

§ 238.115

multiple levels, each main level shall have a minimum of four emergency window exits, either in a staggered configuration where practical or with one exit located in each end of each side on each level.

(2) Each sleeping car, and any similarly designed car having a number of separate compartments intended to be occupied by passengers or train crewmembers, shall have at least one emergency window exit in each compartment.

(3) Each emergency window exit shall be designed to permit rapid and easy removal from the inside of the car during an emergency situation without requiring the use of a tool or other implement.

(b) Each emergency window exit in a passenger car, including a sleeper car, ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, shall have an unobstructed opening with minimum dimensions of 26 inches horizontally by 24 inches vertically. A seat back is not an obstruction if it can be moved away from the window opening without requiring the use of a tool or other implement.

(c) Emergency window exits shall be marked, and instructions provided for their use, as required by § 223.9(d) of this chapter.

[64 25660, May 12, 1999, as amended at 67 FR 19990, Apr. 23, 2002]

§ 238.115 Emergency lighting.

(a) This section applies to each passenger car ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002. This section applies to each level of a multi-level passenger car.

(b) Emergency lighting shall be provided in each passenger car and shall include the following:

(1) A minimum, average illumination level of 1 foot-candle measured at floor level adjacent to each exterior door and each interior door providing access to an exterior door (such as a door opening into a vestibule);

(2) A minimum, average illumination level of 1 foot-candle measured 25 inches above floor level along the center of each aisle and passageway;

(3) A minimum illumination level of 0.1 foot-candle measured 25 inches above floor level at any point along the center of each aisle and passageway; and

(4) A back-up power system capable of:

(i) Operating in all equipment orientations within 45 degrees of vertical;

(ii) Operating after the initial shock of a collision or derailment resulting in the following individually applied accelerations:

(A) Longitudinal: 8g;

(B) Lateral: 4g; and

(C) Vertical: 4g; and

(iii) Operating all emergency lighting for a period of at least 90 minutes without a loss of more than 40% of the minimum illumination levels specified in this paragraph (b).

§ 238.117 Protection against personal injury.

On or after November 8, 1999, all moving parts, high voltage equipment, electrical conductors and switches, and pipes carrying hot fluids or gases on all passenger equipment shall be appropriately equipped with interlocks or guards to minimize the risk of personal injury. This section does not apply to the interior of a private car.

§ 238.119 Rim-stamped straight-plate wheels.

(a)(1) Except as provided in paragraph (a)(2) of this section, on or after November 8, 1999, no railroad shall place or continue in service any vehicle, other than a private car, that is equipped with a rim-stamped straight-plate wheel if a brake shoe acts on the tread of the wheel for the purpose of slowing the vehicle.

(2) A commuter railroad may continue in service a vehicle equipped with a Class A, rim-stamped straight-plate wheel mounted on an inboard-bearing axle until the railroad exhausts its replacement stock of wheels held as of May 12, 1999, provided the railroad does not modify the operation of the vehicle in any way that would result in increased thermal input to the wheel during braking.

(b) A rim-stamped straight-plate wheel shall not be used as a replacement wheel on a private car that operates in a passenger train if a brake shoe acts on the tread of the wheel for the purpose of slowing the car.

(c) The requirements of this section do not apply to a wheel that is periodically tread-braked for a short duration by automatic circuitry for the sole purpose of cleaning the wheel tread surface.

Subpart C—Specific Requirements for Tier I Passenger Equipment

§ 238.201 Scope/alternative compliance.

(a) *Scope.* (1) This subpart contains requirements for railroad passenger equipment operating at speeds not exceeding 125 miles per hour. As stated in § 238.229, all such passenger equipment remains subject to the safety appliance requirements contained in Federal statute at 49 U.S.C. chapter 203 and in FRA regulations at part 231 and § 232.2 of this chapter. Unless otherwise specified, these requirements only apply to passenger equipment ordered on or after September 8, 2000 or placed in service for the first time on or after September 9, 2002.

(2) The structural standards of this subpart (§ 238.203-static end strength; § 238.205-anti-climbing mechanism; § 238.207-link between coupling mechanism and car body; § 238.209-forward-facing end structure of locomotives; § 238.211-collision posts; § 238.213-corner posts; § 238.215-rollover strength; § 238.217-side structure; § 238.219 -truck-to-car-body attachment; and § 238.223-locomotive fuel tanks) do not apply to passenger equipment if used exclusively on a rail line:

- (i) With no public highway-rail grade crossings;
- (ii) On which no freight operations occur at any time;
- (iii) On which only passenger equipment of compatible design is utilized; and
- (iv) On which trains operate at speeds not exceeding 79 mph.

(b) *Alternative compliance.* Passenger equipment of special design shall be deemed to comply with this subpart, other than § 238.203, for the service en-

vironment in which the petitioner proposes to operate the equipment if the FRA Associate Administrator for Safety determines under paragraph (c) of this section that the equipment provides at least an equivalent level of safety in such environment with respect to the protection of its occupants from serious injury in the case of a derailment or collision. In making a determination under paragraph (c) the Associate Administrator shall consider, as a whole, all of those elements of casualty prevention or mitigation relevant to the integrity of the equipment that are addressed by the requirements of this subpart.

(c)(1) The Associate Administrator may only make a finding of equivalent safety and compliance with this subpart, other than § 238.203, based upon a submission of data and analysis sufficient to support that determination. The petition shall include:

(i) The information required by § 238.21(c);

(ii) Information, including detailed drawings and materials specifications, sufficient to describe the actual construction of the equipment of special design;

(iii) Engineering analysis sufficient to describe the likely performance of the equipment in derailment and collision scenarios pertinent to the safety requirements for which compliance is required and for which the equipment does not conform to the specific requirements of this subpart; and

(iv) A quantitative risk assessment, incorporating the design information and engineering analysis described in this paragraph, demonstrating that the equipment, as utilized in the service environment for which recognition is sought, presents no greater hazard of serious personal injury than equipment that conforms to the specific requirements of this subpart.

(2) Any petition made under this paragraph is subject to the procedures set forth in § 238.21, and will be disposed of in accordance with § 238.21(g).

[64 25660, May 12, 1999, as amended at 67 FR 19990, Apr. 23, 2002]

§ 238.203 Static end strength.

(a)(1) Except as further specified in this paragraph or in paragraph (d), on