffic to the rear.

(d) **Right Exterior Mirror:** Every bus shall be equipped with a mirror attached to the right side and so adjusted that the driver thereof shall have a clear and full view of the road and condition of traffic to the rear.

**(2) SCHOOL BUSES (TYPE A, B, C, D)**

Every school bus shall be equipped and maintained with mirrors meeting the applicable requirements of FMVSS Section 111, as of the date of manufacture. The original manufacturer may provide alternative mirror types to meet these standards. Specifically:

(a) **Interior Mirror:** Buses shall be equipped with an interior mirror made of safety glass with frame. Interior mirrors requiring replacement shall comply with this subdivision. All Type A buses shall have an interior mirror of approximately 6” x 16”, while Types B, C, and D buses shall have an interior mirror of approximately 6” x 30”.

(b) **Left Front View Mirror:** Every school bus with a seating capacity of 12 passengers or more with its engine located ahead of the driver and all school buses manufactured after December 31, 1993 shall be equipped with a mirror, convex in shape, at least eight inches reflective surface in diameter, firmly mounted at hood, windshield or fender top height in front of the bus. It shall be located on the left side of the bus in such manner that the seated driver may observe through its use the road from
the front bumper forward to the point where direct observation is possible.

(c) **Right Front View Mirror:** Every school bus with a seating capacity of 12 passengers or more with its engine located ahead of the driver and all school buses manufactured after December 31, 1993 shall be equipped with a mirror, convex in shape, at least eight inches reflective surface in diameter, firmly mounted at hood, windshield or fender top height in front of the bus. The mirror shall provide a clear and full view of right side of bus, including the front of the right front wheel and an area at least six feet from the right side of the bus from in front of the right front door to the rear of the bus.

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### 720.4 (N) PAINT & OTHER MARKINGS ON SCHOOL BUSES.

(1) **National School Bus Chrome:** Motor vehicles having a seating capacity of 8 or more passengers and used primarily to transport pupils or pupils and teachers to and from school shall be the color known pursuant to industry standards as “national school bus chrome” or “school bus yellow”.

(a) **Roof:** The area of the vehicle commonly referred to as the “roof” may be painted white in order to reduce the inside temperature of the vehicle.

(b) **Hood:** The Hood may be painted lusterless black, and trim such as rub-rails may be painted with a contrasting color.

(c) **Chrome:** Chrome grills and trim are permitted.

(d) **Fenders:** All school buses shall be equipped with fenders, the color of “national school bus chrome” or “school bus yellow”. School buses with black, blue or green fenders prior to January 1, 1999 may continue to operate in school service until December 31, 2004, however, effective January 1, 2005, such buses shall only be allowed to operate in school service with fenders the color of “national school bus chrome” or “school bus yellow”.

(e) **Bumpers:** All school buses shall be equipped with bumpers, the color of black, “national school bus chrome” or “school bus yellow”. School buses with blue or green bumpers prior to January 1, 1999 may continue to operate in school service until December 31, 2004, however, effective January 1, 2005, such buses shall only be allowed to operate in school service with bumpers the color of black, “national school bus chrome” or “school bus yellow”.

**Note:** Vehicles which do not receive or discharge passengers on or along the public highways may be exempt from the requirements of paragraph 1 of this Section, provided that the operator of such vehicle certifies to the department that the vehicle does not receive or discharge passengers on or along any public highway. Such certification shall be provided to and approved by a duly authorized department representative.

(2) **Reflective Material:** Every school bus may have reflective material installed thereon. Reflective material, if used, shall be automotive engineering grade or better, meeting initial reflectance values in FHWA FP-85 and retaining at least 50 percent of those values for a minimum of six years. Reflective materials and markings, if used, shall include any or all of the following:

(a) **Bumpers:** Front and/or rear bumpers shall be marked diagonally 45 degrees down to centerline of pavement with two inch wide strips of reflective National School Bus Chrome Material. There will be a two inch wide strip (non-reflective) between each strip of reflective material.
(b) **Rear:** The rear of vehicle body shall be marked with a strip of reflective National School Bus Chrome Material no greater than two inches in width to be applied to the back of the vehicle, extending from the left lower corner of the “School Bus” illuminated sign, across to the left side of the vehicle, then vertically down to the top of the bumper, across the vehicle 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” sign.

(c) **Sides:** The sides shall be marked with reflecting National School Bus Chrome Material at least six inches but not more than 12 inches in width, extending the length of the vehicle body and located (vertically) as close as practicable to the belt line. The width of the material may be reduced to no less than two inches if the marking material is a highly reflective sheeting that consists of prismatic lenses formed in a durable transparent resin which is certified by the manufacturer as meeting or exceeding the following standards:

The initial coefficients of retroreflection of new sheeting shall not be less than the minimum values specified in Table I. Measurements are made in accordance with ASTM E 810-94 Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheetings except that values shall be an average of both 0ø and 90ø orientation for entrance angles of -4ø and 30ø. At all entrance angles, values shall be measured at observation angles + of 0.2ø and 0.5ø. The 90ø orientation is defined such that the length source is rotated in the same directions the sheeting would be applied to the vehicle surface.

### 720.4(O) RUB RAILS ON SCHOOL BUSES.

1. **Seat Level:** A rub rail shall be located on both sides and the rear of the bus, approximately at seat level, beginning at the rearward side of the entrance door post and extending completely around the bus body to a point at the front left body post, located near the driver’s position. **Note:** Rub rails are not required at the wheel housing(s), emergency door(s) or access door(s)/grill(s).

2. **Floor Level:** A second rub rail located approximately at floor level, shall cover the same longitudinal area as the first rub rail and extend to the right and left rear corner posts. **Note:** A floor level rub rail is not required on the rear portion of the bus if a rear bumper is located approximately at floor level. Rub rails are not required at the wheel housing(s), emergency door(s) or access door(s)/grill(s).

3. **Third Rub Rail:** A third rub rail also may be installed at the bottom of the panels in lieu of rolled/angled bottom skirting.

4. **Construction:** All rub rails shall be constructed and installed as follows:

   a. Of at least 16-gauge steel, at least four inches in width, and constructed in a corrugated or ribbed manner (Note: Pressed in, snap-on or combination panel and rub rails do not satisfy this requirement.);

   b. Applied to the outside body or outside body posts and attached twice at each body post and at all other upright structural members (Note: For Type A-II buses using chassis manufacturer body, or for Type A-I, B, C, and D buses using rear engine compartment, rub rails need not extend around rear corners.); and

   c. Constructed and affixed as to guard against riders being able to hold onto it.

### 720.4 (P) SEATING AND RESTRAINTS.

1. **GENERAL REQUIREMENTS (ALL VEHICLES)**
(a) **Arrangement**: All seats shall be forward facing unless otherwise noted in this part.

(b) **Construction**: All seats shall be of substantial construction in conformance with FMVSS Sections 571.207 and 222, and shall be securely fastened to the floor, or floor and side-wall. Seat attachments must comply with engineering standards of the manufacturers of the seat and the vehicle body.

(c) **Alternate Seating Configuration**: Alteration or redesign of the seating arrangement shall comply with all requirements of this Part, including but not limited to sections regarding aisles, maximum gross vehicle weight rating, seat spacing, seat restraint support, and barriers. For SED/OGS school buses only, such proposals must be submitted to the Department for approval prior to alteration.

(d) **Seat Dimensions**: All seat cushions except where noted shall be at least 2 ½ inches in design thickness, and all seat backs shall have a minimum design thickness of 1 inch. Depth shall be a minimum of 15 inches at the center of each seated position. There shall be no space between the seat cushion and seat back.

  **Measurement Note**: On vehicles manufactured after January 1, 2000, seat cushion depth and knee room space shall be measured by Department inspectors at three points, the center and approximately 10 inches inward from each end of seat cushion. This shall be measured with a 24 inch (25 inches for non-school vehicles) long rigid device placed parallel to the floor, and contacting the highest point of the seat cushion or slightly above a specially designed lower lumbar support. In taking the measurement, the compression of a seat-back cover up to, but not compressing the seat padding, will be allowed.

(e) **Ceiling Height**: Minimum clearance between the top of seat cushions adjacent to the seat back and vehicle body interior overhead structure shall be 35 inches. Any body construction or installed device within 12 inches behind the contact point of the ceiling measurement must have at least 2 inches of padding and cover combined. Ambuletttes equipped with longitudinal seats may measure approximately 3 inches out from the seat junction (seat back and cushion area) to the ceiling to determine the 35 inch headroom clearance.

  **Measurement Note**: Inspector measurement shall be taken at two points about 6 inches inward from each end of the seat cushion, in a straight line perpendicular to the floor, to the overhead structure.

(f) **Seating Capacity**: The adult seating capacity of every motor vehicle, exclusive of the driver, shall be at least 16 inches per passenger for seats accommodating adults. The child seating capacity of every motor vehicle shall be not less than 13 inches for each child passenger. The total weight of all the passengers and driver, which shall be figured at 120 lbs. per child and 150 lbs. per adult and driver, shall not exceed the gross vehicle weight rating for the motor vehicle.

(g) **Driver’s Seat**: If separate from a passenger seat, the driver’s seat shall be substantially constructed to support the driver’s weight and be solidly fastened to the floor or sub-floor so as to not cause driver to lose control of the vehicle. A minimum of a 3 inch thick cushion and a 2 inch thick back padding and cover shall be provided. A minimum forward to rearward adjustment of 4 inches shall be provided with functional stops. Adjustment must provide a minimum of 13 inches between the closest point of the outer circumference of the steering wheel and the front of the seat back, measured parallel to the floor and without compression of the padding. The horizontal centerline of the cushion shall be aligned with the steering column to provide vision alignment and maximum manipulation of the steering wheel. The relationship of the seat to equipment and driver’s controls shall be such that operation is convenient, safe, and comfortable when driver is seat belted. The seat height may be adjustable to such an extent that the seated driver has an unobstructed view of the highway. Pneumatic/electrically adjustable seats must comply with the minimum dimensions of this section.

(h) **Driver Restraints (Seat Belts)**: The driver’s seat shall be equipped in accordance with FMVSS and the restraint system shall be provided in accordance with the DMV regulations. Vehicles manufactured after January 1, 1990 shall be equipped with a locking retractor seat belt for the
driver’s seat. Each belt section shall be booted to keep the buckle and release mechanism off the floor and within reach of the driver. Belt shall be anchored in such a manner or guided at the seat frame so as to prevent the driver from sliding sideways under the belt.

(i) **Passenger Restraints (Seat Belts):** Passenger restraints shall be provided in accordance with FMVSS and New York State law.

(j) **Child Safety Seats:** Child restraint systems used for the transportation of children shall conform to FMVSS Sections 571.213 and .222.

(k) **High Back Seats:** Vehicles used in school transportation with a seating capacity of more than 11 passengers (adult measurement), exclusive of the driver, shall be equipped with padded seat backs 28 inches high.

(2) **SCHOOL BUSES ( TYPE A, B, C, D )**

(a) **Passenger Restraints (Seat Belts):** Passenger restraints shall be provided for every seated passenger in every bus manufactured after July 1, 1987, and shall be in compliance with the FMVSS Section 571.222. Vehicles with a GVWR of 10,000 lbs. or less shall comply with DMV regulations. The maximum seated capacity for students shall be 84 passengers (3x3 person seating).

(b) **Restraining Barrier:** Each bus shall be equipped with a restraining barrier forward of any designated seating position that does not have the rear surface of another school bus passenger seat within 27 inches from the frontal face of the seat back, measured with a rigid device held parallel to the floor, without compressing the respective padding(s). The barrier shall be as wide as the seat cushion of the seat it protects and shall provide a minimum of 24 inches for knee and cushion room. This shall be measured with a rigid device placed parallel to the floor, and contacting the highest point of the seat cushion or slightly above a specially designed lower lumbar support, without compressing the respective padding(s).

(c) **Construction:** All seat frames shall be securely bolted at the aisle end to the floor and at the wall end to an all-steel continuous longitudinal member or both ends to the floor. The longitudinal member shall have a minimum thickness of 14-gauge steel and shall be securely attached to the side body posts. Each seat foot shall be attached to the floor with at least two fasteners, which shall be bolts and nuts wherever possible, and to the longitudinal member with at least two bolts and nuts. Any brackets or attachments shall be welded either to the seat frame or to the longitudinal member. The horizontal leg of the longitudinal member shall not exceed 1½ inches. Each bolt extending below the floor shall be equipped with a washer or plate underneath the floor with a minimum thickness of 14 gauge steel not less than 2 inches square or equivalent and a nut locking device. Alternatively, the seat may be attached to the floor with a permanently mounted track or other similar type system that is designed and manufactured to provide equal or better attachment than above stated. Such system shall be installed as tested by original manufacturer.

(d) **Cushions:** Seat cushions for pupils and drivers shall be constructed with springs, foam rubber, polyurethane foam, or other equivalent materials. If springs are used, there shall be at least 21 springs per /cushion. Padding used to cover springs shall be cotton, rubberized hair, foam rubber or other equivalent material. If cotton or similar material is used, padding for cushions shall be at least two inches thick, except for reasonable distance from edge of cushion to allow for curve of edges. If foam rubber or polyurethane is used without springs, the cushion thickness shall be approximately five inches and it shall be depressed not more than 80 percent when a distributed weight of 345 pounds is applied to it. If cotton or similar materials, rubberized hair, foam rubber, or polyurethane foam is used in seat back rests, it shall be approximately two inches thick and shall not be depressed more than 80 percent when distributed weight of 300 pounds is applied to it.
(i) Seat covering shall be artificial leather equal to coated fabrics, 42-ounce finished weight, reinforced backing of 1.06 broken twill or material having equivalent strength and similar characteristics. Padding and covering on all seats shall be of material that will not flash or explode upon contact with spark or open fire.

(ii) The backs of all seats of similar size shall be approximately the same width (at the top) and height (from the floor) and shall slant at the same angle with the floor.

(iii) Seat cushion retention systems shall be capable of withstanding a vertical static load at least equal to five times the weight of the cushions, as well as the forward or rearward static load test at least equal to 20 times the weight of the cushions.

(e) **Seat Dimensions:** Cushions shall be a minimum of 14 inches in depth, and may have a vertical plane or slope rearward, but not slope forward. Tops of backrests shall be a minimum of 33 inches above floor level.

(f) **Seat Backs:** School buses with a seating capacity of more than 11 passengers, exclusive of the driver, shall be equipped with padded seat backs 28 inches high, unless an economic hardship waiver for a pre-1976 school bus is granted from the State Education Department. The top side of the seat frame and the back on each seat (except rearmost seats) shall be padded with energy-absorbing material. The padding shall extend the entire length of the seat frame from the grab handles, if any, on aisle side to a corresponding location on the wall side.

(3) **NON-SCHOOL BUSES (TYPE A, B, C, D)**

(a) **Arrangement:** In buses operated in certificated service, the seats may be rear, longitudinal, diagonal or forward facing.

(b) **Cushions:** All passenger seats shall be constructed in a manner that would not flash or explode on contact with a spark or open flame. Solid surface construction of seat material and required guardrails may be used provided that such material shall not crack, wilt or deteriorate under normal use.

(4) **AMBLETTES**

**Seats for the Disabled:** When transporting the disabled, seats and wheelchairs may be rear, longitudinal, diagonal or forward-facing. Longitudinal or diagonal facing seats must have suitable armrests or other guard at each seat. Flip-up cushion type seats may be used to provide alternate seating in place of unused wheelchair space. Vehicles equipped with longitudinal seats must provide an aisle width of at least 10 inches in addition to a knee room space of at least five inches in front of each longitudinal seat. Refer to section 720.8 of this Part for wheelchair related requirements.

(5) **OTHER TYPES**
**Dual Driver Controls:** Passengers shall not be carried in the front seat of a motor vehicle equipped with dual driver controls unless such controls are disconnected and floor pedals removed.

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**720.4 (Q) SPEEDOMETER.**

Every motor vehicle shall be equipped with a speedometer mounted in a position clearly visible to the driver and designed to be easily maintained in a good operating condition. The speedometer shall indicate vehicle speed in miles per hour and shall be illuminated.

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**720.4 (R) STEPWELL.**

(1) **GENERAL REQUIREMENTS (ALL VEHICLES WITH A STEPWELL)**

(a) **Safety Treads:** All Steps shall have safety treads with slip-resistance qualities.

(b) **Step Height:** The step on buses shall not be more than 18 inches nor less than 10 inches from the ground. Measurement shall be taken on a flat surface with tires fully inflated and bus unloaded.

(c) **Light:** A stepwell with more than one step, shall be equipped with a stepwell light(s), wired through a switch which will cause the light(s) to operate when opening the door.

(d) **Stepwell Reflectors:** Pursuant to the Vehicle and Traffic Law, when a step has been added to a vehicle to aid passengers in boarding or alighting from the vehicle that causes the vehicle to become 80 inches or more in width, such vehicle need not be equipped with front or rear identification lamps or clearance lamps, provided that:

   (i) the vehicle does not exceed 84 inches in width;

   (ii) attached to the step and facing oncoming traffic is a clear, white or colorless class “A” reflex reflector of at least three square inches in size; and

   (iii) attached to the step and facing following traffic is an amber class “A” reflex reflector of at least three square inches in size.

(2) **SCHOOL BUSES (TYPE A–I, B, C, D)**

**Multiple Steps:** Buses shall have two-step or three-step stepwell. Step risers shall be of approximately equal height. Step treads shall be approximately 16 inches wide. Step tread depth shall be adequate to ensure safe means of ingress and egress. The step on buses shall not be more than 18 inches from the ground nor less than 10 inches.

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**720.4 (S) TOOL COMPARTMENT.**
Any tool compartment shall be permanently fastened and equipped with a cover that will not accidentally open and shall not interfere with passenger safety.

**720.4 (T) UNDERCOATING FOR SCHOOL BUSES.**

Vehicles shall have the underside of the body, fenders and wheel housings (including the floor members and side panels below the floor level, except as may be outlined in the applicable chassis manufacturer’s vehicle manual) undercoated with a fire-resistant undercoating material, applied to prevent oxidation. All body and firewall insulation shall be made of a fire-resistant material.

**720.4 (U) VENTILATION.**

The vehicle body shall be equipped with a suitably controlled ventilating system capable of distributing an adequate supply of fresh air throughout the passenger section under normal operating conditions without the opening of windows except in extremely warm weather.

**720.4 (V) WHEEL HOUSINGS.**

**GENERAL REQUIREMENTS (ALL VEHICLES)**

The wheel housing opening shall allow for easy tire removal and service as well as the installation of tire chains.

**720.4 (W) WINDSHIELD WIPERS AND WASHER.**

1. Two positive-action variable-speed windshield wipers (air or electric type) shall be provided with control(s) easily accessible to the driver while in normal seated belted position. Wiper arms and blades shall be of sufficient length to clean the windshield properly.

2. A windshield washer shall be provided that will effectively spray the area covered by both windshield wipers.
School buses subject to statutory and regulatory requirements of the New York State Education Department and Office of General Services requirements with capacity to carry more than 10 persons, and/or equipped with a wheel chair lift or other special mobility needs apparatus shall comply with the following:

(1) **Chassis Specifications:** All chassis shall provide proper weight, wheelbase, power, frame length and gross load capacity to conform to specific needs as shown in this section. **Chassis specifications shall be filed with the Department.** Chassis delivered as school bus chassis shall meet all chassis requirements at the time of delivery for body mounting.

(2) Every manufacturer of a school bus chassis, as a pre-condition to obtaining approval by the department, shall file on approved department forms the detailed specifications for each such chassis. Manufacturers shall designate each chassis by a unique model number. Each model approved shall display the department approved model designation when delivered. Separate applications shall be submitted for any component change that affects grade ability, GVWR or weight distribution. Body manufacturers shall submit a floor plan and model designation. Approved school bus chassis which fail to meet the standards contained in this Part may be issued a temporary certificate pending departmental review, provided, that:

(i) at the initial inspection of any such school bus chassis, any deviation from this Part is not listed in the out of service criteria as an “A” item; (See section 720.11 )

(ii) the vehicle complies with all applicable FMVSS requirements as of the date of manufacture or modification;

(iii) the manufacturer provide engineering and test data to the department, which clearly indicates the reason for not complying with the regulation; and

(iv) the vehicle condition does not present an imminent safety hazard.

(1) **GENERAL REQUIREMENTS (ALL VEHICLES)**

(a) **FMVSS:** All chassis shall meet the applicable FMVSS as of date of manufacture. Compliance with such standards shall be certified by the manufacturer by attachment of a plate or decal. The manufacturer’s
GVWR that is not to be exceeded shall be listed on such plate or decal. As necessary, the wet curb weight of the vehicle shall be provided by the final stage manufacturer.

(b) **GVWR:** The chassis shall be designed and constructed so that it will safely carry the appropriate body with its full passenger capacity (based on 120 pounds per child and 150 pounds per adult including the driver) without exceeding the manufacturers rated GVWR.

(c) **Wheelbase Alterations:** Altering the wheelbase by cutting the original chassis frame between axles is prohibited if the vehicle is to be used in school service. Such alternation work only shall be performed by the chassis or unit manufacturer or by others on a certificate of approval by the original manufacturer. Such certification shall contain a detailed description of the extension work and a statement as to the maximum carrying capacity after such extension. An extension may be installed at the rear end of the original chassis frame by the chassis manufacturer or the authorized representative of the chassis manufacturer, and reflected on the chassis manufacturer’s certification of approval of such extension.

(d) **Frame Alterations:** Holes in top or bottom flanges of frame side rails or the frame cross members shall not be permitted, except as provided by the original chassis frame manufacturer. There shall be no welding to frame side rails except by chassis or body manufacturer or manufacturer’s recommended procedure.

(e) **Axles:** Axles or other type of suspension shall have a gross weight rating at the ground at least equal to that portion of the total load which is supported by the axles. Axles or other types of suspension shall not be loaded beyond chassis manufacturer’s gross weight rated capacity. Manufacturer shall provide certification of gross axle weight rating. The rated capacity of front assemblies shall not be less than required by FMVSS. Manufacturers may provide front axles or other types of suspension rated in excess of the above minimum.

(f) **Bumpers:** All motor vehicles shall be equipped with a front and rear bumper which will be of sufficient strength to afford reasonable protection of fenders, body panels and lamps, in the event of a collision. The front bumper shall be constructed to reduce the possibility of locking the front wheels upon impact. For school buses only, the rear bumper shall be designed to prevent hitching to or riding thereon.

(g) **Clutch:** On chassis having mechanical type transmission, the clutch torque capacity shall not be less than 10 percent in excess of the maximum net torque capacity of the engine.

(h) **Drive Shaft:** Assembly capacity shall be at least equal to the maximum net torque capacity of the engine, as developed through the lowest transmission gear reduction.

(i) **Drive Shaft Guard:** The longitudinal drive shaft on buses with a capacity of 10 passengers or more shall be protected by a metal guard or guards to prevent the front end from dropping to the ground, as well as preventing any damage to the brake and fuel lines and exhaust system or from whipping through the floor in the event of a fracture or disconnection.

(j) **Instrument Panel:** Instruments, Gauges and Controls shall be provided to assure safe operation of the vehicle. Such instruments, gauges and controls shall be mounted and located so as to be clearly identified and visible and within reach of driver in normal belted seated position. The instrument panel, as provided by chassis manufacturer, shall include all switches and gauges necessary for the safe operation and maintenance of the chassis.

(k) **Filters:** All engines shall be equipped with:

(i) An air filter of adequate capacity.
(ii) An oil filter of either replaceable element, throwaway or screw-on type and standard make.

(l) **Firewall:** A firewall shall be provided to create a metal separation or equivalent between the engine and the body compartment. It shall either be built as an integral part of the separation wall or secured in place with bolts, lock washers and nuts, and shall be insulated so as to effectively prevent the penetration of heat, fumes or fire into the body compartment. The firewall insulating material shall be fireproof that is equivalent to asbestos. All openings in the floorboard or firewall between the chassis and passenger carrying compartment, such as for gearshift lever and parking brake lever, shall be sealed unless altered by body manufacturer (see 720.4(B)(1)(b) body requirements). **Exception:** Rear engine and forward control vehicle manufacturers constructing a body-chassis combination unit assume this responsibility.

