



Supplying rails worldwide

Solutions for any railroad,
transit or industrial requirement.



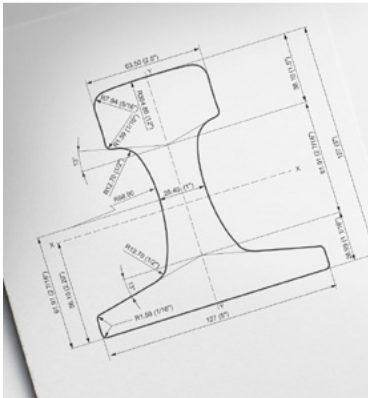
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Quality rails, on time

Since 1993, M.F. Wirth Rail Corporation has been dedicated to supplying the highest quality rails for demanding applications. From our offices in Canada and the United States, we proudly represent top rail mills and equipment suppliers from around the world. Although Wirth Rail's business activities are concentrated in the Americas, we regularly ship rail to every continent. Our diverse team of men and women are pleased to serve you in the four business languages of the Americas: English, French, Spanish and Portuguese.

Who buys our products?

- **Heavy Haul Railways**
(Class I and Class II)
- **Public Transit Authorities**
- **Industrial users**
- **Mines**
- **Crane and equipment Manufacturers**
- **Rail Distributors**
(who provide rails to local contractors)



Quality & Excellence

Wirth Rail's products meet or exceed customer requirements and the latest industry standards. Our suppliers are fully-integrated, ISO 9001-certified rail mills.

Testing varies with the specifications of each rail type, but our rails are generally subjected to checks for:

- Hardness, Strength & Ductility
- Straightness
- Flatness & Sweep
- Squareness & Symmetry
- End Straightness
- Internal flaws by Ultrasonic Testing
- Visual flaws



Our Products & Services

Wirth Rail has been growing its portfolio of products and services for more than ¼ century. Rail is the core of our business, and we have been able to extend this range by offering installation Hardware, Manufactured solutions and On-time Logistics.

Rail Types we offer include:

- Transport (American & European)
- Crane (American, European & Specialty)
- Light (American & European)
- Grooved
- Block
- Contact
- Guard

Rail Hardware examples include:

- Clips
- Splice bars
- Fasteners
- Sole Plates
- Rubber Pad
- Spikes

Manufactured Solutions:

- Drilling
- Mitre Cutting
- Machining
- Fabrication
- Curving
- Sand Blasting
- Metalizing
- Painting

On-time Logistics

Wirth Rail has a team of three logistics specialists dedicated to ensuring the timely and uneventful deliveries of our products.

We offer the following transportation options:

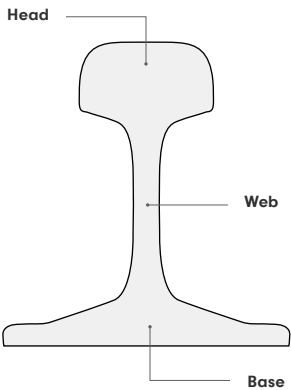
- ISO Ocean Containers
- Break-bulk ship
- Truck
- Railcar

Using Wirth Rail's logistics services ensures:

- Fast & easy door-to-door transport
- Optimal collaboration with carriers, freight-forwarders & customs brokers
- Competitive Rates
- Customer Convenience

Rail Nomenclature

The rails sold by Wirth rail all have a head, a web and a flat base. A common name for this general shape is Vignoles. Charles Vignoles was an engineer working in the UK in the 1830s and is credited for the first installations of rails with flat bottoms and beam configuration. Note the date: George Stephenson's Rocket, one of the first commercially successful steam locomotives, was constructed in 1829.



Throughout this catalogue the terms strength and hardness are used interchangeably. Rails are graded by surface hardness in North America and by tensile strength in Europe. The interface between a wheel and a rail is the subject of textbooks. For the purpose of this catalogue, a higher grade of rail provides a more durable running surface that can handle greater loads. Often increasing to a higher grade is an economical fix in situations of high wear.

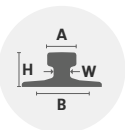
Also used interchangeably in the industry are the terms rail profile and rail section. The term "section" is an abbreviation of cross-section and is common parlance in the United States. The term "profile" is European in origin, perhaps from the latin word "profile". Regardless of the origin, the two terms mean the same thing for the purpose of this catalogue.

Summary tables



Crane Rails | American profiles

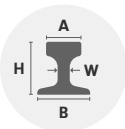
	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
CR104 (MRS51)	52.04	104.90	63.50	2 1/2	127.00	5	127.00	5	25.40	1
CR105 (MRS52)	52.09	105.00	65.09	2 9/16	131.76	5 3/16	131.76	5 3/16	23.81	15/16
CR135 (MRS67)	67.39	135.86	87.31	3 7/16	146.05	5 3/4	131.76	5 3/16	31.75	1 1/4
CR171 (MRS85)	85.02	171.40	109.22	4.30	152.40	6	152.40	6	31.75	1 1/4
CR175 (MRS87B, TR87)	86.80	175.00	107.95	4 1/4	152.40	6	152.40	6	38.10	1 1/2



Crane Rails | European profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
A45	22.10	44.55	45.00	1.77	55	2.17	125	4.92	24	0.94
A55	31.80	64.11	55.00	2.17	65	2.56	150	5.91	31	1.22
A65	43.10	86.89	65.00	2.56	75	2.95	175	6.89	38	1.50
A75	56.20	113.29	75.00	2.95	85	3.35	200	7.87	45	1.77
A100	74.30	149.78	100.00	3.94	95	3.74	200	7.87	60	2.36
A120	100.00	201.59	120.00	4.72	105	4.13	220	8.66	72	2.83
A150	150.30	302.99	150.00	5.91	150	5.91	220	8.66	80	3.15

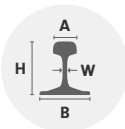
Summary tables



Crane Rails | Special profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
MRS73	73.63	148.43	70.00	2.76	157.00	6.18	146.00	5.75	32.00	1.26
MRS86	85.50	172.36	102.00	4.02	102.00	4.02	165.00	6.50	80.30	3.16
MRS87A (PRI85)	86.80	175.00	101.60	4.00	152.40	6.00	152.40	6.00	34.90	1.37
MRS125	125.00	251.99	120.00	4.72	180.00	7.09	180.00	7.09	40.00	1.57
MRS192	192.00	387.05	140.00	5.51	157.20	6.19	229.00	9.02	128.30	5.05
MRS221	221.40	446.32	220.00	8.66	160.00	6.30	220.00	8.66	145.00	5.71
CR73	73.30	147.77	100.00	3.94	135.00	5.31	140.00	5.51	32.00	1.26
CR100	100.20	201.99	120.00	4.72	150.00	5.91	155.00	6.10	39.00	1.54
CRS140	139.80	281.82	150.00	5.91	150.00	5.91	200.00	7.87	80.00	3.15
AS86	85.88	173.13	101.60	4.00	152.46	6.00	150.00	5.91	35.00	1.38
SP100	89.05	179.52	100.00	3.94	150.00	5.91	150.00	5.91	38.00	1.50
SP120	118.28	238.44	120.00	4.72	170.00	6.69	170.00	6.69	44.00	1.73

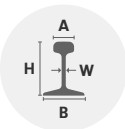
Summary tables



Light Rails | American profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
ASCE20	9.92	20.00	34.13	1 11/32	66.68	2 5/8	66.68	2 5/8	6.35	1/4
ASCE25	12.40	25.00	38.10	1 1/2	69.85	2 3/4	69.85	2 3/4	7.54	19/64
ASCE30	14.88	30.00	42.86	1 11/16	79.38	3 1/8	79.38	3 1/8	8.33	21/64
ASCE40	19.84	40.00	47.63	1 7/8	88.90	3 1/2	88.90	3 1/2	9.92	25/64
ASCE45 (JIS22)	22.32	45.00	50.80	2	93.66	3-11/16	93.66	3-11/16	10.72	27/64
ASCE50 (TR25)	24.80	50.00	53.98	2 1/8	98.43	3 7/8	98.43	3 7/8	11.11	7/16
ASCE60	29.76	60.00	60.33	2 3/8	107.95	4 1/4	107.95	4 1/4	12.30	31/64
ASCE75 (JIS37, TR37)	37.20	75.00	62.71	2 15/32	122.24	4 13/16	122.24	4 13/16	13.49	17/32
ASCE80	39.68	80.00	63.50	2 1/2	127.00	5	127.00	5	13.89	35/64
ASCE85	42.16	85.00	65.09	2 9/16	131.76	5 3/16	131.76	5 3/16	14.29	9/16

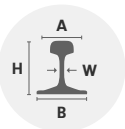
Summary tables



Light Rails | European profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
S7	6.75	13.61	25.00	0.98	65.00	2.56	50.00	1.97	5.00	0.20
S10	10.00	20.16	32.00	1.26	70.00	2.76	58.00	2.28	6.00	0.24
S14	14.00	28.22	38.00	1.50	80.00	3.15	70.00	2.76	9.00	0.35
S18	18.30	36.89	43.00	1.69	93.00	3.66	82.00	3.23	10.00	0.39
S20	19.84	40.00	44.00	1.73	100.00	3.94	82.00	3.23	10.00	0.39
S24	24.43	49.25	53.00	2.09	115.00	4.53	90.00	3.54	10.00	0.39
S30	30.03	60.54	60.30	2.37	108.00	4.25	108.00	4.25	12.30	0.48
S31	31.57	63.64	56.00	2.20	125.00	4.92	106.00	4.17	12.00	0.47
S33 (33E1)	33.47	67.47	58.00	2.28	134.00	5.28	105.00	4.13	11.00	0.43
S41A	44.24	83.14	67.00	2.64	138.00	5.43	125.00	4.92	12.00	0.47
AFNOR26	26.27	52.96	50.00	1.97	110.00	4.33	100.00	3.94	10.00	0.39
AFNOR30	30.15	60.78	58.42	2.30	125.50	4.94	106.00	4.17	11.00	0.43
AFNOR36	36.59	73.76	58.27	2.29	128.00	5.04	115.00	4.53	13.00	0.51
BS35 M	17.40	35.08	42.86	1.69	80.96	3.19	76.20	3.00	9.13	0.36
BS35 R	17.40	35.08	44.45	1.75	85.73	3.38	82.55	3.25	8.33	0.33
BS50 'O'	24.83	50.05	52.40	2.06	100.00	3.94	100.00	3.94	10.30	0.41
BS80 A (39E1)	39.77	80.17	63.50	2.50	133.40	5.25	117.50	4.63	13.10	0.52

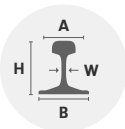
Summary tables



Transport Rails | American profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
90ARA-A (TR45)	44.64	90.00	65.09	2 9/16	142.88	5 5/8	130.18	5 1/8	14.29	9/16
100ARA-A	49.88	100.56	69.85	2 3/4	152.40	6	139.70	5 1/2	14.29	9/16
100ARA-B (100-8)	49.87	100.53	67.47	2 21/32	143.27	5 41/64	130.57	5 9/64	14.29	9/16
100RE (TR50)	50.35	101.50	68.26	2 11/16	152.40	6	136.53	5 3/8	14.29	9/16
115RE (TR57)	56.89	114.68	69.06	2 23/32	168.28	6 5/8	139.70	5 1/2	15.88	5/8
119RE	58.86	118.67	67.47	2 21/32	173.04	6 13/16	139.70	5 1/2	15.88	5/8
132RE	64.95	130.93	76.20	3	180.98	7 1/8	152.40	6	16.67	21/32
133RE	66.10	133.25	76.20	3	179.39	7 1/16	152.40	6	17.46	11/16
136RE (TR68)	67.41	135.88	74.61	2 15/16	185.74	7 5/16	152.40	6	17.46	11/16
141RE	69.80	140.70	77.79	3 1/16	188.91	7 7/16	152.40	6	17.46	11/16
136TW	87.95	177.30	74.61	2 15/16	185.74	7 5/16	152.40	6	42.86	1 11/16

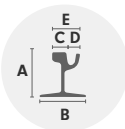
Summary tables



Transport Rails | European profiles

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
45E1 (BS90A)	45.11	90.94	66.67	2.62	142.88	5.63	127.00	5.00	13.89	0.55
45E3 (RN45)	44.79	90.29	66.00	2.60	142.00	5.59	130.00	5.12	15.00	0.59
46E2 (U33)	46.27	93.28	62.00	2.44	145.00	5.71	134.00	5.28	15.00	0.59
49E1 (S49)	49.39	99.57	67.00	2.64	149.00	5.87	125.00	4.92	14.00	0.55
49E5	49.13	99.04	67.00	2.64	149.00	5.87	125.00	4.92	14.00	0.55
50E2 (50EB-T)	49.97	100.73	72.00	2.83	151.00	5.94	140.00	5.51	15.00	0.59
50E6 (U50)	50.90	102.61	65.00	2.56	153.00	6.02	140.00	5.51	15.50	0.61
54E1 (UIC54)	54.77	110.41	70.00	2.76	159.00	6.26	140.00	5.51	16.00	0.63
54E2 (UIC54E)	53.82	108.50	67.00	2.64	161.00	6.34	125.00	4.92	16.00	0.63
54E3 (S54)	54.57	110.01	67.00	2.64	154.00	6.06	125.00	4.92	16.00	0.63
54E4	54.31	109.48	67.00	2.64	154.00	6.06	125.00	4.92	16.00	0.63
54E5 (54E1AHC)	54.42	109.71	70.20	2.76	159.00	6.26	140.00	5.51	13.10	0.52
56E1 (BS113Lb)	56.30	109.71	70.20	2.76	159.00	6.26	140.00	5.51	13.10	0.52
60E1 (UIC60)	60.21	121.38	72.00	2.83	172.00	6.77	150.00	5.91	16.50	0.65
60E2	60.03	121.01	72.00	2.83	172.00	6.77	150.00	5.91	16.50	0.65
MAV48	48.50	97.77	65.80	2.59	148.00	5.83	120.00	4.72	14.00	0.55

