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shall be reattached to the equipment by mechanically fastening the safety appliance or the safety appliance bracket or support to the equipment unless such mechanical fastening is impractical due to the design of the equipment;

(iii) The railroad shall develop and comply with a written plan submitted to and approved by FRA's Associate Administrator for Safety detailing a schedule for all passenger equipment in that series of cars with a similar welded safety appliance bracket or support to have the involved safety appliance or the safety appliance bracket or support mechanically fastened to the equipment; and

(iv) If a railroad determines that the design of the equipment makes it impractical to mechanically fasten the safety appliance or the safety appliance bracket or support to the equipment, then the railroad shall submit a request to FRA for special approval of alternative compliance pursuant to § 238.21. Such a request shall explain the necessity for any relief sought and shall contain appropriate data and analysis supporting its determination that any alternative method of attachment provides at least an equivalent level of safety.

(k) *Records.* Railroads shall maintain written or electronic records of the inspection and repair of the welded safety appliance brackets or supports on any equipment identified in paragraph (e) of this section. The records shall be made available to FRA upon request. At a minimum, these records shall include all of the following:

(1) Training or certification records for any person performing any of the inspections or repairs required in this section.

(2) The date, time, location, and identification of the person performing the initial and periodic safety appliance inspections for each piece of equipment identified in paragraph (e) of this section. This includes the identification of the person making any final determination as to the existence of a defect under paragraph (i)(5) of this section.

(3) A record of all passenger equipment found with a safety appliance weldment that is defective either during the initial or periodic safety appli-

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ance inspection or while the equipment is in-service. This record shall also identify the cause of the crack or fracture.

(4) The date, time, location, identification of the person making the repair, and the nature of the repair to any welded safety appliance bracket or support identified in paragraph (e) of this section.

[71 FR 61858, Oct. 19, 2006, as amended at 74 FR 25174, May 27, 2009]

**§ 238.230 Safety appliances—new equipment.**

(a) *Applicability.* This section applies to passenger equipment placed in service on or after January 1, 2007.

(b) *Welded safety appliances.* Except as provided in this section, all passenger equipment placed into service on or after January 1, 2007, that is equipped with a safety appliance, required by the "manner of application" provisions in part 231 of this chapter to be attached by a mechanical fastener (*i.e.*, bolts, rivets, or screws), shall have the safety appliance and any bracket or support necessary to attach the safety appliance to the piece of equipment mechanically fastened to the piece of equipment.

(1) *Safety appliance brackets or supports considered part of the car body.* Safety appliance brackets or supports will be considered part of the car body and will not be required to be mechanically fastened to the piece of passenger equipment if all of the following are met:

(i) The bracket or support is welded to a surface of the equipment's body that is at a minimum 3/16-inch sheet steel or structurally reinforced to provide the equivalent strength and rigidity of 3/16-inch sheet steel;

(ii) The area of the weld is sufficient to ensure a minimum weld strength, based on yield, of three times the strength of the number of SAE grade 2, ½ inch diameter bolts that would be required for each attachment;

(iii) Except for any access required for attachment of the safety appliance, the weld is continuous around the perimeter of the surface of the bracket or support;

(iv) The attachment is made with fillet welds at least 3/16-inch in size;

(v) The weld is designed for infinite fatigue life in the application that it will be placed;

(vi) The weld is performed in accordance with the welding process and the quality control procedures contained in the current American Welding Society (AWS) Standard, the Canadian Welding Bureau (CWB) Standard, or an equivalent nationally or internationally recognized welding standard;

(vii) The weld is performed by an individual possessing the qualifications to be certified under the current AWS Standard, CWB Standard, or any equivalent nationally or internationally recognized welding qualification standard;

(viii) The weld is inspected by an individual qualified to determine that all of the conditions identified in paragraph (b)(1)(i) through (b)(1)(vii) of this section are met prior to the equipment being placed in service; and

(ix) A written or electronic record of the inspection required in paragraph (b)(1)(viii) of this section shall be retained by the railroad operating the equipment and shall be provided to FRA upon request. At a minimum, this record shall include the date, time, location, identification of the person performing the inspection, and the qualifications of the person performing the inspection.

(2) *Directly welded safety appliances.* Passenger equipment that is equipped with a safety appliance that is directly attached to the equipment by welding (*i.e.*, no mechanical fastening of any kind) may be placed in service only if the railroad meets the following:

(i) The railroad submits a written list to FRA that identifies each piece of new passenger equipment equipped with a welded safety appliance as described in paragraph (b)(2) of this section and provides a description of the specific safety appliance;

(ii) The railroad provides a detailed basis as to why the design of the vehicle or placement of the safety appliance requires that the safety appliance be directly welded to the equipment; and

(iii) The involved safety appliance(s) on such equipment are inspected and handled pursuant to the requirements contained in § 238.229(g) through (k).