(m) **Governors:** Each engine may be provided with either a governor set at the r.p.m. of the engine that represents the recommended maximum performance within the safety range of the engine speed or a speed-regulated governor to control the maximum speed of the engine.
(2) SCHOOL BUSES (TYPE A, B, C, D)

(a) **Power or Grade Ability:** The Gross Vehicle Weight of any vehicle manufactured in 1977 or later shall not exceed 185 pounds per certified net published horsepower of the engine at the manufacturer’s recommended maximum governed revolutions per minute.

(b) **Shock Absorbers:** At each wheel location, the chassis shall be equipped with front and rear double acting shock absorbers that are compatible with the manufacturer’s rated axle capacity.

(c) **Springs:** Springs or suspension assemblies the chassis manufacturer shall be of ample resiliency under all load conditions and of adequate strength to sustain loaded vehicle without evidence of being overloaded.

   (i) **Leaf-type springs:** If used, the front spring stationary eyes shall be protected by a full wrapper leaf in addition to the main leaf.

   (ii) **Rear springs:** If used, they shall be of the progressive or variable rate type.

(d) **Transmission:** The Input torque capacity of manual or automatic transmissions shall at least equal the maximum net torque developed by the engine.

(e) **Manual transmission:** Each gear shall be synchromesh, except for first and reverse gears.

720.4 (Z) BRAKES.

(1) **GENERAL REQUIREMENTS (ALL VEHICLES)**

(a) **Dual Brakes:** Every vehicle shall be equipped with brakes adequate to control the movement of and to stop and hold such vehicle. Vehicles with other than a dual brake system, which were not subject to CFR 49 571.105 or 571.121, shall be equipped with two separate means of brake application: service brakes and an emergency brake. These two separate means of applying the brakes, if connected in any way, shall be so constructed that failure of any one part of the operating mechanism shall not leave the vehicle without operating brakes. The service brakes and the emergency brake shall be designed to be easily maintained in an efficient operating condition and be capable of stopping and holding a vehicle as specified in this section. Vehicles subject to the requirements of 49 CFR 571.105 or 571.121 shall be maintained in a manner that fully complies with said section(s).

For the purposes of this Part, brake measurements stated in rates of feet per second per second shall be measured with a device known as a decelerometer. No vehicle shall be operated in the State with any portion of the service or emergency brake system or warning devices not functioning as designed.
(b) **Service Brakes:** Service brakes shall operate on all wheels and shall be capable of producing a smooth stop within a twelve foot road lane. Vehicles with a GVWR of 10,000 lbs. or less shall be capable of producing a rate of deceleration of 25 feet per second-per second at 20 miles per hour speed. Vehicles with a GVWR of 10,001 lbs. or more shall have power brakes capable of producing a rate of deceleration of 22.2 feet per second-per second at 20 miles per hour speed. The service brake system shall consist of at least two subsystems actuated by a single control designed so that a leakage type failure of a pressure component in a single subsystem (except structural failure of a housing that is common to two or more subsystems) shall not impair the operation of any other subsystem.

(c) **Brake Reservoir:** Every bus equipped with air brakes, hydraulic power system with accumulator, vacuum power brakes or power-operated doors shall have a reservoir of sufficient capacity to furnish power for at least two operations of the brakes and two operations of the doors or other power-operated devices after the engine has stopped.

(d) **Pressure Gauge:** Every bus equipped with air brakes or vacuum power brakes shall have a non-glare illuminated gauge, clearly visible to the driver, to indicate the pressure or vacuum in the reservoir. Such buses shall also be equipped with a device which will give a distinctive audible or visible warning signal when the pressure or vacuum in the reservoir is insufficient to activate any power-operated device on the bus.

(e) **Air Warning Signal:** Every bus using compressed air shall be equipped with warning signals, in addition to air pressure gauge/s, at least one audible or one visible to the driver, which will give continuous warning below a fixed pressure of not less than one half of the compressor governor cutout pressure. School use vehicles (other than charter type allowed for school activities) shall have both audible and visible warning devices. Vehicles equipped with an air operated emergency brake for application or release of an alternative device for application, the warning shall take place when pressure is at least 10 PSI above automatic application.

(f) **Vacuum Warning Signal:** Every bus with a GVWR of 10,001 lbs or more using vacuum for the operation of the hydraulic brakes shall be equipped with a warning signal, audible and visible to the driver, which will give continuous warning whenever the vacuum reserve and reservoir is less than eight inches of mercury.

(g) **Power Warning Device:** Every bus with a GVWR of 10,001 lbs or more using a hydraulic power brake system shall be equipped with warning devices that give continuous, distinctive, audible and visible indication whenever available pressure in the system is insufficient to provide power-assisted brakes. Means shall be provided to establish whether or not the warning devices are in working order.

(h) **Tubing/Hose:** Brake tubing and brake hose shall be constructed of such material and shall be designed and installed as to insure proper continued use. Brake hose shall be constructed as to insure adequate and reliable functioning and conform to the appropriate specification set forth in the SAE standards for hydraulic brake hose, air brake hose or vacuum brake hose.

(i) **Reduced Braking:** Power brakes shall not be equipped with any device which upon application reduces the braking effort in such manner as to prevent compliance with the specifications of this section.
(j) **Emergency Deceleration Rate:** The emergency brake shall be capable of consistently stopping a vehicle at a rate of deceleration of 75 feet per second-per second from a speed of 20 miles per hour. It shall be so designed that whenever applied, the emergency brakes shall remain applied despite the loss of any source of energy or leakage of any kind.

Vehicles equipped with a separate exit door and an interlock device shall stop at a rate of deceleration of 75 feet per second per second from a speed of 20 miles per hour when such interlock device is activated.

(k) **Installation:** The compressor, reservoir, vacuum booster and all other vital parts of the service and emergency brake systems shall be securely installed, and located or protected so as to prevent damage to any part thereof, caused by incidents normal to transportation.

(l) **Check Valve:** Every bus equipped with either air or vacuum reservoirs shall have such reservoirs safeguarded by a check valve or equivalent device so that in the event of failure or leakage in its connection to the source of compressed air or vacuum supply in the reservoir shall not be depleted by the leak or failure. One or more means shall be provided to establish whether or not the check valve is in proper working order.

(m) **Safety Valve:** Compressors and air brake systems shall be protected from overloading due to failure of governor operation with a safety valve installed in the system. The setting of the safety valve shall be determined by the manufacturer of the air compressor.

(n) **Repair:** Brake repair, replacement and/or re-manufacturing shall be performed in accordance with vehicle manufacturer’s and brake component manufacturer’s recommended procedures.

(o) **Testing:** The service and parking brakes of every vehicle scheduled for service shall be tested by both controls before placing such vehicle in service and unless the brakes are in safe operating condition, the vehicle shall not be operated.

(p) **Parking Brake:** Every vehicle subject to this Part shall have a parking brake as described 49 CFR 571.105 S5.2 or 571.121 S5.6. For all vehicles with a GVWR of greater than 7,716 lbs, the parking brake shall be capable of decelerating the vehicle at 75 feet per second per second from a speed of 20 miles per hour for three seconds duration.

Vehicles with a GVWR of less than 7,717 lbs. shall comply with New York State Department of Motor Vehicle annual inspection performance standards for parking brakes.
(2) SCHOOL BUSES (TYPE B, C, D)

(a) **Air Pressure Warning Device:** There shall be a device which will give a distinctive audible and visible warning signal when the air pressure or vacuum in the reservoir is insufficient to activate any power-operated device on the bus, a visible warning signal shall be a distinctive moving-type device. Such warning device shall be readily visible to or easily recognizable by the driver.

(b) **Wig-Wags:** Wig-wags or equivalent audible and movable warning devices shall be mounted as near as practicable to the forward field of vision of the driver when in a normal seated position, and its movement shall not allow contact with other movable or fixed objects attached to the vehicle. If only one audible or movable warning device is used, it shall monitor the wet tank.

### 720.4 (AA) EXHAUST SYSTEM.

#### (1) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) **Location:** No part of the exhaust system of a vehicle shall be located so that it would likely burn, char or damage the electric wiring, the fuel supply or any combustible part of the vehicle.

(b) **Federal Standards:** All vehicles shall meet applicable federal motor vehicle emission standards.

(c) **State Standards:** Every motor vehicle registered in this State and manufactured or assembled after June 30, 1963 shall be equipped with a crankcase ventilating system, of a type approved by the New York State Department of Environmental Conservation (DEC) for the purpose of reducing the emission of pollutants into the atmosphere. Every motor vehicle registered in this State and manufactured or assembled after June 30, 1967 and known as a 1968 or subsequent model shall be equipped with an air contaminant emission control system of a type approved by DEC.

**Note:** Such system shall not emit unnecessary smoke or offensive vapors. See 17 NYCRR Section 721.4(L).

(d) **Installation:** All parts of the exhaust system shall be securely installed outside of the body. The exhaust system shall be leak-proof and of ample capacity to afford a minimum of back pressure.

(e) **Tailpipe:** The tailpipe of a motor vehicle shall extend from the muffler to a point clearing the rear perimeter of the vehicle. It shall not terminate at any of the following locations:

(i) under the passenger section;

(ii) ahead of the rear axle;

(iii) at any point below any door; or

(iv) beyond 1 inch of the rear perimeter of the vehicle. For articulated buses, the termination point shall be determined by the forward unit only.
(2) SCHOOL BUSES (TYPE A, B, C, D)

(a) **Construction:** The exhaust system shall be constructed of seamless or electrically welded 16-gauge steel tubing or a 20-gauge stainless steel.

(b) **Gas Line/Tank Proximity:** Any exhaust pipe located within 8 inches of gas tank or a gas line connection, or directly beneath the gas line connection, or directly beneath the gas tank or a gas line connection, regardless of distance, shall be insulated by means of metal diversion plates.

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### 720.4 (BB) TIRES and WHEELS - ALL VEHICLES

**Type:** Tires and wheels shall be of sufficient size and construction, as recommended by the tire and vehicle manufacturer, to support the combined weight of the vehicle and the allowable passenger load and in addition:

**Note:** See 17 NYCRR Section 721.4(M) regarding tires during operation.

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### 720.4 (CC) FUEL SYSTEMS

(1) **SECTION DEFINITIONS**

In addition to the definitions contained in Section 720.1, the following definitions shall apply wherever the terms are used in this part:

(a) **Alteration:** Any change in the construction, design or installation of a container that affects the strength or safety of the system.

(b) **ASME Code:** The American Society of Mechanical Engineers Boiler and Pressure Vessel Code; section VIII, division I and section IX of the 1971 and later editions.

(c) **ASTM:** The American Society for Testing and Materials.

(d) **CFR:** The Code of Federal Regulations.

(e) **CGA:** The Compressed Gas Association.

(f) **CNG:** Compressed Natural Gas.

(g) **Fuel supply container:** A tank or cylinder installed on a vehicle to supply fuel for the
propulsion system of the vehicle.

(h) **NFPA:** The National Fire Protection Association.

(i) **LPG:** Liquid Propane Gas.

(j) **SAE:** Society of Automotive Engineers.

(k) **Supply line:** The piping, tubing or hose, including all related fittings, through which vapor or liquid passes between the first shut-off valve at the container and the final stage regulator or vaporizer.

(l) **UL:** the Underwriters’ Laboratories, Inc.

(m) **Vaporizer:** A device that converts liquefied natural gas and liquefied petroleum gas to the gaseous state by means of heat.

## (2) GENERAL REQUIREMENTS (ALL VEHICLES)

(a) **Installation:** The installation of liquefied petroleum gas, compressed natural gas, or liquefied natural gas fuel systems on motor vehicle equipped with gaseous fuel carburetors shall be in accordance with the following requirements: driver, passenger, and luggage compartments. Fuel supply containers on vehicle shall not be located in or above the passenger compartment. Fuel supply containers shall be installed and fitted so that no gas from fueling and gauging operations or from relief valves can be released inside the driver, passenger, or luggage compartment.

(b) **Containers:** Fuel supply containers shall meet all appropriate requirements of the ASME Code, the USDOT regulations, and the regulations contained in this section. Fuel supply containers shall also comply with the following requirements.

   (i) Each container and container cradle shall be mounted in protected locations to minimize damage from collision. All valves and gauges shall be protected by doors or other means.

   (ii) To prevent damage from road hazards, slippage, loosening, or rotation, each container or cradle shall be secured to the vehicle body, bed, or frame by either of the following means:

      (a) attaching bolts not less than 7/16 inch in diameter that meet SAE Standard J 429 for grade 5 threaded fasteners in the 1965 or later edition of the SAE Handbook and self-locking nuts to at least four securement points and, where bolts pierce body metal but not frame, by reinforcing both sides of each securement point with metal plates at least ¾ inch thick and 7 square inches in area; or

      (b) by using other means capable of withstanding in any direction a static force of eight times the weight of the fully loaded container.

   (iii) Each container in a cradle shall be secured to its cradle by means capable of withstanding in any direction a static force of eight times the weight of the fully loaded container.

   (iv) No portion of the container or container valves in communication with the liquid or vapor shall be located behind the rear frame cross member of the vehicle unless adequately protected.

   (v) The weight of the container shall not in any way be supported by outlets, valves, manifold, or other fuel connections.
(vi) No part of the container shall be field welded. Only saddle plates, brackets, or other non-pressure parts that were provided and installed by the manufacturer of the container may be field welded.

(vii) No container shall be repaired until the contemplated method has been authorized by the container manufacturer. USDOT containers shall be repaired under USDOT regulations and control. The replacement of valves, fittings, and accessories intended for the same purpose is not considered a repair.

(viii) Containers located less than eight inches from the engine or exhaust system shall be shielded against direct heat.

(ix) Filler caps shall fit snugly to prevent leakage of fuel while vehicle is standing or in motion.

(c) **Markings:** Markings of set-to-discharge pressure for safety relief devices and working pressure of fuel supply containers required by this section shall be visible either directly or by use of a mirror after installation. All remote filling inlets shall be visibly marked with the type of fuel and the lowest working pressure of any fuel supply container in the system.

(d) **Venting:** All safety devices that may discharge to the atmosphere shall be vented to the outside of the vehicle, and all discharge lines and outlets shall be installed as follows:

(i) Lines shall be constructed of metal other than aluminum and shall be of a size and so located and maintained as not to restrict the maximum flow of the safety device. Flexible metallic lines shall be used when necessary.

(ii) The discharge line of a container installed inside a compartment shall extend to the outside of the compartment.

(iii) Lines shall be located as far from the exhaust outlet as is practicable and shall direct escaping gas upward within 45 degrees of vertical. Escaping gas shall not impinge upon fuel supply containers and shall not be directed into wheel wells, at other vehicle in traffic, or at engine air intake inlets.

(iv) The discharge line from the safety relief valve on all vehicle shall be located at the rear of the vehicle, directed upward, and extended to the top of the vehicle roof. Means shall be provided to verify that discharge line is clear.

(v) Outlets shall be protected by caps, covers, or other means to keep water or dirt from collecting in the lines. Protective devices shall not restrict the flow of gas.

(vi) Each line and its connectors shall withstand the pressure caused by the discharge of vapor or liquid from a safety device in fully open position.

(vii) CNG containers may be vented to the outside of the vehicle with a flexible bag. Such bag shall be constructed of a material that is nonflammable or self-extinguishing. The bag and attachments shall be capable of withstanding an internal pressure produced by a flow rate of 300 cfm with a safety factor of not less than four. The bag shall be shielded or installed in a protected location to prevent damage from unsecured objects and abrasion.

(e) **Manifold Shut Off Valve:** Manifolds connected to fuel containers shall be supported to minimize vibration and shall be installed in a protected location or shielded to prevent damage from unsecured objects. A normally closed automatic shut-off valve that is held open by electrical current shall be installed in the outlet of the manifold and marked with the words “AUTOMATIC SHUT-OFF VALVE”.


(Decals or stencils are acceptable.) The automatic shut-off valve shall be wired so it shuts off when the ignition switch is in the off or accessory position and when engine vacuum or oil pressure is not present.

(f) Pipes, tubing, hoses, and fittings: Each shall meet the following requirements:

(i) All materials and assemblies shall be designed for the widest pressure and temperature ranges to which they may be subjected with a pressure safety factor of at least four.

(ii) All materials, including gasket and packing materials, shall be compatible with the fuel used in the system and its service conditions. Aluminum pipe, tubing, or fittings shall not be used between the container and first-stage regulator. When used, Copper tubing shall be seamless.

(iii) A pipe thread sealant impervious to the action of the fuel used in the system shall be applied to all male pipe threads prior to assembly. Only tin-silver (95 percent tin, 5 percent silver) or silver braze alloy shall be used on sweat type joints or fittings.

(g) Supply Lines: Supply lines passing through a panel shall be protected by grommets or similar devices, which shall snugly fit both the supply lines and the holes in the panel. Supply lines shall have a minimum clearance of eight inches from the engine exhaust system unless they are shielded from exhaust heat. Supply lines shall be supported at least every 24 inches and shall be prevented from sagging. Damaged lines shall be replaced, not repaired.

(h) Shut-off Valve: An automatic fuel supply shut-off valve shall be installed in a protected location adjacent to the manual shut-off valve on all vehicle and shall be activated by engine vacuum or oil pressure.

(i) Carburetor Flows: Means shall be provided in the system to prevent the flow of gaseous fuel to the carburetor when the ignition is in the off or accessory position, or from the carburetor when engine vacuum or oil pressure is not present.

(j) Duel Fuel: Dual fuel systems using liquid and gaseous fuel shall have an automatic shut-off valve installed in the liquid fuel line to the carburetor.

(k) Relief Device: A bypass relief device shall be installed in the fuel pump or between the fuel pump and the automatic shut-off valve in the liquid fuel line to the carburetor on vehicle equipped with dual fuel systems for the use of gasoline and gaseous fuel. The relief device need not be installed on fuel pumps containing a bypass relief device as original equipment.

(l) Electrical Equipment: Radio transmitters, radio receivers, electric motors, or other electrical equipment (except vehicle lamps and wiring) shall not be mounted in a compartment with fuel supply containers, unless one of the following conditions is met:

(i) all piping and all connectors and valves on the fuel supply containers are exterior to and sealed from the compartment containing electrical equipment;

(ii) all piping, connectors, and valves within the compartment are contained in a vapor-tight enclosure and vented to the atmosphere exterior of the vehicle; or

(iii) the electrical equipment is contained in a vapor-tight enclosure that is vented to the atmosphere exterior of the vehicle.
(m) **Road Clearance:** The fuel system, including the fuel supply container, shall be installed with as much road clearance as practicable. The lowest part of any component in the system, including protective guards, shall not be lower than the lowest edge of the vehicle differential housing under maximum spring deflection.

(n) **Gasoline Tank:** Such tank shall not be placed below the aisle to a door, unless the area over such tank is adequately protected by metal shielding. This subdivision shall not apply to buses registered in another state or country and used in transporting passengers for hire within this State less than four times within any 12 consecutive months.

(o) **Certified Fuel Tanks:** All buses manufactured after January 1, 1974 shall be equipped with diesel or gasoline fuel tanks certified and marked by the manufacturer as to comply with USDOT requirements. Replacement fuel tanks installed on any bus after January 1, 1974 shall comply with this subdivision.

(p) **Supply Lines:** Gasoline or diesel fuel supply lines shall be connected above the bottom of the fuel tank. Buses manufactured after January 1, 1974 shall have the fuel supply line fitting located in the top of the tank. This subdivision shall not apply to buses registered in another state or country and used in transporting passengers for hire within this State not more than three times in any 12 consecutive months.

(q) **Fuel System:** All parts of the fuel system shall be securely installed outside of the passenger section and shall be located so as to prevent damage to any part thereof.

(r) **Fuel Tanks:** Fuel tank shall conform to 49 CFR Section 393.65 of the USDOT regulations and shall have:

(i) suitable baffles,

(ii) a supply line taken from the top of the tank,

(iii) all parts of the electrical system located under any part of the fuel system, including fuel tank, carburetor, gasoline pump, gasoline filter or fuel line connections, shielded from possible fuel leakage, and

(iv) for a fuel supply system using liquefied petroleum gas, liquefied natural gas or compressed natural gas, such system constructed and installed in accordance with the provisions of this Part.

(3) **LIQUEFIED PETROLEUM GAS SYSTEMS VEHICLES**

In addition to NFPA standards, fuel systems using liquefied petroleum gas (LPG) shall meet the following requirements of this subsection:

(a) **Fuel Supply Container:** Each LPG fuel supply container shall be constructed, inspected and permanently marked in accordance with the appropriate USDOT regulation or ASME Code. Containers constructed to the USDOT regulations shall have a minimum service pressure of 240 psi. Containers constructed to the ASME Code shall have a minimum working pressure of 250 psi. Every container must be equipped with an outage valve or a fixed liquid level gauge to indicate when the container is 79.8 percent full. A float gauge cannot be used to meet this requirement. In addition, containers must have a fill valve that limits filling to 80 percent of tank capacity.
(b) **Back-flow Check Valve:** When two or more containers are used, a back-flow check valve shall be installed in each fuel line to prevent passing of fuel between tanks during filling operation. A hydrostatic relief valve with a pressure setting not lower than 350 psi nor higher than 500 psi shall be installed between the back-flow check valves and the gaseous fuel cutoff valve to the carburetor.

(c) **Container Markings:** Each LPG fuel supply container shall be permanently marked as follows:

(i) the official ASME Code U symbol;

(ii) the manufacturer’s name, initials, or trademark;

(iii) the maximum allowable working pressure (-psi at -F);

(iv) a serial number; and

(v) the year built.

**Exception:** For containers constructed to USDOT regulations, the permanent markings shall include:

(i) the letters USDOT or ICC (referring to the former federal Interstate Commerce Commission) with the appropriate specifications and service pressure;

(ii) the manufacturer’s name, initials or trademark, as registered with USDOT;

(iii) the serial number; and

(iv) the year tested.

All container inlets and outlets, except those for relief valves and gauging devices, shall note if they connect to vapor or liquid space.

(d) **Valves:** Valves shall be of a type that has been tested and listed by UL or by other nationally recognized testing laboratories as meeting the UL requirements for LPG. All valves shall be securely mounted and shielded or installed in a protected location to prevent damage from vibrations and unsecured objects.

(e) **Safety relief valves:** One or more spring-loaded internal safety relief valves shall be installed directly in each fuel container in communication with the vapor space. The markings showing “set to discharge pressure” shall be visible after the valves are installed in the container. Safety relief valves for USDOT fuel supply containers shall be approved by the Federal Bureau of Explosives, and the valve setting shall be as required by the Bureau. The safety relief valve setting for ASME containers shall not be less than 100 percent or more than 110 percent of the maximum allowable service
(f) **Safety Relief Markings**: Permanent markings on safety relief valves in ASME containers shall include:

(i) manufacturer’s name, initials, or trademark;

(ii) manufacturer’s design or type number;

(iii) discharge pressure (-psi);

(iv) discharge capacity (cfm air at 60 degrees F and 14.7 psi); and

(v) ASME or UL symbol.

**Exception**: Permanent markings on safety relief valves in USDOT containers shall include:

(i) manufacturer’s name, initials or trademark;

(ii) catalog number;

(iii) discharge pressure (-psi); and

(iv) discharge capacity (cfm air at 60 degrees F and 14.7 psi).

(g) **Excess flow valve**: An internal excess flow valve shall be provided that is designed to close when maximum volume escapes through the smallest connection in the supply line valve or gauging device outlets. The excess flow valve shall have a bypass not to exceed a No. 60 drill size opening to allow equalization of pressure.

(h) **Check valves**: Inlet connections in the fuel supply container shall be fitted with either an internal and external check valve, or an internal check valve with an adjacent or remote manual shut-off valve. The inlet of the filling system shall be capped, except when filling, to withstand the maximum service pressure of the container. **All containers installed after January 1, 1973** shall be equipped for remote filling exterior to the vehicle compartment with an internal and external check valve installed in the container.

(i) **Vapor equalizing valve**: A vapor equalizing valve may be installed in the fuel supply container. The valve shall be capped, except when filling to withstand the maximum pressure of the container.