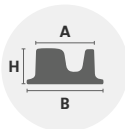
Summary tables



Grooved Rails

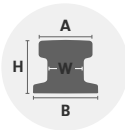
	Weight		Overall Head Width A		Height H		Base width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
51R1 (Ri52)	51.37	103.56	113.00	4.45	130.00	5.12	150.00	5.91	12.00	0.47
53R1 (Ri53)	52.98	106.80	113.00	4.45	130.00	5.12	150.00	5.91	12.00	0.47
54G1/54R1 (41GPU)	54.26	109.38	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
54G2 (Ri54G2)	54.55	109.97	116.60	4.59	152.50	6.00	141.50	5.57	13.00	0.51
54G4	50.09	100.98	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55G2 (41GP)	55.37	111.62	116.90	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55G3 (41GP13)	55.27	111.42	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55R1 (Ri55NK)	55.45	111.78	113.00	4.45	150.00	5.91	150.00	5.91	12.00	0.47
57R1 (Ph37)	56.54	113.98	127.00	5.00	182.00	7.17	150.00	5.91	11.00	0.43
59R1 (Ri59)	58.97	118.88	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
59R2 (Ri59N)	58.14	117.20	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
60R1 (Ri60)	60.59	122.14	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
60R2 (Ri60N)	59.75	120.45	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
62R1 (NP4aM)	62.37	125.73	116.00	4.57	180.00	7.09	180.00	7.09	12.00	0.47
62R2 (Np4aS)	61.91	124.80	116.00	4.57	180.00	7.09	180.00	7.09	12.00	0.47

Summary tables



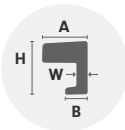
Block Rails

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
53K2 (MSzTS52)	53.34	107.53	116.00	4.57	70.00	2.76	156.00	6.14	n/a	n/a
57K2 (LK1)	57.68	116.28	115.00	4.53	72.00	2.83	156.00	6.14	n/a	n/a
58K2 (112T)	58.20	117.51	120.00	4.72	72.00	2.83	156.00	6.14	n/a	n/a



Contact Rails

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
STR74 (150NMC)	74.00	149.18	104.80	4 1/8	103.19	4 1/16	123.83	4 7/8	69.85	2 3/4
STR40	40.27	81.18	80.00	3.15	105.00	4.13	80.00	3.15	18.00	0.71
T52	52.31	105.45	101.00	3.98	100.50	3.96	45.00	1.77	45.00	1.77



Guard Rails

	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
33C1 (UIC33, U69, RL1-60)	32.99	66.50	80.00	3.15	93.00	3.66	40.00	1.57	20.00	0.79
SBB Radlenker	40.56	81.77	80.00	3.15	104.00	4.09	40.00	1.57	20.00	0.79



Crane Rails

AMERICAN PROFILES

Crane Rails are an important subset of the rail industry. Their shapes can be quite different from those of Transport rails and are the result of a long evolution to give the rails specific performance characteristics.

Transverse loads (across the rails) are particularly high in crane applications and have led to rails with wide bases and relatively thick webs. Several profiles have flat heads as well, to better support large wheel loads..

Because each crane project is different, over time, many heavy crane rail profiles (sections) have been developed. American Heavy Crane Rails are the most common in North America, European DIN Rails are found worldwide, and Speciality Crane Rails appear for specific projects.

All Crane rails are produced and tested to the latest metallurgical quality standards. They are offered in multiple grades which improve the rail’s load-bearing capabilities while reducing in-service wear rates. The grading of Crane Rails depends on their origins: in North America, Brinell Hardness is used for grading purposes, whereas the European standards focus on Tensile Strength. There is a rough correlation between the two systems.

Description

American Crane Rails rails have a long-established tradition among engineers in the Americas and are widely used for industrial crane applications. CR rails range in size from 104 lbs/yard (52.04 kg/m) to 175 lbs/yard (86.80 kg/m). and follow the ASTM A759 specification. An interesting characteristic of the CR rails is that their base widths and overall heights are the same.

All American Crane Rails profiles meet or exceed the requirements of ASTM A759. Only the grade "High Strength" (often referred to as Head Hardened) is described in A759. The other two grades are Standard and Advanced Head Hardened.

American Crane Rails profiles are produced in standard lengths of 33, 39, 40, 60, 78 and 80 feet (≈ 10, 12, 18 and 24 meters). Other lengths are also available upon special request. The ends can be finished as needed, either non-drilled (blank) for welding or drilled with 3 holes for joint bars.

Basic Dimensions

	Weight		Head Width		Height		Base Width		Web	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
CR104 (MRS51)	52.04	104.90	63.50	2 1/2	127.00	5	127.00	5	25.40	1
CR105 (MRS52)	52.09	105.00	65.09	2 9/16	131.76	5 3/16	131.76	5 3/16	23.81	15/16
CR135 (MRS67)	67.39	135.86	87.31	3 7/16	146.05	5 3/4	131.76	5 3/16	31.75	1 1/4
CR171 (MRS85)	85.02	171.40	109.22	4.30	152.40	6	152.40	6	31.75	1 1/4
CR175 (MRS87B, TR87)	86.80	175.00	107.95	4 1/4	152.40	6	152.40	6	38.10	1 1/2

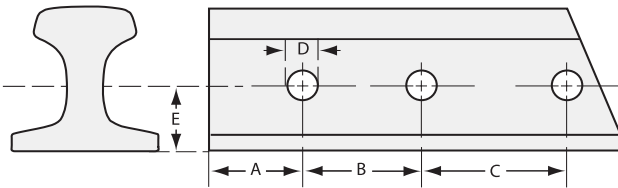
Mechanical Properties

Grades	Brinell Hardness HB	Tensile Strength (for info. only) MPa
Standard	≥ 270	≥ 910
High Strength	321 - 388 4 AS SPECIFIED BY ASTM A759	≥ 1080
Advanced Head Hardened (AHH)	≥ 360	≥ 1220

Chemical Composition

Grade	C %	Mn %	Si %	P %	S %	V %	Cr %
Standard	0.40 – 0.60	0.80 – 1.20	≤ 0.35	≤ 0.045	≤ 0.045	-	-

High Strength Rails (heat-treated, head-hardened, or alloy rails) are produced in accordance with manufacturer's standard practice (ASTM A759 and supplementary requirements).

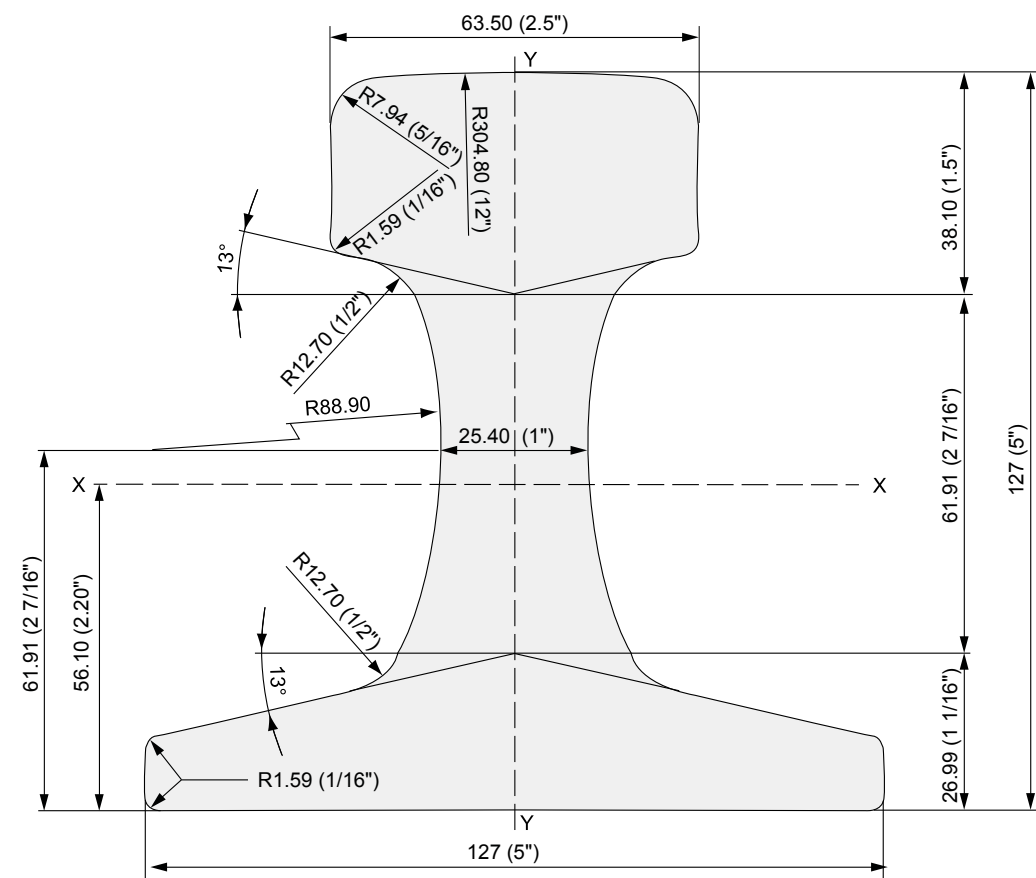


Drilling Patterns

Rail profile	Spacing						Hole diameter		Elevation		
	A mm	in	B mm	in	C mm	in	D mm	in	E mm	in	
CR104 (MRS51)	101.60	4	127.00	5	152.40	6	26.99	1 1/16	61.91	2 7/16	
CR105 (MRS52)	101.60	4	127.00	5	152.40	6	23.81	15/16	55.96	2 13/64	
CR135 (MRS67)	101.60	4	127.00	5	152.40	6	30.16	1 3/16	62.71	2 15/32	
CR171 (MRS85)	101.60	4	127.00	5	152.40	6	30.16	1 3/16	66.68	2 5/8	
CR175 (MRS87B, TR87)	101.60	4	127.00	5	152.40	6	30.16	1 3/16	67.47	2 21/32	

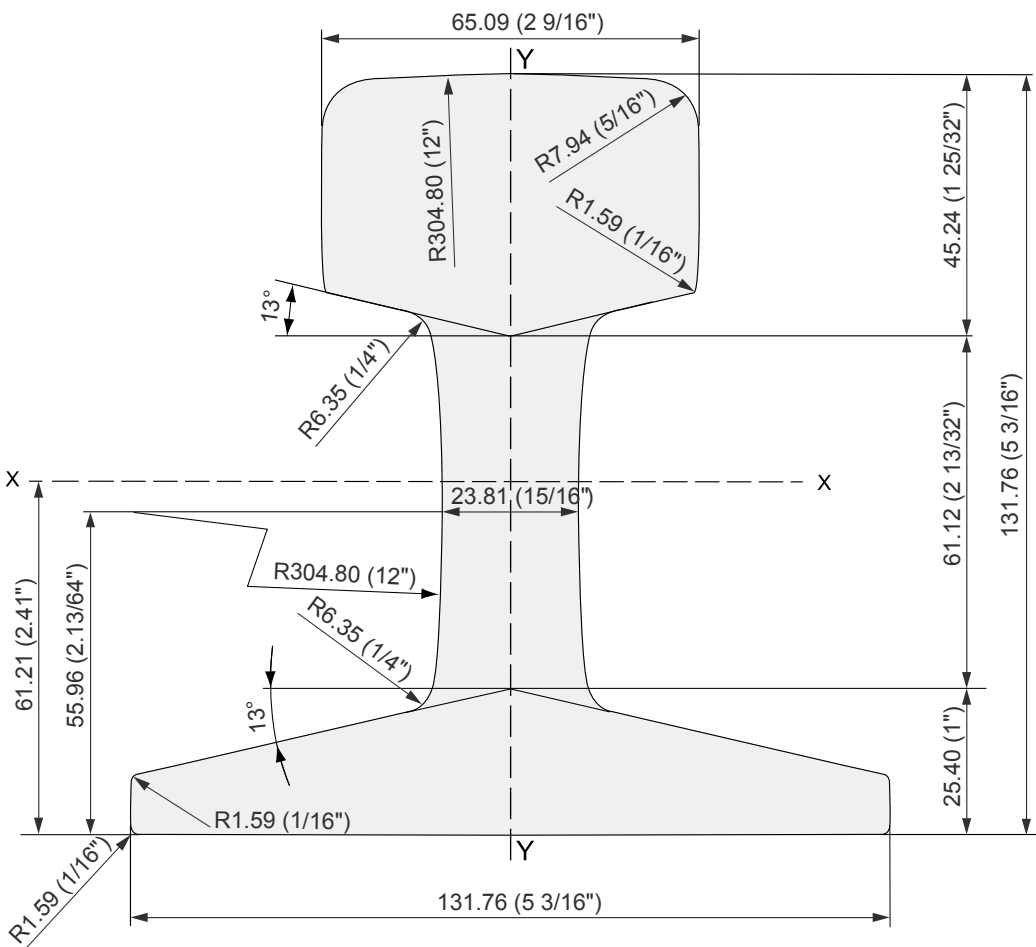
CR104 (MRS51)

Weight 52.04 kg/m | 104.90 lb/yd



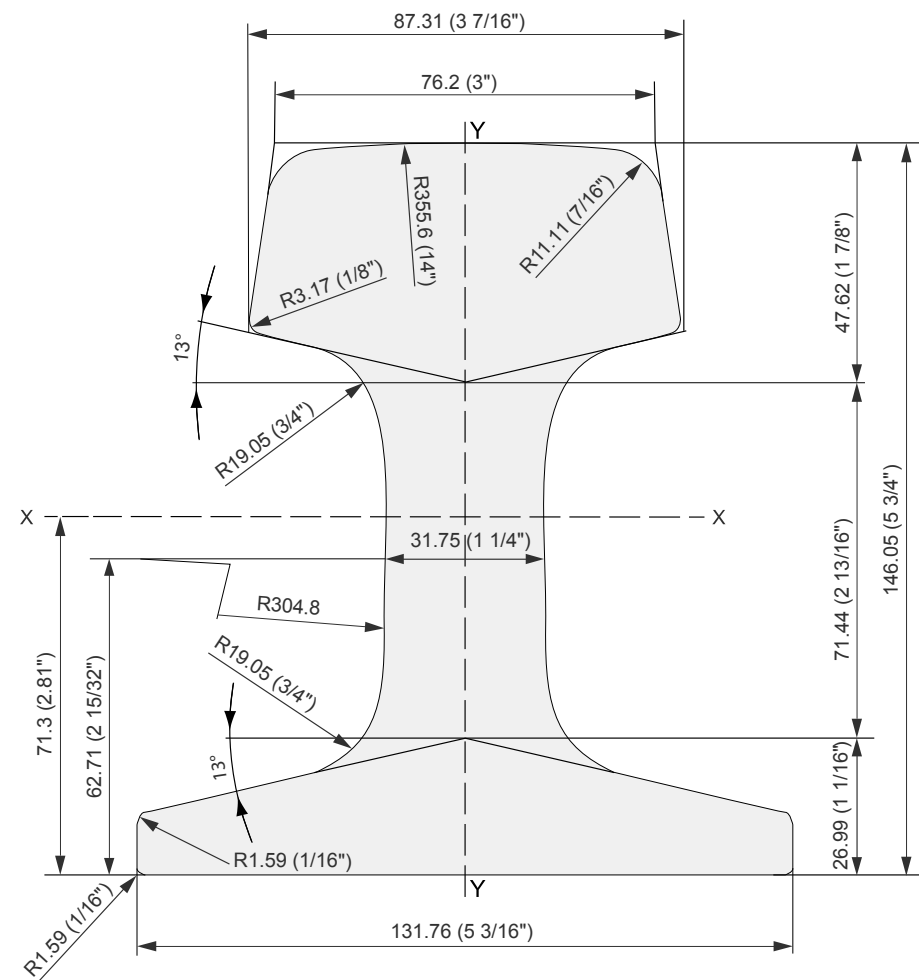
CR105 (MRS52)

