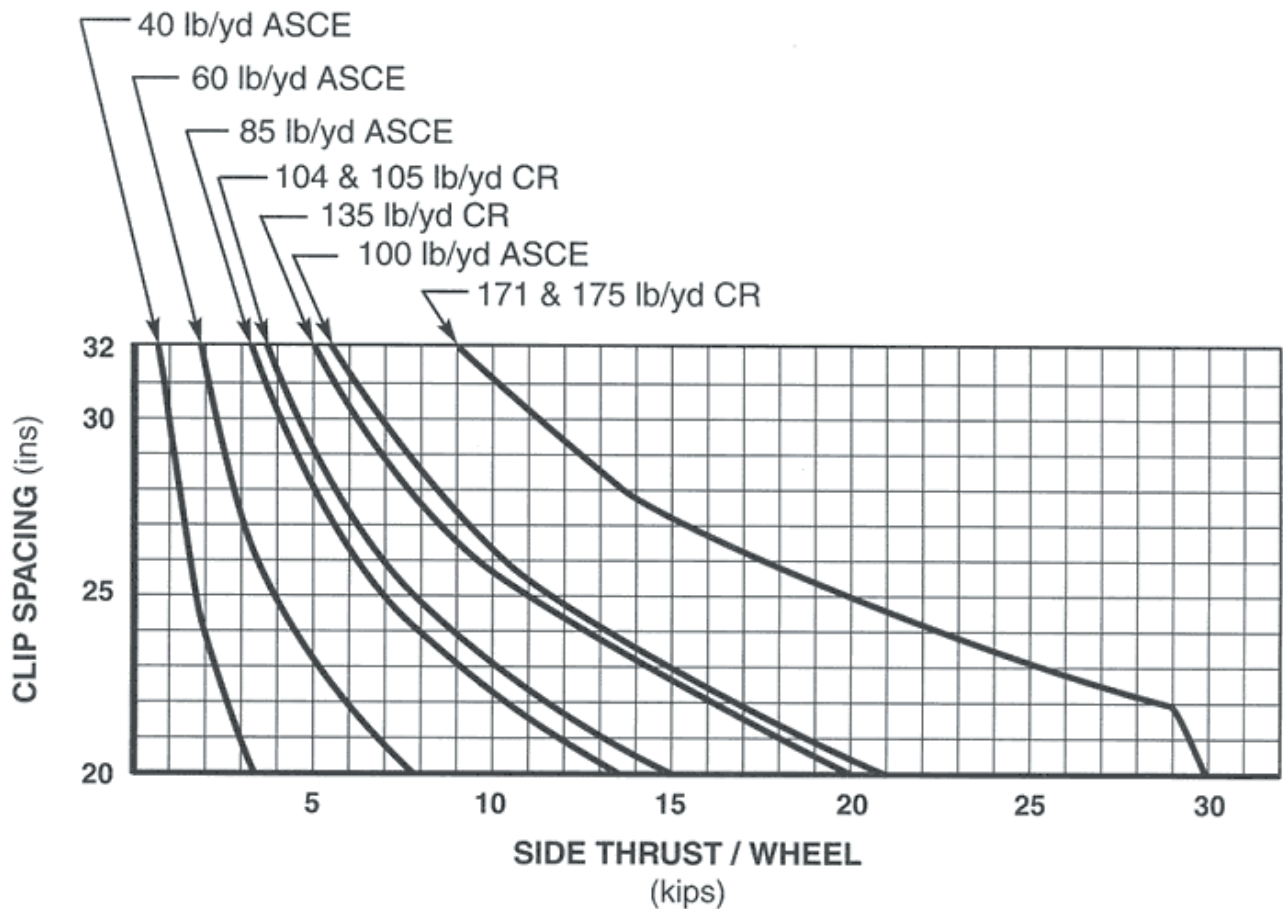


CONTINUOUSLY SUPPORTED RAIL ON GANTREX PAD

The graph is based on a horizontal load (side thrust) of 15% of vertical wheel load and a rail yield stress of 75 ksi.



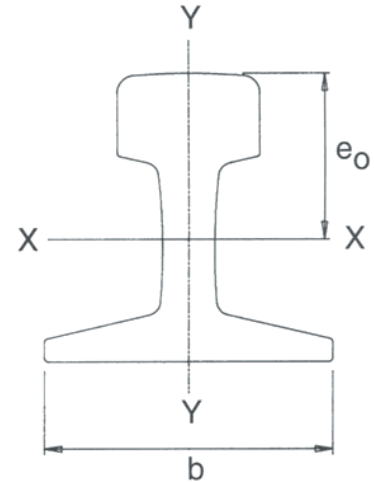
CONTINUOUSLY SUPPORTED RAIL WITHOUT GANTREX PAD

Gantrex suggests that the clip spacing calculation be based on rail with pad to allow for future pad installation. If pad is never to be used, consult Gantrex for a clip spacing recommendation.

GANTREX CLIP SPACING GUIDE

RAIL DATA (NORTH AMERICAN)

RAIL SIZE (lbs/yd)	I_{xx} (ins ⁴)	I_{yy} (ins ⁴)	e_0 (ins)	a (ins ²)	b (ins)	S (ins)
40 ASCE	6.54	2.00	1.94	3.94	3.50	8.65
60 ASCE	14.56	4.40	2.20	5.93	4.25	10.07
85 ASCE	30.07	7.70	2.72	8.33	5.19	11.48
100 ASCE	43.97	13.20	3.02	9.84	5.75	12.31
104 CR	29.84	8.56	2.57	10.29	5.00	11.57
105 CR	34.41	9.40	2.98	10.30	5.19	11.38
135 CR	50.82	12.07	2.95	13.32	5.19	13.09
171 CR	73.40	23.80	3.38	16.81	6.00	13.84
175 CR	70.51	21.65	3.34	17.12	6.00	13.70



For rail sizes not shown on the graphs, consult Gantrex or determine spacing from the following formulae:

$$\text{Let } \ell = \text{max clip spacing} = \sqrt[3]{\frac{0.48 E I_{yy}}{H \times 10^3}} \text{ ins.}$$

and check that $f_V + f_H + f_T \geq 45,000$ psi

$$\text{Where } f_V = \frac{V S e_0 \times 10^3}{4 I_{xx}} \text{ psi}$$

$$f_H = \frac{0.1707 H \ell b \times 10^3}{2 I_{yy}} \text{ psi}$$

$$f_T = \frac{T}{A} \text{ psi}$$

V = Vertical wheel load, kips

H = Horizontal (side thrust) load, kips

T = Longitudinal load, kips

$$S = \text{Characteristic length of rail} = \sqrt[4]{\frac{4 E I_{xx}}{bk}} \text{ ins}$$

k = Pad stiffness = 40,000 lbs/in³ (average value)

b = Rail flange width, ins.

a = cross-sectional area of rail, ins²

NOTE: If H is greater than 15% V , or greater than the value shown at 20" spacing for the rail in question, consult GANTREX.



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