I. The assembly shall include a device attached to the bumper near the end of the arm to automatically retain the arm while in the stowed position. That device shall not interfere with normal operations of the crossing control arm.

DEFROSTERS

A. Defrosting and defogging equipment shall direct a sufficient flow of heated air onto the windshield, the window to the left of the driver and the glass in the viewing area directly to the right of the driver to eliminate frost, fog and snow.

Note: The requirements of this standard do not apply to the exterior surfaces of double pane storm windows.

B. The defrosting system shall conform to SAE J381, Windshield Defrosting Systems Test Procedure and Performance Requirements—Trucks, Buses, and Multipurpose Vehicles.

C. The defroster and defogging system shall be capable of furnishing heated, outside ambient air, except that the part of the system furnishing additional air to the windshield, entrance door and stepwell may be the re-circulating air type.

D. Auxiliary fans are not considered defrosting or defogging systems.

E. Portable heaters shall not be used.

DOORS

A. The entrance door shall be under the driver's control, designed to afford easy release and to provide a positive latching device on manual operating doors to prevent accidental opening. When a hand lever is used, no part shall come together that will shear or crush fingers. Manual door controls shall not require more than 25 pounds of force to operate at any point throughout the range of operation, as tested on a 10% grade, both uphill and downhill.

B. The primary entrance door shall be located on the right side of the bus, opposite and within direct view of the driver.

C. The entrance door shall have a minimum horizontal opening of 24 inches and a minimum vertical opening of 68 inches.

D. The entrance door shall be a split-type door and shall open outward.

E. All entrance door glass shall be approved safety glass. The bottom of each lower glass panel shall be not more than 10 inches from the top surface of the bottom step. The top of each upper glass panel when viewed from the interior shall be not more than 3 inches below the interior door control cover or header pad.

F. Vertical closing edges on entrance doors shall be equipped with flexible materials.

G. All door openings shall be equipped with padding at the top edge of the opening. Padding shall be at least three inches wide and one inch thick and extend the full width of the door opening.

H. On power-operated entrance doors, the emergency release valve, switch or device to release the entrance door must be placed above or to the immediate left or immediate right of the entrance door and must be clearly labeled. The emergency release valve, switch or device shall work in the absence of power.

I. If air or electric doors are used, the amber warning lights shall be activated from a momentary switch. A three-position switch or bezel of contrasting color to the dash, located on the panel to the right side shall activate the sequence as follows:
    1. Position One – door closed; lights off.
    2. Position Two – activate red lights, stop arm, and crossing control arm.
    3. Position Three – red lights activated, door open, stop arm activated, and crossing control are activated.

DRIVE SHAFT

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

ELECTRICAL SYSTEM

A. Alternator

1. All Type A buses with a GVWR of 15,000 pounds or less shall have a minimum 130-amp alternator. Buses equipped with an electrically powered wheelchair lift and/or air conditioning shall be equipped with the highest rated capacity available from the chassis OEM.

2. All buses over 15,000 pounds GVWR shall be equipped with a heavy-duty truck or bus-type alternator having a minimum output rating of 200 amps or higher and should produce a minimum current output of 50 percent of the rating at engine idle speed.

3. All other buses than those described in B1 equipped with an electrically powered wheelchair lift and/or air conditioning shall have a minimum alternator output of 240 amps and may be equipped with a device that advances the engine idle speed when the voltage drops to, or below, a pre-set level.

4. A belt-driven alternator shall be capable of handling the rated capacity of the alternator with no detrimental effect on any other driven components. (For estimating required alternator capacity, see School Bus Manufacturers Technical Council's publication, "School Bus Technical Reference," available at http://www.nasdpts.org.)

5. A direct/gear-drive alternator is permissible in lieu of a belt-driven alternator.

B. Battery

1. The storage batteries shall have minimum cold cranking capacity rating (cold cranking amps) equal to the cranking current required for 30 seconds at 0 degrees Fahrenheit and a minimum reserve capacity rating of 120 minutes at 25 amps. Higher capacities may be required, depending upon optional equipment and local environmental conditions.