(j) **Shut-off valve**: A manually operated shut-off valve shall be installed directly into the fuel supply container outlet connection serving the supply line and shall be marked with the words “SHUT-OFF VALVE.” (Decals or stencils are acceptable).

(k) **Liquid Volume Gauge**: All LPG containers shall be equipped with a liquid volume gauge, which shall be designed and installed as follows:

(i) The gauging device shall be of a type that has been listed by UL or by other nationally
recognized testing laboratories as meeting the UL requirements for LPG.

(ii) The gauge shall be securely mounted and shielded or installed in a protected location to prevent damage from excessive vibration and unsecured objects.

(iii) A gauge that requires bleeding of the product shall be bled to outside of the vehicle compartment and shall be equipped with a bleeder valve. A restricting orifice not larger than No. 54 drill size shall be inside the fuel supply container.

(i) Pressure reducing regulator: An automatic pressure reducing regulator or a regulating vaporizer designed to withstand a service pressure of at least 250 psi shall be installed between the LPG fuel supply container and the carburetor. All regulators and vaporizers shall be of a type that has been tested and listed by UL or other nationally recognized testing laboratories as meeting the UL requirements for LPG. The regulator or vaporizer shall be installed so that its weight is not placed on, or supported alone by, the attached tubing or flexible lines.

(m) Vents: Every compartment in which an LPG container is installed shall be vented to the atmosphere unless all piping and connectors are exterior to the compartment. The vent or vents shall be installed at the lowest practicable point of the compartment and shall have an open area totaling not less than three square inches.

(n) LPG hose for high pressure liquid or vapor use: All LPG Hose and hose assemblies shall have a working pressure of not less than 350 psi and a burst pressure of not less than 1750 psi. Each hose shall be reinforced with corrosion-resistant wire braid and shall be of a type that has been tested and listed by UL or by other nationally recognized testing laboratories as meeting the UL requirements for LPG. Each LPG hose shall have the following permanent identification markings in letters and numerals at least ¾ inch in height at intervals of 24 inches or less:

(i) manufacturer’s name, initials or trademark;

(ii) LPG or LP Gas; and

(iii) working pressure.

(4) COMPRESSED NATURAL GAS VEHICLES

In addition to NFPA regulations, fuel systems using compressed natural gas (CNG) shall meet the following requirements of this section:

(a) Fuel Supply Container: Each CNG fuel supply container shall be constructed and inspected in accordance with USDOT regulations and shall have a rated service pressure of not less than 2250 psi at 70 degrees F. It shall not be filled beyond the working pressure stamped on the tank and marked near the filler connection, corrected for the ambient temperature at time of filling as prescribed by USDOT.

(b) Markings: Each CNG fuel supply container shall have the following identification markings:

(i) the letters USDOT with the appropriate specification and working pressure;

(ii) serial number;
(iii) year tested; and

(iv) manufacturer’s name, initials or trademark.

(c) **Shut-Off Valve:** A manually operated shut-off valve shall be in direct contact with the container and shall be marked with the words “SHUT-OFF VALVE”. (Decals or stencils are acceptable.) No valve shall be used for CNG unless it has been certified for that purpose by the manufacturer. The shut-off valve shall be securely mounted and shielded or installed in a protected location to prevent damage from vibration and unsecured objects.

(d) **Safety Relief Device(s):** One or more safety relief devices shall be installed in the fuel supply container in communication with the fuel and vented to the outside of the vehicle compartment. Relief devices shall be approved as to type, size, quantity, and location by the Federal Bureau of Explosives and shall have the following permanent identification markings:

(i) manufacturer’s name, initials or trademark;

(ii) flow capacity (-cfm); and

(iii) yield temperature rating (-F).

(e) **Gauges:** Gauges used in CNG systems shall be designed and installed as follows:

(i) gauging devices shall be designed for the most severe pressure and temperature conditions to which the devices may be subjected with a pressure safety factor of not less than four; and

(ii) gauges shall be securely mounted and shielded or installed in a protected location to prevent damage from vibration and unsecured objects.

(f) **Automatic Pressure Reducing Regulator(s):** An automatic pressure reducing regulator or regulators shall be installed in CNG systems to reduce container pressure to a value consistent with the working pressure required by the carburetor. Means shall be provided to prevent malfunction due to refrigeration effects. Regulators shall be installed so that their weight is not placed, on, or supported alone by, the attaching line or lines. Regulators shall be designed to a container’s maximum working pressure and temperature with a pressure safety factor of not less than four.

(g) **Vent(s):** Every compartment in which a CNG container is installed shall be vented to the atmosphere, unless all piping and connections exterior to the compartment are vapor sealed and vented to the atmosphere. The vent or vents shall be installed at the highest practicable point of the compartment and shall have an open area totaling not less than three square inches.

### (5) LIQUEFIED NATURAL GAS

In addition to NFPA regulations, fuel systems using liquefied natural gas (LNG) shall meet the following requirements of this section:

(a) **Fuel Supply Container:** Each LNG fuel supply container shall be constructed and inspected in accordance with 49 CFR Section 178.57 specification 4L for welded cylinders insulated with the exception of subsections 178.57-13 and 178.57-20 and the reports to the Federal Bureau of Explosives in subsection 178.57-4(d). Each LNG container shall meet the following additional requirements:

(i) The unrelieved fuel pressure inside the container shall not exceed 100 psi within a total 72-h period consisting of 48h at 60 degrees F, 12h at 70 degrees F, and 12h at 90 degrees F ambient temperatures when the container has been filled with LNG conditioned at one atmosphere;
(ii) The container shall be equipped with a liquid level gauging device and a dip tube to prevent filling beyond 90 percent by volume at atmospheric pressure; and

(iii) Each completed container, including its supporting structure and valves, enclosures, and lines normally attached thereto, shall have structural integrity to withstand damage from deceleration and acceleration forces resulting from a 30 mph front-end and rear-end collision with the type of vehicle in which the container is installed. A test of other means shall demonstrate that the container and its openings do not rupture in such collisions.

(b) **Markings:** Each LNG fuel supply container shall have the following permanent identification markings:

(i) service pressure;

(ii) serial number;

(iii) manufacturer’s name, initials or trademark;

(iv) inspector’s mark;

(v) date tested; and

(vi) all inlets and outlets, except relief valves and gauging devices, shall be marked to designate whether they make contact with vapor or liquid space.

(c) **Valves Certification:** Valves shall be certified for liquid natural gas use by the manufacturer or certified for cryogenic service at temperatures down to and including -320 degrees F. All valves shall be securely mounted and shall be shielded or installed in a protected location to prevent damage from vibration and unsecured objects.

(d) **Safety Relief Valve(s):** Each container shall be equipped with one or more safety relief valves. The safety relief valve shall be installed in a line that communicates with the vapor space of the container. A safety relief valve shall be installed between two shut-off valves in a supply line to prevent a buildup of pressure between the valves in the off position. The discharge pressure of safety relief valves shall not exceed 125 percent of the service pressure of the container. Relief valves shall have sufficient capacity to meet the requirements of either the Federal Bureau of Explosives for approval of safety relief valves or NFPA standard 59 (A) - Appendix A and be capable of preventing explosion of the normally charged cylinder when it is placed in a fire. Relief valves shall have the following permanent identification markings:

(i) manufacturer’s name, initials or trademark;

(ii) catalog number;

(iii) discharge pressure (-psi); and

(iv) discharge capacity (-cfm air at 60 degrees F and 14.7 psi).

(e) **Shut-off Valve(s):** One manually operated shut-off valve shall be secured directly to the tank vapor outlet with no intervening fitting other than the relief valve and shall be marked with the words “VAPOR SHUT-OFF VALVE.” Another manually operated shut-off valve shall be secured directly to the tank liquid outlet and shall be marked with the words “LIQUID SHUT-OFF VALVE.” (Decals or
stencils are acceptable.) Normally closed automatic shut-off valves that are held open by electrical current may be used in lieu of manual shut-off valves at either the tank vapor port or tank liquid port, or both. An automatic shut-off valve shall be wired so it shuts off when the ignition switch is in the off and accessory positions and when engine vacuum or oil pressure is not present.

(f) **Control Valve:** A positive shut-off valve shall be installed in the fuel supply lines as close to the containers as possible, automatically closing off and preventing the flow of fuel to the carburetor when the ignition switch is off or in the accessory position.

(g) **Gauges:** Gauges used in LNG systems shall be designed and installed as follows:

(i) Gauging devices shall be designed for the most severe pressure and temperature conditions to which the devices may be subjected with a pressure safety factor of not less than four;

(ii) All gauges shall be securely mounted and shall be shielded or installed in a protected location to prevent damage from vibration and unsecured objects; and

(iii) Gauging devices that require bleeding of the product shall be bled to the outside of the vehicle compartment.

(h) **Pressure Reducing Regulators:** LNG systems shall be equipped with one-or-two stage pressure reducing regulators. The regulators shall be installed so that their weight is not placed on, or supported alone by, the attaching tubing or flexible lines.

(i) **Vent(s):** Every compartment in which an LNG container is installed shall be vented to the atmosphere unless all piping and connectors are exterior to the compartment. The vent or vents shall be installed at the highest practicable point of the compartment and shall have an open area totaling not less than three square inches.

### 720.4 (DD) ENGINE FIRE WARNING/PROTECTION DEVICE.

All vehicles fueled with other than diesel fuel with the engine located to the rear of the driver’s seat shall be equipped with either an automatic signal device to warn the driver of fire in the engine section or an automatic fire extinguishing device or both, which shall operate whenever the temperature in the engine section reaches 350 degrees F.

### 720.5 EMERGENCY EXITS.

#### (A) GENERAL REQUIREMENTS (ALL VEHICLES)

**Emergency Exits:** All vehicles shall be equipped with emergency exits, as required by FMVSS and any additional requirements as contained in this Part. Specifically:

(1) **Steps:** There shall be no steps leading to any emergency exit.
(2) **Design:** Emergency exits shall be designed and maintained in a free operating condition and the passageway thereto shall be unobstructed.

(3) **Instructions:** Opening instructions shall be displayed on the interior adjacent to or on any emergency exit.

(4) **Additional Exits:** Any additional emergency exit that is installed at the option of the operator, manufacturer/dealer or is required by this Part must meet all FMVSS requirements as of the date of installation and the applicable requirements of this Part.

(5) **Vehicles having a capacity to carry more than 10 persons,** (adults or children), and no more than two doors shall have access to a rear exit or, in lieu of the rear exit, one push-out window on each side of the vehicle.

(B) **SCHOOL BUSES ( TYPE A, B, C, D )**

(1) **Emergency Exits:** Each school bus shall meet the following:

(a) **Effective Date:** School buses manufactured prior to the effective date of this regulation must meet the emergency exit requirements as specified in the FMVSS and 17 NYCRR 720 that were applicable on the vehicle date of manufacture for emergency door(s), exit window(s), push out window(s), roof exit(s) dimensions, location, identification lights and lettering. All school buses manufactured on or after the effective date of this regulation shall meet all the applicable emergency exit requirements of the FMVSS effective at the time of manufacture, as well as the applicable provisions of this Section.

(b) **Audible Warning Device:** An audible warning device shall be provided to alert driver if any emergency exit (door, window or roof hatch) is locked. The warning device shall function while engine is running or ignition is in the on position and shall incorporate an interlocking electrical circuit that prevents the engine from being started when locked.

(c) **The Number of Emergency Exits** shall be provided in accordance with the following listing:

<table>
<thead>
<tr>
<th>Vehicle Group</th>
<th>Passenger Capacity</th>
<th>Type A, B, C, D</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Front Engine Buses</td>
<td>Rear Engine Buses</td>
</tr>
<tr>
<td>1</td>
<td>10-22</td>
<td>1 Rear Emergency Door</td>
<td>1 Left Side Emergency Door</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 Rear Emergency Window</td>
</tr>
<tr>
<td>2</td>
<td>23-45</td>
<td>1 Rear Emergency Door</td>
<td>1 Left Side Emergency Door</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Push Out Windows</td>
<td>1 Rear Emergency Window</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Roof Hatch</td>
<td>2 Push Out Windows</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 Roof Hatch</td>
</tr>
<tr>
<td>3</td>
<td>46-70</td>
<td>1 Rear Emergency Door</td>
<td>1 Left Side Emergency Door</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Left Side Emergency Door</td>
<td>1 Rear Emergency Window</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Push Out Windows</td>
<td>3 Push Out Windows</td>
</tr>
</tbody>
</table>
Notes: (1) For Group 4, all 80 - 84 passenger capacity vehicles require 1 additional Push Out Window or Roof Hatch; (2) Vehicles with three or more wheelchair positions manufactured on or after January 1, 1990 shall be equipped with at least one roof hatch.

(2) Emergency Exit Doors and Rear Exit Windows: Each school bus shall meet the following:

(a) **Emergency Door**: The emergency door shall have a minimum dimension of 45 inches (vertical) and 24 inches (horizontal). **Type D Exception**: For a TYPE D rear engine bus, a rear emergency exit window that meets the FMVSS Standards for size and location shall be acceptable.

(b) **Red Door Light**: All doors shall have a two-inch ruby or red light mounted on inside above the door connected to headlight or marker light circuit.

(c) **Exit Markings**: The words “EMERGENCY EXIT” shall be placed both inside and outside directly above, on or adjacent to the exit in letters of one and one-half inch minimum height. An arrow of contrasting color (Red or Black) shall also be placed on the interior and exterior of the door, as close as practicable to the door handle, which will indicate direction to move the handle to unlatch the door. All lettering and numbering shall conform to Series B of Standard Alphabets for Highway Signs within the Manual of Uniform Traffic Control Devices (17 NYCRR, Chapter V).

(d) **Hinges**: All doors shall be hinged on two or more door-type hinges, properly spaced.

(e) **Sealer Strip**: All doors shall be sealed on all edges with rubber sealer strip.

(f) **Outward Opening**: All emergency doors shall open outward at least 90 degrees. Those doors that are required to be equipped with a door stop (holder) shall maintain this 90 degree opening when door stop is engaged.

(g) **Opening Device**: All doors shall be provided with a three-point fastening device operated independently of the driver. The inside opening device shall operate upward and shall be of contrasting color and easily accessible. It shall be substantially constructed and engineered in such a manner that it provides for easy opening and yet is protected against accidental release.

(h) **Outside Door Handle**: All doors shall be equipped with a recessed or flush outside handle, designed to prevent hitching to or riding thereon and constructed to quickly release the door from the outside.

(i) **Warning Device**: All doors shall be equipped with a device, connected to a audible warning signal, located in the driver’s compartment which shall be activated when the door is open or not fully
latched. The switch shall be enclosed and wires leading from switch shall be concealed in bus body.

(j) Door Rigidity: All doors shall be constructed in a manner to provide at least equal rigidity and crash resistance on the sides and rear of the bus, except the upper door section shall be equipped with approved glazing. The lower portion of the rear emergency door shall have an area large enough to provide adequate vision and may be equipped with glazing approved by DMV only.

(3) Push-Out Windows: Each school bus shall meet the following requirements:

(a) Push-Out Windows: Each window shall be hinged at the top and shall open approximately 90 degrees, or as near as practicable thereto, from the closed position and shall be connected electrically to an audible signal which will warn the driver when such windows are not completely latched. Side push-out windows shall have a minimum height of at least 17 inches and a minimum width of at least 23 ½ inches. Rear push-out windows shall have a minimum height of 17 inches and a minimum width of 45 inches for a single window. If two windows are provided, each shall have a minimum height of 17 inches and minimum width of 23 ½ inches. Push-out windows shall have a positive latching device that is designed to prevent accidental opening. Note: Vehicles meeting the applicable FMVSS for emergency exit window(s) opening dimensions shall be considered in compliance with this section.

(b) Side Emergency Windows: For buses equipped with two side emergency push out windows on the same side of the bus, one window shall be located forward and one to the rear of the midpoint of the passenger section.

(4) Roof Hatch(s): Each shall meet the following requirements:

(a) School buses manufactured as 1984 or subsequent models:

(i) Each such bus shall have roof hatches equipped with an audible warning device located in the driver’s compartment that activates with the ignition on if the latch is released and any opening of the hatch occurs.

(ii) Buses equipped with roof hatches designed to provide ventilation shall have such warning devices installed so as to activate whenever the safety latch is released and the ignition is on.

(iii) Such roof hatches shall open from the outside and the exterior release mechanism shall be designed so as to not add to the overall height of the vehicle.

(b) Hinges: If hinged, the roof hatch shall be located on the hatch toward the front of the bus.

(c) Safety Chain: If not equipped with hinges, the roof hatch shall be equipped with a chain to prevent cover from being separated from vehicle.

(d) Spacing: Roof hatches shall not be closer than 3 feet when more than one hatch is installed.
720.6 ELECTRICAL SYSTEM - ALL VEHICLES.

(A) **Installation:** The electrical equipment, connections and wiring shall be securely installed and protected to prevent damage to any part thereof.

(B) **Battery:** When the battery is mounted outside of the engine compartment, it shall be located in a vented compartment (equipped with drains) which shall retain the battery in case the vehicle is involved in an accident and otherwise rolls over. The battery compartment door or cover shall be secured by an adequate and conveniently operated latch or other type fastener. The cables to the battery shall not be spliced. Battery compartment shall be constructed in a manner that provides easy access to the battery for convenient servicing. The location of the battery compartment shall be lettered on the exterior of the vehicle on or adjacent to such compartment.

(C) **Generator or Alternator:** The generator or alternator shall be of sufficient capacity to adequately supply all electrical equipment and keep the battery or batteries fully charged.

(D) **Wiring:** All electrical wiring, except in the engine and cowl compartment areas, shall be insulated and protected by covering of fibrous loom tube or equivalent located to protect it from external damage and to minimize any dangers from short circuits and exposure to the elements. Wrapped covering shall not be utilized.

   (1) Wires shall be fastened securely and all joints shall be soldered or joined by equally effective connectors.

   (2) All wiring shall conform to the current SAE Standard J1292.

   (3) All circuits shall be such as to provide bulb design voltage at the bulb terminals.

720.7 EMERGENCY EQUIPMENT.

(A) **GENERAL REQUIREMENTS (ALL VEHICLES)**

(1) **Fire Extinguisher:** Every vehicle operated upon the public highways of the state having a carrying capacity of ten or more passengers shall be equipped with at least one portable fire extinguisher containing not less than four pounds of carbon dioxide or two pounds of dry chemical shall be provided. Such extinguishers shall be:

   (a) a type approved by a recognized Underwriter’s Laboratory or Factory Mutual Laboratories under classification 4B:C,

   (b) properly filled and serviceable, and

   (c) mounted so as to be properly identified and readily accessible for use.

(2) **Road Reflectors:** All buses shall be equipped with bi-directional emergency reflective triangles that will conform to the National Highway Traffic Safety Administration’s FMVSS No. 125. These triangles will also be mandatory equipment for buses manufactured on or after January 1, 1974.
(3) **Reflective Triangles:** Effective January 1, 1974 as warning device equipment is replaced, each vehicle must be equipped with bi-directional emergency reflective triangles that will conform to the National Highway Traffic Safety Administration's FMVSS No. 125.


(B) **SCHOOL BUSES ( TYPE A, B, C, D )**

(a) **Fire Extinguisher:** At least one all purpose fire extinguisher dry chemical or CO(2) type rated at least 10-B:C, equipped with calibrated or marked gauge shall be mounted in an automotive bracket located in driver’s compartment in full view and easily accessible, which may be in a compartment if readily accessible and properly identified. If the compartment is locked, it must be interlocked to the starting circuit.

(b) **First Aid Kit:** Every bus shall be equipped with a first aid kit properly identified and readily accessible. The case and cover of such first aid kit shall be substantially constructed of durable material. Due to the many different needs of student transportation, the appropriate contents of the first aid kit shall be determined and supplied by the vehicle operator. The National School Bus Standards contain a suggested list of contents.

720.8 SPECIALLY EQUIPPED VEHICLES TO TRANSPORT THE DISABLED.

(A) **AMBULETTES**

Ambulettes are specially equipped vehicles (other than School Buses) used to transport passengers in mobility aid devices or wheelchairs. The provisions of this section shall apply to vehicles used in certificated transit disabled service. Those manufactured on or after April 1, 1978 shall meet the following requirements:

(1) **Special Service Door:** A special service door(s) shall be located on the right side or rear of vehicle, and shall have the following features:

   (a) The door opening(s) shall be of sufficient size to accommodate the wheelchair with a seated passenger. When a door is located at the rear of the vehicle, a reflective decal, with a dimension of at least fifty (50) square inches, must be affixed so as to present an unobstructed view to the drivers of vehicles approaching from the rear and to call attention to the open door(s).

   (b) The interior release latch handle may be of contrasting color.

   (c) A drip molding shall be installed above the door opening(s) to effectively drain water away from the entrance area.

   (d) The door(s) shall cover the entire opening and shall be weather-sealed to include lift or ramp storage area.
(e) The door(s) shall be equipped with a device that will actuate an audible or visible signal when the
door(s) is not securely closed. Such warning signals shall be located in the driver’s compartment.
The visible signal shall be a minimum two-inch red or amber lamp and shall be readily visible to
the driver while in his or her normal belted seated position.

(f) Each door shall contain a window that provides visibility of the ramp or lift

(g) A positive fastening device shall be installed to hold the door or doors in an open position.

(h) The door posts, door locking device and doors shall be constructed in a manner to develop at
least the same rigidity and crash resistance as the sides and rear of the vehicle.

(i) A light placed inside the vehicle, located over the service door and activated by opening the
door, shall be provided to illuminate the ramp and platform area.

(2) **Ramp:** If ramp is used, it shall be stored completely enclosed in the vehicle, and shall have the
following features:

(a) It shall be of sufficient strength and rigidity to support wheelchair, occupant and attendant. It shall
be equipped with protective flange on each longitudinal side to keep the wheelchair on the ramp.
The ramp shall be capable of supporting a minimum of 600 pounds.

(b) Floor of ramp shall be constructed of a non - skid material.

(c) On all vehicles equipped with a wheelchair lift that is stowed in the vehicle interior, within sixteen
(16) inches of an adjacent wheelchair position and the lift platform is made of a metallic mesh
type material, the opening in the mesh shall comply with any applicable federal standard. In the
absence of such federal standard, the mesh shall be no larger than one quarter (1/4) of an inch
in diameter to insure that passengers do not catch their fingers within the mesh opening.

(d) Ramp shall be equipped with handles and be of weight and design to permit one person to put
the ramp in place and return it to its storage place.

(e) Ramp shall be properly secured in the stored position.

(f) Provisions shall be made to attach the ramp at one end to the inside of the vehicle at floor level,
in such manner as to permit easy access of the wheels of the wheelchair(s) between the floor of
the vehicle and the ramp.

(g) The minimum length of the ramp shall be three times the distance, measured vertically, between
the vehicle floor to which the ramp is attached and the ground on which the vehicle rests. The
ramp shall be measured from the point where the ramp makes contact with the ground to the
point where the ramp makes contact with the vehicle floor.

(h) The width of ramp shall conform to the approximate width of the door opening.

(i) Instructions for the use of the ramps must be posted and readily visible when the service door is
open.

(3) **Power Lift:** If a power lift is used, it shall be stored completely within the vehicle and shall have the
following features:

(a) It shall be of sufficient size to accommodate the wheelchair and occupant. The power lift shall be
capable of lifting a minimum load of 600 pounds.

(b) Protective paneling shall be provided adjacent to the lift to prevent shearing action between platforms and vehicle floor or door jams.

(c) On all vehicles equipped with a wheelchair lift that is stowed in the vehicle interior, within sixteen (16) inches of an adjacent wheelchair position and the lift platform is made of a metallic mesh type material, the opening in the mesh shall comply with any applicable federal standard. In the absence of such federal standard, the mesh shall be no larger than one quarter (1/4) of an inch in diameter to insure that passengers do not catch their fingers within the mesh opening.

(d) All elevator type lifts shall be mounted on the chassis frame or vehicle body, provided the body and/or chassis frame is adequately strengthened and supplied with a warrantee by the lift installer. Edges of platform and adjacent floor shall be properly finished, and all seams covered with molding as required for vehicle floor. Flexible seals, designed to keep out dirt, water and fumes when in a locked position, shall be installed along platform edges. An approach ramp shall be attached to the lift platform. When the platform is in the down position, the approach ramp shall minimize the incline from the ground to the lift floor. The approach ramp shall have a skid-resistant surface. There shall be means provided to contain the wheelchair on lift platform, when platform is in use.

