

Federal Railroad Administration, DOT

§ 213.331

of these vehicle types at such cant deficiencies and track class on any other track segment is permitted only in accordance with the qualification requirements in this subpart.

(i) As used in this section and in §§ 213.333 and 213.345—

(1) *Vehicle* means a locomotive, as defined in § 229.5 of this chapter; a freight car, as defined in § 215.5 of this chapter; a passenger car, as defined in § 238.5 of this chapter; and any rail rolling equipment used in a train with either a freight car or a passenger car.

(2) *Vehicle type* means like vehicles with variations in their physical properties, such as suspension, mass, interior arrangements, and dimensions that do not result in significant changes to their dynamic characteristics.

[78 FR 16105, Mar. 13, 2013]

§ 213.331 Track surface.

(a) For a single deviation in track surface, each track owner shall maintain the surface of its track within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform ¹ profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	1	1	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	1	1	1	¾
Except as provided in paragraph (b) of this section, the deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¾	1½	1¼	1
The deviation from zero crosslevel at any point on tangent track may not be more than ²	1	1	1	1
Reverse elevation on curves may not be more than	½	½	½	½
The difference in crosslevel between any two points less than 62 feet apart may not be more than ³	1½	1½	1¼	1
On curved track, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1⅙	1	¾

¹ Uniformity for profile is established by placing the midpoint of the specified chord at the point of maximum measurement.
² If physical conditions do not permit a spiral long enough to accommodate the minimum length of runoff, part of the runoff may be on tangent track.
³ However, to control harmonics on jointed track with staggered joints, the crosslevel differences shall not exceed 1 inch in all of six consecutive pairs of joints, as created by seven low joints. Track with joints staggered less than 10 feet apart shall not be considered as having staggered joints. Joints within the seven low joints outside of the regular joint spacing shall not be considered as joints for purposes of this footnote.

(b) For operations at a qualified cant deficiency, E_u , of more than 5 inches, a single deviation in track surface shall be within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1	1 ¹	¾
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1½	1¼	1¼	1

¹ For curves with a qualified cant deficiency, E_u , of more than 7 inches, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than three-quarters of an inch.

(c) For three or more non-overlapping deviations in track surface occurring within a distance equal to five times the specified chord length, each of which exceeds the limits in the following table, each track owner shall maintain the surface of the track within the limits prescribed for each deviation:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	¾	¾	½	⅜
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	¾	¾	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¼	1	⅞	⅝

[78 FR 16106, Mar. 13, 2013]

§ 213.332 Combined track alinement and surface deviations.

(a) This section applies to any curved track where operations are conducted at a qualified cant deficiency, E_u , greater than 5 inches, and to all Class 9 track, either curved or tangent.

(b) For the conditions defined in paragraph (a) of this section, the combination of alinement and surface deviations for the same chord length on the outside rail in a curve and on any of the two rails of a tangent section, as measured by a TGMS, shall comply with the following formula:

$$\frac{3}{4} \times \left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| \leq 1$$

Where—

A_m = measured alinement deviation from uniformity (outward is positive, inward is negative).

A_L = allowable alinement limit as per § 213.327(c) (always positive) for the class of track.

S_m = measured profile deviation from uniformity (down is positive, up is negative).

S_L = allowable profile limit as per § 213.331(a) and § 213.331(b) (always positive) for the class of track.

$$\left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| = \text{the absolute (positive) value of the result of } \frac{A_m}{A_L} + \frac{S_m}{S_L} .$$

[78 FR 16107, Mar. 13, 2013]

§ 213.333 Automated vehicle-based inspection systems.

(a) A qualifying Track Geometry Measurement System (TGMS) shall be operated at the following frequency:

(1) For operations at a qualified cant deficiency, E_u , of more than 5 inches on track Classes 1 through 5, at least twice per calendar year with not less than 120 days between inspections.

(2) For track Class 6, at least once per calendar year with not less than 170 days between inspections. For operations at a qualified cant deficiency, E_u , of more than 5 inches on track

Class 6, at least twice per calendar year with not less than 120 days between inspections.

(3) For track Class 7, at least twice within any 120-day period with not less than 25 days between inspections.

(4) For track Classes 8 and 9, at least twice within any 60-day period with not less than 12 days between inspections.

(b) A qualifying TGMS shall meet or exceed minimum design requirements which specify that—

(1) Track geometry measurements shall be taken no more than 3 feet away from the contact point of wheels carrying a vertical load of no less than