Weight 52.09 kg/m | 105.00 lb/yd



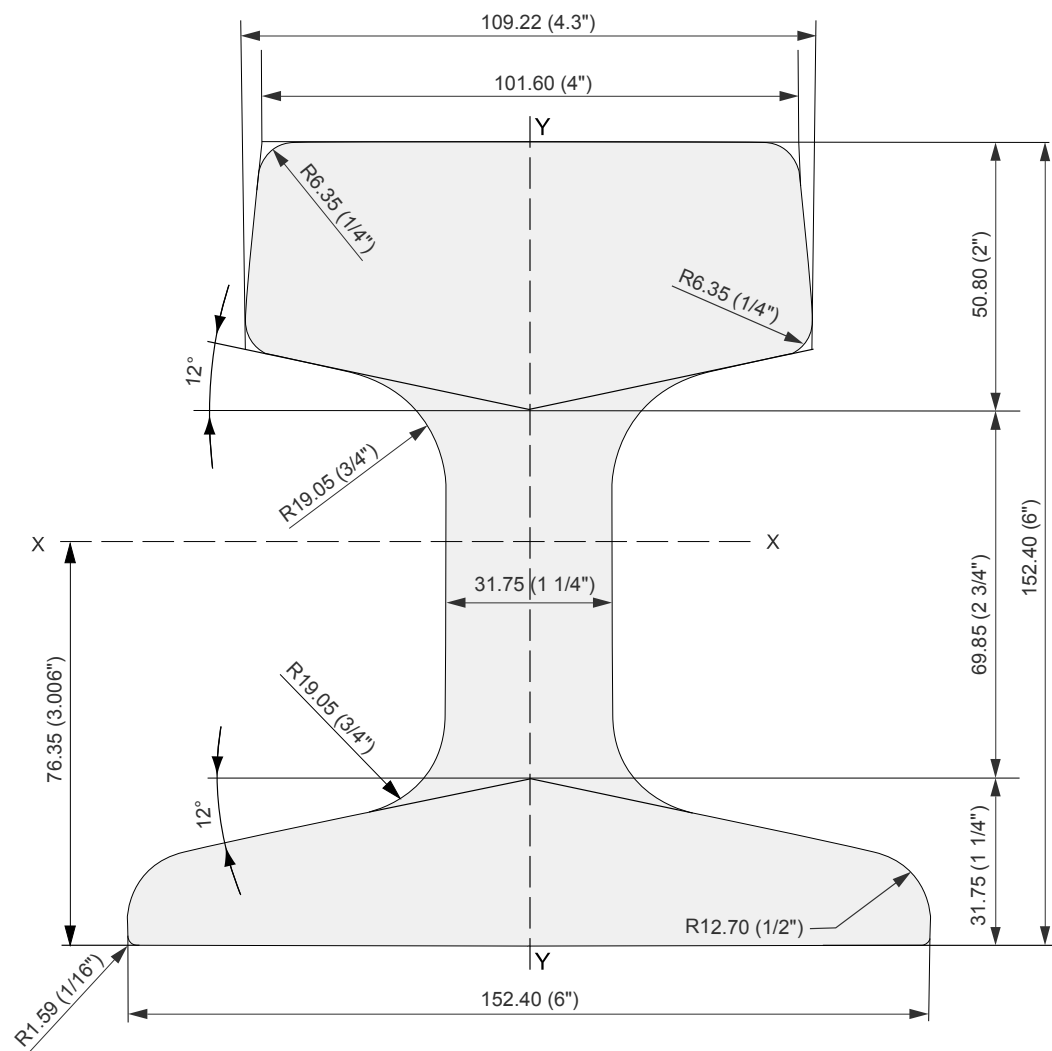
CR135 (MRS67)

Weight 67.39 kg/m | 135.86 lb/yd



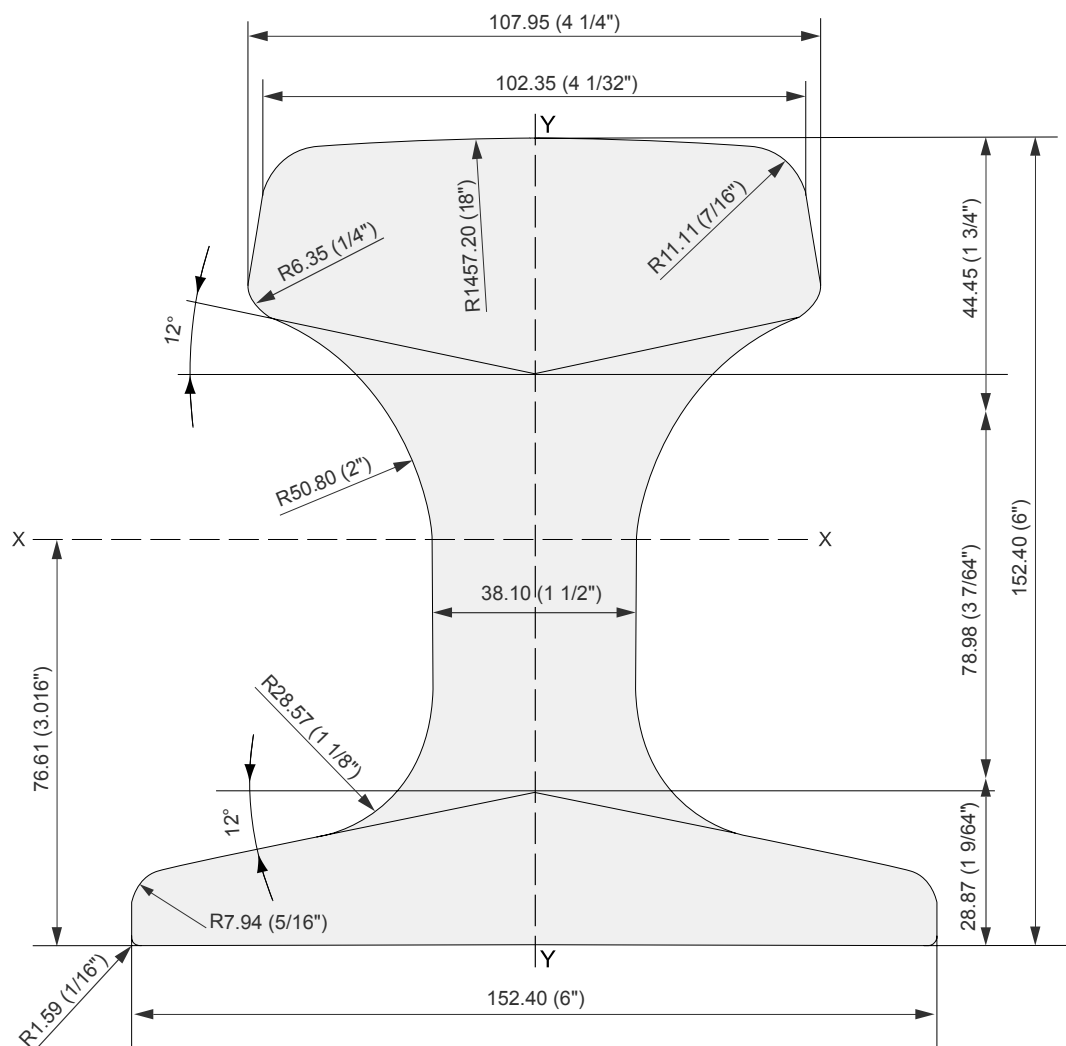
CR171 (MRS85)

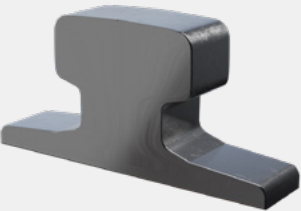
Weight 85.02 kg/m | 171.40 lb/yd



CR175 (MRS87B, TR87)

Weight 86.80 kg/m | 175.00 lb/yd





Crane Rails

EUROPEAN
PROFILES (DIN)

Crane Rails are an important subset of the rail industry. Their shapes can be quite different from those of Transport rails and are the result of a long evolution to give the rails specific performance characteristics.

Transverse loads (across the rails) are particularly high in crane applications and have led to rails with wide bases and relatively thick webs. Several profiles have flat heads as well, to better support large wheel loads.

Because each crane project is different, over time, many heavy crane rail profiles have been developed. American Heavy Crane Rails are the most common in North America, European DIN Rails are found worldwide, and Speciality Crane Rails appear for specific projects.

All Crane rails are produced and tested to the latest metallurgical quality standards. They are offered in multiple grades which improve the rail’s load-bearing capabilities while reducing in-service wear rates. The grading of Crane Rails depends on their origins: in, Brinell Hardness is used for grading purposes, whereas the European standards focus on Tensile Strength. There is a rough correlation between the two systems.

Description

A class of short and squat rails was developed in Europe and is described by the DIN 536 Standard. Commonly referred to as “DIN” rails, these are found worldwide and are, by volume, the most widely used crane rails in the world.

DIN rails are offered in a range of sizes, from A45 (22.1 kg/m) to A150 (150 kg/m) and can fulfill the requirements of most crane rail systems. Unlike the names of many other rails, the nomenclature for DIN rails describes the width of the head (for example, A45 has a 45mm wide head). Each DIN rail profile is characterized by a low center of gravity, a relatively wide and robust head and a very wide web and base. Designed to be installed on beams or foundations that offer continuous support, their lower height can be a boon for installations where overhead clearance is important. Their width and blocky shapes are extremely stable – ideal for crane applications.

The DIN 536 standard defines two steel grades: those with a tensile strength greater than 690 MPa and those greater than 880 MPa. Over time, different mills have come to use different jargon to represent these grades. Wirth Rail’s DIN rail supplier, ArcelorMittal, uses the names 70 kg & 90 kg. (aside: 880 MPa = 880 N/mm2 ≈ (90 kg x gravitational constant 9.81m/s2)/ mm2).

A third grade is also common in Europe but is not described in the DIN 536 specification. The shapes remain the same but the steel is alloyed with Chromium and Vanadium to achieve a tensile strength greater than 1080 MPa. ArcelorMittal refers to this as 110 CrV in its literature.

European heavy crane rails are finished in standard lengths of 9, 10, 12, 15 and 18 meters. Other lengths can be supplied by special request. The stocky shapes of these rails make drilling impractical. Square-finished ends are standard with Mitre cuts also available.

Basic Dimensions

Profiles	Weight		Head Width		Height		Base Width		Web	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
A45	22.10	44.55	45.00	1.77	55	2.17	125	4.92	24	0.94
A55	31.80	64.11	55.00	2.17	65	2.56	150	5.91	31	1.22
A65	43.10	86.89	65.00	2.56	75	2.95	175	6.89	38	1.50
A75	56.20	113.29	75.00	2.95	85	3.35	200	7.87	45	1.77
A100	74.30	149.78	100.00	3.74	95	3.74	200	7.87	60	2.36
A120	100.00	201.59	120.00	4.72	105	4.13	220	8.66	72	2.83
A150	150.30	302.99	150.00	5.91	150	5.91	220	8.66	80	3.15

Mechanical Properties

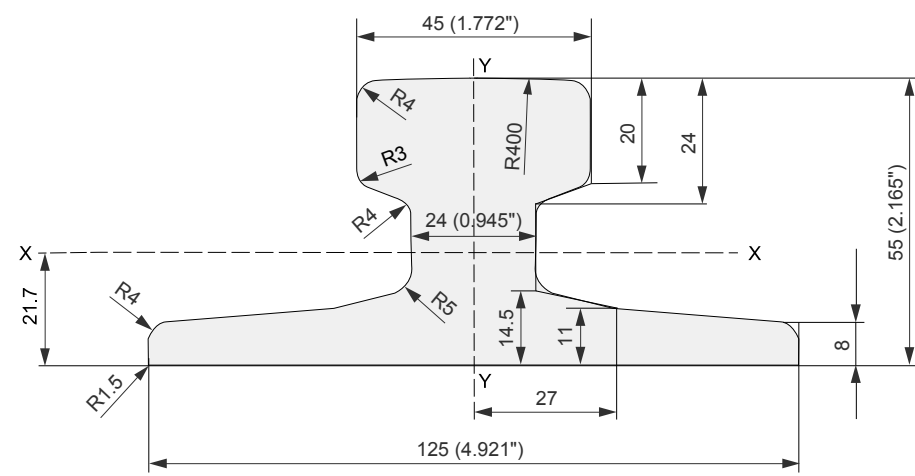
Grade	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness min. HB (for information only)
70 kg (700)	≥ 690	≥ 355	≥ 12	≥ 200
90 kg (900)	≥ 880	≥ 440	≥ 8	≥ 260
110 CrV (1100)	≥ 1080	≥ 640	≥ 7	≥ 320

Chemical Composition

Grade	C %	Mn %	Si %	P %	S %	V %	Cr %
70 kg (700)	0.40 – 0.60	0.80 – 1.20	≤ 0.350	≤ 0.045	≤ 0.045	-	-
90 kg (900)	0.60 – 0.80	0.80 – 1.30	≤ 0.500	≤ 0.045	≤ 0.045	-	-
110 CrV (1100)	0.65 – 0.85	0.90 – 1.30	≤ 0.500	≤ 0.040	≤ 0.040	0.05 – 0.15	0.20 – 0.80