(e) The power lift platform shall be constructed of a non-skid material.

(f) A device shall be installed which will prevent operation of lift until the doors are open.

(g) A device shall be provided to prevent power lift from dropping while in a stored position.

(h) All electrical and hydraulic lines within the passenger compartment shall be adequately enclosed and protected.

(i) In the event the power lift, when in the stored position, prevents inside access to the special service door opening, the lift control system shall be equipped with a device which will allow moving the lift from its obstructing position in the event of an emergency or power failure.

(j) All lifts shall be approved by the lift manufacturer for passenger carrying purposes.

(k) Instructions for use of the lift must be posted and readily visible when the service door is open.

(4) Stanchions, panels and guardrails: A padded stanchion, padded guardrail, and panel shall be installed at both the rear and front edges of the special service door opening extending into vehicle at least the width of the seat in front of or to the rear of such opening. As an alternative, an enclosure wall of equal or greater strength, installed front and rear of the lift, is an acceptable option. Seats that are forward facing and positioned within 10 inches forward of the lift shall meet this requirement.

(a) If a elevator type lift is used, a covered chain shall be installed between the stanchion posts to enclose the area of the power lift.

(b) There shall be a padded modesty panel (barrier) directly in front of any forward facing seat in any unprotected area. There shall be a minimum of 25 inches seat and knee room combined space provided.

(5) Fastening Devices for Wheelchairs: Positive fastening device(s) designed and manufactured for the purpose of wheelchair securement shall be provided. They shall be attached to the floor, walls or both, such that they will securely hold the wheelchairs in position, and will not constitute a tripping hazard. If the positive fastening device(s) incorporates a seat safety belt, the belt shall conform to
FMVSS 209. Gurney-type devices shall be secured parallel to the side of each bus.

(6) **Seat(s) and Wheelchair(s) positions:** When transporting the disabled, seats and wheelchairs may be rear, longitudinal, diagonal or forward-facing. Longitudinal or diagonal facing seats must have suitable arm rests or other guards at each seat. Flip-up cushion type seats may be used to provide alternate seating in place of unused wheelchair space. Vehicles equipped with longitudinal seats must provide an aisle width of at least 10 inches in addition to a knee room space of at least five inches in front of each longitudinal seat.

(7) **Space Requirements:** In computing space requirements in vehicles transporting passengers in wheelchairs, each wheelchair position shall be assigned a minimum area 26 inches wide and 42 inches long, or as recommended by the securement device manufacturer.

(8) **Emergency Exits:** An emergency door with a minimum width of 30 inches and a minimum height of 48 inches shall be provided. For low profile vans with an exit that measures less than 26 inches from the ground to the bottom of the emergency door opening, such vehicle shall have an emergency door with a minimum width of 30 inches and a minimum height of 37 inches. Vehicles equipped with a special service door located in the rear shall be equipped with an emergency door located on either side of the passenger compartment that meets the dimensional requirements specified above.

(9) **Aisles:** Vehicles manufactured on or after April 1, 1978 and used as ambulettes to transport passengers in wheelchairs shall provide unobstructed aisle space with a minimum width of 30 inches leading from wheelchair positions to the emergency door.

(a) This aisle shall be free of fixed items that could impede or obstruct the movement of wheelchairs or create a tripping hazard;

(b) Vehicles shall have access at least 10 inches wide from the right side door to the rear most passenger position. Vehicles equipped with two entrances doors located on the right side may designate the rear most passenger position for each door location.

(10) **Passenger Protection:** No vehicle manufactured on or after January 1, 2000 with a wheelchair position located within 16 inches of a stowed wheelchair lift that could be struck by the head of a wheelchair occupant seated at that position shall operate in certificated or school service.

All vehicles manufactured prior to January 1, 2000 equipped with a wheelchair lift stowed in the interior of the vehicle within sixteen (16) inches of an adjacent wheelchair position shall have adequate padding or another method/device that affords reasonable protection to the head of the adjacent wheelchair occupant from possible injury caused by head of the occupant striking the lift roll stop, platform, or any other portion of the lift while it is stowed within the vehicle. The provisions of this paragraph shall remain in effect through December 31, 2004. **Note:** Possible options include, but are not limited to, placing a removable pad, made of energy absorbing material over the portion(s) of the lift requiring protection or applying the head impact protection standards specified in 49 CFR Section 571.222 (FMVSS #202- School bus passenger seating and crash protection).

Effective January 1, 2005, no vehicle manufactured prior to January 1, 2000 with a wheelchair position located within sixteen (16) inches of a stowed wheelchair lift that could be struck by the head of a wheelchair occupant seated at that position shall operate in certificated or school service.

**(B) SCHOOL BUSES ( TYPE A, B, C, D )**
School buses designed for transporting students with special transportation needs shall comply with the following National Standards and with all FMVSS applicable to their GVWR category.

1. **Forward Facing Wheelchairs:** All vehicles used in school service and manufactured on or after January 17, 1994 shall comply with FMVSS 571.222, specifically regarding the requirements for forward facing wheelchairs, wheelchair securement and wheelchair occupant restraint.

2. **Securement and Occupant Restraint Systems:** No person shall operate, in school service, a motor vehicle manufactured on or after January 17, 1994, while transporting one or more wheelchair passengers, unless the wheelchair securement devices and wheelchair occupant restraint system specified in FMVSS 571.222 are present and in use.

3. **Other Safety Requirements:** Vehicles used to accommodate students with special needs shall meet all the safety requirements of section 720.4 of this Part pertaining to school buses, plus those listed in this section. The vehicle shall have a minimum classification of SCHOOL BUS as defined by the 49 CFR Section 571.3, where “Bus” is defined as a motor vehicle with motive power, except trailers, designed for carrying more than 10 persons.

4. **Power Lift or Ramp:** Any school bus to be used for the transportation of children who are confined to a wheelchair or other mobile positioning device, or who require life support equipment which prohibits the use of the regular service entrance, shall be equipped with a power lift, unless a ramp is needed for unusual circumstances related to a specific passenger needs.

5. **Aisles:** All school buses equipped with a power lift or ramp shall provide a 30 inch aisle leading from any wheelchair/mobility aid position to at least one emergency door and the lift area.

   - Aisles shall be designed to be unobstructed at all times by any type of fixed object (barrier, seat, stanchion, etc.) While a wheelchair shall not be considered a fixed object in this section, a wheelchair tie down mounting bracket designed in such a manor to prohibit a smooth egress shall be considered a fixed object.

   - The main aisle shall not contain any obstructions.

   - A flip seat in the unoccupied or “up” position shall not obstruct the 30 inch minimum aisle to any side emergency door.

6. **Disabled Symbol:** Every school bus which is equipped with a lift to facilitate the transportation of passengers with disabilities shall display a universal disabled symbol, which is an illustration of a person seated in a wheelchair. The symbol, as shown in Figure 1 below, shall be:

   - white against a blue background;

   - a square not less than four nor more than six inches on each side; and

   - mounted as close as practicable to the vertical centerline of the rear of the bus and three to six feet above the ground, but NOT on glass needed for visibility.

   - The symbol may be a decal or a sign or may be painted on the bus, and if desired, may be of a high-intensity reflectorized material meeting the USDOT’s Federal Highway Administration (FHWA) Standard FP-85.

*Figure 1*
(7) **Passenger Capacity Lettering:** In identifying the passenger capacity of a school bus for purposes of exterior lettering, the child seated capacity shall be depicted as well as the number of wheelchair station(s) in the manner shown by the example below.

Example: $5c + 3\ w/c$ (with $c$ meaning children and $w/c$ meaning wheelchair capacity)

(8) **Power Lifts:** Each lift shall be located on the right side of the bus body.

(a) **Design Load:** The design load of the lift shall be at least 600 pounds. Working parts, such as cables, pulleys, and shafts, which can be expected to wear, and upon which the lift depends for support of the load, shall have a safety factor of at least 6 (six), based on the ultimate strength of the material. Non-working parts, such as the platform, frame, and attachment hardware that would not be expected to wear, shall have a safety factor of at least 3 (three), based on the ultimate strength of the material.

(b) **Lift Controls:** Controls shall be provided that enable the operator to activate the lift mechanism from either inside or outside the bus. The lift shall deploy to all levels (i.e., ground, curb, and intermediate positions) normally encountered in the operating environment. Where provided, each control for deploying, lowering, raising, and stowing the lift and lowering the roll-off barrier shall be of a momentary contact type requiring continuous manual pressure by the operator and shall not allow improper lift sequencing when the lift platform is occupied. The controls shall allow reversal of the lift operation sequence, such as raising or lowering a platform that is part way down, without allowing an occupied platform to fold or retract into the stowed position.

**Exception:** Where the lift is designed to deploy with its long dimension parallel to the vehicle axis and which pivots into or out of the vehicle while occupied (i.e., rotary lift), the requirements of this paragraph prohibiting the lift from being stowed while occupied shall not apply if the stowed position is within the passenger compartment and the lift is intended to be stowed while occupied.

(c) **Emergency Operation:** The lift shall incorporate an emergency method of deploying, lowering to ground level with a lift occupant, and raising and stowing the empty lift if the power to the lift fails. No emergency method, manual or otherwise, shall be capable of being operated in a manner that could be hazardous to the lift occupant or to the operator when operated according to manufacturer’s instructions. The design shall not permit the platform to be stowed or folded when occupied, unless the lift is a rotary lift and is intended to be stowed while occupied. No manual emergency operation shall require more than 2 (two) minutes to lower an occupied wheelchair to ground level.

(d) **Power or Equipment Failure:** Platforms stowed in a vertical position, and deployed platforms when occupied, shall have provisions to prevent their deploying, falling, or folding any faster than
12 inches per second or their dropping of an occupant in the event of a single failure of any load carrying component.

(e) **Platform Barriers/ Loading Ramp:** The lift platform shall be equipped with barriers to prevent any of the wheels of a wheelchair or mobility aid from rolling off the platform during its operation. A movable barrier or inherent design feature shall prevent a wheelchair or mobility aid from rolling off the edge closest to the vehicle until the platform is in its fully raised position. Such barriers shall not interfere with maneuvering into or out of the aisle. The loading edge (outer) barrier, which functions as a loading ramp when the lift is at ground level, shall be of sufficient height, when raised or closed, to prevent a power wheelchair or mobility aid from riding over or defeating it, or a supplementary system to achieve this objective shall be installed. The outer barrier of the lift shall automatically raise or close, or a supplementary system shall automatically engage, and remain raised, closed, or engaged at all times that the platform is more than 3 inches above the ground and the platform is occupied. Alternatively, a barrier or system may be raised, lowered, opened, closed, engaged, or disengaged by the lift operator, provided an interlock or inherent design feature prevents the lift from rising unless the barrier is raised or closed or the supplementary system is engaged.

(f) **Lift Mesh:** On all vehicles equipped with a wheelchair lift that is stowed in the vehicle interior, within sixteen (16) inches of an adjacent wheelchair position and the lift platform is made of a metallic mesh type material, the opening in the mesh shall comply with any applicable federal standard. In the absence of such federal standard, the mesh shall be no larger than one quarter (1/4) of an inch in diameter to insure that passengers do not catch their fingers within the mesh opening.

(g) **Boarding direction:** The lift design shall permit both inboard and outboard facing of wheelchair and mobility aid users.

(h) **Use by standees:** Lift designs shall accommodate persons using walkers, crutches, canes or braces, or who otherwise have difficulty using steps. The platform may be marked to indicate a preferred standing position.

(i) **Handrails:** Platforms on lifts when equipped with handrails on two sides, which move in tandem with the lift, shall be graspable and provide support to standees throughout the entire lift operation. Handrails shall have a usable component at least 8 inches long with the lowest portion a minimum 30 inches above the platform and the highest portion a maximum 38 inches above the platform. The handrails shall be capable of withstanding a force of 100 pounds concentrated at any point on the handrail without permanent deformation of the rail or its supporting structure. The handrail shall have a cross-sectional diameter between 1 ¼ and 1 ½ inches, or shall provide an equivalent grasping surface, and have eased edges with corner radii of not less than 1/8 inch. Handrails shall be placed to provide a minimum 1 1/2 inches knuckle clearance from the nearest adjacent surface.

Handrails shall not interfere with wheelchair or mobility aid maneuverability when entering or leaving the vehicle.

(j) **Circuit Breaker:** A resettable circuit breaker shall be installed between the power source and the lift motor if electrical power is used. It shall be located as close to the power source as possible, but not within the passenger/driver compartment.

(k) **Excessive Pressure:** Lift design shall prevent excessive pressure that could damage the lift system when the platform is fully lowered or raised, or that could jack the vehicle.

(9) **Vehicle Ramp:** If a ramp is used, it shall be of sufficient strength and rigidity to support the special device, occupant, and attendant(s) and shall meet the following:
(a) Each ramp shall be equipped with a protective flange on each longitudinal side to keep special device on the ramp.

(b) Floor of ramp shall be constructed of non-skid material.

(c) Ramp shall be equipped with handles and be of weight and design to permit one person to put the ramp in place and return it to its storage place.

(d) Ramps installed in raised floor buses by manufacturers may be used for emergency evacuation purposes. They shall not be used as a substitute for a lift when a lift can meet the need.

(e) On all vehicles equipped with a wheelchair ramp that is stowed in the vehicle interior, within sixteen (16) inches of an adjacent wheelchair position and the platform is made of a metallic mesh type material, the opening in the mesh shall comply with any applicable federal standard. In the absence of such federal standard, the mesh shall be no larger than one quarter (1/4) of an inch in diameter to insure that passengers do not catch their fingers within the mesh opening.

(10) **Restraint Devices**: On power-lift or ramp equipped vehicles, seat frames may be equipped with attachments or devices to which belts, restraining harnesses or other devices may be attached in the following manner:

   (a) Installed attachment framework or anchorage devices shall conform to FMVSS Section 571.210.

   (b) Seat belt assemblies shall conform to FMVSS Section 571.209

   (c) Child restraint systems used to facilitate the transportation of children shall conform to FMVSS Section 571.213 and .222.

(11) **Seating Arrangements**: All seating shall be forward-facing.

(12) **Securement And Restraint System For Wheelchair / Mobility Aid And Occupant**: In addition to the terms defined in Section 720.1, the following terms which are used in this Section are defined below:

   (i) “securement” or “securement system” only means the device(s) that secures the wheelchair/mobility aid to the vehicle;

   (ii) “restraint” or “restraint system” only means the device(s) used to restrain the occupant of the wheelchair/ mobility aid; and

   (iii) “securement and restraint system” refers to the total system that secures and restrains both the wheelchair/mobility aid and the occupant.

Each Wheelchair/Mobility Aid Securement and Occupant Restraint System shall be designed, installed, and operated to accommodate passengers in a forward-facing orientation within the bus and shall comply with all applicable requirements of FMVSS Section 571.222. Additionally:

   (a) Gurney-type devices shall be secured parallel to the side of each bus.

   (b) The securement and restraint system, including the system track, floor plates, pockets, or other anchorage’s, shall be either provided by the same manufacturer, or certified to be compatible by manufacturers of all equipment/systems used on the vehicle.
(c) When a wheelchair/mobility aid securement device and an occupant restraint share a common anchorage, including occupant restraint designs that attach the occupant restraint to the securement device or the wheelchair/mobility aid, the anchorage shall be capable of withstanding the loads of both the securement device and occupant restraint applied simultaneously, in accordance with FMVSS Section 571.222.

(d) When a wheelchair/mobility aid securement device (webbing or strap assembly) is shared with an occupant restraint, the wheelchair/mobility aid securement device (webbing or strap assembly) shall be capable of withstanding a force of at least twice the amount as specified in 4.4(a) of FMVSS Section 571.209.

(e) The bus body floor and sidewall structures where the securement and restraint system anchorage’s are attached shall have equal or greater strength than the load requirements of the system(s) being installed.

(f) The occupant restraint system shall attach to the bus body either directly or in combination with the wheelchair/mobility aid securement system, by a method which prohibits the transfer of weight or force from the wheelchair/mobility aid to the occupant in the event of an impact.

(g) When an occupied wheelchair/mobility aid is secured in accordance with the manufacturer’s instructions, the securement and restraint system shall limit the movement of the occupied wheelchair/mobility aid to no more than 2 inches in any direction under normal driving conditions.

(h) The securement and restraint system shall incorporate an identification scheme that allows for the easy identification of the various components and their functions. Specifically, the wheelchair/mobility aid securement device (webbing or strap assemblies) and occupant restraint belt assemblies shall be clearly marked to indicate the proper wheelchair orientation in the vehicle, and the name and location for each device or belt assembly, i.e., front, rear lap belt shoulder belt, etc.

(i) All attachment or coupling devices designed to be connected or disconnected frequently shall be accessible and operable without the use of tools or other mechanical assistance.

(j) All securement and restraint system hardware and components shall be free of sharp or jagged areas and shall be of a non-corrosive material or treated to resist corrosion in accordance with 4.3(a) of FMVSS Section 571.209.

(k) No vehicle manufactured on or after January 1, 2000 with a wheelchair position located within 16 inches of a stowed wheelchair lift that could be struck by the head of a wheelchair occupant seated at that position shall operate in certificated or school service.

All vehicles manufactured prior to January 1, 2000 equipped with a wheelchair lift stowed in the interior of the vehicle within sixteen (16) inches of an adjacent wheelchair position shall have adequate padding or another method/device that affords reasonable protection to the head of the adjacent wheelchair occupant from possible injury caused by head of the occupant striking the lift roll stop, platform, or any other portion of the lift while it is stowed within the vehicle. The provisions of this paragraph will remain in effect through December 31, 2004. **Note:** Possible options include, but are not limited to, placing a removable pad, made of energy absorbing material over the portion(s) of the lift requiring protection or applying the head impact protection standards specified in 49 CFR Section 571.222 (FMVSS #202- School bus passenger seating and crash protection).
Effective January 1, 2005, no vehicle manufactured prior to January 1, 2000 with a wheelchair position located within sixteen (16) inches of a stowed wheelchair lift that could be struck by the head of a wheelchair occupant seated at that position shall operate in certificated or school service.

(l) For vehicles manufactured after the effective date of this regulation, a device for storage of the securement and restraint system shall be provided. When the system is not in use, the storage device shall allow for clean storage of the system, keep the system securely contained within the passenger compartment, provide reasonable protection from vandalism, and enable the system to be readily accessed for use.

(m) The entire securement and restraint system, including the storage device, shall meet the flammability standards established in FMVSS Section 571.302.

(n) Each securement device (webbing or strap assembly) and restraint belt assembly shall be permanently and legibly marked or shall incorporate a non-removable label or tag which states that it conforms to all applicable FMVSS requirements for School Buses, in effect on the date of manufacture.

(o) Each vehicle equipped with a securement and restraint system shall contain detailed operating instructions, including a diagram showing the proper placement of the wheelchair/mobility aids and positioning of securement devices and occupant restraints, including correct seat belt angles.

(13) Wheelchair/Mobility Aid Securement System: All securement system(s) shall meet the construction and performance criteria as outlined in the FMVSS Section 571.209 and .222 and all other applicable FMVSS sections. Additionally, each system shall satisfy the following:

(a) Each securement system location shall consist of a minimum of four anchorage points. A minimum of two anchorage points shall be located in front of the wheelchair/mobility aid and a minimum of two anchorage points shall be located in the rear of the aid. The securement anchorage’s shall be attached to the floor of the vehicle and shall not interfere with passenger movement or present any hazardous condition.

(b) Each securement system location shall have a minimum clear floor area of 30 inches by 48 inches. Additional floor area may be required for some applications. Consultation between the user and the manufacturer is recommended to ensure adequate floor area is provided.

(c) The securement system shall secure common wheelchair/mobility aids and shall be able to be attached easily by a person having average dexterity who is familiar with the system and wheelchair/mobility aid.

(d) The securement system shall secure the wheelchair/mobility aid in such a manner that the attachments or coupling hardware will not become detached when any wheelchair/mobility aid component deforms, when one or more tires deflate, and without intentional operation of a release mechanism (e.g., a spring clip on a securement hook).

(e) Each securement device (webbing or strap assembly) shall provide a means of adjustment, based on the manufacturer's design, to remove slack from the device or assembly.

(14) Occupant restraint system: All Occupant restraint securement system(s) shall meet the construction and performance criteria as outlined in the FMVSS Section 571.209 and .222 and all other applicable FMVSS sections: Specifically, such systems shall comply with the following:
(a) The occupant restraint system shall be made of materials which do not stain, soil, or tear an occupant’s clothing, and which are resistant to water damage and fraying.

(b) Each wheelchair/mobility aid location shall have not less than two floor anchorage's for the occupant pelvic and the connected upper torso restraint.

(c) Each floor and wall anchorage which secures the occupant restraint to the vehicle and is not permanently attached shall be of a “positive latch” design, and shall not allow for any accidental disconnection.

(15) **Dynamic Testing:** The dynamic test shall be performed by accredited personnel using an impact simulator with proven ability to provide reliable, accurate, and test results which can be replicated.

(a) Such dynamic test shall be performed in accordance with the procedures set forth in Appendix A of SAE J2249 “Test for Frontal Impact Crash Worthiness”.

(b) When tested, the wheelchair/mobility aid securement and occupant restraint system shall pass the criteria in Section 6.2 of SAE J2249 “Performance Requirements of Frontal Sled Impact Test”.

(16) **Special Light:** A light placed inside the vehicle, located over the service door and activated by opening the door, shall be provided to illuminate the ramp and platform area.

(17) **Special Service Entrance:** Power lift-equipped vehicles shall have a special service entrance to accommodate the power lift. **Exception:** If the lift is designed to operate within the regular service entrance, and is capable of stowing so that the regular service entrance is not blocked in any way, and persons entering or exiting the bus are not impeded, a special service entrance shall not be required.

(a) The special service entrance and door shall be located on the right side of the bus and shall be designed so as not to obstruct the regular service entrance.

(b) The opening may extend below the floor through the bottom of the body skirt. If such an opening is used, reinforcements shall be installed at the front and rear of the floor opening to support the floor and give the same strength as other floor openings.

(c) A drip molding shall be installed above the opening to effectively divert water from entrance.

(d) Door posts, headers and floor sections around this special opening shall be reinforced to provide strength and support equivalent to adjacent side wall and floor construction of an unaltered vehicle model.

(18) **Special Service Entrance Doors:** A single door or double doors may be used for the special service entrance, providing that:

(a) All doors shall have positive fastening devices to hold doors in the open position;

(b) All doors shall be weather sealed;

(c) All doors shall be equipped with a recessed or flush outside handle, designed to prevent hitching to or riding thereon and constructed to quickly release the door from the outside;

(d) All doors shall be equipped with a suitable switch connected with an audible or visible warning
signal located in the driver’s compartment that shall be activated when the door is open or not fully latched. If equipped with a locking system, the doors shall incorporate an interlocking electrical circuit that prevents the engine from being started while the doors are locked. An audible or visible warning device shall be provided to alert the driver if the door is locked while the engine is running or the ignition is on;

(e) Door materials, panels and structural strength shall be equivalent to the conventional service and emergency doors. Color, rub rail extensions(if equipped), lettering and other exterior features shall match adjacent sections of the body;

(f) Each door shall have windows set in rubber which are visually similar in size and location to adjacent non-door windows. Glazing shall be of the same type and tinting (if applicable) as the standard fixed glass in other vehicle body locations;

(g) A switch or device shall be installed so that the lifting mechanism will not operate when the lift platform door(s) are closed; and

(h) Special service entrance doors shall be equipped with padding at the top edge of the interior door opening and shall be at least 3” wide and 1” thick and extend the full width of the door opening.

(19) **Support Equipment And Accessories:** Each vehicle that is set up to accommodate wheelchair/mobility aids or other assistance or restraint devices which utilize seat belts, shall contain at least one **belt cutter** properly secured in a location within reach of the driver while the driver is belted into his/her driver’s seat. The belt cutter shall be durable and designed to eliminate the possibility of the operator or others being injured during use.

