

§213.339

(12) *Flattened rail* means a short length of rail, not a joint, which has flattened out across the width of the rail head to a depth of $\frac{3}{8}$ inch or more below the rest of the rail. Flattened rail occurrences have no repetitive regularity and thus do not include corrugations, and have no apparent localized cause such as a weld or engine burn. Their individual length is relatively short, as compared to a condition such as head flow on the low rail of curves.

(13) *Bolt hole crack* means a crack across the web, originating from a bolt hole, and progressing on a path either inclined upward toward the rail head or inclined downward toward the base. Fully developed bolt hole cracks may continue horizontally along the head/web or base/web fillet, or they may progress into and through the head or base to separate a piece of the rail end from the rail. Multiple cracks occurring in one rail end are considered to be a single defect. However, bolt hole cracks occurring in adjacent rail ends within the same joint shall be reported as separate defects.

(14) *Defective weld* means a field or plant weld containing any discontinuities or pockets, exceeding 5 percent of the rail head area individually or 10 percent in the aggregate, oriented in or near the transverse plane, due to incomplete penetration of the weld metal between the rail ends, lack of fusion between weld and rail end metal, entrainment of slag or sand, under-bead or other shrinkage cracking, or fatigue cracking. Weld defects may originate in the rail head, web, or base, and in some cases, cracks may progress from the defect into either or both adjoining rail ends.

(15) *Head and web separation* means a progressive fracture, longitudinally separating the head from the web of the rail at the head fillet area.

[63 FR 34029, June 22, 1998; 63 FR 51638, Sept. 28, 1998]

§213.339 Inspection of rail in service.

(a) A continuous search for internal defects shall be made of all rail in track at least twice annually with not less than 120 days between inspections.

(b) Inspection equipment shall be capable of detecting defects between

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joint bars, in the area enclosed by joint bars.

(c) Each defective rail shall be marked with a highly visible marking on both sides of the web and base.

(d) If the person assigned to operate the rail defect detection equipment being used determines that, due to rail surface conditions, a valid search for internal defects could not be made over a particular length of track, the test on that particular length of track cannot be considered as a search for internal defects under §213.337(a).

(e) If a valid search for internal defects cannot be conducted for reasons described in paragraph (d) of this section, the track owner shall, before the expiration of time limits—

(1) Conduct a valid search for internal defects;

(2) Reduce operating speed to a maximum of 25 miles per hour until such time as a valid search for internal defects can be made; or

(3) Remove the rail from service.

§213.341 Initial inspection of new rail and welds.

The track owner shall provide for the initial inspection of newly manufactured rail, and for initial inspection of new welds made in either new or used rail. A track owner may demonstrate compliance with this section by providing for:

(a) *In-service inspection*—A scheduled periodic inspection of rail and welds that have been placed in service, if conducted in accordance with the provisions of §213.339, and if conducted not later than 90 days after installation, shall constitute compliance with paragraphs (b) and (c) of this section;

(b) *Mill inspection*—A continuous inspection at the rail manufacturer's mill shall constitute compliance with the requirement for initial inspection of new rail, provided that the inspection equipment meets the applicable requirements specified in §213.339. The track owner shall obtain a copy of the manufacturer's report of inspection and retain it as a record until the rail receives its first scheduled inspection under §213.339;

(c) *Welding plant inspection*—A continuous inspection at a welding plant, if

conducted in accordance with the provisions of paragraph (b) of this section, and accompanied by a plant operator's report of inspection which is retained as a record by the track owner, shall constitute compliance with the requirements for initial inspection of new rail and plant welds, or of new plant welds made in used rail; and

(d) *Inspection of field welds*—An initial inspection of field welds, either those joining the ends of CWR strings or those made for isolated repairs, shall be conducted not less than one day and not more than 30 days after the welds have been made. The initial inspection may be conducted by means of portable test equipment. The track owner shall retain a record of such inspections until the welds receive their first scheduled inspection under § 213.339.

(e) Each defective rail found during inspections conducted under paragraph (a) or (d) of this section shall be marked with highly visible markings on both sides of the web and base and the remedial action as appropriate under § 213.337 will apply.

§ 213.343 Continuous welded rail (CWR).

Each track owner with track constructed of CWR shall have in effect and comply with written procedures which address the installation, adjustment, maintenance and inspection of CWR, and a training program for the application of those procedures, which shall be submitted to the Federal Railroad Administration by March 21, 1999. FRA reviews each plan for compliance with the following—

(a) Procedures for the installation and adjustment of CWR which include—

(1) Designation of a desired rail installation temperature range for the geographic area in which the CWR is located; and

(2) De-stressing procedures/methods which address proper attainment of the desired rail installation temperature range when adjusting CWR.

(b) Rail anchoring or fastening requirements that will provide sufficient restraint to limit longitudinal rail and crosstie movement to the extent practical, and specifically addressing CWR rail anchoring or fastening patterns on

bridges, bridge approaches, and at other locations where possible longitudinal rail and crosstie movement associated with normally expected train-induced forces, is restricted.

(c) Procedures which specifically address maintaining a desired rail installation temperature range when cutting CWR including rail repairs, in-track welding, and in conjunction with adjustments made in the area of tight track, a track buckle, or a pull-apart. Rail repair practices shall take into consideration existing rail temperature so that—

(1) When rail is removed, the length installed shall be determined by taking into consideration the existing rail temperature and the desired rail installation temperature range; and

(2) Under no circumstances should rail be added when the rail temperature is below that designated by paragraph (a)(1) of this section, without provisions for later adjustment.

(d) Procedures which address the monitoring of CWR in curved track for inward shifts of alignment toward the center of the curve as a result of disturbed track.

(e) Procedures which control train speed on CWR track when —

(1) Maintenance work, track rehabilitation, track construction, or any other event occurs which disturbs the roadbed or ballast section and reduces the lateral and/or longitudinal resistance of the track; and

(2) In formulating the procedures under this paragraph (e), the track owner shall—

(i) Determine the speed required, and the duration and subsequent removal of any speed restriction based on the restoration of the ballast, along with sufficient ballast re-consolidation to stabilize the track to a level that can accommodate expected train-induced forces. Ballast re-consolidation can be achieved through either the passage of train tonnage or mechanical stabilization procedures, or both; and

(ii) Take into consideration the type of crossties used.

(f) Procedures which prescribe when physical track inspections are to be performed to detect buckling prone