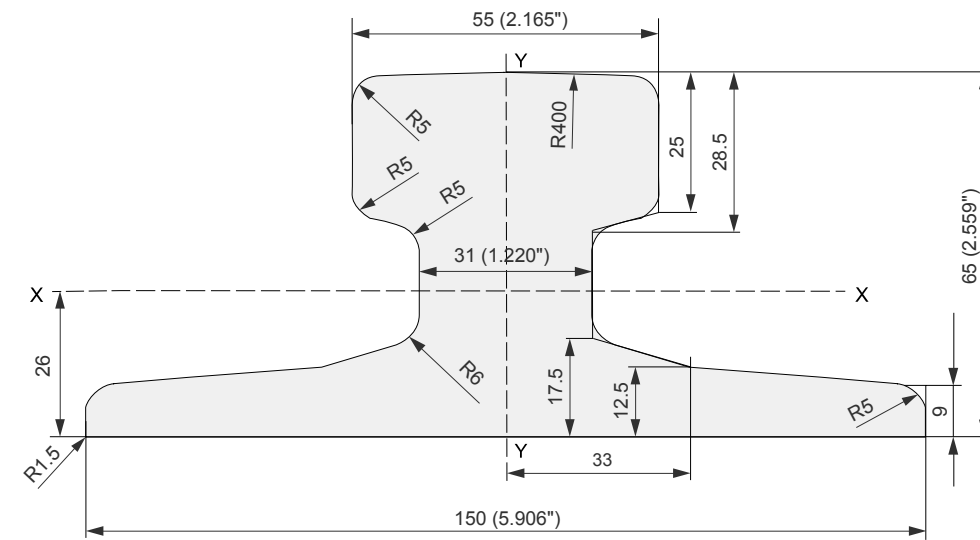
A45

Weight 22.10 kg/m | 44.55 lb/yd



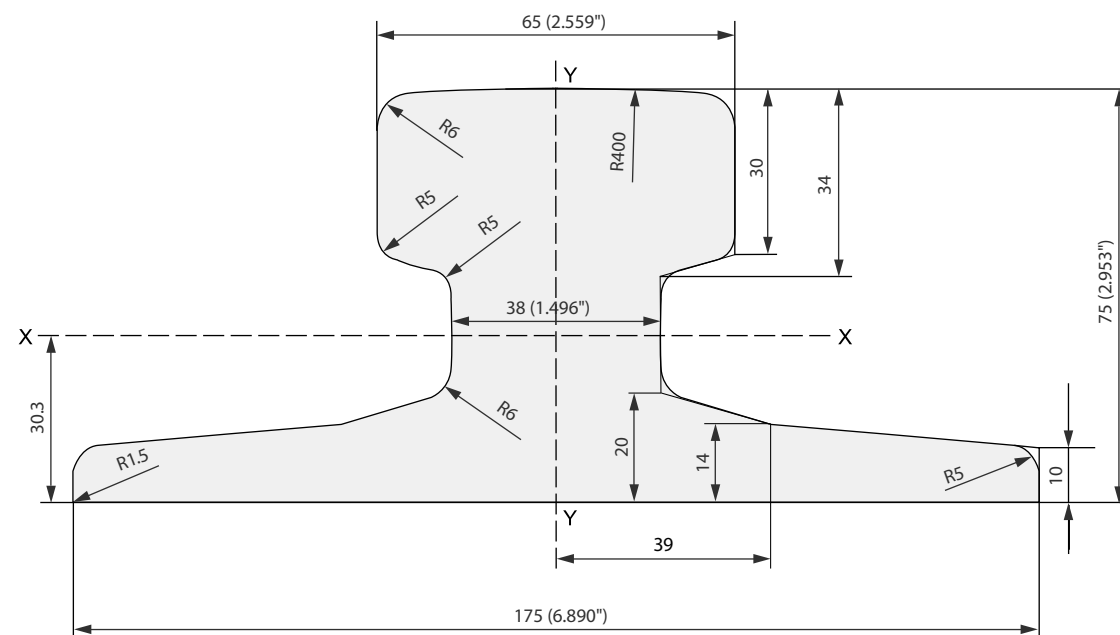
A55

Weight 31.80 kg/m | 64.11 lb/yd



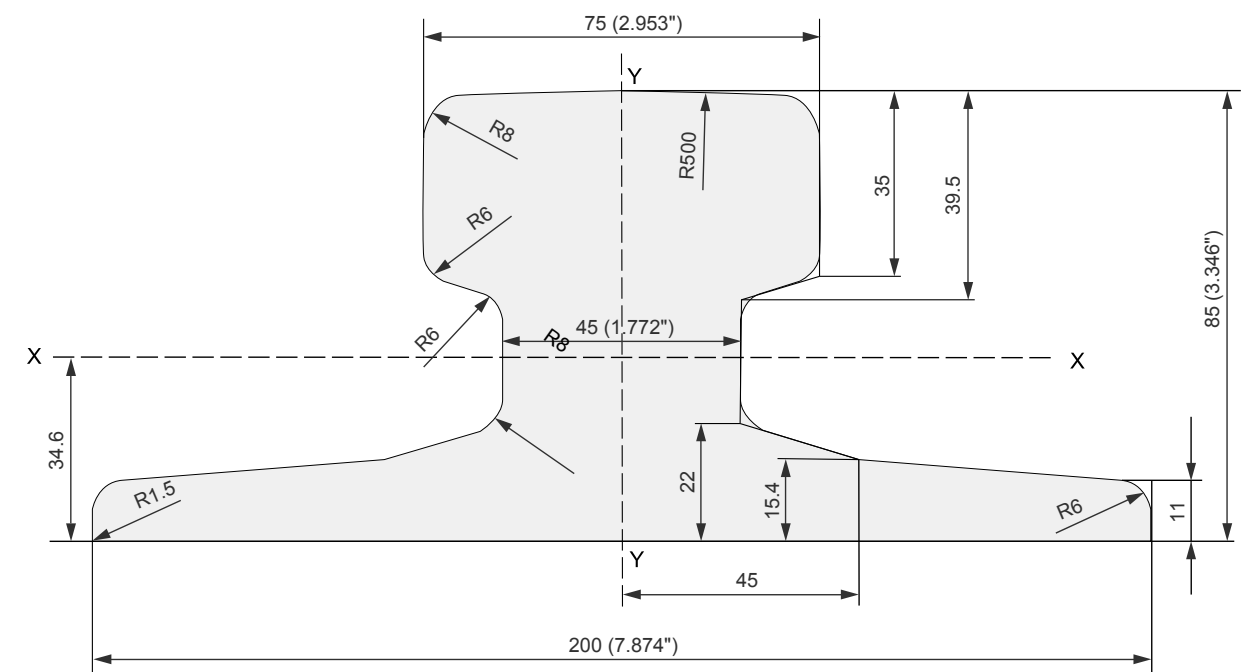
A65

Weight 43.10 kg/m | 86.89 lb/yd



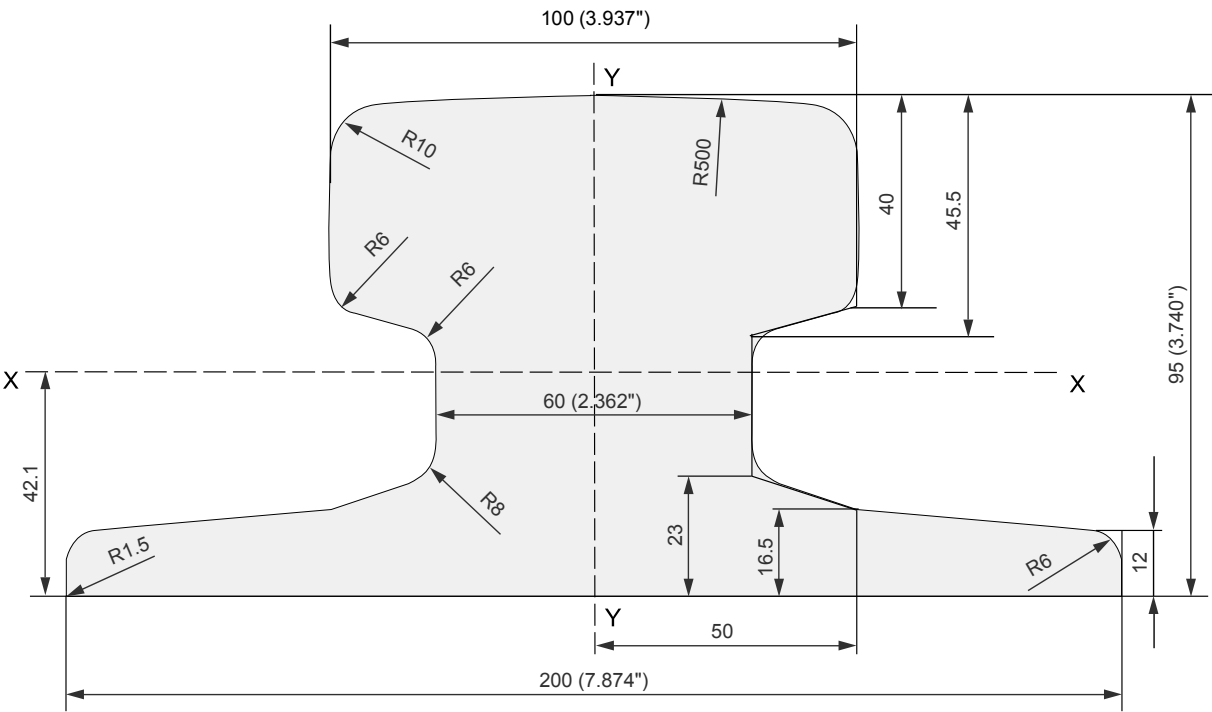
A75

Weight 56.20 kg/m | 113.29 lb/yd



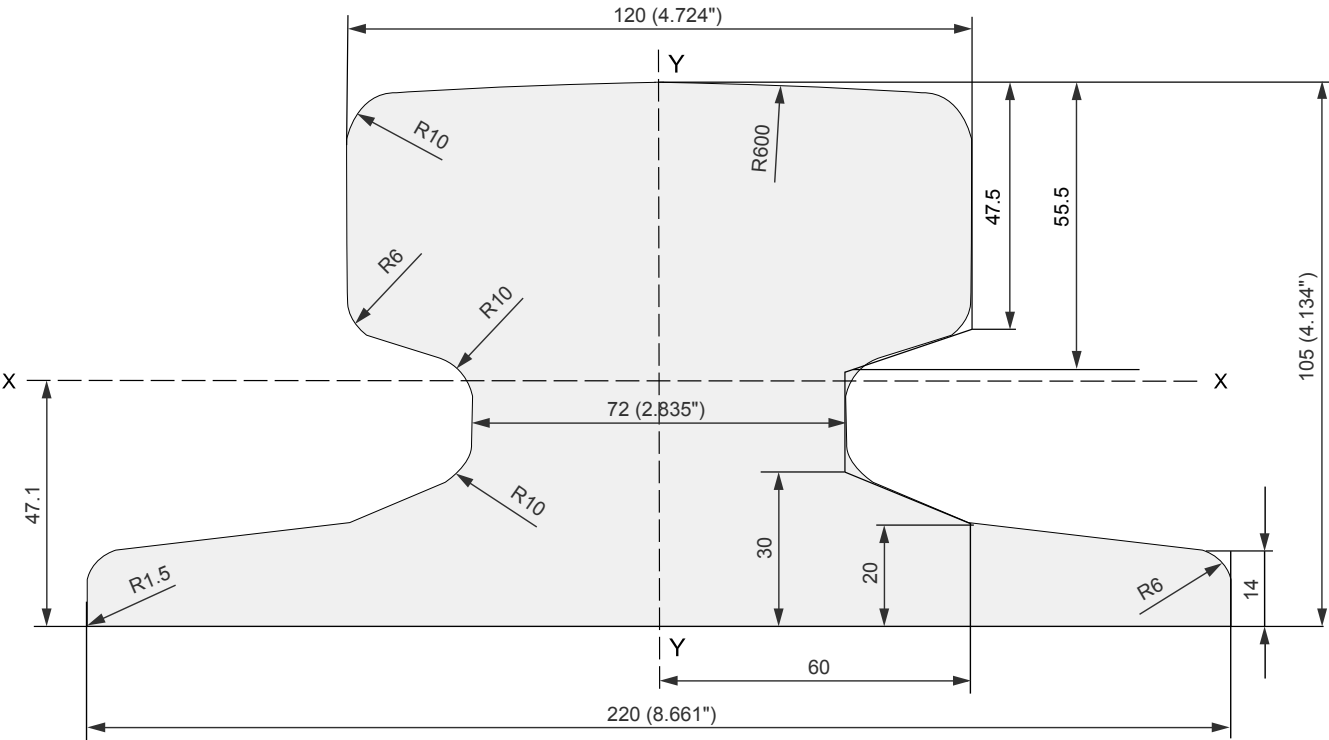
A100

Weight 74.30 kg/m | 149.78 lb/yd



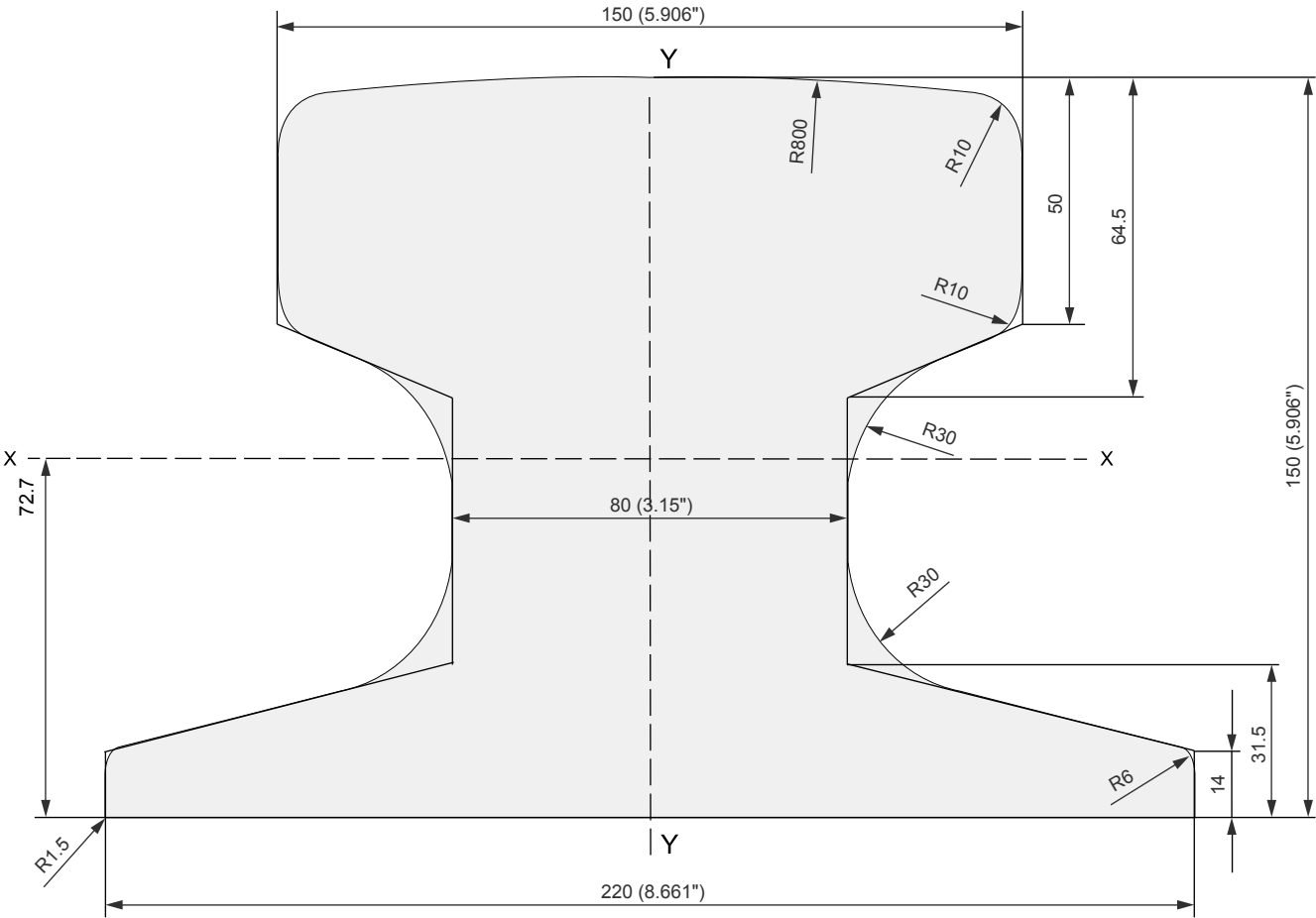
A120

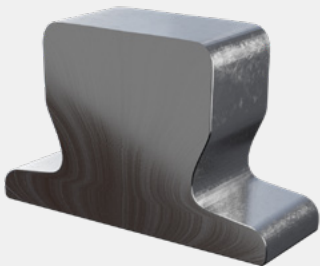
Weight 100.00 kg/m | 201.59 lb/yd



A150

Weight 150.30 kg/m | 302.99 lb/yd





Crane Rails

SPECIAL PROFILES

Crane Rails are an important subset of the rail industry. Their shapes can be quite different from those of Transport rails and are the result of a long evolution to give the rails specific performance characteristics.