(20) **Fire Control:** Vehicles shall be equipped as follows:

(a) If manufactured on or after January 1, 1990, fueled with other than diesel fuel, and used to transport three or more wheelchairs or with a total capacity of more than eight passengers and used to transport non-ambulatory students, an automatic fire extinguishing system and/or automatic signal device shall be provided to warn the driver of fire in the engine compartment. (Such devices shall be designed to activate whenever the temperature in the engine compartment reaches 350 F degrees.);

(b) If transporting non-ambulatory students in school transportation, a fire blanket with a minimum of 35 square feet in size and a minimum width of four feet shall be provided that is, properly identified and readily accessible.

(c) If manufactured on or after January 1, 1990 and equipped to handle wheelchairs, fire blocked upholstery shall be provided on all padded seats and padded panels designed to protect wheelchair passengers. All other padded panels shall be fire retardant.

(21) **Interior Width:** Vehicles manufactured on or after January 1, 1990, and equipped to carry more than three wheelchairs used in school transportation shall provide a minimum of 90 inches interior width in the passenger compartment.

(22) **Waivers:** The provisions of this section requiring the use of wheelchair securement devices, wheelchair occupant restraint system and the requirement for forward-facing orientation of
wheelchairs may be waived by a duly authorized representative of the department. Such waivers shall be submitted by the school in writing, must state the medical condition or other reason for the waiver and must note the specific requirement(s) requested to be waived. If a waiver is granted for wheelchair securement and/or wheelchair occupant restraint, it is necessary for the school district to insure that equipment is provided that would provide the same degree of securement as would have been provided had the devices required by this regulation been utilized. The department shall retain the right of final approval of any alternate securement/restraint device(s).

720.9 ELECTRIC POWERED MOTOR VEHICLES.

The purpose of the following requirements is to support the safe introduction and operation of electric and hybrid-electric buses placed in service.

(A) Definitions: In addition to the definitions contained in Section 720.1, the following terms, which are used in this section, mean the following:

1. **Electric Bus** means any bus defined in 17 NYCRR 720 which is powered by an electric motor drawing current from rechargeable storage batteries, fuel cells, or other portable sources of electrical current, and which may include a non-electrical source of power designed to charge its batteries.

2. **Hybrid-Electric Bus** means any bus defined in 17 NYCRR 720, which is propelled by a combination of an electric motor and an internal combustion engine or other power source.

3. **Regenerative Braking System (RBS)** means an electrical energy system installed in an electric powered vehicle, which uses the propulsion motor(s) to retard or slow the vehicle in conjunction with the service brake system, while returning electrical energy to the propulsion system batteries.

4. **Propulsion System** means a system that furnishes high-wattage electric power to the motor that propels the vehicle forward or backward, and is sometimes referred to as the “main or power drive circuitry.”

(B) Identification: All Electric or Hybrid Electric Buses shall be equipped with the following:

1. Each door, cover, or other panel that affords immediate access to any high voltage area shall be plainly marked with a hazard warning label which shall read:

   “WARNING - HIGH VOLTAGE” OR “DANGER - HIGH VOLTAGE.”
Note: The label shall be located in a highly conspicuous place, and maintained in legible condition.

(2) When access doors or panels are located on the exterior of the bus body or within the passenger compartment, in addition to the warning required by (1), the labels may also read “MAINTENANCE ACCESS ONLY.”

(3) Each door or panel providing access to the propulsion motor disconnect switch or device required in 17 NYCRR Section 720.9 (E) shall be plainly marked to indicated that it is a main power disconnect switch or device.

(4) Exterior labels shall have black lettering not less than one inch nor more than two inches in height and shall be placed to clearly indicate the locations of the hazards to which they refer, and shall be maintained in legible condition.

(5) Each Electric and Hybrid-Electric Bus shall display a symbol, consisting of nine “electric blue” lightning bolts arranged in the shape of the letter “C” and immediately followed by the words “ELECTRIC POWERED.” The display shall be substantially as shown in Figure 2, and shall be located as follows:

Figure 2

(a) On the right side, it shall be located immediately to the rear of the entrance door, below the lower edge of the frame of the passenger window.

(b) On the left side, it shall be located below the driver’s side window, as far forward as practical.

(c) The height of each line of the lettering “ELECTRIC POWERED,” shall be in black upper case letters not less than 1 inch or more than 2 inches in height and the maximum width consistent with the size requirement of the above lettering.

(d) The electric powered symbol/sign may also be displayed on the front of the bus, provided it is located on the body panel below the windshield and meets the size requirements of Section 720.9(B) of this Part.

(C) Equipment Requirements For Electric and Hybrid-Electric Buses: The provisions of this article shall apply to all electric and hybrid-electric buses as defined in 17 NYCRR 720.9 (A), provided,
however, that electric and hybrid-electric buses manufactured and maintained in compliance with the FMVSS in place on the date of manufacturer regarding electric bus propulsion systems shall be deemed in compliance with the requirements of this article.

(D) Batteries and Battery Compartment(s:) For the purpose of this section, batteries and battery compartments on electric and hybrid-electric buses shall be considered as a unit with respect to crash worthiness and shall meet the following requirements:

(1) All propulsion system batteries shall be contained in compartments isolated from the passenger compartment. Batteries shall be protected by a substantial and securely fastened electrically insulated enclosure or removable cover. Batteries shall be secured by devices which shall distribute force over the battery case walls and/or solid partition areas of the battery case or individual cells such that no damaging loads are imposed on the batteries. Clearance shall be provided to avoid blockage of any vents or contact with battery terminals to prevent short circuits or battery discharge. The edges of all metal members through which cables and harnesses pass shall be bushed with insulating grommets. Properly secured suitable tubing or conduit over cables may be substituted for grommets.

(2) Battery compartments and all adjacent metal parts which might corrode due to battery leakage shall be constructed from corrosion resistant material or painted or coated with acid-resistant material as necessary to prevent the expected corrosive effects caused by leakage of the type of batteries included in the manufacturer’s design of the vehicle. Such compartments shall have openings to provide ample battery drainage of potential leakage, including any corrosive vapors created by battery charging, unless all such vapors are collected and directed away from vulnerable parts of the bus.

(3) The battery compartment shall be equipped with a suitable ventilating system of sufficient capacity to maintain the concentration of hydrogen below four percent by volume during battery charging. Cells, batteries, or battery compartments shall be equipped with a system to prevent explosions. Adequate ventilation shall be deemed to meet this requirement if it functions as intended regardless of whether or not the bus is in motion.

(4) Battery compartment(s) shall be designed and constructed to prevent all battery fluids, such as gel, liquid electrolytes, caustic, reactive or toxic gases or fumes, from entering the passenger compartment when the a vehicle is subjected to a moving contoured barrier crash test such that:

   (a) The contoured barrier shall weigh 4,000 pounds and be configured as specified in Figure 2 of FMVSS 301 (49 CFR 571.301).

   (b) The barrier assembly shall be traveling longitudinally forward at any speed up to and including 30 mph at the time of impact.

   (c) The barrier assembly may impact the test vehicle at any point and at any angle.

(5) Replacement batteries for the propulsion system shall be of the same performance characteristics (energy and power density), charging recommendations, and type as the original battery manufacturer’s specifications. The original vehicle manufacturer or vehicle retrofitter shall permanently affix a label or placard in each battery compartment containing the following information:

   (a) Battery manufacturer’s name.

   (b) The battery model or specification number.
(c) The number of batteries to be located in each compartment.

(d) A wiring schematic which illustrates battery cable connections including which batteries are connected in series (or parallel, if applicable) and indicated negative or positive ground.

(6) Vehicles shall be equipped with a state-of-charge, range indicator, or other similar meter for the propulsion system, as a means of indicating the remaining range. The gauge or meter shall be displayed in view of the drive and shall be illuminated whenever the dashboard lights are illuminated.

(7) Batteries used exclusively for lighting and other common electrical accessories and located in a separate compartment shall meet the requirements of Section 720.6 - Electrical Systems instead of the provision of Section 720.9 of this Part.

(E) **Electric Propulsion Circuit**: Electric and hybrid-electric vehicles shall meet the following requirements:

(1) Wire, cable and conductor insulation shall provide adequate insulation for the voltage used and for ambient temperatures ranging from -15°F to 120°F (-25°C to 50°C).

(2) All high voltage circuits shall provide adequate and automatic protection against electrical overloads caused by short circuits or other excessive current conditions through the use of fuses, circuit breakers and ground fault interruption.

(3) A Positive Propulsion Circuit Disconnection shall be provided as follows:

   (a) **School Buses** shall be equipped with a key-type switch that will positively disconnect the propulsion motor when the switch is turned to the “off” position and is operable from the normal driving position. All other accessories powered by the main propulsion battery circuit shall remain operable when the key switch is in the “off” or “disconnect” position.

   (b) **Buses (other than school buses)** shall be equipped with a manually operated switch or device that permits the positive electrical disconnection of the high current or high voltage circuit of the propulsion motor and is operable from the normal driving position. All other accessories powered by the main propulsion battery circuit shall remain operable when the device required by this paragraph is in the “disconnect” position.

   (c) **All buses** shall be equipped with an additional manual or automatic switch or device independent of the propulsion motor disconnect controls described in (a) and (b) above. The additional switch or device shall permit the positive disconnection of all circuits from the main propulsion battery circuit and shall be operable from outside the vehicle. Access to the switch or device shall be plainly marked as required by Section 720.9 (B)(5) of this Part.

(4) The electric propulsion ground circuit shall be electrically isolated from other conductive portions of the vehicle to prevent injury due to a person contacting any portion of the electric propulsion circuit while in contact with other conductive parts of the vehicle or earth ground. The design shall prevent the use of the bus frame or body as the ground return path of the high-voltage or high-current vehicle propulsion circuit.

(5) A device shall prevent driving the vehicle while it is connected to an external battery charging power source. Such device shall be an integral part of the bus, not related to the external
charging system, and:

(a) All inside and outside high voltage access areas shall be locked or otherwise secured to prevent unauthorized access to high voltage or high current points of contact; and

(b) Doors, covers, or other panels which afford immediate access to any high-voltage or high-current area shall bear a “hazard warning label” as required in this Section, which advises maintenance personnel, vehicle inspectors, or other persons of potential hazards.

(6) The propulsion drive system shall provide an average acceleration rate of at least 0.06g achieved at the vehicle’s GVWR between 0 and 15 mph on level ground and shall be designed to provide equal torque to each drive wheel under normal operating conditions.

Exception: Automatic traction control systems are permitted that apply unequal power to wheels at opposite ends of an axle during poor traction conditions.

Minimum acceleration rates in seconds at the GVWR are as follows:

<table>
<thead>
<tr>
<th>SECONDS</th>
<th>MILES PER HOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>20</td>
<td>11.0</td>
</tr>
<tr>
<td>30</td>
<td>22.0</td>
</tr>
<tr>
<td>40</td>
<td>45.0</td>
</tr>
<tr>
<td>50</td>
<td>55.0</td>
</tr>
</tbody>
</table>

(a) The propulsion drive system shall be capable of achieving a vehicle speed of at least 50 mph on a straight level road at the GVWR with all accessories operating and with the propulsion system batteries at 80 percent of discharge (20 percent charge remaining).

(b) Propulsion system grade ability requirements shall be met on grades with a surface friction coefficient of 0.3 and above at the GVWR, with all accessories operating. The propulsion system shall enable the vehicle to maintain a speed of at least 40 mph on a 2 percent grade and at least 25 mph on a 5 percent grade.

(c) Buses shall not be capable of exceeding 15 miles per hour in reverse range on level ground.

(F) Range Selectors:

(1) Each drive range selector shall include “Forward”, “Neutral”, and “Reverse” positions. The “Neutral” position shall be located between the “Forward” drive and “Reverse” drive positions. The drive range selector may include “Park” and/or “Off” positions in addition to the required range selector positions. Selector positions shall be arranged sequentially from “Park” (if applicable) to “Reverse” drive, to “Neutral”, to “Forward” drive.
(2) In vehicle where multi-position selector switches, push button controls, or quadrant type controls are used for the drive range selector, the orientation of the range selections shall be as follows:

(a) Top to bottom when the selector positions are oriented on a line essentially vertical and perpendicular to the longitudinal centerline of the vehicle.

(b) Front to back when the selector positions are oriented on a line essentially horizontal and parallel to the longitudinal centerline of the vehicle.

(c) Left to right when the selector positions are oriented on a line essentially horizontal and transverse to the longitudinal centerline of the vehicle.

(d) Clockwise from left to right when a steering column mounted selector is used, or any design in which the indicator moves through an arc rather than along a straight line.

Note: The selected range shall be indicated mechanically at all times whether electric power is present or not, such as by the use of a multi-position indicator that points to the selected range.

(3) Drive range selector positions shall be identified, including the positions in relation to each other, and the position selected shall be displayed in full view of the driver. Identification of the drive range selector positions may be displayed using the acronym PRND or PROD, referring to the following range positions: Park, Reverse, Neutral or Off, and Drive. The drive range selector shall be illuminated whenever the dash or other instrument lamps are lighted.

(4) The propulsion system shall be manufactured and maintained so that the electric propulsion motor(s) can be energized by the accelerator only, when the drive range selector is in a “Forward” or “Reverse” drive position. A zero-speed sensor or equivalent device shall prevent shifting the propulsion system from “Forward” to “Reverse” (or vice versa) without the vehicle coming to a complete stop.

(G) Electrical Overload Protection: Electric bus propulsion systems shall include the following:

(1) A device to sense temperatures at critical points in the propulsion system, and to protect the system from heat damage by reducing power output when necessary. The controller or other device shall be designed to reduce propulsion current or to shut off electrical current when its lowest rated component reaches its designed maximum temperature.

(2) A high-temperature activated warning light. The warning light shall be readily visible to the driver to warn of excessive temperature conditions in the controller, battery, and propulsion motor systems. The warning light shall be set to illuminate prior to the critical high-temperature condition (shutdown point or reduced power output point) to give the driver sufficient time to select the nearest safe place to stop the bus.

(H) Regenerative Braking Systems shall be equipped with a master “on-off” switch or control, which is operable from the normal driving position.

(I) Back-Up Alarm: Electric buses shall be equipped with the following:
(1) An automatic audible back-up alarm which sounds when the drive range selector is placed in the reverse range. (The alarm shall be located behind the rear axle of the vehicle and shall comply with SAE Standard J994 for a Type C-97 dB(A) level of audible sound.)

(2) A second back-up alarm (in addition to the one required in (I)(1) above) that gives warning when the bus rolls backward more than three feet regardless of which drive range is selected.

720.10 EXCEPTIONS TO SAFETY REGULATIONS.

(A) A duly authorized department representative, upon application and review, may adopt an order that permits the issuance of a certificate of inspection to the owner or operator of a motor vehicle subject to this Part that does not meet or achieve a certain standard(s) or requirement(s) contained within this Part, if such authorized representative determines that said vehicle, as designed, constructed, altered or modified, is safe to be operated within this State, and that the specific deviations from the standard(s) or requirement(s) does not render such vehicle unsafe to passengers or to the public compared to if such vehicle had complied with such provision(s). Any order adopted pursuant to this section shall set forth the specific provisions contained in this Part which the vehicle(s) is exempt from, and the reason(s) why the authorized representative has determined that the exemption has been granted.

(B) A copy of each such Department order granting a waiver shall be filed in the Department’s Vehicle Maintenance Folder (17NYCRR 721.1 (C))

(C) New York City Historic Double-decker Sightseeing Bus Exception. Effective April 1, 1998, historic double-decker sightseeing buses operated under the authority of the New York City Office of Consumer Affairs and meeting the definition contained in Section 720.1(M) of this Part shall be subject to all the requirements of this Part, except for the following: 720.3(A)(9), 720.4(B), (C), (D), (E), (I),(M)(1)(b),(AA)(1)(e) and 720.5.
(A) **General.** The condition of vehicles subject to inspection by the Department will be evaluated at
the time of inspection on the basis of applicable requirements of this Part, the Transportation and
Vehicle and Traffic Laws of the State of New York, applicable Federal motor vehicle safety
standards and the criteria contained in this section. Vehicles that do not meet the applicable
requirements shall be placed “out-of-service”, or repaired in a timely manner in accordance with
this section.

(B) **Applicability.** These criteria apply to all vehicle subject to inspection by this department. The
applicability of each inspection item listed is based on the type, size, and use of the vehicle.
Therefore, all inspection items will not apply to all vehicles. As an example, a vehicle not
equipped with air brakes will not have the air brake criteria applied to that vehicle.

(K) **Criteria.**

1. Any vehicle with at least one Defect Rating of “A” discovered at the time of inspection shall be
   issued an “out-of-service vehicle” sticker, and that vehicle may not be used to carry passengers
   until the defect(s) has been repaired/corrected and the vehicle has been re-inspected by a
   NYSDOT inspector, the “out-of-service vehicle” sticker removed by the inspector and a valid
   inspection certificate affixed.

2. Any vehicle operated by a carrier with an acceptable safety and inspection record that is without
   a Defect rating of “A” discovered at the time of inspection shall be issued an inspection
certificate based on the following conditions:

   (A) if the vehicle has one or more Defect Ratings of “B”, all such defect(s) must be repaired
       by the carrier prior to carrying any passengers;

   (B) if the vehicle has only one or more Defect Ratings of “C”, all such defect(s) must be
       repaired by the carrier within 15 days of the date of inspection.

3. Vehicles operated by a carrier determined not to have an acceptable safety and inspection
   record that have Defect ratings of “B” and “C” shall be treated as if they had a Defect Rating of
   “A”. Periodically, the Passenger and Freight Safety Division shall determine those carriers that
do not have an adequate safety and inspection record. Such determinations may be based on a
review of the carrier’s past safety record, preventative maintenance program and out-of-service
rate.

