§ 213.55 Alinement.

Alinement may not deviate from uniformity more than the amount prescribed in the following table:

Class of track	Tangent track	Curved track	
	The deviation of the mid-offset from a 62-foot line[1] may not be more than—(inches)	The deviation of the mid-ordinate from a 31-foot chord[2] may not be more than—(inches)	The deviation of the mid-ordinate from a 62-foot chord[2] may not be more than—(inches)
Class 1 track	5	[3] N/A	5
Class 2 track	3	[3] N/A	3
Class 3 track	1¾	1¼	1¾
Class 4 track	1½	1	1½
Class 5 track	¾	½	⅝

[1] The ends of the line shall be at points on the gage side of the line rail, five-eighths of an inch below the top of the railhead. Either rail may be used as the line rail, however, the same rail shall be used for the full length of that tangential segment of track.

[2] The ends of the chord shall be at points on the gage side of the outer rail, five-eighths of an inch below the top of the railhead.

[3] N/A—Not Applicable.

§ 213.57 Curves; elevation and speed limitations.

(a) The maximum crosslevel on the outside rail of a curve may not be more than 8 inches on track Classes 1 and 2 and 7 inches on Classes 3 through 5. Except as provided in § 213.63, the outside rail of a curve may not be lower than the inside rail. (The first sentence of paragraph (a) is applicable September 21, 1999.)

(b)(1) The maximum allowable operating speed for each curve is determined by the following formula—

$$V_{max} = \sqrt{\frac{E_a + 3}{0.0007D}}$$

Where—

V_{max} = Maximum allowable operating speed (miles per hour).

E_a = Actual elevation of the outside rail (inches).[1]

D = Degree of curvature (degrees).[2]

(2) Table 1 of Appendix A is a table of maximum allowable operating speed computed in accordance with this formula for various elevations and degrees of curvature.

(c)(1) For rolling stock meeting the requirements specified in paragraph (d) of this section, the maximum operating speed for each curve may be determined by the following formula—

$$V_{max} = \sqrt{\frac{E_a + 4}{0.0007D}}$$

Where—

V_{max} = Maximum allowable operating speed (miles per hour).

E_a = Actual elevation of the outside rail (inches).[1]

D = Degree of curvature (degrees).[2]

(2) Table 2 of Appendix A is a table of maximum allowable operating speed computed in accordance with this formula for various elevations and degrees of curvature.

(d) Qualified equipment may be operated at curving speeds determined by the formula in paragraph (c) of this section, provided each specific class of equipment is approved for operation by the Federal Railroad Administration and the railroad demonstrates that:

(1) When positioned on a track with a uniform 4-inch superelevation, the roll angle between the floor of the equipment and the horizontal does not exceed 5.7 degrees; and

(2) When positioned on a track with a uniform 6 inch superelevation, no

[1] Actual elevation for each 155 foot track segment in the body of the curve is determined by averaging the elevation for 10 points through the segment at 15.5 foot spacing. If the curve length is less than 155 feet, average the points through the full length of the body of the curve.

[2] Degree of curvature is determined by averaging the degree of curvature over the same track segment as the elevation.