Transverse loads (across the rails) are particularly high in crane applications and have led to rails with wide bases and relatively thick webs. Several profiles have flat heads as well, to better support large wheel loads.

Because each crane project is different, over time, many heavy crane rail profiles have been developed. American Heavy Crane Rails are the most common in North America, European DIN Rails are found worldwide, and Speciality Crane Rails appear for specific projects.

All Crane rails are produced and tested to the latest metallurgical quality standards. They are offered in multiple grades which improve the rail’s load-bearing capabilities while reducing in-service wear rates. The grading of Crane Rails depends on their origins: in North America, Brinell Hardness is used for grading purposes, whereas the European standards focus on Tensile Strength. There is a rough correlation between the two systems.

Description

There is a long history of crane rail development and many profiles were developed for specific applications over a century ago. Having proven to be effective, these are still in demand today for special applications. In addition, new rail profiles have also been developed to meet new needs in industrial and port applications. Wirth Rail distributes a wide range of these ‘singular’ profiles. Although the producers may have changed, these rails meet or exceed the original mill specifications.

These special crane rails are usually produced with the same steel grades used for the European rails, the most common grades being the 70 kg, 90 kg and 110 CrV.

Special Crane Rails are finished in standard lengths of 9, 10, 12, 15 and 18 metres (29.528 to 59.055 ft), but other lengths can be supplied by special request. Rail ends are prepared with the usual non-drilled (blank), square finished ends. Mitre cutting and drilling are also available, again by special request. As with the DIN rails, not all profiles can be drilled due to their unusual shapes and webs.

Basic Dimensions

Profiles	Weight		Head Width		Height		Base Width		Web	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
MRS73	73.63	148.43	70.00	2.76	157.00	6.18	146.00	5.75	32.00	1.26
MRS86	85.50	172.36	102.00	4.02	102.00	4.02	165.00	6.50	80.30	3.16
MRS87A (PRI85)	86.80	175.00	101.60	4.00	152.40	6.00	152.40	6.00	34.90	1.37
MRS125	125.00	251.99	120.00	4.72	180.00	7.09	180.00	7.09	40.00	1.57
MRS192	192.00	387.05	140.00	5.51	157.20	6.19	229.00	9.02	128.30	5.05
MRS221	221.40	446.32	220.00	8.66	160.00	6.30	220.00	8.66	145.00	5.71
CR73	73.30	147.77	100.00	3.94	135.00	5.31	140.00	5.51	32.00	1.26
CR100	100.20	201.99	120.00	4.72	150.00	5.91	155.00	6.10	39.00	1.54
CRS140	139.80	281.82	150.00	5.91	150.00	5.91	200.00	7.87	80.00	3.15
AS86	85.88	173.13	101.60	4.00	152.46	6.00	150.00	5.91	35.00	1.38
SP100	89.05	179.52	100.00	3.94	150.00	5.91	150.00	5.91	38.00	1.50
SP120	118.28	238.44	120.00	4.72	170.00	6.69	170.00	6.69	44.00	1.73

Mechanical Properties

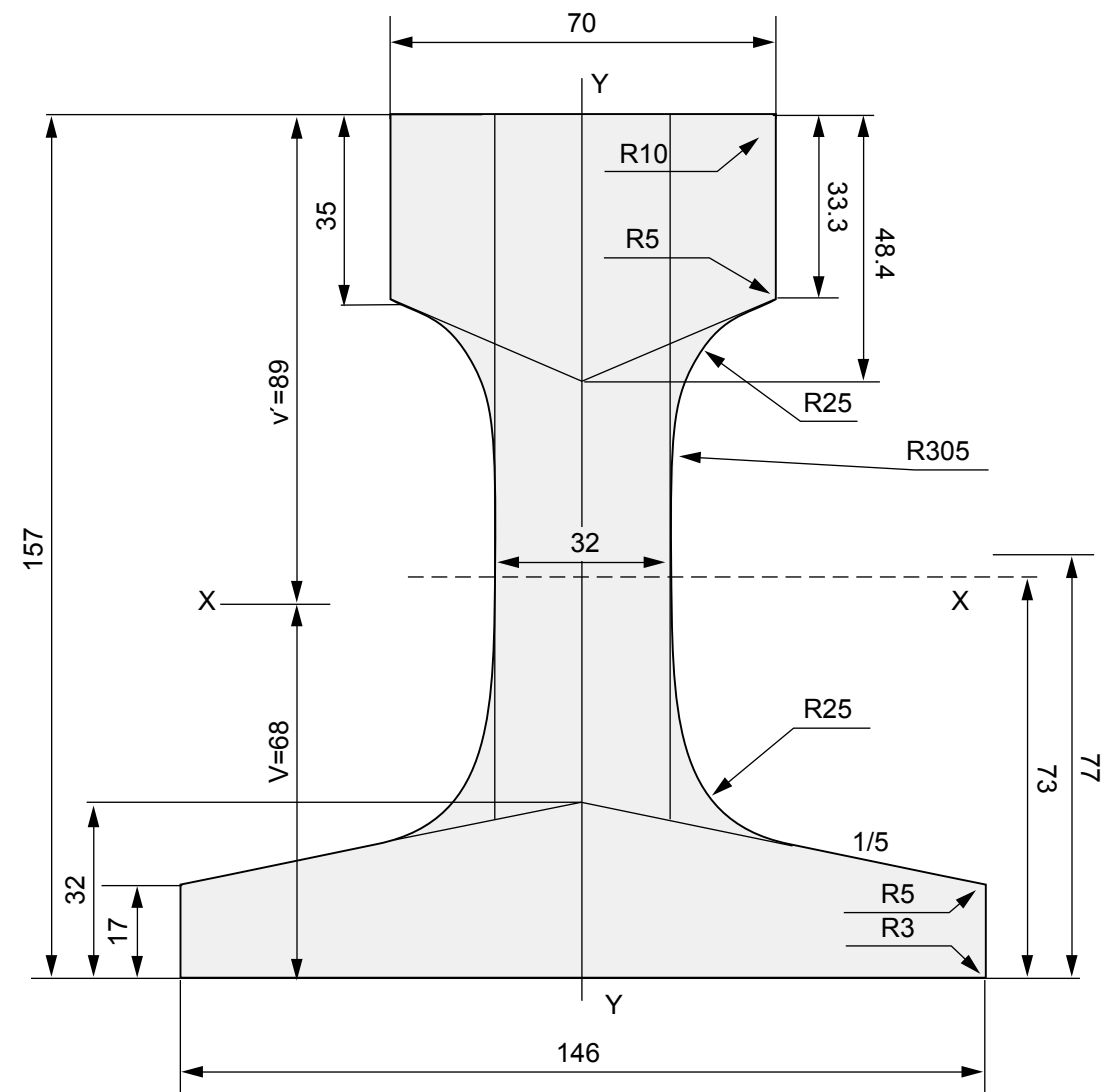
Grade	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness min. HB (for information only)
70 kg (700)	≥ 690	≥ 355	≥ 12	≥ 200
90 kg (900)	≥ 880	≥ 440	≥ 8	≥ 260
110 CrV (1100)	≥ 1080	≥ 640	≥ 7	≥ 320

Chemical Composition

Grade	C %	Mn %	Si %	P %	S %	V %	Cr %
70 kg (700)	0.40 – 0.60	0.80 – 1.20	≤ 0.350	≤ 0.045	≤ 0.045	-	-
90 kg (900)	0.60 – 0.80	0.80 – 1.30	≤ 0.500	≤ 0.045	≤ 0.045	-	-
110 CrV (1100)	0.65 – 0.85	0.90 – 1.30	≤ 0.500	≤ 0.040	≤ 0.040	0.05 – 0.15	0.20 – 0.80