4. Effective April 1, 1998 pursuant to Chapter 202 of the Laws of 1997, historic double-decker
buses operating pursuant to the regulatory authority of the New York City Office of Consumer
Affairs and meeting the definition contained in Section 720.1(M) of this Part shall comply with
each of the “Out-of-Service and Defect Criteria” except as follows: 12.00, 15.01, 18.04.2
(providing the vehicle has aisles at least 10 inch wide and 72 inches high), 20.00.2, 21.00,
25.01, 37.00.2 and 45.05.
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
<th>DEFECT</th>
<th>DEFECT RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00</td>
<td>Bus Identification</td>
<td>Federal Motor Vehicle Safety Standard (FMVSS) tag missing 1. Initial Inspections, including any “first sale” bus presented for inspection for the purpose of operating the bus in school service 2. Regular Inspection</td>
<td>A</td>
</tr>
<tr>
<td>10.01</td>
<td>Bus Number</td>
<td>N/A</td>
<td>B</td>
</tr>
<tr>
<td>10.02</td>
<td>Registration</td>
<td>N/A</td>
<td>C</td>
</tr>
<tr>
<td>10.03</td>
<td>Operator's Name</td>
<td>1. Missing or not proper size or location 2. Missing word “Operator” or “Operated By” where required.</td>
<td>B</td>
</tr>
<tr>
<td>10.04</td>
<td>Seating &amp; Standing Capacity</td>
<td>N/A</td>
<td>C</td>
</tr>
<tr>
<td>11.00</td>
<td>Driver's Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.01</td>
<td>Entrance Door</td>
<td>1. Control must operate freely and hold door or doors in fully closed position. 2. Air operated door emergency release missing, inoperable, not identified or operating instruction missing or illegible.</td>
<td>A</td>
</tr>
<tr>
<td>11.02</td>
<td>Steering Wheel</td>
<td>Bent, broken, not secured, does not turn freely or exceeds “Steering Wheel Free Play” tolerances (see Section 720.11(E))</td>
<td>A</td>
</tr>
<tr>
<td>11.03</td>
<td>Steering Column</td>
<td>No excessive looseness in steering components and/or steering column attachment areas other than adjustable steering column, which must lock in place</td>
<td>A</td>
</tr>
<tr>
<td>11.05</td>
<td>Directional Indicator/Switch</td>
<td>Failed to function as designed</td>
<td>A</td>
</tr>
<tr>
<td>11.06</td>
<td>Clutch Pedal</td>
<td>1. Does not operate without binding or return completely or does not engage or disengage completely, 2. Cover pad missing</td>
<td>A</td>
</tr>
<tr>
<td>11.07</td>
<td>Brake Pedal</td>
<td>1. Does not operate without binding or return completely 2. Does not have any reserve pedal travel on hydraulic brake systems, 3. Pedal cover pad missing.</td>
<td>A</td>
</tr>
<tr>
<td>11.08</td>
<td>Accelerator Pedal</td>
<td>1. Does not operate without binding or return completely 2. Cover pad missing</td>
<td>A</td>
</tr>
<tr>
<td>NO.</td>
<td>INSPECTION ITEM</td>
<td>DEFECT</td>
<td>DEFECT RATING</td>
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<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>12.00</td>
<td>Interior Mirrors</td>
<td>1. Any required mirror missing, broken, or will not maintain adjustment.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Any required mirror of not proper size, type or where discolored that would impair vision.</td>
<td>B</td>
</tr>
<tr>
<td>13.00</td>
<td>Windshield</td>
<td>1. Any crack or bruises greater than a ½” diameter on driver's side wiper area or in view of any mirror.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. All other locations: no bruise larger than 1” or crack longer than 4”.</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. No fog or discoloration which obstructs driver's vision.</td>
<td>A</td>
</tr>
<tr>
<td>13.01</td>
<td>Wipers</td>
<td>1. Not equipped with number originally installed.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Wiper blade with:</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) torn rubber</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) metal in contact with the windshield</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Do not work</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Do not operate as designed</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Is improperly adjusted/does not properly clean windshield (5 wiper passes)</td>
<td>B</td>
</tr>
<tr>
<td>13.02</td>
<td>Washer</td>
<td>Not working</td>
<td>B</td>
</tr>
<tr>
<td>13.03</td>
<td>Sun Visor</td>
<td>Missing or not functional</td>
<td>B</td>
</tr>
<tr>
<td>14.00</td>
<td>Interior Lights</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>15.00</td>
<td>Heater</td>
<td>1. Inadequate fan shield</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Delivers inadequate heat (NOTE: Seasonal considerations apply)</td>
<td>B</td>
</tr>
<tr>
<td>15.01</td>
<td>Defroster</td>
<td>Any defroster system not working or inadequate to clear driver viewing area.</td>
<td>A</td>
</tr>
<tr>
<td>15.02</td>
<td>Air Conditioning &amp; Ventilation</td>
<td>1. Vehicle with air conditioning:</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Air conditioning inoperable (NOTE: Seasonal considerations apply).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Vehicle without air conditioning:</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Inadequate ventilation</td>
<td></td>
</tr>
<tr>
<td>15.03</td>
<td>Leaks</td>
<td>Any coolant leak in passenger compartment (observable movement of fluid)</td>
<td>A</td>
</tr>
<tr>
<td>16.00</td>
<td>Gauges</td>
<td>1. Air/vacuum gauge(s) missing or defective</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Oil, Amp or Volt gauge defective</td>
<td>C</td>
</tr>
<tr>
<td>16.01</td>
<td>WIG-WAG</td>
<td>Missing or not working properly</td>
<td>A</td>
</tr>
<tr>
<td>16.02</td>
<td>Speedometer</td>
<td>Not operating as designed</td>
<td>A</td>
</tr>
<tr>
<td>16.03</td>
<td>Brake Warning Light/Buzzer</td>
<td>Any required brake warning light/buzzer missing, defective or inoperative</td>
<td>A</td>
</tr>
<tr>
<td>16.04</td>
<td>Illumination</td>
<td>Speedometer or brake system gauge (air/vac) not illuminated</td>
<td>C</td>
</tr>
<tr>
<td>17.00</td>
<td>Safety Equipment</td>
<td>School bus that fails to meet April 1, 1977 federal school bus safety standards (no approved SED hardship waiver)</td>
<td>A</td>
</tr>
<tr>
<td>NO.</td>
<td>INSPECTION ITEM</td>
<td>DEFECT</td>
<td>DEFECT RATING</td>
</tr>
<tr>
<td>-----</td>
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<td>---------------</td>
</tr>
<tr>
<td>17.01</td>
<td>Fire Extinguisher</td>
<td>1. Missing &lt;br&gt;2. Not serviceable &lt;br&gt;3. Not of proper type &lt;br&gt;4. Not identified for accessibility</td>
<td>B &lt;br&gt;B &lt;br&gt;B &lt;br&gt;B</td>
</tr>
<tr>
<td>17.02</td>
<td>First Aid Kit (school service) (when required)</td>
<td>1. Missing or empty &lt;br&gt;2. Not identified for accessibility</td>
<td>B &lt;br&gt;B</td>
</tr>
<tr>
<td>17.03</td>
<td>Flares/Reflectors (when required)</td>
<td>1. Missing &lt;br&gt;2. Not of approved type</td>
<td>B &lt;br&gt;B</td>
</tr>
<tr>
<td>17.04</td>
<td>Fire Blanket (when required)</td>
<td>1. Missing &lt;br&gt;2. Not of approved type &lt;br&gt;3. Not identified for accessibility</td>
<td>B &lt;br&gt;B &lt;br&gt;B</td>
</tr>
<tr>
<td>17.05</td>
<td>Seat Belt Cutters (when required)</td>
<td>1. Missing &lt;br&gt;2. Not of approved type &lt;br&gt;3. Not identified for accessibility</td>
<td>B &lt;br&gt;B &lt;br&gt;B</td>
</tr>
<tr>
<td>18.00</td>
<td>Floor Covering</td>
<td>Any deterioration or any defective covering that may result in a tripping hazard</td>
<td>B</td>
</tr>
<tr>
<td>18.01</td>
<td>Metal Strip</td>
<td>Unsecured in such a manner that may result in a tripping hazard or has sharp edges</td>
<td>B</td>
</tr>
<tr>
<td>18.02</td>
<td>White Line</td>
<td>1. Missing &lt;br&gt;2. Represents a tripping hazard &lt;br&gt;3. White line instruction sign missing (when required)</td>
<td>B &lt;br&gt;B &lt;br&gt;C</td>
</tr>
<tr>
<td>18.03</td>
<td>Stepwell</td>
<td>1. Any deterioration or any defective covering that may result in a tripping hazard &lt;br&gt;2. Step dimensions do not meet regulations (new or transfer) &lt;br&gt;3. Stepwell light inoperative</td>
<td>B &lt;br&gt;A &lt;br&gt;C</td>
</tr>
<tr>
<td>18.04</td>
<td>Aisle</td>
<td>1. Any deterioration or any defective covering that may result in a tripping hazard &lt;br&gt;2. Dimension of aisle(s) does not meet regulation</td>
<td>B &lt;br&gt;A</td>
</tr>
<tr>
<td>19.00</td>
<td>Seats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.01</td>
<td>Frames</td>
<td>1. Broken or loose &lt;br&gt;2. Not secured properly</td>
<td>B &lt;br&gt;B</td>
</tr>
<tr>
<td>19.02</td>
<td>Upholstery</td>
<td>1. Any required fire block upholstery ripped, torn, or separated &lt;br&gt;2. Any seat material so defective that the integrity of passenger protection and safety is affected</td>
<td>B &lt;br&gt;B</td>
</tr>
<tr>
<td>19.03</td>
<td>Padding and Seat Cushions</td>
<td>Any defective padding and unsecured cushions that affect passenger safety</td>
<td>B</td>
</tr>
<tr>
<td>19.04</td>
<td>Deleted</td>
<td>Deleted</td>
<td></td>
</tr>
<tr>
<td>19.05</td>
<td>Driver's Seat</td>
<td>1. Improperly secured &lt;br&gt;2. Not able to adjust or hold adjustment &lt;br&gt;3. Not able to meet required spacing regulations &lt;br&gt;4. Missing or inoperative seat belt</td>
<td>A &lt;br&gt;A &lt;br&gt;A &lt;br&gt;A</td>
</tr>
<tr>
<td>19.06</td>
<td>Seat Belts (when required)</td>
<td>Missing, inoperative, defective seat belt assembly</td>
<td>B</td>
</tr>
<tr>
<td>NO.</td>
<td>INSPECTION ITEM</td>
<td>DEFECT</td>
<td>DEFECT RATING</td>
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</tr>
</tbody>
</table>
| 19.07 | Wheelchair Securement Devices            | 1. Any defective or improperly installed wheelchair securement component  
|       |                                          | 2. Any component that constitutes a tripping hazard in an aisle area     | A             |
|       |                                          |                                                                       | B             |
| 19.08 | Handrail Clearance (school buses)        | Fails to pass department’s nut/drawstring test procedure               | B             |
| 20.00 | Emergency Door(s)                        | 1. Missing or does not open or close freely or completely, when required;  
<p>|       |                                          | 2. FMVSS hold-open requirement missing or inoperative                    | A             |
|       |                                          |                                                                       | B             |
| 20.01 | Latching Device                          | 1. Latch does not operate freely or hold door in a closed position       | A             |
|       |                                          | 2. Any interlock system not working properly                            | A             |
| 20.02 | Rubber Seal                              | Any seal so defective as to allow exhaust to enter the passenger compartment | B             |
| 20.03 | Operation Buzzer                         | Fails to function correctly                                            | A             |
| 20.04 | Lettering                                | Required lettering missing                                             | B             |
| 20.05 | Emergency Exit Light                     | Not working                                                             | B             |
| 21.00 | Emergency Windows/Roof Hatches           | 1. Not present when required                                            | A             |
|       |                                          | 2. Fails to function correctly                                         | A             |
| 21.01 | Operation Buzzer (school bus)            | Does not work properly                                                 | A             |
| 21.02 | Lettering                                | Required lettering missing                                             | B             |
| 22.00 | Windows (School bus - split sash)        | Open more than 5 inches                                               | B             |
| 22.01 | Sash                                     | Does not function properly                                             | C             |
| 22.02 | Frames                                   | Loose or has sharp edges                                              | B             |
| 22.03 | Glass                                    | 1. Not of approved type                                                | A             |
|       |                                          | 2. Broken or has exposed sharp or jagged edges                          | A             |
|       |                                          | 3. Any condition that obscures the driver's vision                     | A             |
| 22.04 | Latch Operation                          | N/A                                                                    |               |
| 23.00 | Interior Panels                          | Any condition that would likely cause injury to passengers (sharp edges, protruding fasteners, etc.) | A             |
| 23.01 | Ceiling Panels                           | Any condition that would likely cause injury to passengers (sharp edges, protruding fasteners, etc.) | A             |
| 23.02 | Side Panels                              | Any condition that would likely cause injury to passengers (sharp edges, protruding fasteners, etc.) | A             |
| 23.03 | Wheel Housings                           | Any defective wheel housing that would allow intrusion of outside elements | A             |</p>
<table>
<thead>
<tr>
<th>NO.</th>
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<tbody>
<tr>
<td>23.04</td>
<td>Damage/Corrosion</td>
<td>1. Any damage or corrosion that would likely cause injury to passengers, such as ripped or torn metal, sharp edges and protruding fasteners or any corrosion to the extent that would allow intrusion of outside elements (exhaust fumes) into the passenger compartment 2. Rust holes in panels or members that has not met the above described condition (repair with corrective applications to prevent further corrosion)</td>
<td>A</td>
</tr>
<tr>
<td>23.05</td>
<td>Barriers/Panels</td>
<td>1. Not of proper type and/or missing 2. Not secured properly</td>
<td>A A</td>
</tr>
<tr>
<td>24.00</td>
<td>Cleanliness</td>
<td>Any unsanitary condition</td>
<td>B</td>
</tr>
<tr>
<td>25.00</td>
<td>Exit-Entrance Door</td>
<td>1. Does not operate freely or completely 2. Exit lights not working</td>
<td>A C</td>
</tr>
<tr>
<td>25.01</td>
<td>Door Controls</td>
<td>Does not operate as designed</td>
<td>A</td>
</tr>
<tr>
<td>25.02</td>
<td>Special Service Door</td>
<td>1. Does not operate freely or completely 2. Does not actuate the required warning signal 3. Positive door holding device missing or inoperable</td>
<td>A A B</td>
</tr>
<tr>
<td>25.03</td>
<td>Controls/Locking Device</td>
<td>Does not operate as designed</td>
<td>A</td>
</tr>
<tr>
<td>25.04</td>
<td>Seals</td>
<td>Any door seal so damaged as to allow exhaust gasses to enter the passenger compartment</td>
<td>B</td>
</tr>
<tr>
<td>25.05</td>
<td>Lift/Ramp Operation</td>
<td>1. Fails to operate as required 2. Lift operates with special service door in a closed position 3. Operating instructions missing</td>
<td>A A C</td>
</tr>
<tr>
<td>25.06</td>
<td>Lift/Ramp Mounting</td>
<td>1. Is not secured while vehicle is in motion 2. Reflecting decal missing when required 3. Lift/Ramp illumination light inoperative</td>
<td>A C C</td>
</tr>
<tr>
<td>25.07</td>
<td>Sliding Side Entrance Doors (School service)</td>
<td>1. Warning signal not present or inoperative 2. Power door locks not present or inoperative</td>
<td>B B</td>
</tr>
<tr>
<td>26.00</td>
<td>Exterior Lights</td>
<td><strong>Note</strong>: Failure of any multi-functional element will result in only one “out-of-service” defect being cited on the inspection report.</td>
<td></td>
</tr>
<tr>
<td>26.01</td>
<td>Headlights</td>
<td>1. Any light or control that fails to function as designed/intended 2. Any lens is broken 3. Light/lens not of proper type. Any lamp that is not securely mounted or can easily be moved</td>
<td>A A A</td>
</tr>
<tr>
<td>26.02</td>
<td>Marker/Reflectors</td>
<td>1. Any marker/reflector that fails to function as designed/intended 2. Any marker/reflector that is broken (pieces missing) 3. Lens not of proper type</td>
<td>B C C</td>
</tr>
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<tr>
<td>26.03</td>
<td>Stop Lights</td>
<td>1. Any light or control that fails to function as designed/intended</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Any lens that is broken (pieces missing)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Light/lens not of proper type</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Any lamp that is not securely mounted or can easily be moved</td>
<td>A</td>
</tr>
<tr>
<td>26.04</td>
<td>Emergency Flashers</td>
<td>1. Any light or control that fails to function as designed/intended</td>
<td>A</td>
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<tr>
<td></td>
<td></td>
<td>2. Any lens that is broken (pieces missing)</td>
<td>A</td>
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<tr>
<td></td>
<td></td>
<td>3. Light/lens not of proper type</td>
<td>A</td>
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<tr>
<td></td>
<td></td>
<td>4. Any lamp that is not securely mounted or can easily be moved</td>
<td>A</td>
</tr>
<tr>
<td>26.05</td>
<td>Directional Signal</td>
<td>1. Any light or control that fails to function as designed/intended</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Any lens that is broken (pieces missing)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Light/lens not of proper type</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Any lamp that is not securely mounted or can easily be moved</td>
<td>A</td>
</tr>
<tr>
<td>26.06</td>
<td>Reverse Light/Beeper</td>
<td>1. Any light, beeper or control that fails to function as designed/intended</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Lights/lens not of proper type</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Any lamp that is not securely mounted or can easily be moved</td>
<td>A</td>
</tr>
<tr>
<td>26.07</td>
<td>School Bus Warning Lights/Stop Signal Arm</td>
<td>1. Any light or control that fails to function as designed/intended</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Any lens that is broken (pieces missing)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Light/lens not of proper type</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Any lamp that is not securely mounted or can easily be moved</td>
<td>A</td>
</tr>
<tr>
<td>26.08</td>
<td>Tail Lights</td>
<td>1. Any light or control that fails to function as designed/intended</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Any lens that is broken (pieces missing)</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Light/lens not of proper type</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Any lamp that is not securely mounted or can easily be moved</td>
<td>B</td>
</tr>
<tr>
<td>NO.</td>
<td>INSPECTION ITEM</td>
<td>DEFECT</td>
<td>DEFECT RATING</td>
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</table>
| 27.00| Front Wheel/Rim          | 1. Lock ring/side ring: bent, broken, cracked, mismatched, improperly seated, sprung, distorted  
                                2. Rim/Disc/Spoke Defects: any circumferential crack except an intentional manufactured crack at a valve stem hole, other structural cracks, valve stem protector missing/against lug component  
                                3. Disc Wheel Cracks:  
                                    a) Any crack  
                                4. Stud Holes (disc wheels): any elongated stud holes (fasteners tight)  
                                5. Spoke Wheel Cracks: any crack across a spoke or hub section  
                                6. Fasteners: any loose, missing, broken, cracked, or stripped (both spoke and disc wheels)  
                                7. Welds:  
                                    a) Any cracks in welds attaching disc wheel disc to rim  
                                    b) Any crack in welds attaching tubeless demountable rim to adapter  
                                    c) Any welded repair on aluminum wheel(s) on a steering axle  
                                    d) Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the steering axle  
                                8. Rim shows evidence of slippage on spider | A             |
| 27.01| Wheel Bearings           | Has play which exceeds the manufacturer's specifications | A             |
| 27.02| Lugs, Wheel Bolts, Nuts or Studs | Any are missing, damaged, loose or improperly installed | A             |
| 27.03| Alignment                | Is obviously misaligned | C             |
| 27.04| Grease/Fluid Leak/Seals  | Any leak resulting in contamination on brake lining, drum or rotor, or on oil bath seals, leaking from hub cap or gasket | A             |
| 28.00| Tires                    | Has a valve stem that is cracked, chafed from contact with the spider or rim, in contact with brake drum, inaccessible for taking pressure readings | B             |
| 28.01| Front                    | 1. Any tire that fails to meet the performance and construction requirements outlined in NYCRR Sections 720.4(BB) and 721.4(M)  
                                2. Tire is flat or has noticeable leak | A             |
| 28.02| Rear                     | 1. Any tire that fails to meet the performance and construction requirements outlined in NYCRR Sections 720.4(BB) and 721.4(M)  
                                2. Tire is flat or has noticeable leak | A             |
| 28.03| Other                    | 1. Any tire that fails to meet the performance and construction requirements outlined in NYCRR Sections 720.4(BB) and 721.4(M)  
                                2. Tire is flat or has noticeable leak | A             |
<table>
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<tr>
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</table>
| 29.00 | Exterior Mirrors & Brackets | 1. Any required mirror missing, broken or will not maintain a set adjustment  
2. Discolored | A  
C |
| 29.01 | Pedestrian Detection Mirrors (crossover) | Any required mirror missing, broken, discolored or will not adjust or maintain a set adjustment | A |
| 30.00 | School Sign & Illumination | 1. When required sign is missing or illegible  
2. Not illuminated in a uniform manner | A  
B |
| 31.00 | Exterior Body Panels | | |
| 31.01 | Damage | Any body panel that is loose, torn or dislocated and protruding from the surface of the vehicle causing a hazard | A |
| 31.02 | Corrosion | 1. Any corrosion to the extent that would allow intrusion of outside elements into the passenger compartment  
2. Any corrosion to a panel or member that has developed into a stage that is loose, poorly secured or in danger of falling off  
3. Small rust holes in panels or members that has not met the above described condition (recommended Repair would include corrective applications designed to prevent further corrosion) | B  
B  
C |
<p>| 31.03 | Body Paint | Is not of the required color for school buses (National School Bus Chrome) | A |
| 31.04 | Hand Holds | N/A | |
| 31.05 | Storage Compartments | Can not properly be secured or latched | B |
| 32.00 | Hood | Missing, damaged resulting in sharp edges or interference with other components | A |
| 32.01 | Latch | Nonfunctional | A |
| 32.02 | Interior Engine Hood | Defective Seals | A |</p>
<table>
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</table>
| 33.00 | Rear Wheel(s) | 1. Lock ring/side ring: bent broken, cracked, mismatched, improperly seated, sprung, distorted  
2. Rim/Disc/Spoke Defects: any circumferential crack except an intentional manufactured crack at a valve stem hole, other structural cracks, valve stem protector missing/against lug component  
3. Disc Wheel Cracks:  
   a) Any crack  
4. Stud Holes (disc wheels): any elongated stud holes (fasteners tight)  
5. Spoke Wheel Cracks: any crack across a spoke or hub section  
6. Fasteners: any loose, missing, broken, cracked, or stripped (both spoke and disc wheels)  
7. Welds:  
   a) Any cracks in welds attaching disc wheel disc to rim  
   b) Any crack in welds attaching tubeless demountable rim to adapter  
   c) Any welded repair on aluminum wheel(s) on a steering axle  
   d) Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the steering axle  
8. Rim shows evidence of slippage on spider | A |
| 33.01 | Rear Wheel Lugs | Missing, worn, installed improperly, stripped, cross threaded | A |
| 33.02 | Rear Wheel Bearings | Has play which exceeds the manufacturer's specification | A |
| 33.03 | Grease/Fluid Leak | Any leak resulting in contamination on brake lining, drum or rotor, or on oil bath seals, leaking from hub cap or gasket | A |
| 33.04 | Axle Flange | Fasteners: missing, improper application, loose/holes: elongated/damaged | A |
| 34.00 | Steering |  |  |
| 34.01 | Pump/Fluid Level/Leaks | 1. Inoperative  
2. Fluid level below add mark (when hot)  
3. Any leak at shaft seal  
4. Missing or defective belt | A B A A |
| 34.02 | Hoses | 1. Leaks: Excessive fluid and/or oil leak (observable movement of fluid)  
2. Exposed or damaged reinforcement ply or cord  
3. Improper type or design for application  
4. Installation which may cause damage by wear or chafing, or which may cause interference to surrounding moving parts | A A A A |
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<tbody>
<tr>
<td>34.03</td>
<td>Pitman Arm</td>
<td>1. Looseness of pitman arm on pitman shaft</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Obvious repair weld, or improperly secured</td>
<td>A</td>
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<tr>
<td></td>
<td></td>
<td>3. Wheels cannot be turned to designed limits without interference</td>
<td>A</td>
</tr>
</tbody>
</table>
| 34.04 | Tie-Rod Ends & Drag Link | 1. Looseness:  
|       |                  | a) Any motion, other than rotational, greater than one eighth inch, that can be detected by movement with two hands with moderate strength, in any connecting joint | A             |
|       |                  | b) Any wear, demonstrated by wear indicator                            |               |
|       |                  | c) Any looseness of a stud nut                                          |               |
|       |                  | d) Any looseness in any threaded joint                                  |               |
|       |                  | e) Any loose clamp(s) or clamp fastener(s)                             |               |
|       |                  | 2. Fastener(s):  
<p>|       |                  | a) Missing                                                             | A             |
|       |                  | b) Missing stud nut or other fastener/locking/safety component         |               |
|       |                  | c) Any bent or damaged bolt(s)                                          |               |
| 34.05 | Steering Box     | 1. Securement: loose, damaged or missing fasteners or mounting component | A             |
|       |                  | 2. Leaks: excessive fluid and/or oil leak (observable movement of fluid) | A             |
|       |                  | 3. Any repair welds                                                    | A             |
|       |                  | 4. Input or pitman shaft damage or repair-welded                         | A             |
|       |                  | except accepted seal surface repair                                    |               |
|       |                  | 5. Steering shaft coupler loose at steering box shaft                   | A             |
| 37.00 | Exhaust System   | 1. Any part of the exhaust system passing through the passenger compartment | A             |
|       |                  | 2. Any exhaust pipe terminating at any point under the passenger section, under any door, or ahead of the rear axle | A             |
|       |                  | 3. Any vehicle exhaust system that emits unnecessary smoke, offensive vapors or is noticeable louder than OEM design | C             |
|       |                  | 4. No part of the exhaust system of any motor vehicle shall be so located as to be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle | A             |
| 37.01 | Leaks            | 1. Exhaust system leaking under the passenger or engine compartment     | A             |
|       |                  | 2. Exhaust system discharging under the passenger compartment           | A             |
| 37.02 | Hangers          | Any exhaust hanger(s) broken or damaged that would likely cause the system to disengage or alter its position in such a manner that would result in burning, charring, or damaging electrical, fuel or other mechanical parts | B             |
| 38.00 | Front Axle       | 1. Any obvious bend or twist                                            | A             |
|       |                  | 2. Any portion cracked or welded repair                                 | A             |
|       |                  | 3. Improper restoration of axle eye(s)                                  | A             |</p>
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</table>
| 38.01 | Springs                  | 1. Any leaf or portion of any leaf in any spring assembly is missing, separated or cracked on both sides  
2. Any broken main leaf in a leaf spring **NOTE:**  
   a). Any leaf of a leaf spring assembly is a main leaf if it extends, at both ends, to or beyond:  
      (i) The load bearing surface of a spring hanger or equalizer  
      (ii) The spring end cap or insulator box mounted on the axle  
      (iii) A spring eye  
   b). The radius rod leaf, in springs having such a leaf, has the same function as the torque or radius components, and should be treated as such a component for purposes of out-of-service  
3. Coil spring broken  
4. Rubber spring missing, cracked larger than OEM recommendations  
5. One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum, or frame  
6. Broken torsion bar  
7. One or more leaves cracked or broken between the "U" bolts  
8. Center pin is sheared | A  
|       |                          |                                                                        |               |
| 38.02 | Axle Parts/Members/King Pins/Etc. | 1. Any U-bolt(s) or other spring to axle clamp bolt(s) cracked, broken, loose or missing  
2. Any spring hanger(s), or other axle positioning part(s) cracked, broken, bent, loose or missing  
3. Any part of a torque, radius, or tracking component assembly or any part used for attaching same to the vehicle frame or axle that is cracked, loose, broken, or missing (including spring leaves, used as a radius or torque rods, missing bushings but not loose bushings in torque or track rods)  
4. One or more fastener(s) missing, broken or loose from any spring hanger or shackle assembly  
5. King Pins, Ball Joints, Struts: Exceeds manufacturer's allowable wear tolerances | A  
|       |                          |                                                                        |               |
| 38.03 | Shock Absorbers          | 1. If originally equipped, any missing or broken shock or mounting stud  
2. Any rubber bushing that is deteriorated to a degree that shock metal and mounting point comes into contact (metal to metal)  
3. Shock absorber performance is determined to be deficient during road test | A  
|       |                          |                                                                        | B  

