**Section 435.APPENDIX J Ventilation through Windshield Wipers**

a) VENTILATION

The body shall be equipped with a controlled ventilation system of sufficient capacity to maintain a satisfactory ratio of outside to inside air under cool and cold operating conditions without opening of windows. With a powered ventilation system, air outlet openings shall be located, sized, and manufactured so that, with doors and windows closed, a positive pressure is maintained in the driver and passenger spaces to lessen chances of dangerous gas entering those spaces. Fresh air inlets shall be located so as to minimize entrance of either dangerous engine gas or obnoxious engine fumes.

b) WARNING DEVICES

AGENCY NOTE: The bus purchaser may elect to install the warning devices after the bus is purchased.

1) Emergency warning devices are required to be carried on any second division motor vehicle weighing more than 8,000 pounds and operated upon any highway outside an urban district. The warning devices must be securely stored.

The warning devices required for use when lighted lamps are required (see Section 12-201(b) of the Illinois Vehicle Equipment Law) shall consist of:

A) At least three liquid-burning flares and three red-burning 15-minute fusees; or

B) Three red electric lanterns; or

C) Three portable red emergency reflectors that meet FMVSS No. 125.

2) In addition, the following warning devices are also required for use when lighted lamps are not required (see Section 12-201(b) of the Illinois Vehicle Equipment Law):

A) Two red cloth flags (not less than 12 inches square with standards to support flags); or

B) Two portable emergency reflectors that meet FMVSS No. 125. (The reflectors in subsection (b)(1)(C) qualify for this option.) (See Section 12-702(a) and (c) of the Illinois Vehicle Equipment Law.)

c) WHEELS

1) Housings

Each opening shall allow for unimpeded wheel and tire service and removal. Each rear wheel housing shall provide the clearance recommended in SAE J683 (August 1985) for installation and use of tire chains on the dual or single tires installed on the rear wheels.

2) Rim

Wheels and rims may be black, gray or manufacturer's option.

3) Tires

Must meet 49 CFR 571.120. A spare tire is the purchaser's option. If the spare tire is carried inside, it shall be securely mounted so that it in no way interferes with the passenger seating accommodations, the emergency door operations or aisle space.

Tires on same axle must be of same construction.

A mixture of regular and mud-and-snow treads must be the same on both sides of the axle.

When radial and conventional (i.e., bias) tires are both used, one of the following two requirements shall be met:

A) On vehicles with one single wheel axle and one or more dual wheel axles, radial tires shall be used on the steering (i.e., front) axle only.

B) On vehicles having two single wheel axles, radial tires shall be used on the rear axle only.

d) WINDOWS

1) All applicable provisions of 49 CFR 571.205 apply to the optional laminated safety glass and also to any plastic materials used in a multiple glazed unit.

Glazing shall be marked as follows pursuant to 49 CFR 571.205:

A) Windshield − "AS 1" Glass

B) Driver's Window − "AS 1" Glass or "AS 2" Glass

C) Driver's door − "AS 1" Glass or "AS 2" Glass

D) All other locations − "AS 1" Glass, "AS 2" Glass, or "AS 3" Glass.

2) Emergency (Also see EMERGENCY EXITS)

When the emergency door is located on the left side, a rear emergency window shall be provided. Minimum dimensions are 16 inches high and 48 inches wide. Designed to be opened from the inside or the outside. Hinged on top, designed and operated to insure against accidental closing in an emergency. Inside handle shall provide for quick release. Outside handle shall be nondetachable and nonhitchable. When locked or not fully latched, window shall actuate alarm audible and visible to driver. No cutoff switch allowed.

Optional emergency windows are allowed. They must be labeled "Emergency Exit" in letters at least two inches high, of a color that contrasts with its background, located at the top of or directly above the window on the inside surface of the bus.

Optional emergency windows must be equipped with an audible alarm activated when window is locked or not fully latched.

3) Rear

All rear glazing shall be the fixed type. No portion of any rear window shall display any lettering, numerals or symbols that may obstruct the driver's view.

4) Side

Each side window shall provide unobstructed emergency opening at least 9 inches high and 22 inches wide, obtained either by lowering window or by use of knock-out type split sash.

Window latches must be in proper working order.

5) Windshield

Shall be installed between front corner posts and must be unobstructed. Non-reflective tinted film may be used along the uppermost portion of the windshield but must not extend more than six inches down from the top of the windshield. (See Sections 12-501 and 12-503 of the Illinois Vehicle Equipment Law.) Windshield shall be slanted to reduce glare.

e) WINDSHIELD WASHER

Windshield washer shall effectively clean entire area covered by both wipers.

f) WINDSHIELD WIPERS

Wipers shall be either two speed or variable speed with nonglare arms and blades. Blades need not be individually powered.