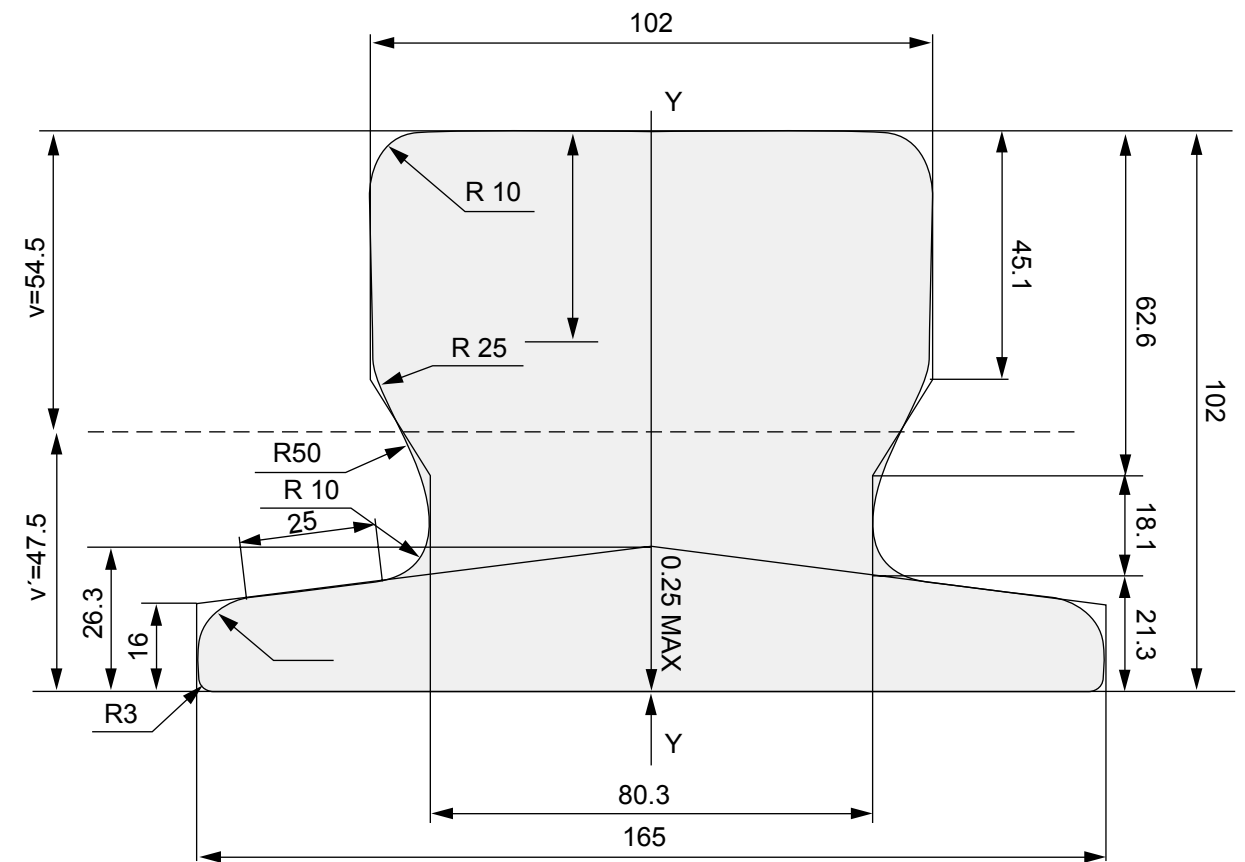
MRS73

Weight 73.63 kg/m | 148.43 lb/yd



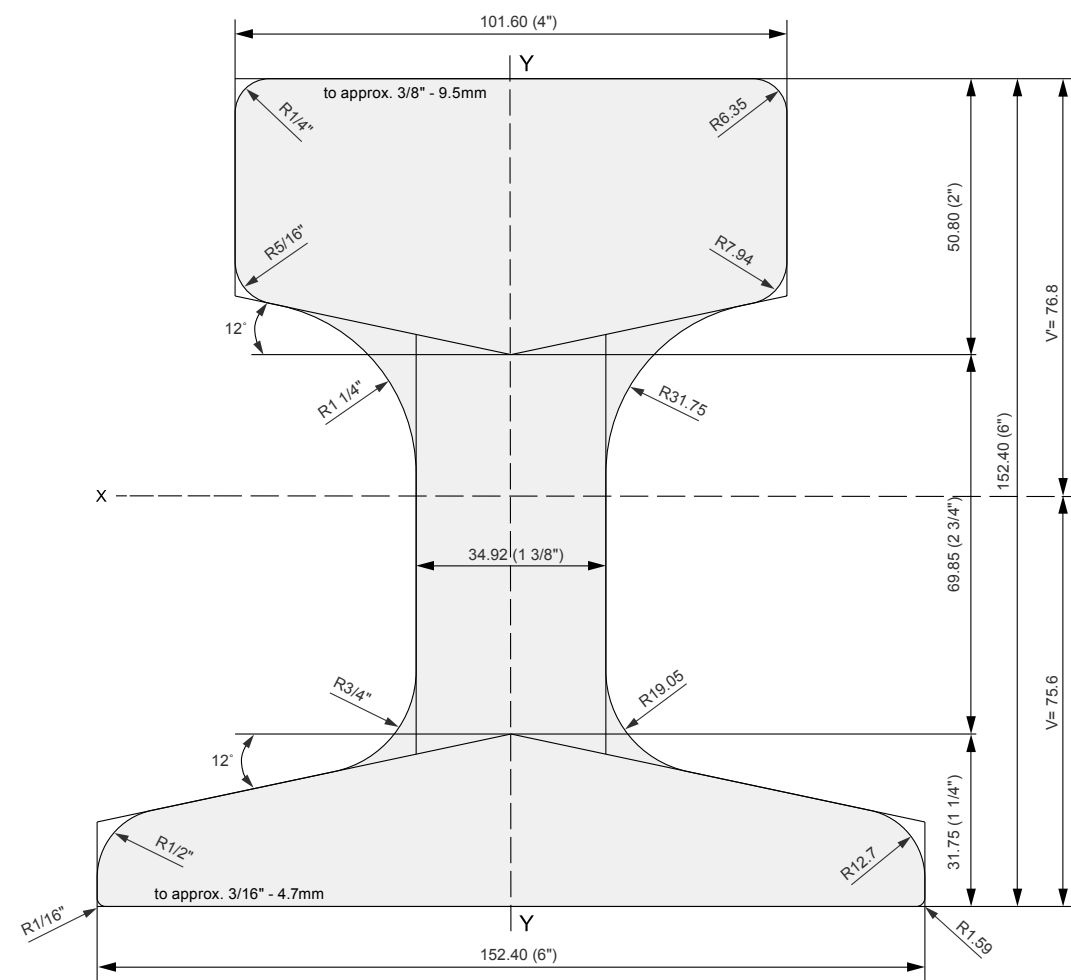
MRS86

Weight 85.50 kg/m | 172.36 lb/yd



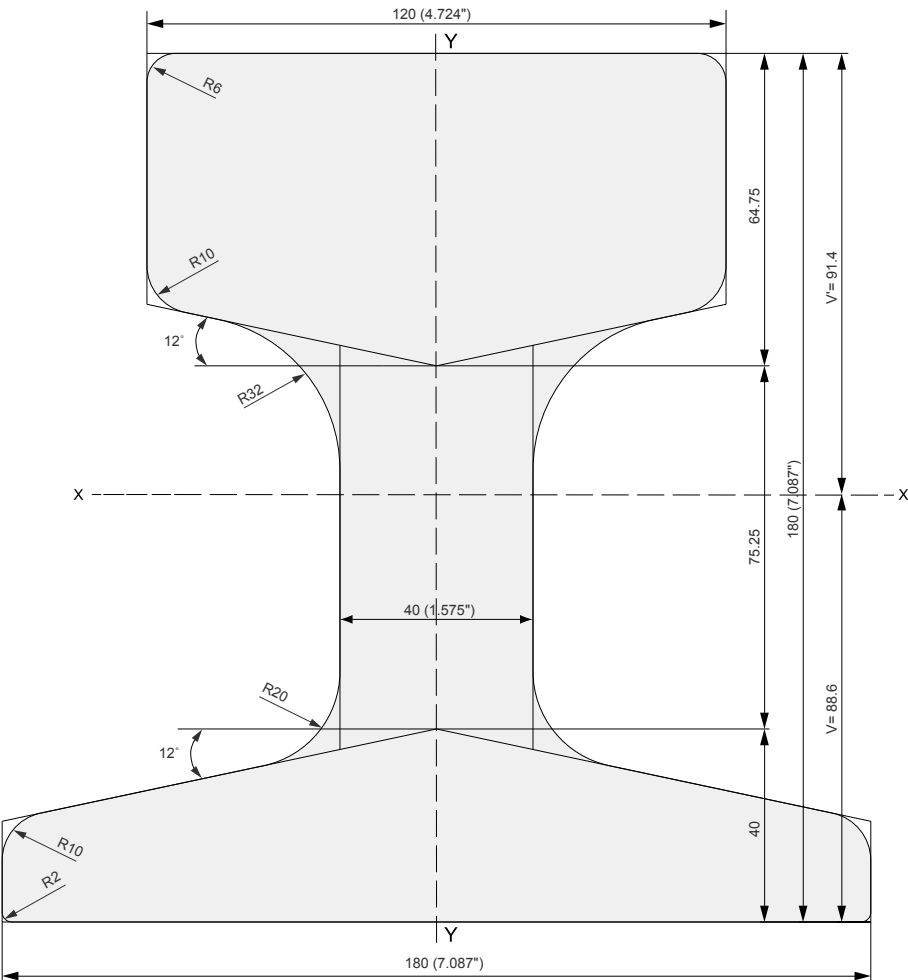
MRS87A (PRI85)