**NOTE:** a). Any leaf of a leaf spring assembly is a main leaf if it extends, at both ends, to or beyond:  
   (i) The load bearing surface of a spring hanger or equalizer  
   (ii) The spring end cap or insulator box mounted on the axle  
   (iii) A spring eye  

b). The radius rod leaf, in springs having such a leaf, has the same function as the torque or radius components, and should be treated as such a component for purposes of out-of-service.
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</thead>
</table>
| 38.04| Air Suspension           | 1. Deflated air suspension, i.e. system failure, leak, improperly adjusted or defective leveling valve, etc.  
2. Any air bag worn (cord exposed)  
3. Improperly mounted or mis-matched air bag  
4. Any missing, broken, loose, cracked or bent radius rod(s) or other air suspension components  
5. Any bushing defect which causes the component to contact its mounting point | A             |
| 38.05| Positioning Components  | Any component that is worn or broken that affects the alignment or location of the axle | A             |
| 39.00| Hydraulic Brakes        | 1. Absence of braking action upon application of the service brakes as designed (such as brake linings failing to move or contact braking surface adequately upon application)  
2. Any missing, broken or improperly installed part(s) | A             |
| 39.01| Brake Lines/Hoses/Connections | 1. Any bulge/swelling of any hose when operating pressure is applied  
2. Any lines, hoses, tubing or connections that leak, are cracked, chafed (cord exposed), flattened, broken, restricted, insecurely fastened, improperly retained, or in contact with exhaust system, drive line, etc.  
3. Any line, tubing, hose or connection that is not constructed to meet all applicable manufacturers codes and standards | A             |
| 39.02| Reservoir               | Improperly mounted or loose, or leaking                                | A             |
| 39.03| Wheel Cylinders/Calipers | 1. Wheel cylinders/calipers are frozen or leaking  
2. Loose or improperly mounted | A             |
| 39.04| Hydro-vacs/Assist       | 1. If equipped or required to be equipped with a reservoir, insufficient vacuum reserve to permit two full brake applications after engine is shut off  
2. If not required to be equipped with a reservoir, insufficient vacuum reserve to permit one full brake application after engine is shut off  
3. Brake warning indicator fails to activate with ignition switch in the “on” or “crank” position or remains on after engine is started  
4. Any low-vacuum or pressure warning device (as required) fails to operate properly  
5. Power assist unit fails to operate properly to include back up system  
6. Any brake fluid or power steering fluid leak | A             |
| 39.05| Drums/ Rotors           | 1. Any portion of the drum or rotor (discs) improperly mounted, missing or in danger of falling away  
2. If drums or rotors are at or exceeds the manufacturers discard measurement  
3. If drums or rotors have any external crack or cracks that open upon brake application  
4. Any drum or rotor contaminated with grease or oil  
5. Any substantial portion of the drum or rotor lining contact surface missing or deteriorated | A             |
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
<th>DEFECT</th>
<th>DEFECT RATING</th>
</tr>
</thead>
</table>
| 39.06| Linings/Pads          | 1. Bonded linings are less than the following (measurement should be taken at thinnest point):  
                        - GVWR up to 10,000 lbs - less than 1/16"  
                        - GVWR of 10,001 to 18,000 lbs - less than 1/8"  
                        - GVWR more than 18,000 lbs - less than 1/4"  
                        (Measurement should be taken at center of shoe)  
                        2. Riveted linings are less than 1/16 inch above rivet head at thinnest point  
                        3. Lining is broken, not firmly attached to shoe or plate, contaminated with oil or grease  
                        4. Substantially uneven due to improper wear  
                        5. Lining has cracks or breaks that extend from edge through rivet or bolt holes which are deeper than half of lining thickness. (Ignore minor cracks which do not impair attachment) | A             |
| 39.07| Master Cylinder       | 1. Master cylinder is not filled to design capacity or is leaking  
                        2. Loose or improperly mounted master cylinder | A             |
| 40.00| Air Brakes            | 1. Any one brake at or beyond the readjustment limit (SEE SECTION 720.11(D)) measured at push rod with air reservoir pressure between 90 to 100 PSI with engine off and then fully applied brakes  
                        2. Absence of braking action upon application of the service brakes (such as brake linings failing to move or contact braking surface upon application)  
                        3. Any wedge brake where the lining movement exceeds 1/16 of an inch at the center of the shoe  
                        4. Any test failure of the air reservoir system to include mounting and reservoir condition  
                        5. Any missing, broken or improperly installed part | A             |
| 40.01| Brake System Valve(s)/Tanks | Any brake system valve(s) or attached connection(s) mounted improperly, leaking or found to be defective through air brake system test procedures (application, relay, release, inversion, limiting, etc.) | A             |
| 40.02| Cams/Wedges           | 1. Any cam brake or wedge type component worn to a point that it is beyond the manufacturers wear tolerance  
                        2. Any cam brake operation with noticeable irregular movement while brakes being applied (i.e. jumping, hanging, etc.) | A             |
| 40.03| Chambers/Push Rods/Slack Adjusters | 1. Any chamber component or connection(s) leaking or not properly mounted  
                        2. Any slack adjuster that will not adjust or hold adjustment  
                        3. Any mismatch across any axle of:  
                            a) air chamber size  
                            b) air chamber type  
                            c) slack adjuster length  
                            d) push-rod length (shall not exceed maximum of 1/2" difference side to side)  
                        4. Corrosion to a chamber that is so severe that it results in looseness, poor securement or danger of structural failure | A             |
<table>
<thead>
<tr>
<th>NO.</th>
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<th>DEFECT RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.04</td>
<td>Hoses/Lines</td>
<td>1. Hose with any damage extending through the outer reinforcement ply. (Rubber impregnated fabric cover is not a reinforcement or color difference between cover and inner tub. Exposure of second color is out-of-service) &lt;br&gt;2. Bulge/swelling when air pressure is applied &lt;br&gt;3. Hose with audible leak &lt;br&gt;4. Two hoses improperly joined such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube &lt;br&gt;5. Air hose cracked, broken, or crimped in such a manner as to restrict air flow</td>
<td>A</td>
</tr>
<tr>
<td>40.05</td>
<td>Drums/ROTORS</td>
<td>1. Any portion of the drum or rotor (discs) improperly mounted, missing or in danger of falling away &lt;br&gt;2. If drums or rotors are at or exceeds the manufacturers discard measurement &lt;br&gt;3. If drums or rotors have any external crack or cracks that open upon brake application &lt;br&gt;4. Any drum or rotor contaminated with grease or oil &lt;br&gt;5. Any substantial portion of the drum or rotor lining contact surface missing or deteriorated</td>
<td>A</td>
</tr>
<tr>
<td>40.06</td>
<td>Linings/Pads</td>
<td>1. Any lining(s) that is worn to the Manufacturer’s wear mark. &lt;br&gt;2. Any axle with 2 piece linings that are worn to less than 1/4&quot; (measured at center of shoe) or 1/16&quot; (above rivet or bolt head). &lt;br&gt;3. Any 1 piece lining on steering axle is less than 3/16&quot; at thinnest point (includes disc brake linings). &lt;br&gt;4. Substantially uneven due to improper wear &lt;br&gt;5. Lining has cracks or breaks that extend from edge through rivet or bolt holes which are deeper than half of lining thickness. (Ignore minor cracks which do not impair attachment) &lt;br&gt;6. Lining is broken, not firmly attached to shoe or plate, contaminated with oil or grease</td>
<td>A</td>
</tr>
<tr>
<td>41.00</td>
<td>Transmission</td>
<td>nstion</td>
<td>A</td>
</tr>
<tr>
<td>41.01</td>
<td>Leaks</td>
<td>The transmission or it’s lines are leaking fluid steadily or leaking onto any exhaust system component</td>
<td>A</td>
</tr>
<tr>
<td>41.02</td>
<td>Mounting</td>
<td>The transmission is loose or if any mounts are worn, loose, broken or damaged</td>
<td>A</td>
</tr>
<tr>
<td>41.03</td>
<td>Operation</td>
<td>1. Defective start neutral safety switch &lt;br&gt;2. The transmission fails to operate in any selected gear setting or fails to perform under normal operating conditions</td>
<td>B</td>
</tr>
<tr>
<td>42.00</td>
<td>Emergency/Parking Brake Assembly</td>
<td>If any mechanical parts of the emergency brake assembly are missing, frozen, broken or badly worn</td>
<td>A</td>
</tr>
<tr>
<td>42.01</td>
<td>Handle/Application Valve</td>
<td>1. The handle or application valve fails to operate, is broken or missing &lt;br&gt;2. The handle or application valve fails to remain in the selected position</td>
<td>A</td>
</tr>
<tr>
<td>NO.</td>
<td>INSPECTION ITEM</td>
<td>DEFECT</td>
<td>DEFECT RATING</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
| 42.02 | Control Rod or Cable, Hoses, Lines | 1. Control rod is bent, loose or worn to a point where it cannot perform its intended function  
2. Any cable that is missing, frozen, frayed or altered  
3. Any hose or line which has an audible leak if air, or visible leak if fluid  
4. A bulge/swelling when a hose or line is pressurized  
5. A hose or line is cracked, broken or cramped in such a manner as to restrict flow  
6. Hose abraded (chafed) through outer cover to fabric layer | A  
A  
A  
A  
A  
A |
| 42.03 | Locknuts | Any required locknuts missing or loose | A |
| 42.04 | Ratchet & Pawl Shield | 1. Ratchet that has two adjacent teeth missing  
2. Ratchet and pawl assembly does not stay in the selected position | A  
A |
| 42.05 | Return Spring/Application Spring | 1. Absence of any required return or application springs  
2. Any broken spring or any spring which is worn to a point in which it cannot perform its intended function | A  
A |
| 42.06 | Linings/Drums/Rotors | **Note:** When the emergency brake system utilized components of the primary brake system refer to Section 39 and 40 of this criteria. For all other emergency brake systems see below.  
1. Lining or pad is not firmly attached to the shoe  
2. The friction surface is saturated with oil, grease, or brake fluid  
3. The lining or pad has worn beyond the manufacturer’s replacement recommendations  
4. Any obvious cracks in the drum, rotor or their respective mounting points | A  
A  
A  
A |
| 43.00 | Driveshaft | 1. Driveshaft is bent, cracked or otherwise distorted  
2. Any driveshaft fastener is missing, broken or loose | A  
A |
| 43.01 | Universal Joints | 1. Any universal joint or end cap which is cracked, split, missing worn through or excessive play  
2. Any snap ring fastener(s) missing, any bolt(s) missing to a bolt fastened end cap  
3. Any universal joint which is worn to a point that causes excessive drive line vibration | A  
A  
A |
| 43.02 | Hanger Bearings | 1. Hanger bearing mounting bolts which are missing or loose  
2. Any bearing which has become completely dislodged from its rubber casing  
3. A bearing which has excess movement in its outer bearing race | A  
A  
A |
| 43.03 | Driveshaft Guard | 1. Absence of any required guard  
2. Improperly located guard  
3. Installed guard which affects the proper function of any other component | C  
C  
A |
| 44.00 | Rear Axle (also applies to third axle if so equipped) | 1. The rear axle or axle housing is bent cracked or loose  
2. The rear axle is obviously misaligned or does not allow the front wheel to track in straight ahead travel | A  
A |
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
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</tr>
</thead>
<tbody>
<tr>
<td>44.01</td>
<td>Differential</td>
<td>The differential has evidence of excess wear indicated by grinding or excessive banging. NOTE: This would be most apparent during the vehicle road test</td>
<td>A</td>
</tr>
</tbody>
</table>
| 44.02 | Springs | 1. Any leaf or portion of any leaf in any spring assembly is missing, separated or cracked on both sides  
2. Any broken main leaf in a leaf spring  
**NOTE:** a). Any leaf of a leaf spring assembly is a main leaf if it extends, at both ends, to or beyond:  
(1) The load bearing surface of a spring hanger or equalizer  
(2) The spring end cap or insulator box mounted on the axle  
(3) A spring eye  
b). The radius rod leaf, in springs having such a leaf, has the same function as the torque or radius components, and should be treated as such a component for purposes of out-of-service  
3. Coil spring broken  
4. Rubber spring missing, cracked larger than OEM recommendations  
5. One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum, or frame  
6. Broken torsion bar  
7. One or more leaves cracked or broken between the “U” bolts  
8. Center pin is sheared | A A A A A |
| 44.03 | Axle Parts/Members/King Pins, etc. | 1. Any U-bolt(s) or other spring to axle clamp bolt(s) cracked, broken, loose or missing  
2. Any spring hanger(s), or other axle positioning part(s) cracked, broken, bent, loose or missing  
3. Any part of a torque, radius, or tracking component assembly or any part used for attaching same to the vehicle frame or axle that is cracked, loose, broken, or missing (including spring leaves, used as a radius or torque rods, missing bushings but not loose bushings in torque or track rods) | A A A |
| 44.04 | Shock Absorbers | 1. If originally equipped, any missing or broken shock or mounting stud  
2. Any rubber bushing that is deteriorated to a degree that shock metal and mounting point comes into contact (metal to metal)  
3. Shock absorber performance is determined to be deficient during road test | A B |
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
<th>DEFECT</th>
<th>DEFECT RATING</th>
</tr>
</thead>
</table>
| 44.05| Air Suspension                      | 1. Deflated air suspension, i.e. system failure, leak, improperly adjusted or defective leveling valve, etc.  
2. Any air bag worn (cord exposed)  
3. Improperly mounted or mis-matched air bag  
4. Any missing, broken, loose, cracked or bent radius rod(s) or other air suspension components  
5. Any bushing defect which causes the component to contact its mounting point | A             |
| 44.06| Leaks/Seals                         | 1. Any steady leak caused by axle housing cracks, differential gasket or defective input shaft seal  
2. Any axle seal leaking resulting in oil, grease or other fluid being thrown onto the friction surface of the brakes or brake drum | A             |
| 44.07| Positioning Components              | Any component that is worn or broken that affects the alignment or location of the axle | A             |
| 45.00| Chassis                             |                                                                        |               |
| 45.01| Frame/Uni-body                      | 1. Any cracked, loose, sagging or broken frame member  
2. Any repair not performed in accordance with manufacturer’s recommended procedures | A             |
| 45.02| Outriggers/Body Supports            | 1. Any outrigger missing, broken, shifted or damaged from improper repair (welded incorrectly).  
2. Any outrigger mounting plate or fastener slightly loose or cracked.  
3. Any body mount missing or broken.  
4. Any body mount fastener or washer slightly loose. | A             |
| 45.03| Body Clamps/Insulation              | 1. Any 2 adjacent or total of 3 or more body clamps loose, broken or missing (as required by manufacturer’s design)  
2. More than 25% of the body to chassis insulator(s) or insulation missing or deteriorated | A             |
| 45.04| Body Cross Sills/Members            | Body cross members or sills are separated, shifted, corroded or damaged to a degree that would likely result in the structural integrity being deficient. | A             |
| 45.05| Bumpers                             | 1. Any bumper missing.  
2. Any bumper not secured properly | A             |
| 46.00| Fuel Tank                           | 1. Any physical damage to the tank or fuel container that affects its integrity  
2. Non approved fuel container (non-USDOT spec)  
3. Fuel cap missing | A             |
| 46.01| Mounting Brackets Guard             | 1. Any part of the fuel tank, fuel container or its mounting brackets are loose, missing or broken  
2. Any required guard missing, broken or damaged | A             |
<p>| 46.02| Connections/Leaks                   | Any vapor or liquid fuel leakage at any point | A             |
| 46.03| Heat Shields                        | Any Final Vehicle Manufacturer required heat shield(s) missing | B             |</p>
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
<th>DEFECT</th>
<th>DEFECT RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>47.00</td>
<td>Engine</td>
<td>Any critical component that fails to perform its intended function</td>
<td>A</td>
</tr>
</tbody>
</table>
| 47.01 | Operation       | 1. Fails to start  
2. Engine is not in proper running condition | A  
A |
| 47.02 | Mounts          | 1. Any missing, excessively worn or improper fastener  
2. Any defective support that would result in engine shifting | A  
A |
| 47.03 | Leak            | Any leak (oil, water, etc.) that would affect engine operation | A |
| 47.04 | Belts (other than power steering) | 1. Any improperly installed belt  
2. Any belt in such a condition that results in slippage, malfunction or is likely to break | B  
B |
| 47.05 | Cleanliness     | 1. Any abnormal accumulations of fluids or debris which may cause fire or release of toxic fumes  
2. Any deposit which may render any critical components inoperative | A  
A |
| 47.06 | Noise abatement shield | Any required shield missing | C |
| 47.07 | Pollution Control Devices | Any original equipment pollution control device rendered inoperable or disconnected | A |
| 48.00 | Electrical Components | 1. Evidence of charring or burning  
2. Insulation damaged - Wire exposed | A  
B |
| 48.01 | Starter         | 1. Fails to operate properly  
2. Not properly fastened | A  
B |
| 48.02 | Charging System | Fails to hold and maintain proper voltage | A |
| 48.03 | Battery & Cables | 1. Battery not properly secured  
2. Dead battery  
3. Damaged or missing parts that would result in malfunction and release of contents | A  
A  
A |
| 49.00 | Fuel Supply System | | |
| 49.01 | Pump(s)/Line(s)/Connections | 1. Any vapor or liquid fuel leakage at any point  
2. Any part of the system not securely fastened | A  
A |
<p>| 50.00 | Air Compressor  | Does not perform to manufacturer’s specifications | A |
| 50.01 | Line            | Any line that leaks, is cracked, chaffed, flattened, broken, restricted, insecurely fastened or improperly retained | A |
| 50.02 | Connection      | Any connection that leaks, is cracked, chaffed, flattened, broken, restricted, insecurely fastened or improperly retained | A |
| 50.03 | Mounting        | Any part of the system not securely fastened | A |
| 50.04 | Dryer           | Fails to function properly | C |</p>
<table>
<thead>
<tr>
<th>NO.</th>
<th>INSPECTION ITEM</th>
<th>DEFECT</th>
<th>DEFECT RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.00</td>
<td>Alternate Fuel Components</td>
<td>Any system component that fails to meet or operate as per NYCRR 720, NFPA or any other applicable requirement</td>
<td>A</td>
</tr>
<tr>
<td>52.00</td>
<td>Road Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52.01</td>
<td>Service Brake Operation</td>
<td>Fails to provide an even and smooth stop</td>
<td>A</td>
</tr>
<tr>
<td>52.02</td>
<td>Emergency Brake Operation</td>
<td>Fails to apply and maintain application until manual release</td>
<td>A</td>
</tr>
<tr>
<td>52.03</td>
<td>Interlock System Operation</td>
<td>Fails to activate when device is actuated</td>
<td>A</td>
</tr>
<tr>
<td>52.04</td>
<td>Other Unsafe Operational Problems</td>
<td>Unsafe operating conditions</td>
<td>A</td>
</tr>
<tr>
<td>52.05</td>
<td>Service Brake Stopping Distance</td>
<td>Fails to meet the required rate of deceleration as outlined in NYCRR 720.4(Z)(1)(b) (at a tested speed of 20 mph)</td>
<td>A</td>
</tr>
<tr>
<td>52.06</td>
<td>Emergency or Parking Brake Stopping Distance (GVWR greater than 7,716 lbs.)</td>
<td>Fails to meet the required rate of deceleration as outlined in NYCRR 720.4(Z)(1) (75 feet at a tested speed of 20 mph)</td>
<td>A</td>
</tr>
<tr>
<td>52.07</td>
<td>Other Brake Stopping Distance</td>
<td>Fails to meet the required rate of deceleration as outlined in NYCRR 720.4(Z)(1)(p) for parking brakes (GVWR of less than 7717 lbs.) or 720.4(Z)(1)(j) for exit door interlock systems (75 feet at a tested speed of 20 mph)</td>
<td>A</td>
</tr>
</tbody>
</table>
Section 720.11 Continued

(K) **Brake Adjustments**: Brake adjustments shall not meet or exceed those specifications contained hereunder relating to “Brake Adjustment Limit”. (Dimensions are in inches and millimeters or centimeters.

### CLAMP TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>4-1/2 &quot; (114 mm)</td>
<td>1-1/4 &quot; (32 mm)</td>
</tr>
<tr>
<td>9</td>
<td>5-1/4 &quot; (133 mm)</td>
<td>1-3/8 &quot; (35 mm)</td>
</tr>
<tr>
<td>12</td>
<td>5-11/16 &quot; (145 mm)</td>
<td>1-3/8 &quot; (35 mm)</td>
</tr>
<tr>
<td>16</td>
<td>6-3/8 &quot; (162 mm)</td>
<td>1-3/4 &quot; (45 mm)</td>
</tr>
<tr>
<td>20</td>
<td>6-25/32 &quot; (172 mm)</td>
<td>1-3/4 &quot; (45 mm)</td>
</tr>
<tr>
<td>24</td>
<td>7-7/32 &quot; (184 mm)</td>
<td>1-3/4 &quot; (45 mm)</td>
</tr>
<tr>
<td>30</td>
<td>8-3/32 &quot; (206 mm)</td>
<td>2 &quot; (51 mm)</td>
</tr>
<tr>
<td>36</td>
<td>9 (229 mm)</td>
<td>2-1/4 &quot; (57 mm)</td>
</tr>
</tbody>
</table>

### LONG STROKE CLAMP TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>5-11/16 &quot; (14.5 cm)</td>
<td>1-3/4 &quot; (4.5 cm)</td>
</tr>
<tr>
<td>16</td>
<td>6-3/8 &quot; (162 mm)</td>
<td>2.0 &quot; (51 mm)</td>
</tr>
<tr>
<td>20</td>
<td>6-25/32 &quot; (172 mm)</td>
<td>2.0 &quot; (51 mm)</td>
</tr>
<tr>
<td>24</td>
<td>7-7/32 &quot; (184 mm)</td>
<td>2.0 &quot; (51 mm)</td>
</tr>
<tr>
<td>24*</td>
<td>7-7/32 &quot; (184 mm)</td>
<td>2.5 &quot; (64 mm)</td>
</tr>
<tr>
<td>30</td>
<td>8-3/32 &quot; (206 mm)</td>
<td>2.5 &quot; (64 mm)</td>
</tr>
</tbody>
</table>

* For 3 " maximum stroke type 24 chambers

### TIE ROD STYLE PISTON BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>6-1/2 &quot; (165 mm)</td>
<td>2.5 &quot; (64 mm)</td>
</tr>
</tbody>
</table>
### BOLT TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6-15/16 &quot; (176 mm)</td>
<td>1-3/8 &quot; (35 mm)</td>
</tr>
<tr>
<td>B</td>
<td>9-3/16 &quot; (234 mm)</td>
<td>1-3/4 &quot; (45 mm)</td>
</tr>
<tr>
<td>C</td>
<td>8-1/16 &quot; (205 mm)</td>
<td>1-3/4 &quot; (45 mm)</td>
</tr>
<tr>
<td>D</td>
<td>5-1/4 &quot; (133 mm)</td>
<td>1-1/4 &quot; (32 mm)</td>
</tr>
<tr>
<td>E</td>
<td>6-3/16 &quot; (157 mm)</td>
<td>1-3/8 &quot; (35 mm)</td>
</tr>
<tr>
<td>F</td>
<td>11 &quot; (279 mm)</td>
<td>2-1/4 &quot; (57 mm)</td>
</tr>
<tr>
<td>G</td>
<td>9-7/8 &quot; (251 mm)</td>
<td>2 &quot; (51 mm)</td>
</tr>
</tbody>
</table>

### ROTOCHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>4-9/32 &quot; (109 mm)</td>
<td>1-1/2 &quot; (38 mm)</td>
</tr>
<tr>
<td>12</td>
<td>4-13/16 &quot; (122 mm)</td>
<td>1-1/2 &quot; (38 mm)</td>
</tr>
<tr>
<td>16</td>
<td>5-13/32 &quot; (138 mm)</td>
<td>2 &quot; (51 mm)</td>
</tr>
<tr>
<td>20</td>
<td>5-15/16 &quot; (151 mm)</td>
<td>2 &quot; (51 mm)</td>
</tr>
<tr>
<td>24</td>
<td>6-13/32 &quot; (163 mm)</td>
<td>2 &quot; (51 mm)</td>
</tr>
<tr>
<td>30</td>
<td>7-1/16 &quot; (180 mm)</td>
<td>2-1/4 &quot; (57 mm)</td>
</tr>
<tr>
<td>36</td>
<td>7 5/8 &quot; (194 mm)</td>
<td>2-3/4 &quot; (70 mm)</td>
</tr>
<tr>
<td>50</td>
<td>8-7/8 &quot; (226 mm)</td>
<td>3 &quot; (76 mm)</td>
</tr>
</tbody>
</table>

### DD-3 BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OUTSIDE DIAMETER</th>
<th>BRAKE ADJUSTMENT LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>8-1/8 &quot; (206 mm)</td>
<td>2-1/4 &quot; (57 mm)</td>
</tr>
</tbody>
</table>

### WEDGE BRAKE DATA

Any wedge brake where the lining movement exceeds 1/16 of an inch at the center of the shoe.
(E) *Steering Wheel Free Play:* Steering wheel free play shall not exceed the requirements listed in the following chart:

**STEERING WHEEL FREE PLAY**

<table>
<thead>
<tr>
<th>Steering Wheel Diameter</th>
<th>Manual System Movement 30°</th>
<th>Power System Movement *45°</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot; (41cm)</td>
<td>2” (or more)</td>
<td>4 ½”(or more)</td>
</tr>
<tr>
<td>18&quot; (46cm)</td>
<td>2 1/4”(or more)</td>
<td>4 3/4”(or more)</td>
</tr>
<tr>
<td>20&quot; (51cm)</td>
<td>2 ½”(or more)</td>
<td>5 1/4”(or more)</td>
</tr>
<tr>
<td>22&quot; (56cm)</td>
<td>2 3/4”(or more)</td>
<td>5 3/4”(or more)</td>
</tr>
</tbody>
</table>

*For power systems, if steering wheel movement exceeds 45 degrees before steering axle tires move, proceed as follows: Rock steering wheel left to right between points of power steering valve resistance. If the motion exceeds 30 degrees (or the inch movement values shown for manual steering) vehicle shall be placed out of service.*

(F) **COMMERCIAL VEHICLE SAFETY ALLIANCE INSPECTION STICKER:** The following is a sample of a typical Inspection Sticker issued by Commercial Vehicle Safety Alliance (CVSA) members throughout North America to commercial vehicles that successfully pass a Level 1 Roadside Safety Inspection. The sticker is typically placed on the glass portion (window) of the entrance door of the bus.
(A) The provisions of the Code of Federal Regulations which have been incorporated by reference in this Part have been filed in the Office of the Secretary of State of the State of New York, the publications so filed being the booklets entitled: Code of Federal Regulations, title 49, parts 100 to 177, parts 178 to 199, parts 200 to 299, parts 300 to 399, parts 400 to 571 and parts 572 to 999, revised as of October 1, 2013, published by the Office of the Federal Register, National Archives and Records Administration, as a special edition of the Federal Register. The regulations incorporated by reference may be examined at the Office of the Department of State, One Commerce Plaza, 99 Washington Avenue, Albany, NY 12231-0001, at the New York State Supreme Court Law Libraries, the Legislative Library, the New York State Department of Transportation, Office of Counsel or Motor Carrier Safety Bureau, 50 Wolf Road, Albany, NY 12232. They may also be purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-0001. Copies of the Code of Federal Regulations are also available at many public libraries and bar association libraries.