2. The manufacturer shall securely attach the battery on a slide-out or swing-out tray in a closed, vented compartment in the body skirt or chassis frame so that the battery is accessible for convenient servicing from the outside. When in the stored position, the tray shall be retained by a securing mechanism capable of holding the tray [with battery(ies)] in position when subjected to a 5g load from any direction. The battery compartment door or cover, if separate from the tray, shall be hinged at the front or top. It shall be secured by a positive operated latching system or other type fastener. The door may be an integral part of the battery slide tray. The door or cover must fit tightly to the body, and not present sharp edges or snagging points. Battery cables shall meet the Society of Automotive Engineers (SAE) requirements. Battery cables shall be of sufficient length to allow the battery tray to fully extend. Any chassis frame-mounted batteries shall be relocated to a battery compartment on Type A buses.

3. All batteries are to be secured in a sliding tray except that on van conversion or cutaway front-section chassis, batteries may be secured in accordance with the manufacturer's standard configuration. In these cases, the final location of the battery and the appropriate cable lengths shall be agreed upon mutually by the chassis and body manufacturers. However, in all

cases the battery cable provided with the chassis shall have sufficient length to allow some slack and shall be of sufficient gauge to carry the required amperage.

4. Buses may be equipped with a battery shut-off switch. The switch is to be placed in a location not readily accessible to the driver or passengers.

C. Electrical Components

Materials in all electrical components shall contain no mercury.

D. Wiring, Chassis

1. All wiring shall conform to current applicable recommended practices of the Society of Automotive Engineers (SAE). All wiring shall use color and at least one other method for identification. The other method shall be either a number code or name code, and each chassis shall be delivered with a wiring diagram that illustrates the wiring of the chassis.

2. The chassis manufacturer of an incomplete vehicle shall install a readily accessible terminal strip or connector on the body side of the cowl or in an accessible location in the engine compartment of vehicles designed without a cowl. The strip or connector shall contain the following terminals for the body connections:

   A. Main 100-amp body circuit.

   B. Tail lamps.

   C. Right turn signal.

   D. Left turn signal.

   E. Stop lamps.

   F. Back-up lamps; and

   G. Instrument panel lamps (controlled by dimmer switch).

3. An appropriate identifying diagram (color plus a name or number code) for all chassis electrical circuits shall be provided to the body manufacturer for distribution to the end user.

4. Wiring for the headlamp system must be separate from the electronic controlled body solenoid/module.

E. Wiring, Body

1. All wiring shall conform to current applicable Society of Automotive Engineers (SAE) recommended practices.

2. All wiring shall have an amperage capacity exceeding the design load by at least 25%. All wiring splices are to be accessible and noted as splices on the wiring diagram.

3. A body wiring diagram, sized to be easily read, shall be furnished with each bus body or affixed to an area convenient to the electrical accessory control panel.

4. The body power wire shall be attached to a special terminal on the chassis.

5. Each wire passing through metal openings shall be protected by a grommet.

6. Wires not enclosed within the body shall be fastened securely at intervals of not more than 18 inches. All joints shall be soldered or joined by equally effective connectors, which shall be water-resistant and corrosion resistant.

7. Wiring shall be arranged in circuits, as required, with each circuit protected by a fuse breaker or electronic protection device. A system of color and number-coding shall be used, and an appropriate identifying diagram shall be provided to the end user, along with the wiring diagram provided by the chassis manufacturer. The wiring diagrams shall be specific to the bus model supplied and shall include any changes to wiring made by the body manufacturer. Chassis wiring diagrams shall be supplied to the end user. The following body interconnecting circuits shall be color-coded, as noted:

FUNCTION	COLOR
Left Rear Directional Lamp	Yellow
Right Rear Directional Lamp	Dark Green
Stop Lamps	Red
Back-up Lamps	Blue
Tail Lamps	Brown
Ground	White
Ignition Feed, Primary Feed	Black

The color of the cables shall correspond to SAE J1128, *Low-Tension*