(3) *Other welded safety appliances and safety appliance brackets and supports.* Except for safety appliance brackets and supports identified in paragraph (b)(1) of this section, safety appliance brackets and supports on passenger equipment shall not be welded to the car body unless the design of the equipment makes it impractical to mechanically fasten the safety appliance and it is impossible to meet the conditions for considering the bracket or support part of the car body contained in paragraph (b)(1) of this section. Prior to placing a piece of passenger equipment in service with a welded safety appliance bracket or support as described in this paragraph, the railroad shall submit documentation to FRA, for FRA's review and approval, containing all of the following information:

(i) Identification of the equipment by number, type, series, operating railroad, and other pertinent data;

(ii) Identification of the safety appliance bracket(s) or support(s) not mechanically fastened to the equipment and not considered part of the car body under paragraph (b)(1) of this section;

(iii) A detailed analysis describing the necessity to attach the safety appliance bracket or support to the equipment by a means other than mechanical fastening;

(iv) A detailed analysis describing the inability to make the bracket or support part of the car body as provided for in paragraph (b)(1) of this section; and

(v) A copy and description of the consensus or other appropriate industry standard used to ensure the effectiveness and strength of the attachment;

(c) *Inspection and repair.* Passenger equipment with a welded safety appliance or a welded safety appliance bracket or support will be considered defective and shall be handled in accordance with § 238.17(e) if any part or portion of the weld is defective as defined in § 238.229(d). When appropriate, civil penalties for improperly using or hauling a piece of equipment with a defective welded safety appliance or safety appliance bracket or support addressed in this section will be assessed pursuant to the penalty schedule contained in Appendix A to part 231 of this

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chapter under the appropriate defect code contained therein.

(1) Any safety appliance bracket or support approved by FRA pursuant to paragraph (b)(3) of this section shall be inspected and handled in accordance with the requirements contained in § 238.229(g) through (k).

(2) Any repair to a safety appliance bracket or support considered to be part of the car body under paragraph (b)(1) of this section shall be conducted in accordance with APTA Standard SS-C&S-020-03—Standard for Passenger Rail Vehicle Structural Repair (September 2003), or an alternative procedure approved by FRA pursuant to § 238.21, and shall ensure that the repair meets the requirements contained in paragraphs (b)(1)(i) through (b)(1)(vii) of this section. The Director of the Federal Register approves incorporation by reference of the APTA Standard SS-C&S-020-03 (September 2003), “Standard for Passenger Rail Vehicle Structural Repair,” in this section in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of the incorporated standard from the American Public Transportation Association, 1666 K Street, Washington, DC 20006. You may inspect a copy of the incorporated standard at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue, SE., Washington, DC 20590 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(d) *Passenger cars of special construction.* A railroad or a railroad’s recognized representative may submit a request for special approval of alternative compliance pursuant to § 238.21 relating to the safety appliance arrangements on any passenger car considered a car of special construction under § 231.18 of this chapter. Any such petition shall be in the form of an industry-wide standard and at a minimum shall:

(1) Identify the type(s) of car to which the standard would be applicable;

(2) As nearly as possible, based upon the design of the equipment, ensure that the standard provides for the same complement of handholds, sill steps, ladders, hand or parking brakes, running boards, and other safety appliances as are required for a piece of equipment of the nearest approximate type already identified in part 231 of this chapter;

(3) Comply with all statutory requirements relating to safety appliances contained at 49 U.S.C. 20301 and 20302;

(4) Specifically address the number, dimension, location, and manner of application of each safety appliance contained in the standard;

(5) Provide specific analysis regarding why and how the standard was developed and specifically discuss the need or benefit of the safety appliance arrangement contained in the standard;

(6) Include drawings, sketches, or other visual aids that provide detailed information relating to the design, location, placement, and attachment of the safety appliances; and

(7) Demonstrate the ergonomic suitability of the proposed arrangements in normal use.

(e) Any industry standard approved pursuant to § 238.21 will be enforced against any person who violates any provision of the approved standard or causes the violation of any such provision. Civil penalties will be assessed under part 231 of this chapter by using the applicable defect code contained in appendix A to part 231 of this chapter.

[71 FR 61860, Oct. 19, 2006, as amended at 74 FR 25174, May 27, 2009]

### § 238.231 Brake system.

Except as otherwise provided in this section, on or after September 9, 1999 the following requirements apply to all passenger equipment and passenger trains.

(a) A passenger train’s primary brake system shall be capable of stopping the train with a service application from its maximum authorized operating speed within the signal spacing existing on the track over which the train is operating.

(b) Where practicable, the design of passenger equipment ordered on or