(B) Incorporation of Certain Industry Standards By Reference: The provisions of the Standards of the Society of Automotive Engineers which have been incorporated by reference in this Part have been filed in the Office of the Secretary of State of the State of New York, the publications so filed being the Society of Automotive Engineers Standards J429 - Mechanical and Material Requirement for Externally Threaded Fasteners, dated January, 1999; J887 - School Bus Warning Lamps, dated May, 1996; J994 - Alarm Backup Electric Laboratory Performance Testing, dated August, 1993; J377 - Performance of Vehicle Traffic Horns, dated May, 1998; J2249 - Wheelchair Tiedown and Occupant Restraint Systems for Use in Motor Vehicles, dated October, 1996 and J1292 - Automobile, Truck, Truck-Tractor, Trailer and Motor Coach, dated October, 1981, published by the Society of Automotive Engineers. They may be purchased from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096-0001; telephone number (724) 776-4841. The provisions of the Standard of the American Society for Testing and Materials which has been incorporated by reference in this Part has been filed in the Office of the Secretary of State of the State of New York, the publication so filed being the American Society for Testing and Materials Standard E 810-94 Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting, dated April, 1994, published by the American Society for Testing and Materials. This may be purchased from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; telephone number (610) 832-9595. The provisions of the Standard of the National Fire Protection Association which has been incorporated by reference in this Part has been filed in the Office of the Secretary of State of the State of New York, the publication so filed being the National Fire Protection Association Standard 59 A - Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG), 1996 Edition, published by the National Fire Protection Association. This may be purchased from the National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269-9101; telephone (617) 770-3000. These standards incorporated by reference may be examined at the Office of the Department of State, 41 State Street, Albany, NY 12231, at the New York State Supreme Court Law Libraries, the Legislative Library, the New York State Department of Transportation, Office of Counsel or Motor Carrier Safety Bureau, State Office Campus, Albany, NY 12232.
PART 721

BUS & PASSENGER CARRYING VEHICLE/DRIVER
OPERATIONAL REQUIREMENTS
(Statutory authority: Transportation Law Sections 14, 138, 140; and
Vehicle and Traffic Law Article 19-A)

721.0 APPLICABILITY

721.1 MAINTENANCE

721.2 MAINTENANCE/DRIVER DOCUMENTATION

721.3 DRIVER REQUIREMENTS

721.4 SAFETY PRECAUTIONS

721.5 TEMPORARY EMERGENCY OPERATION

721.6 INCORPORATION BY REFERENCE

721.0 APPLICABILITY.

Bus and other passenger vehicles operating in New York State and subject to the requirements of Part 720 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR) are subject to the provisions of Part 721. Operation of one or more leased vehicles shall not relieve the operator from complying with the provisions of Part 721.

721.1 MAINTENANCE.

(A) Preestablished Regular Maintenance Intervals: Every passenger vehicle operator shall insure that all vehicles subject to the requirements of 17 NYCRR 720 are examined and serviced at regular maintenance intervals preestablished by the operator, and that such operator has an effective preventive maintenance program.

(B) Regular Maintenance Review: The operator shall make a complete examination of each vehicle at the preestablished maintenance intervals for any mechanical, structural defects or other safety defects.

(1) Vehicle examinations shall include, but not be limited to the brake system, steering mechanism, tires, lights and all emergency exits and shall be consistent with the type(s) of vehicles in their operation. Use of a comprehensive vehicle examination checklist by the assigned maintenance staff is recommended.

(2) Each defect identified during a periodic vehicle maintenance examination shall be recorded on a maintenance form provided by the operator (See Section 721.2).

(3) All necessary safety defect repairs shall be made before the vehicle is returned to service.
(C) **Method of Repair:** All such repairs shall be made in accordance with the manufacturer's recommended procedures or industry accepted techniques. In addition, all repairs shall be done in a worker-like manner and shall not reduce the effectiveness of any component.

(D) **Maintenance Facility:** The maintenance facilities used by each operator shall be adequate and shall include either a suitable pit or lift in an enclosed, heated garage. If the operator arranges to use a facility not owned or leased by the operator or contracts for maintenance services, the department shall be notified of such arrangement(s) in writing.

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**721.2 MAINTENANCE/DRIVER DOCUMENTATION.**

(A) **Maintenance Interval Certification:** Each operator shall certify in writing to the department as to the time or mileage intervals when company examinations and preventative maintenance will be performed.

1. Such certification shall be submitted in writing to the appropriate Regional Bus Inspection Program Supervisor and shall list the maximum maintenance cycle established for each particular vehicle type that the operator owns or leases. The maximum maintenance cycle may be expressed in terms of vehicle miles, engine hours or days between maintenance intervals. The carrier shall not exceed the established maximum maintenance interval(s).

2. The maximum established maintenance interval(s) shall be determined based on sound preventive maintenance principles that consider current operating conditions, previous maintenance experiences, including component failure history and the final vehicle manufacturer's recommended service intervals. Maintenance intervals shall not exceed the mileage, engine hours or time period limit(s) recommended by the final vehicle manufacturer.

3. In the event an operator decides to modify the maintenance interval, an updated certification shall be filed with the Regional Bus Inspection Supervisor prior to the implementation of the revised cycle.

(B) **Driver Pre Trip Inspection and Post Trip Review Reports:** The operator of more than one vehicle shall require each on duty driver to complete and sign a driver vehicle inspection report at the beginning and end of the day's work or tour of duty, as well as any time the vehicle undergoes mechanical service during the day without passengers on board:

1. The pre-trip inspection at least shall examine the following items: service brakes, parking brake, steering mechanism, lighting devices and reflectors, horn, windshield wipers, mirrors, tires, wheels and rims, and emergency equipment and exits. The post-trip review shall note any additional mechanical or safety defects not listed on the pre-trip inspection report that the driver becomes aware prior to the end of the tour of duty.

2. Such driver reports shall list the vehicle identification number, starting and ending mileage, date, driver’s signature, and any identified vehicle defects or roadside vehicle failures. If no defects or failures are noted, the report shall indicate this fact. Each day's driver pre-trip inspection and post-trip review reports may be contained on a single form, if desired by the operator, or combined with a carriers mechanical defect form, as long as it is clear what defects were discovered by the driver and when.

3. Such driver reports shall be carefully examined by the operator. The operator shall ensure that any safety defects noted therein shall be corrected before the vehicle is used in service, including all defects that do not meet the Out-of-Service requirements contained in Section 720.11 of this Part.
(4) The Operator or designated mechanic shall certify by signing a form that notes all defects listed in the driver reports have been repaired that could affect the safe operation of the vehicle, prior to the vehicle again carrying passengers.

(5) The Operator shall adopt and implement a procedure(s) to ensure that its drivers have reviewed a legible copy of the previous driver vehicle inspection report (DVIR) and such drivers are made aware in writing, prior to dispatch, that potential safety defect(s) noted on the previous DVIR have been properly addressed by the operator and the vehicle is safe for dispatch. Authorized Department representatives shall only approve operator’s procedure(s) that satisfactorily meet this objective.

(6) Such driver reports shall be filed by vehicle number and in chronological order within each vehicle folder. The operator shall maintain these reports for at least the most recent six (6) month.

(7) Such driver reports shall be available for examination by a motor vehicle inspector or other authorized representative of the department at any time.

(C) En Route Driver Relief: When a driver is relieved while en route and passengers remain onboard the vehicle, the new driver shall be provided with information of any potential safety defect(s) identified by the driver being relieved. Whenever possible, this information shall be passed on to the new driver via direct communication with the driver being relieved.

(D) Operator Maintenance Examination: An itemized record of each periodic maintenance examination, showing the date, vehicle number, mileage, lubrication record, adjustments and repairs, having been signed by the operator or the designated mechanic, shall be retained by the operator for at least two years. In addition, an itemized record of any repair(s) or adjustment(s) performed on the vehicle other than those performed at the time of the periodic maintenance examination, shall be maintained by the operator for at least two years.

These records shall be kept within an appropriate vehicle folder and shall be available for examination by a motor vehicle inspector or other authorized representative of the department at any time. NYSDOT vehicle inspection reports (Form MC300) issued to the operator by the department shall become part of this vehicle maintenance file and shall be retained by the operator for at least two years.

(E) Scheduled NYSDOT Safety Inspection: The operator of a motor vehicle scheduled for department inspection shall present it’s vehicle maintenance and driver file/records at the time of inspection. Such records and reports shall be for the time period from the last departmental inspection of that vehicle to and including the current date.

(F) Driver 19-A & B Affidavit of Compliance: The operator shall provide a copy of its annual NYS Department of Motor Vehicles, Article 19 A and/or Article 19-B of Vehicle and Traffic Law affidavit of Compliance(s) to department inspectors or other authorized representatives upon request to facilitate an accident investigation, compliance review or regulatory proceeding.

721.3 DRIVER REQUIREMENTS.

(A) Driver License: All drivers shall be duly licensed to operate a bus or other passenger carrying motor vehicle in the State of New York pursuant to the Vehicle and Traffic Law. This often will require that a driver possess a Commercial Vehicle License and the appropriate Passenger Endorsement.

(B) Article 19 A & B Registration: All drivers covered under the requirements of Article 19-A or B of the Vehicle and Traffic Law shall be properly registered with the Bus Driver Unit of the New York State Department of Motor Vehicles.
(C) **Safety Rules:** All drivers of buses and passenger carrying vehicles shall have general knowledge of the NYSDOT’s applicable safety rules and regulations governing motor carriers of passengers, including Parts 720 (Vehicle Safety Regulations - Sections 720.0 to 720.3, 720.7 and 720.11 ), 721 (Vehicle/Driver Operational Requirements), 722 (Reports of Accidents) and 723 (Hours of Labor for Operators of Motor Buses).

(D) **Pre-trip Inspection:** At the beginning of each work day or shift, the driver shall be satisfied that the motor vehicle is in safe operating condition prior to carrying passengers. Additionally,

1. The driver shall review the last driver vehicle inspection report in order to verify that the operator has addressed the potential safety defect(s) noted on the previous report and the vehicle is safe for dispatch.

2. In addition to checking for repair of deficiencies noted on the previous driver report, the driver shall complete the Pre-trip Inspection Report set forth in Section 721.2(B) of this Part, which includes the date of the inspection, vehicle number, mileage, and the driver’s name.

3. Each completed report shall list any defect or deficiency discovered by the driver which would affect the safe operation of the vehicle or likely result in its mechanical breakdown. If no defect or deficiency is discovered, the report shall so indicate.

4. In all instances, the driver shall sign the report.

(E) **Post-trip Review:** At the completion of each work day or shift, the driver shall conduct a review to identify if the motor vehicle is still in a safe operating condition. Specifically:

1. The driver shall complete the Post-trip Review Report set forth in Section 721.2(B) of this Part;

2. The driver shall list on the report the date of the inspection, vehicle number, mileage, and his/her name, as well as any defect or deficiency discovered by the driver during the workday/shift, which could adversely affect the safety of operation of the vehicle or result in its mechanical breakdown. If no defect or deficiency is discovered, the report shall so indicate; and

3. In all instances, the driver shall sign the report.

(F) **FMCSR:** Drivers of passenger carrying vehicles that carry more than 15 passengers, including the driver, or with a gross vehicle weight rating of more than 10,000 pounds shall comply with the applicable Federal Motor Carrier Safety Regulations (FMCSR) of the Federal Highway Administration, including: 49 CFR Part 382 - Controlled Substances and Alcohol Use and Testing, Part 383 - Commercial Driver’s License Standards; Requirements and Penalties, Part 390 - Federal Motor Carrier Safety Regulations; General, Subdivisions 391.21, except for (b)(12), 391.23, except for (b) and (c), 391.25, 391.27, except for (c) and (d), 391.41, 391.43 and 391.51, except for (b)(3), (b)(7) and (d)(4), of Part 391 - Qualifications of Drivers, Part 392 Driving of Commercial Motor Vehicles, Part 393 - Parts and Accessories Necessary For Safe Operation, Part 396 - Inspection, Repair, and Maintenance, except for Subdivisions 396.3(a)(2) and (b)(4) and Part 397 - Transportation of Hazardous Materials; Driving and Parking Rules. With respect to commercial drivers that are licensed with a passenger endorsement to operate a bus on an intrastate basis only, Parts 390 to 397 shall not apply to commercial drivers when operating a school bus, and the adopted portions of Part 391 shall only apply to those drivers that received their initial commercial drivers license after the effective date of this regulation. With respect to hours of service of bus drivers, the requirements of Title 17 NYCRR Section 723.10 shall apply.
Seat Belts: In accordance with FMCSR, each driver of passenger carrying vehicles designed to transport more than 15 passengers, including the driver, or with a GVWR of more than 10,000 pounds that was manufactured on or after January 1, 1965 shall wear a seat belt while operating such a vehicle on a public highway. In accordance with the regulations of the New York State Education Department pursuant to the State Education Law, each driver of a school bus in New York State shall wear a seat belt while operating such a vehicle. Additionally, each driver of any passenger carrying vehicle weighing less than 18,000 pounds shall wear a seat belt in accordance with the requirements of the New York State Vehicle and Traffic Law.

721.4 SAFETY PRECAUTIONS.

(A) Driver Assurance of Passenger Protection: Prior to or during the transporting of passengers, the driver shall ensure that the following are accomplished:

1. The required Pre-trip Inspection Report and road worthiness check of the vehicle is completed and potential safety defects are identified. Such a check shall include the items listed in Section 721.2(B) of this Part.

2. If any safety defects are discovered, they shall be reported to the operator or duly authorized representative. The vehicle shall not transport passengers until each safety defect noted is corrected.

3. All doors, rear tailgates and rear transom windows are closed securely and remain closed while the vehicle is in motion.

4. There is not any glass in a window or elsewhere on the vehicle which is so broken, fractured, discolored as to distort visibility or which may cause injury to a passenger or the driver.

5. The vehicle is never left unattended while in service until the emergency brake is securely set and all other reasonable precautions have been taken to prevent movement of the vehicle.

6. No vehicle carrying passengers is pushed, towed or used to push or tow any other vehicle.

7. A vehicle shall not be fueled while the engine is running and no smoking or flames shall be permitted in or about the vehicle during fueling operations and until all fumes have dissipated.

8. Combustible materials are not carried in the passenger compartment. Reserve fuel for the propulsion of the vehicle or for the operation of accessories may only be carried in a properly mounted fuel tank(s).

9. While driving a vehicle, no driver shall engage in any unnecessary conversation or other activities that could distract his/her attention from the operation of such vehicle.

10. Passengers shall not be permitted to stand in any location so as to obstruct the driver’s vision to the front and sides while a vehicle is in motion.

11. The passenger section shall be kept in a clean, sanitary condition and aisles shall be not obstructed while the vehicle is in service. Baggage, freight or other property shall not be carried in the aisle or so as to interfere with passenger seating space, safety or comfort. Such property may be carried in suitable baggage compartments or racks.
(B) **Protection of Standees:** In addition to satisfying the aisle and marking requirements of 17 NYCRR Sections 720.4, .5 and .8, every vehicle in which passengers are permitted to stand shall have:

1. A gate of a type approved by the department at the entrance to the main aisle, or a permanent marking in contrasting color at least two inches wide extending across the main aisle from the rear edge of the front stepwell to the rear of the driver’s seat; and

2. A conspicuous sign displayed on the front interior which clearly states that passengers are not permitted to stand forward of the marking, gate or turnstile, as may be applicable, while the bus is in motion. Lettering shall be at least one and one-half inch high.

3. Suitable handrails, handholds or stanchions, and grab-handles on cross seats, unless overhead baggage racks provide a suitable handhold.

(C) **Pre-Service Brake Test:** The service and emergency brakes of every vehicle subject to 17 NYCRR Part 720 shall be tested before the vehicle is placed in service. If the brakes are not in a safe operating condition, the vehicle shall NOT be operated on a public highway.

(D) **Safe Operating Condition:** The body, chassis, engine and all safety related equipment shall be in proper adjustment and safe operating condition at all times the vehicle is driven on the public roadways.

(E) **Brakes:** All service and emergency brakes shall be maintained in an efficient operating condition and be capable of stopping and holding a vehicle as specified in this section.

1. The service and emergency brakes of every vehicle subject to 17 NYCRR Part 720 shall be tested before the vehicle is placed in service.

2. No vehicle shall be operated in the State with any portion of the service or emergency brake system or warning devices not functioning either as designed or in a safe operating condition.

(F) **Out-of-Service Vehicles:** Operators of vehicles placed “Out-Of-Service” by a Department inspector or law enforcement official shall abide by the specific conditions of any such “Out-Of-Service” order issued pursuant to 17 NYCRR 720.

(G) **School Vehicle Signs and Red Signal Lamps:** The driver of every School Vehicle shall keep such red signal lamps lighted whenever passengers are being received or discharged, and shall light all other required signal lamps, as a warning, prior to stopping to receive or discharge passengers in accordance with regulations prescribed by the New York State Department of Motor Vehicles (DMV) pursuant to Title 15 of NYCRR. In the event that any such school vehicle is operated on a public highway during the period between one-half hour after sunset and one-half hour before sunrise, the driver shall keep the school vehicle signs lighted.

(H) **Dual Driver Control Vehicles:** Passengers shall not be carried in the front seat of a motor vehicle equipped with dual driver controls, unless such controls are disconnected and floor pedals removed.

(I) **Trailers:** Under no circumstances shall a trailer be attached to a vehicle being used in the transportation of passengers.
(J) **Electric Wheelchairs:** If electric wheelchairs are carried on the vehicle, dry cell or jelly type batteries are recommended to enhance passenger safety. If wet cell type batteries are used, provisions shall be made to contain battery and battery acid in the event of an accident.

(K) **Fuel Leaks:** If gasoline or any other flammable liquid or combustible liquid or gas seeps or leaks from a fuel container or vehicle stopped on a highway, no emergency warning signal producing a flame shall be lighted or placed, except at such a distance from any such liquid or gas as will assure the prevention of a fire or explosion. The reflective triangles required under 17 NYCRR Section 720.7(B) shall be used in such instances.

(L) **Emissions and Vapors:** The exhaust system of each vehicle shall not emit unnecessary smoke or offensive vapors and shall be maintained in good working order in conformity with standards promulgated by the New York State Department of Environmental Conservation (DEC) pursuant to Title 6 of NYCRR. Vehicles which emit unnecessary smoke or offensive vapors shall not be operated on a public highway. DEC may exempt or partially exempt from these provisions any type or class of motor vehicle for which no practical control system has been developed or is necessary.

(M) **Tires:** No vehicle shall be operated on a tire(s) that has:

1. Fabric exposed through the tread or sidewall;
2. A bump, bulge or knot related to separation or partial failure of the tire structure;
3. A fabric break or cut in excess of one inch in any direction measured on the outside of the tire and depth enough to reach the body cords, or has been repaired temporarily by the use of blowout patches or boots;
4. A portion of the tread design completely worn where such worn portion is of sufficient size to affect the traction and stopping ability of the tire. The term worn portion shall mean such portion of sufficient size which exceeds in length the tread surface of the tire that contacts the road surface when the vehicle is in a standing position with the proper air inflation of the tire and/or tread is cupped in a manner that appropriate water dispersion will not take place for the average tread depth.
5. A tread groove pattern depth of less than two thirty-seconds of an inch (four thirty-seconds of an inch for vehicles with a GVWR of 10,000 lbs. or more on steering axle) when measured in a major tread groove. The measurement shall not be made where tie bars, humps or fillets are located.
6. Re-grooved, recapped or re-treaded tires on the front wheels of any bus, unless such vehicle is operated solely in city service.

**Note:** For the purpose of defining tread depth and special mileage commercial tires, the following definitions shall apply:

i) **Tread depth:** The amount of tread design on the tire. Tread depth includes both original, retread and recapped tread design, and with respect to special mileage commercial tires, re-cut, re-grooved and siped tread design.

ii) **Special mileage commercial tires:** A tire manufactured with an extra layer of rubber between the cord body and original tread design which is designed for the purpose of re-cutting or re-grooving and is specifically labeled as a special mileage commercial tire.
721.5 TEMPORARY EMERGENCY OPERATION.

In case of an emergency, a certificated operator may, for a period not to exceed a total of 30 days in any one calendar year, use a bus in certificated service which complies with all of the requirements of 17 NYCRR Parts 720 and 721 applicable to buses in other than certificated service.

721.6 INCORPORATION BY REFERENCE.

Incorporation of Certain Federal Regulation By Reference: The provisions of the Code of Federal Regulations which have been incorporated by reference in this Part have been filed in the Office of the Secretary of State of the State of New York, the publications so filed being the booklets entitled Code of Federal Regulations, title 49, parts 100 to 177, parts 178 to 199, parts 200 to 299, parts 300 to 399, parts 400 to 571 and parts 572 to 999, revised as of October 1, 2013, published by the Office of the Federal Register, National Archives and Records Administration, as a special edition of the Federal Register. The regulations incorporated by reference may be examined at the Office of the Department of State, One Commerce Plaza, 99 Washington Ave, Albany, NY 12231-0001, at the law libraries of the New York State Supreme Court, the Legislative Library, the New York State Department of Transportation, Office of Counsel or Motor Carrier Safety Bureau, 50 Wolf Road, Albany, NY 12232. They may also be purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-0001. Copies of the Code of Federal Regulations are also available at many public libraries and bar association libraries.
# PART 722

REPORTS OF ACCIDENTS

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<tr>
<th>Sec.</th>
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<th>Page #</th>
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<td>APPLICABILITY</td>
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<td>722.1</td>
<td>REPORTABLE ACCIDENTS</td>
<td>1</td>
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Part 722. REPORTS OF ACCIDENTS

(Statutory Authority: Transportation Law, Section 142)

Sec. 722.0 Applicability
Every operator of a motor vehicle subject to Department of Transportation inspection is hereby directed and required to comply with and obey the following rules and regulations.

722.1 Reportable accidents
(a) Any accident in any way involving a motor vehicle subject to department inspection, which results in the loss of life or injury of any passenger, employee, or other person, or which was caused by mechanical failure (regardless of whether or not injuries were incurred), shall be immediately reported to the department by telephone or electronically to: passengersafety@dot.ny.gov.
(b) In addition to an incident commonly known as an accident, the following are reportable accidents within the purview of this Part:
(1) any mechanical failure;
(2) evidence of intrusion into the body of the vehicle of carbon monoxide, exhaust fumes emitted from such vehicle, or other noxious gases or smoke;
(3) smoke (other than normal exhaust) emanating from the engine or any other part of the vehicle, whether internal or external; and
(4) presence of or emission, whether internal or external, of sparks, flame or fire.
(c) No work shall be performed on and no passengers shall be transported in the vehicle involved until it is released by the Department of Transportation.
PART 723

HOURS OF LABOR FOR OPERATORS OF MOTOR BUSES

<REPEALED>