Weight 86.80 kg/m | 175.00 lb/yd



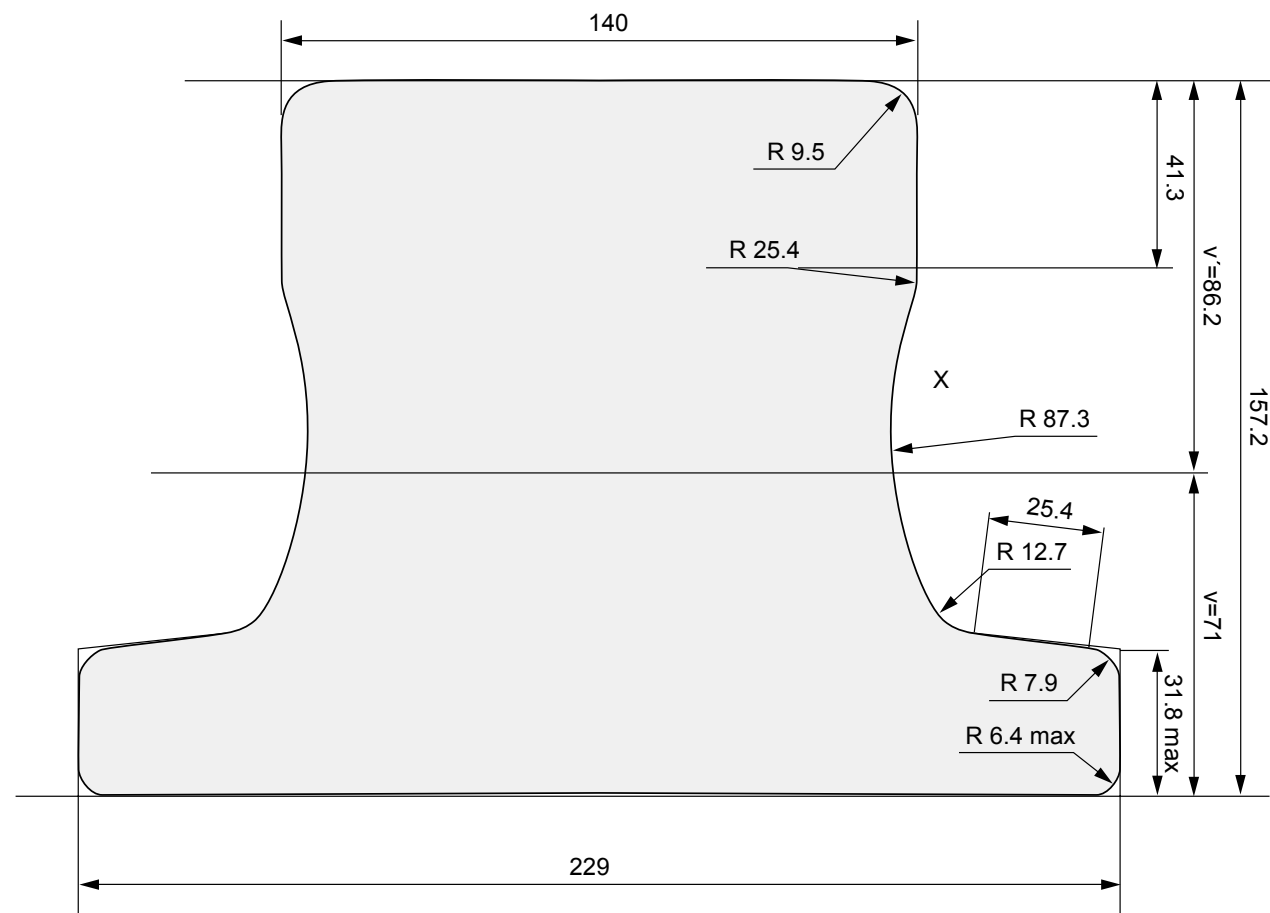
MRS125

Weight 125.00 kg/m | 251.99 lb/yd

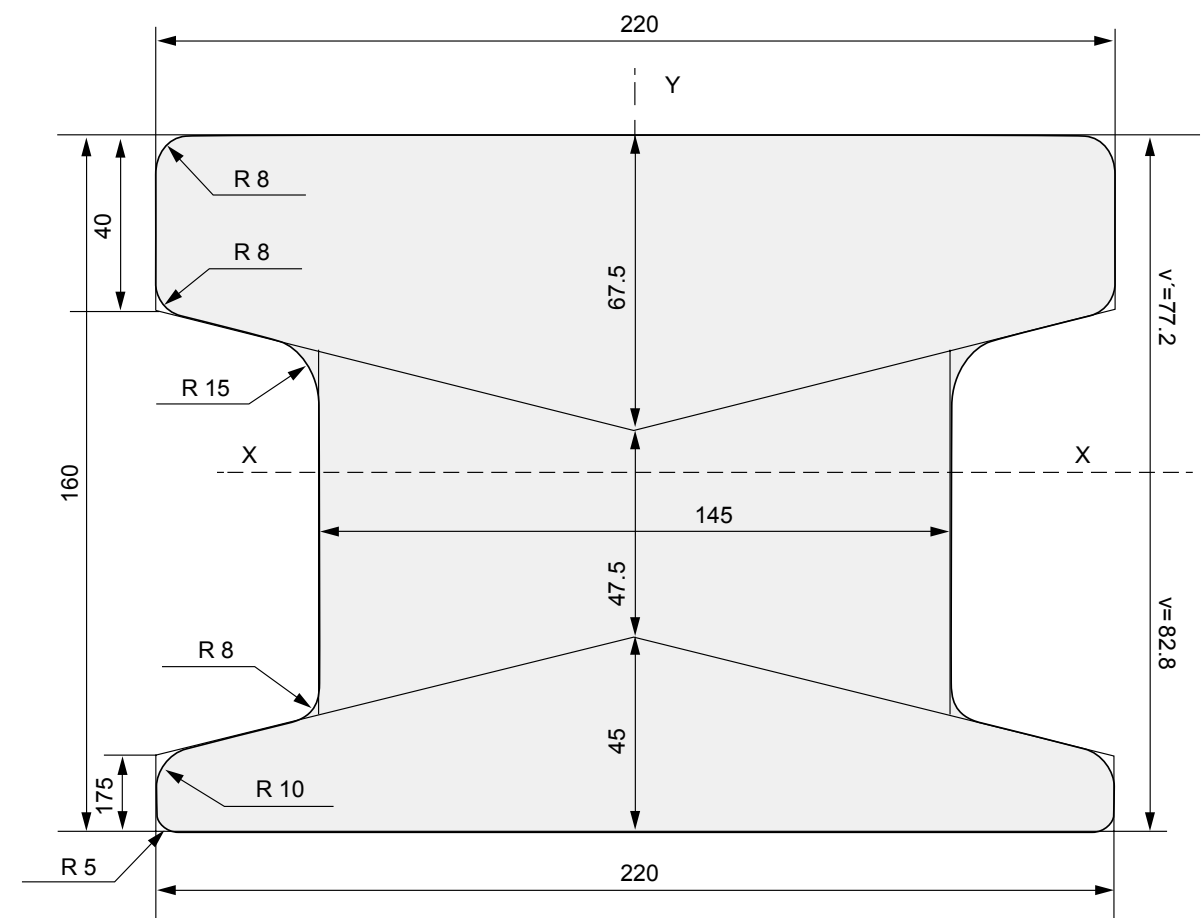


MRS192

Weight 192.00 kg/m | 387.05 lb/yd

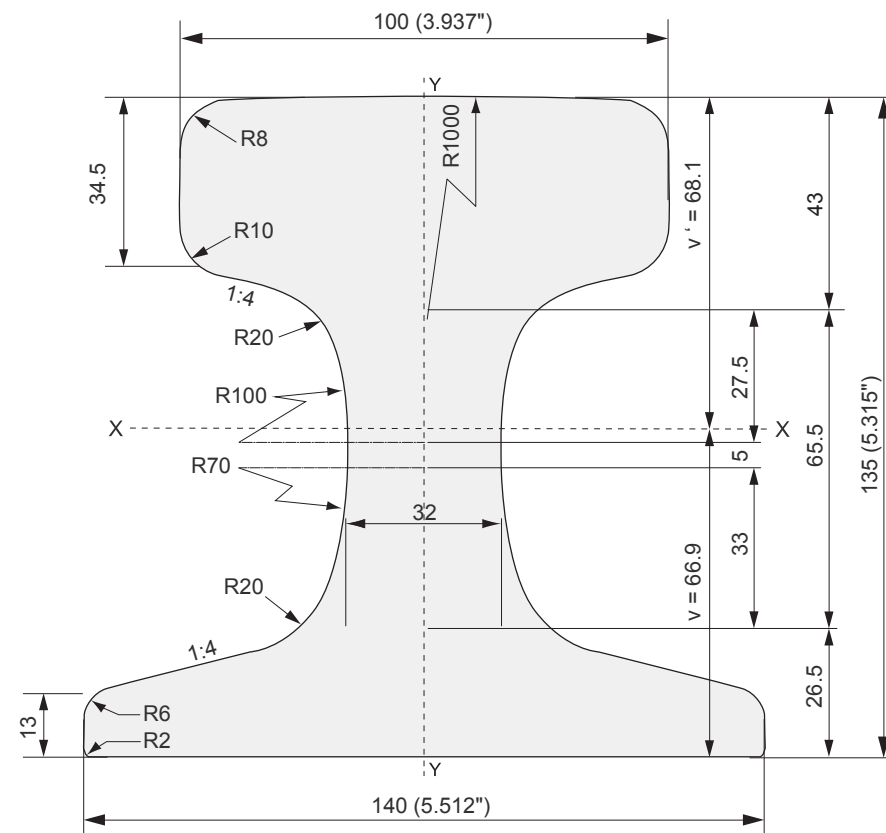
**MRS221**

Weight 221.40 kg/m | 446.32 lb/yd



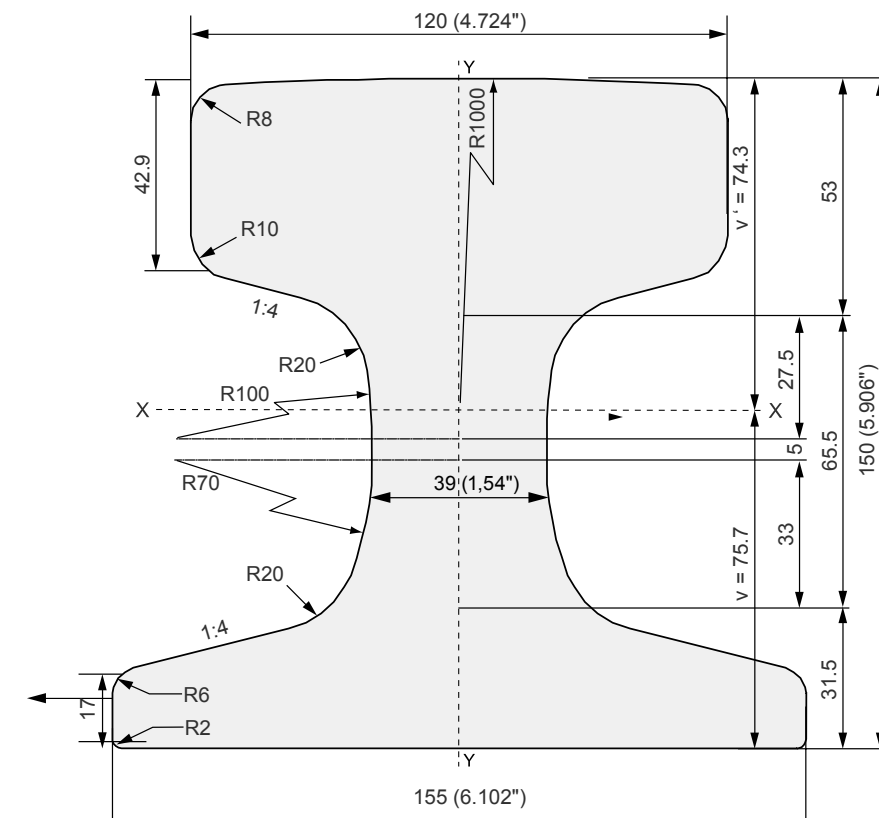
CR73

Weight 73.30 kg/m | 147.77 lb/yd



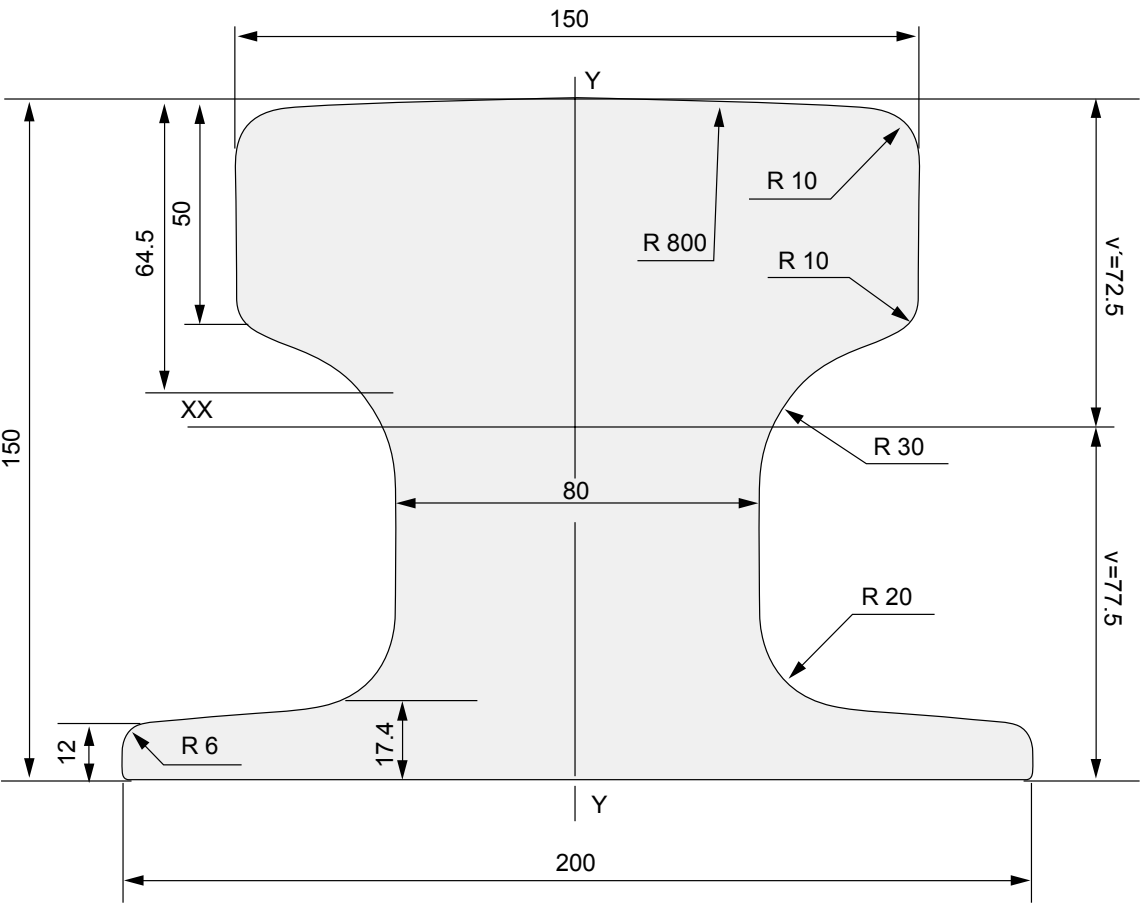
CR100

Weight 100.20 kg/m | 201.99 lb/yd



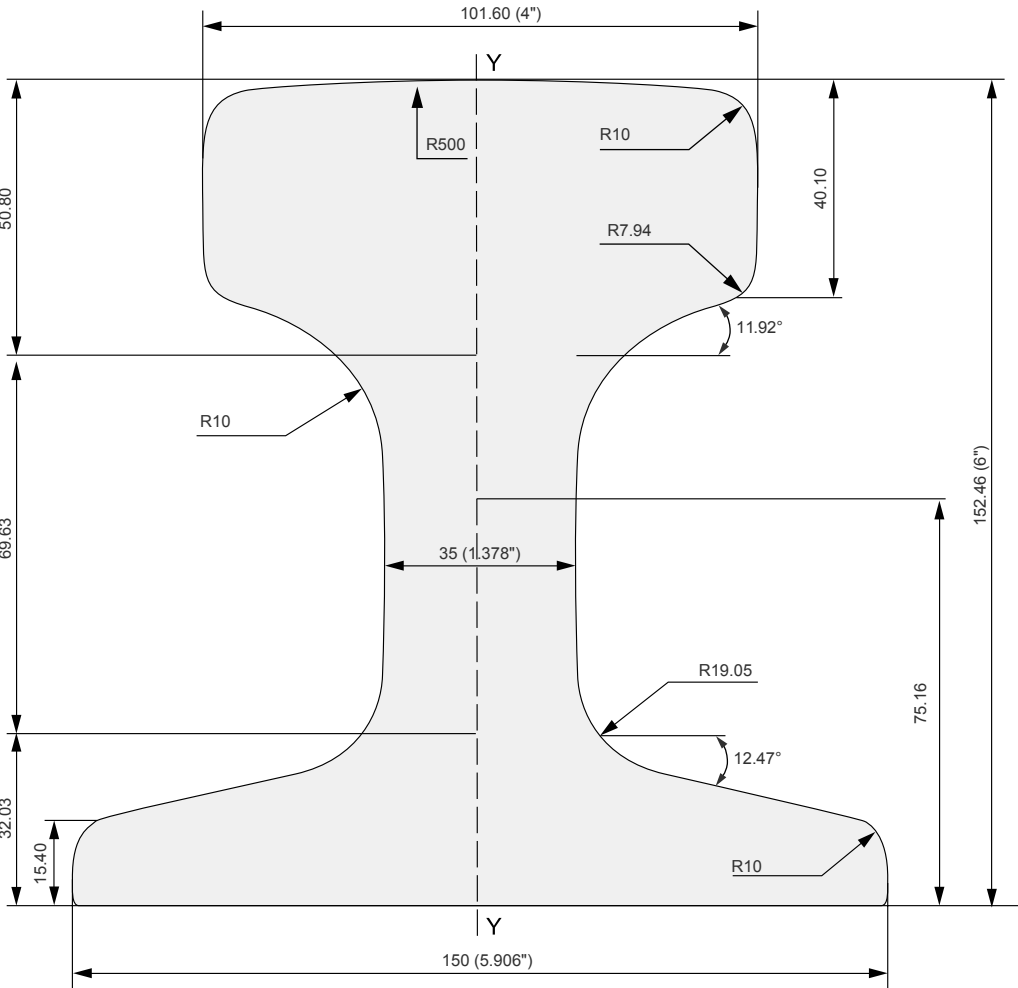
CR140

Weight 139.80 kg/m | 281.82 lb/yd



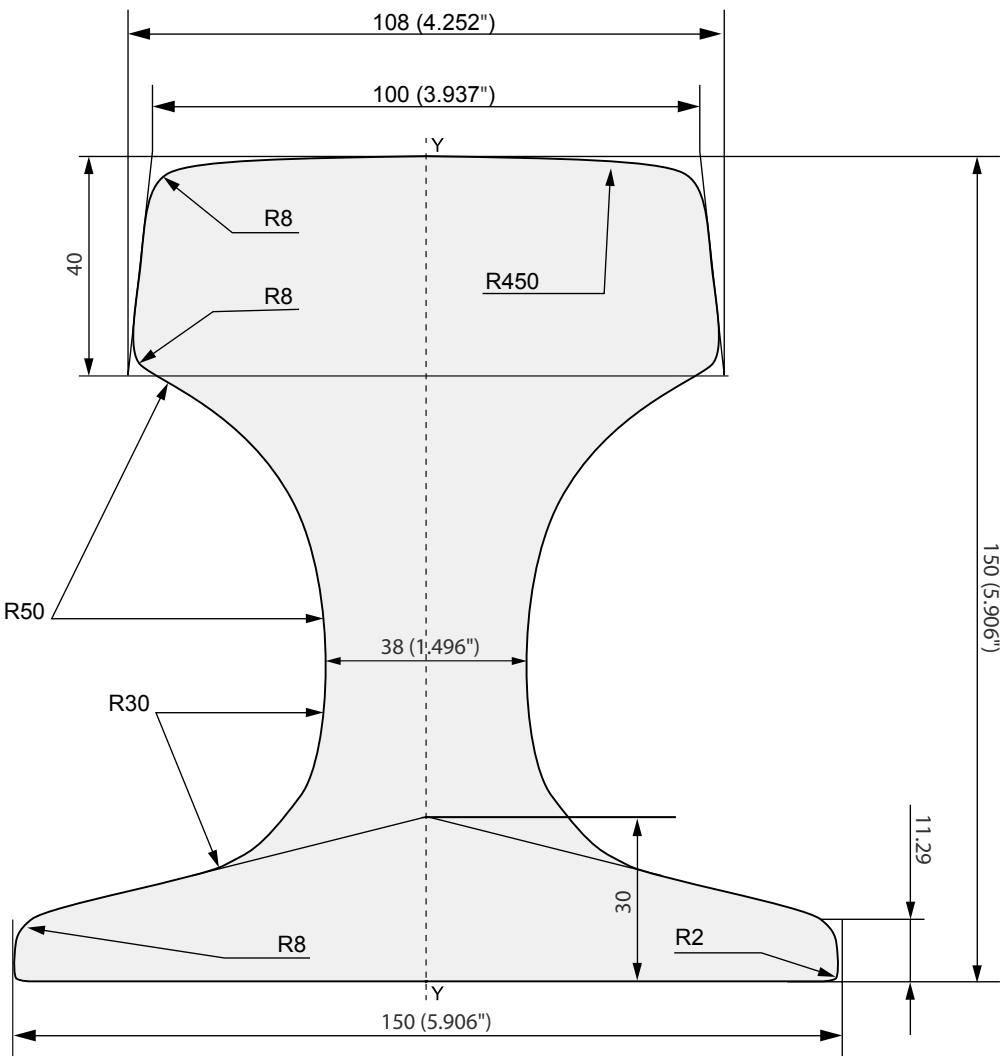
AS86

Weight 85.88 kg/m | 173.13 lb/yd



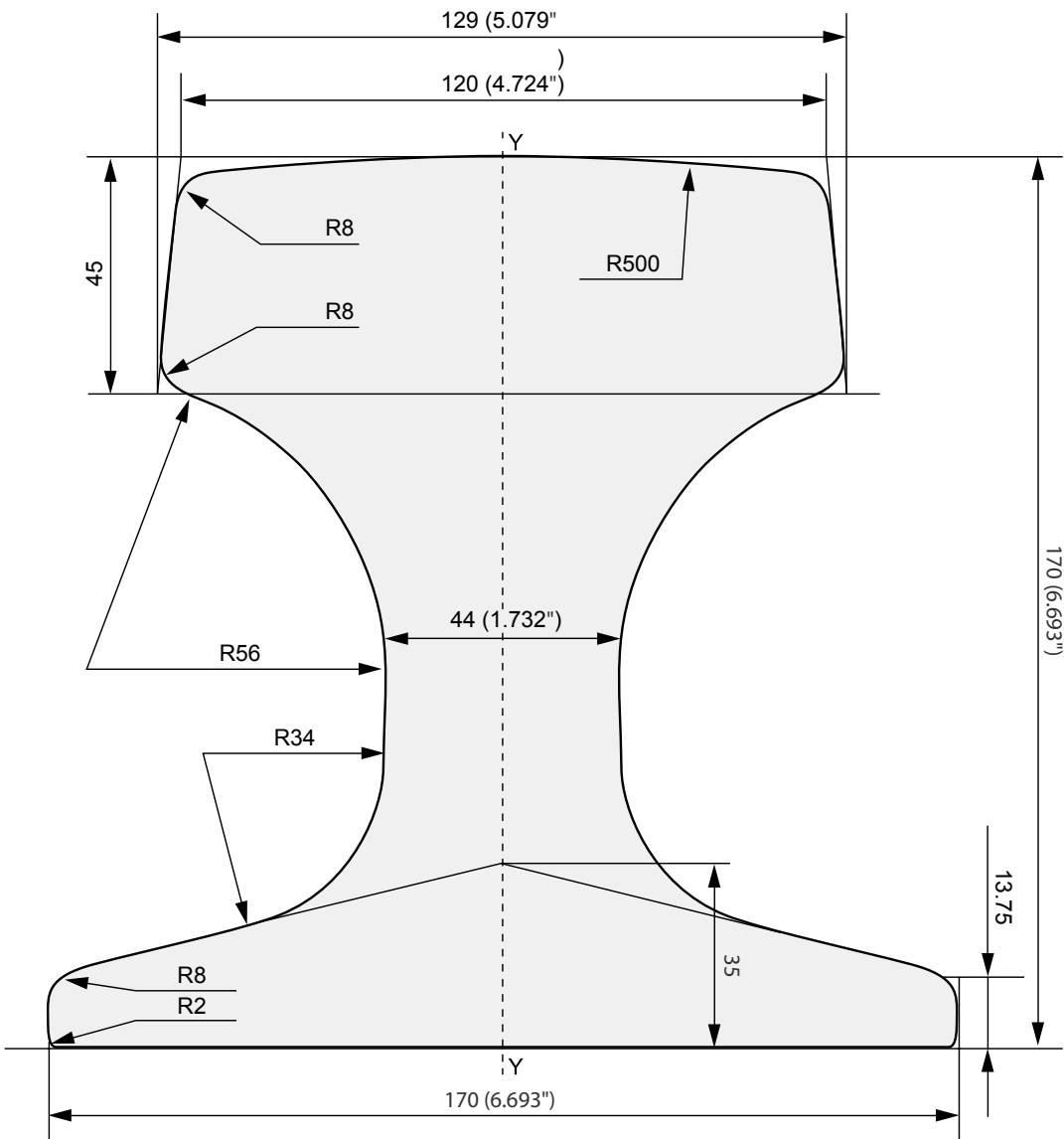
SP100

Weight 89.05 kg/m | 179.52 lb/yd



SP120

Weight 118.28 kg/m | 238.44 lb/yd





Light Rails

AMERICAN PROFILES

Description

In the interest of standardization, the American Society of Civil Engineers (or ASCE) developed a set of rail profiles in 1893. These rails all have a height equal to the width of their bases, and share the same proportions of steel weight in the head, web & foot.

