

(iii) A planned schedule for conducting the testing;

(iv) A description of the railroad property or facilities to be used to conduct the testing;

(v) A detailed description of how the testing is to be conducted, including a description of the criteria to be used to evaluate the equipment's performance;

(vi) A description of how the test results are to be recorded;

(vii) A description of any special instrumentation to be used during the tests;

(viii) A description of the information or data to be obtained;

(ix) A description of how the information or data obtained is to be analyzed or used;

(x) A description of any criteria to be used as safety limits during the testing;

(xi) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full-level testing results, the analysis to be done to justify the validity of the extrapolation shall be described;

(xii) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed;

(xiii) Criteria to be used for the revenue service operation of the equipment; and

(xiv) A description of any testing of the equipment that has previously been performed.

(2) Submit a copy of the plan to FRA at least 30 days prior to testing the equipment and include with that submission notification of the times and places of the pre-revenue service tests to permit FRA observation of such tests. For Tier II passenger equipment, the railroad shall obtain FRA approval of the plan under the procedures specified in § 238.21.

(3) Comply with the plan, including fully executing the tests required by the plan.

(4) Document in writing the results of the tests. For Tier II passenger equipment, the railroad shall report the results of the tests to the FRA Associate Administrator for Safety at least 90 days prior to its intended oper-

ation of the equipment in revenue service.

(5) Correct any safety deficiencies identified in the design of the equipment or in the inspection, testing, and maintenance procedures, uncovered during the testing. If safety deficiencies cannot be corrected by design changes, the railroad shall impose operational limitations on the revenue service operation of the equipment that are designed to ensure that the equipment can operate safely. For Tier II passenger equipment, the railroad shall comply with any operational limitations imposed by the FRA Associate Administrator for Safety on the revenue service operation of the equipment for cause stated following FRA review of the results of the test program. This section does not restrict a railroad from petitioning FRA for a waiver of a safety regulation under the procedures specified in part 211 of this chapter.

(6) Make the plan and documentation kept pursuant to that plan available for inspection and copying by FRA upon request.

(7) For Tier II passenger equipment, obtain approval from the FRA Associate Administrator for Safety prior to placing the equipment in revenue service. The Associate Administrator grants such approval upon a showing of the railroad's compliance with the applicable requirements of this part.

(c) If a railroad plans a major upgrade or introduction of new technology on Tier II passenger equipment that has been used in revenue service in the United States and that affects a safety system on such equipment, the railroad shall follow the procedures specified in paragraph (b) of this section prior to placing the equipment in revenue service with such a major upgrade or introduction of new technology.

§ 238.113 Emergency window exits.

(a) The following requirements apply on or after November 8, 1999—

(1) Each passenger car 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 of the passenger car. If the passenger car has

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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.