**Section 441.APPENDIX H Mirrors through Rub Rails**

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| a) | | MIRRORS | | | | |  | |
|  | | | | | | | PROCEDURES/SPECIFICATIONS:  Every required mirror shall be of reflecting material protected from abrasion, scratching, and corrosion. Mirror shall be firmly installed on stable supports so as to five a clear, stable, reflected view. Mirrors must meet all requirements of 49 CFR 571.111 to provide the required field of view.  Convex crossover mirrors can be combined with either the right or left side safety mirrors provided the convex mirror meets the field of view and size requirements established in this subsection or in 49 CFR 571.111. | |
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|  | | | | | | | REJECT VEHICLE IF:  Mirrors do not meet requirements; defective; excessively clouded; not securely attached; cracked or broken glass. | |
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|  | | | 1) | Exterior | | |  | |
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|  | | | | | A) | Rear View  Driving |  | |
|  | | | | | | PROCEDURES/SPECIFICATIONS:  Shall be mounted outside on the left and right sides of the bus. Must give seated driver a view to the rear along each side of the bus. Must be at least 50 square inches of usable flat rectangular reflecting surface on each side. (49 CFR 571.111)  If the rear view driving mirror does not provide the required field of view, a convex driving mirror must be installed to expand the driving view to the rear. However, the usable flat reflecting surface must be rectangular and must maintain at least 50 square inches. | |
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|  | | | | | B) | Right  Side  Safety |  | |
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|  | | | | | | PROCEDURES/SPECIFICATIONS:  An outside convex mirror, either alone or in combination with the crossover mirror system, shall give the seated driver a view of the roadway along the right side of the bus between the most forward surface of the right front tire and the rear of the rear bumper. The projected reflecting surface of this convex mirror shall be at least 40 square inches (7⅛ inches diameter if a circle).  Extra-wide-angle convex mirror heads are permissible on right front corner only.  Exception: A right safety mirror is optional on a bus manufactured in August 1974 or earlier. | |
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|  | | | | | C) | Left Side  Safety  (Optional) |  | |
|  | | | | | | | PROCEDURES/SPECIFICATIONS:  A convex mirror is required if the left rear view driving mirror system does not give the seated driver a reflected view of the roadway along the left side of the bus between the front edge or the driver's seat (in most forward position) and the rear of the rear bumper. The convex mirror shall be installed so that either alone or in combination with the rear view driving mirror gives the seated driver the proper view.  Exception: A left safety mirror is optional on a bus with chassis manufactured in March 1977 or earlier. | |
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|  | | | | | D) | Crossover |  | |
|  | | | | | | | PROCEDURES/SPECIFICATIONS:  An outside convex mirror shall give the seated driver a view of the front bumper and the area of roadway in front of the bus. The projected reflecting surface of this mirror shall be at least 40 square inches (7⅛ inch diameter if a circle). (49 CFR 571.111)  Exception: If the seated driver of a forward control bus has a direct view of the front bumper and the area of roadway in front of the bus, a crossover mirror is optional. | |
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|  | | | 2) | Interior | | | PROCEDURES/SPECIFICATIONS:  Clear view safety glass mirror, minimum 6 inches x 30 inches overall; framed with rounded and padded corners and edges. It shall afford good view of the bus interior and portions of the roadway to the rear.  Exception: All buses manufactured prior to September 1974 are exempt from padding on the mirror.  Exception: For buses that meet the definition of a Type I-A school bus, as defined in Section 441.40, the interior mirror may meet manufacturer's specifications. | |
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| b) | | PAINT  REQUIREMENTS | | | | |  | |
|  | | PROCEDURES/SPECIFICATIONS:  *The exterior of the body, excluding the required rails, shall be painted a uniform color, National School Bus Glossy Yellow. The front and rear bumpers, required rub rails and wheels shall be black. Additional rub rails may either be painted black or yellow. Grilles and hub caps may be a bright finish (e.g., chrome, anodized aluminum, etc.). Retaining rings may be gray or aluminum. Manufacturer's name or emblem may be any color but must not interfere with required lettering, numbering, or arrows. Roofs may be white.* (Section 12-801 of the Illinois Vehicle Equipment Law)  For buses manufactured on or after May 2, 1994, each opening for a required emergency exit must be outlined around its outside perimeter with a minimum 1 inch (2.54 cm) wide yellow retroreflective tape. This yellow retroreflective tape must be on the exterior surface of the bus. Required yellow retroreflective tape can be located on the rear bumper provided the space between the top of the bumper and bottom of the door is not adequate to accommodate the tape. (49 CFR 571.217)  Optional: A white roof may extend only to within 6 inches above the drip rails on the sides of the body. The front and rear roof caps shall remain National School Bus Glossy Yellow.  Optional: Black areas around flashers are permitted, but must not interfere with "SCHOOL BUS" lettering.  Optional: Reflectorized tape is permitted provided it reflects the same color that is applied to and is not located on any bumper unless the bus was manufactured on or after May 2, 1994 (see paragraph above).  Exception: *Fenders on buses manufactured prior to January 1976 may be painted black.* (Section 12-801 of the Illinois Vehicle Equipment Law)  Exception: Hoods may be lusterless black or lusterless school bus yellow. | |
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|  | | | | | | | REJECT VEHICLE IF:  Paint does not meet color requirements or is in poor condition (i.e., faded, peeling or rusted).  Optional black area around flashers interferes with required lettering.  Required or optional reflectorized tape does not meet color requirements. | |
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| c) | PROJECTIONS | | | | | |  | |
