

**§ 213.349**

**49 CFR Ch. II (10–1–02 Edition)**

(b) If train operation is projected at Class 7 speed for a track segment that will include rail-highway grade crossings, the track owner shall submit for FRA's approval a complete description of the proposed warning/barrier system to address the protection of highway traffic and high speed trains. Trains shall not operate at Class 7 speeds over any track segment having highway-rail grade crossings unless:

- (1) An FRA-approved warning/barrier system exists on that track segment; and
- (2) All elements of that warning/barrier system are functioning.

**§ 213.349 Rail end mismatch.**

Any mismatch of rails at joints may not be more than that prescribed by the following table—

Class of track	Any mismatch of rails at joints may not be more than the following—	
	On the tread of the rail ends (inch)	On the gage side of the rail ends (inch)
Class 6, 7, 8 and 9 .....	1/8	1/8

**§ 213.351 Rail joints.**

- (a) Each rail joint, insulated joint, and compromise joint shall be of a structurally sound design and dimensions for the rail on which it is applied.
- (b) If a joint bar is cracked, broken, or because of wear allows excessive vertical movement of either rail when all bolts are tight, it shall be replaced.
- (c) If a joint bar is cracked or broken between the middle two bolt holes it shall be replaced.
- (d) Each rail shall be bolted with at least two bolts at each joint.
- (e) Each joint bar shall be held in position by track bolts tightened to allow the joint bar to firmly support the abutting rail ends and to allow longitudinal movement of the rail in the joint to accommodate expansion and contraction due to temperature variations. When no-slip, joint-to-rail contact exists by design, the requirements of this section do not apply. Those locations, when over 400 feet long, are considered to be continuous welded rail track and shall meet all the requirements for continuous welded rail track prescribed in this subpart.
- (f) No rail shall have a bolt hole which is torch cut or burned.
- (g) No joint bar shall be reconfigured by torch cutting.

**§ 213.352 Torch cut rail.**

- (a) Except as a temporary repair in emergency situations no rail having a torch cut end shall be used. When a rail

- end with a torch cut is used in emergency situations, train speed over that rail shall not exceed the maximum allowable for Class 2 track. All torch cut rail ends in Class 6 shall be removed within six months of September 21, 1998.
- (b) Following the expiration of the time limits specified in paragraph (a) of this section, any torch cut rail end not removed shall be removed within 30 days of discovery. Train speed over that rail shall not exceed the maximum allowable for Class 2 track until removed.

**§ 213.353 Turnouts, crossovers, and lift rail assemblies or other transition devices on moveable bridges.**

- (a) In turnouts and track crossings, the fastenings must be intact and maintained so as to keep the components securely in place. Also, each switch, frog, and guard rail shall be kept free of obstructions that may interfere with the passage of wheels. Use of rigid rail crossings at grade is limited per § 213.347.
- (b) Track shall be equipped with rail anchoring through and on each side of track crossings and turnouts, to restrain rail movement affecting the position of switch points and frogs. Elastic fasteners designed to restrict longitudinal rail movement are considered rail anchoring.
- (c) Each flangeway at turnouts and track crossings shall be at least 1½ inches wide.

(d) For all turnouts and crossovers, and lift rail assemblies or other transition devices on moveable bridges, the track owner shall prepare an inspection and maintenance Guidebook for use by railroad employees which shall be submitted to the Federal Railroad Administration. The Guidebook shall contain at a minimum—

(1) Inspection frequency and methodology including limiting measurement values for all components subject to wear or requiring adjustment.

(2) Maintenance techniques.

(e) Each hand operated switch shall be equipped with a redundant operating mechanism for maintaining the security of switch point position.

**§ 213.355 Frog guard rails and guard faces; gage.**

The guard check and guard face gages in frogs shall be within the limits prescribed in the following table—

Class of track	Guard check gage—The distance between the gage line of a frog to the guard line <sup>1</sup> of its guard rail or guarding face, measured across the track at right angles to the gage line, <sup>2</sup> may not be less than—	Guard face gage—The distance between guard lines, <sup>1</sup> measured across the track at right angles to the gage line, <sup>2</sup> may not be more than—
Class 6 track .....	4'6½"	4'5"
Class 7 track .....	4'6½"	4'5"
Class 8 track .....	4'6½"	4'5"
Class 9 track .....	4'6½"	4'5"

<sup>1</sup> A line along that side of the flangeway which is nearer to the center of the track and at the same elevation as the gage line.  
<sup>2</sup> A line ⅝ inch below the top of the center line of the head of the running rail, or corresponding location of the tread portion of the track structure.

**§ 213.357 Derails.**

(a) Each track, other than a main track, which connects with a Class 7, 8 or 9 main track shall be equipped with a functioning derail of the correct size and type, unless railroad equipment on the track, because of grade characteristics cannot move to foul the main track.

(b) For the purposes of this section, a derail is a device which will physically stop or divert movement of railroad rolling stock or other railroad on-track equipment past the location of the device.

(c) Each derail shall be clearly visible. When in a locked position, a derail shall be free of any lost motion which would prevent it from performing its intended function.

(d) Each derail shall be maintained to function as intended.

(e) Each derail shall be properly installed for the rail to which it is applied.

(f) If a track protected by a derail is occupied by standing railroad rolling stock, the derail shall be in derailing position.

(g) Each derail on a track which is connected to a Class 7, 8 or 9 main track shall be interconnected with the signal system.

**§ 213.359 Track stiffness.**

(a) Track shall have a sufficient vertical strength to withstand the maximum vehicle loads generated at maximum permissible train speeds, cant deficiencies and surface defects. For purposes of this section, vertical track strength is defined as the track capacity to constrain vertical deformations so that the track shall return following maximum load to a configuration in compliance with the vehicle/track interaction safety limits and geometry requirements of this subpart.

(b) Track shall have sufficient lateral strength to withstand the maximum thermal and vehicle loads generated at maximum permissible train speeds, cant deficiencies and lateral alignment defects. For purposes of this section lateral track strength is defined as the track capacity to constrain lateral deformations so that track shall return following maximum load to a configuration in compliance with the vehicle/track interaction safety limits and geometry requirements of this subpart.

**§ 213.361 Right of way.**

The track owner in Class 8 and 9 shall submit a barrier plan, termed a "right-of-way plan," to the Federal Railroad Administration for approval.