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|  | | | 1) | Exterior | | | PROCEDURES/SPECIFICATIONS:  Entire rear and bumper area of bus must be nonhitchable. | |
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|  | | | AGENCY NOTE: | | | | "Nonhitchable" is defined as the rear of the bus being designed and maintained to prevent or discourage riding or grasping rear of bus so as to "hitch" rides. | |
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|  | | | 2) | Interior | | | PROCEDURES/SPECIFICATIONS:  Interior shall be free of all dangerous projections.  Optional equipment (e.g., video camera) that is located in the bulkhead area of the bus and not flush with the interior walls must meet the following requirements: | |
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|  | | | | | | | 1) | Must not interfere with occupants entering or exiting the bus. |
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|  | | | | | | | 2) | Must not be located in driver's head impact zone. |
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|  | | | | | | | 3) | Must not obstruct required lettering. |
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|  | | | | | | | Additional projections (e.g., external speakers, air conditioners) located within 59 inches from the floor shall be padded to prevent injury. This includes inner lining of ceiling and walls. Installation of book racks is not permissible.  Exception: Buses purchased prior to September 1974 may be equipped with book racks. However, if book racks are present, they shall be above side windows and shall not extend forward of the front seat or across or above the emergency door. Racks must be free of projections likely to cause injury. | |
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|  | | | | AGENCY NOTE: | | | See RADIO NOISE for additional requirements. | |
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|  | | | | | | | REJECT VEHICLE IF:  Optional equipment in bulkhead does not meet requirements.  Remaining projections are not padded (e.g., external speakers). Book racks are present.  Flush mounted speakers are exempt from padding requirements.  For buses purchased prior to September 1974, book racks do not meet requirements. | |
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| d) | RADIO NOISE | | | | | | PROCEDURES/SPECIFICATIONS:  Radio/stereo speakers must be located at least four feet behind the rearmost position of the driver's seat. Any speaker already located in the prohibited area must be permanently deactivated. | |
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|  |  | | | | | | REJECT VEHICLE IF:  After January 1, 1999, speakers are located in a prohibited area or are not deactivated. | |
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|  | | | | AGENCY NOTE: | | | Two-way communication radios are allowed. | |
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| e) | REFLECTORS | | | | | |  | |
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|  | | | 1) | Front | | | PROCEDURES/SPECIFICATIONS:  *Two yellow rigid or sheet type* *(tape) front reflex reflectors shall be attached securely and as far forward as practicable.* (Section 12-202 of the Illinois Vehicle Equipment Law) They shall be located between 15 and 60 inches above the roadway at either fender, cowl, or body and installed so as to mark the outer edge of the maximum width of the bus. No part of the required reflecting material may be obscured by a lamp, mirror, bracket, or any other portion of the bus. No part of the required reflecting material may be more than 11.8 inches (300 mm) inboard of the outer edge of the nearest rub rail (12 inches on a bus with chassis manufactured in March 1977 or earlier). The reflector may be any shape (e.g., square, rectangle, circle, oval, etc.). A rigid type reflex reflector may be any size if permanently marked either DOT, SAE A, or SAE J 594; otherwise, it shall display at least seven square inches of reflecting material (about 3 inch diameter if a solid circle).  A sheet type (tape) reflex reflector may conform to the surface on which it is installed but its forward projected reflecting area shall be at least eight square inches. | |
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|  | | | 2) | Left Side | | | PROCEDURES/SPECIFICATIONS:  *One amber at or near the front and one red at or near the rear. Mounted at a height not less than 15 inches and not more than 60 inches above the surface of the road. On sides of buses 20 feet or more in length, one amber as near center as practicable must also be provided.* (Section 12-202 of the Illinois Vehicle Equipment Law) Minimum three inches in diameter. | |
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|  | | | 3) | Right Side | | | PROCEDURES/SPECIFICATIONS:  *One amber at or near the front and one red at or near the rear. Mounted at a height not less than 15 inches and not more than 60 inches above the surface of the road. On sides of buses 20 feet or more in length, one amber as near center as practicable must also be provided* (Section 12-202 of the Illinois Vehicle Equipment Law) Minimum three inches in diameter. | |
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|  | | | 4) | Rear | | | *Two red reflectors on rear body within 12 inches of lower right and lower left corners.* (Section 12-202 of the Illinois Vehicle Equipment Law) Minimum three inches in diameter. | |
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| f) | RUB RAILS | | | | | |  | |
|  | | | | | | | PROCEDURES/SPECIFICATIONS:  There shall be one rub rail located approximately at seat level which shall extend from the rear of the service entrance completely around the bus body without interruption, except at functioning doors or a rear engine compartment, to a point of curvature near the front of the body on the left side.  There shall be one rub rail on each side located approximately at the floor line which shall extend over the same longitudinal distance as the rub rail located at the seat level.  More than two rub rails may be installed on sides and rear of bus.  Rub rails of longitudinally corrugated or ribbed steel at least 3.9 inches (100 mm) wide shall be fixed on the outside of the bus.  Exceptions: | |
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|  | | | | | | | 1) | Rub rail need not extend across wheel housing. |
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(Source: Amended at 25 Ill. Reg. 3283, effective February 20, 2001)