The ASCE rails quickly spread all over the world with production taking place in mills far from the USA. With many producers of the same products, it was not uncommon for each Mill to follow its own standards and naming conventions. For example, ASCE45 is known as JIS22 under the Japanese Industrial Standards. Similarly, the Brazilian TR25 is the same as the ASCE50 rail. The TR is from the Portuguese ‘trilho’ or rail.

In the early days of railroading, rolling stock and the loads they carried were much lighter than they were to become. One of the first rails with the familiar 'I' shape originated in the UK in 1829. (Coincidentally, Stephenson’s Rocket locomotive was created in the same year.) These rails weighed just 36 lbs/yard (17.9 kg/m) whereas a modern Transport rail might be 136 lbs/yard (67.4 kg/m).

Over time, lightweight rails have been superseded by larger & heavier rails for transportation purposes. Mining was an early adopter, and lightweight rails found other uses: light crane systems, assembly lines, automated warehouse retrieval systems, amusement parks and even car washes, to name only a few. As this shift took place, Light Rail formed a class distinct from Transportation Rail. Different countries have developed their own standards and the rails themselves evolved with different shapes, sizes and specifications. European and American standards dominate the Light Rail market.

American Light Rails are produced under the dimensional tolerances and mechanical properties defined in the ASTM A1/00 technical specification.

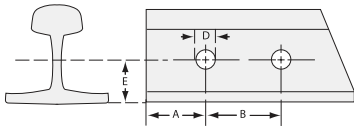
American Light Rails are produced in standard lengths of 33, 39, 40, 60, 78 and 80 feet (≈ 10, 12, 18 and 24 meters). Other lengths are also available upon special request. The ends can be finished as needed, either non-drilled (blank) for welding or drilled with 2 holes for joint bars.

Basic Dimensions

Profiles	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb / yd	mm	in	mm	in	mm	in	mm	in
ASCE20	9.92	20.00	34.13	1 11/32	66.68	2 5/8	66.68	2 5/8	6.35	1/4
ASCE25	12.40	25.00	38.10	1 1/2	69.85	2 3/4	69.85	2 3/4	7.54	19/64
ASCE30	14.88	30.00	42.86	1 11/16	79.38	3 1/8	79.38	3 1/8	8.33	21/64
ASCE40	19.84	40.00	47.63	1 7/8	88.90	3 1/2	88.90	3 1/2	9.92	25/64
ASCE45 (JIS22)	22.32	45.00	50.80	2	93.66	3-11/16	93.66	3-11/16	10.72	27/64
ASCE50 (TR25)	24.80	50.00	53.98	2 1/8	98.43	3 7/8	98.43	3 7/8	11.11	7/16
ASCE60	29.76	60.00	60.33	2 3/8	107.95	4 1/4	107.95	4 1/4	12.30	31/64
ASCE75 (JIS37, TR37)	37.20	75.00	62.71	2 15/32	122.24	4 13/16	122.24	4 13/16	13.49	17/32
ASCE80	39.68	80.00	63.50	2 1/2	127.00	5	127.00	5	13.89	35/64
ASCE85	42.16	85.00	65.09	2 9/16	131.76	5 3/16	131.76	5 3/16	14.29	9/16

Mechanical Properties

Profiles	Grades available				
	≥ 155 HB	≥ 201 HB	≥ 260 HB	≥ 285 HB	≥ 320 HB
ASCE20	✓				
ASCE25, ASCE30, ASCE40, ASCE45, ASCE50		✓			
ASCE60, ASCE75		✓	✓		✓
ASCE80		✓	✓	✓	✓
ASCE85				✓	✓

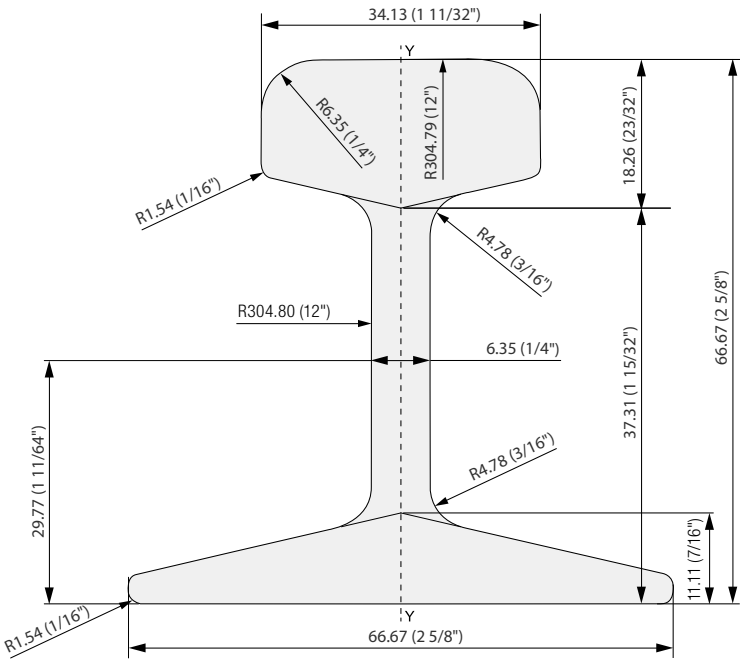


Drilling

Rail profile	Spacing				Hole diameter		Elevation	
	A		B		D		E	
	mm	in	mm	in	mm	in	mm	in
ASCE20	50.80	2	101.60	4	15.90	5/8	29.80	1 11/64
ASCE25	50.80	2	101.60	4	15.88	5/8	31.35	1 15/64
ASCE30	50.80	2	101.60	4	19.05	3/4	35.32	1 25/64
ASCE40	63.50	2 1/2	127.00	5	22.23	7/8	39.69	1 9/16
ASCE45 (JIS22)	63.50	2 1/2	127.00	5	22.20	7/8	41.67	1 41/64
ASCE50 (TR25)	63.50	2 1/2	127.00	5	22.20	7/8	43.66	1 23/32
ASCE60	63.50	2 1/2	127.00	5	23.81	15/16	48.42	1 29/32
ASCE75 (JIS37, TR37)	68.30	2 1/2	139.70	5 1/2	25.40	1	53.78	2 15/128
ASCE80	63.50	2 1/2	127.00	5	25.40	1	55.56	2 3/16
ASCE85	63.50	2 1/2	127.00	5	25.40	1	57.55	2 17/64

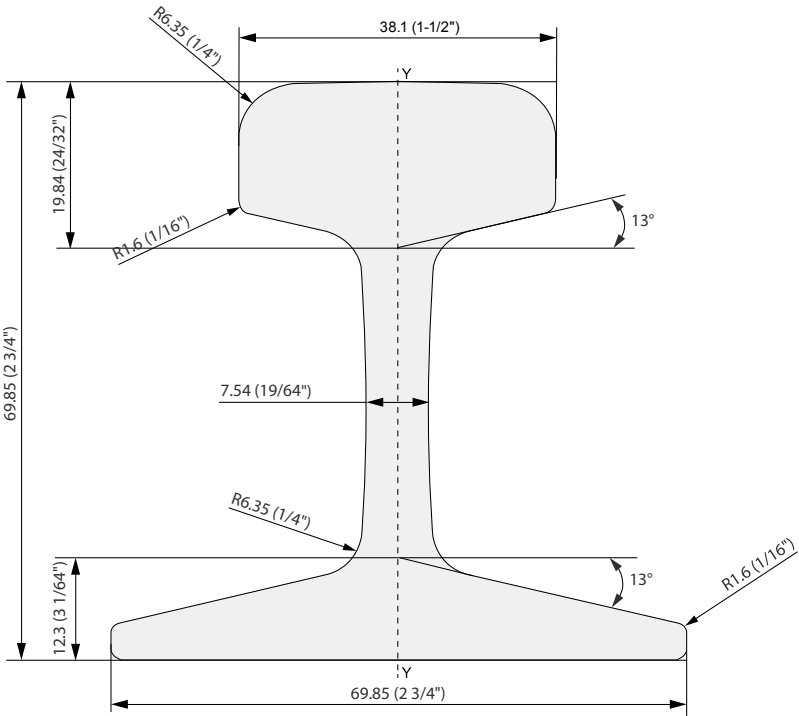
ASCE20

Weight 9.92 kg/m | 20.00 lb/yd



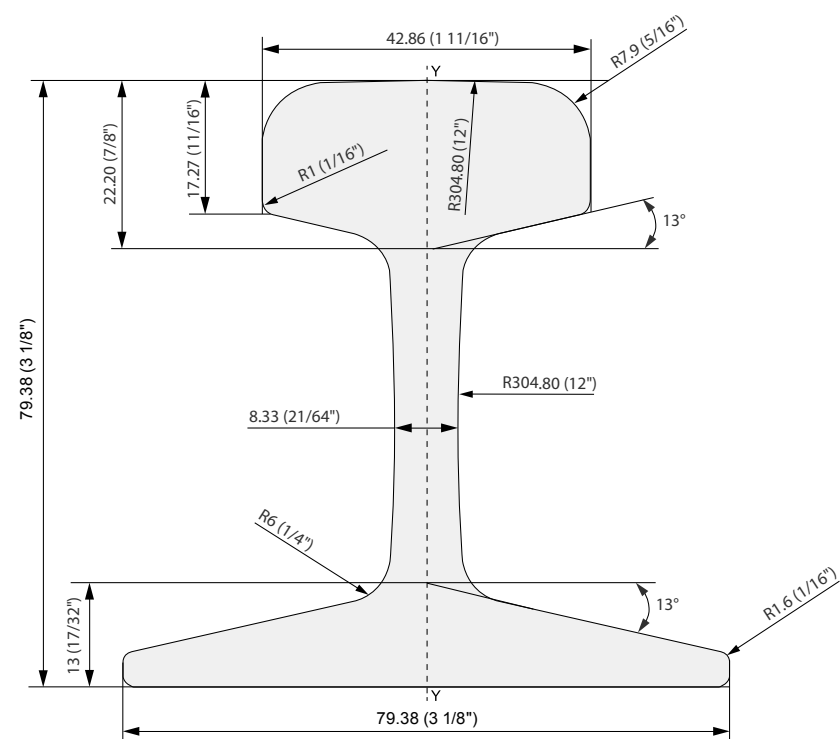
ASCE25

Weight 12.40 kg/m | 25.00 lb/yd



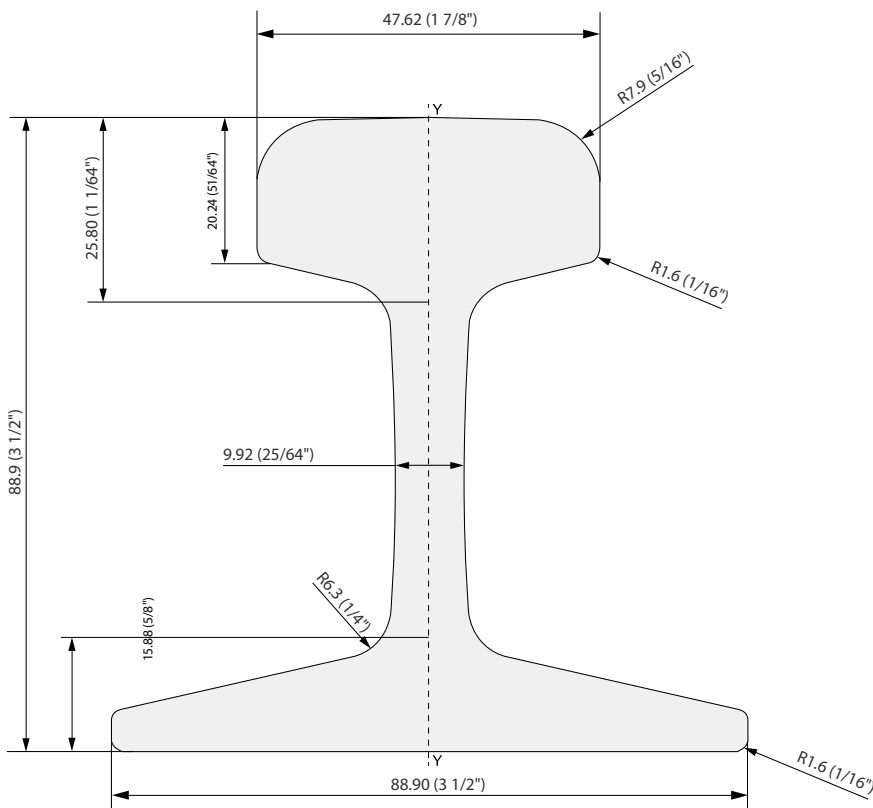
ASCE30

Weight 14.88 kg/m | 30.00 lb/yd



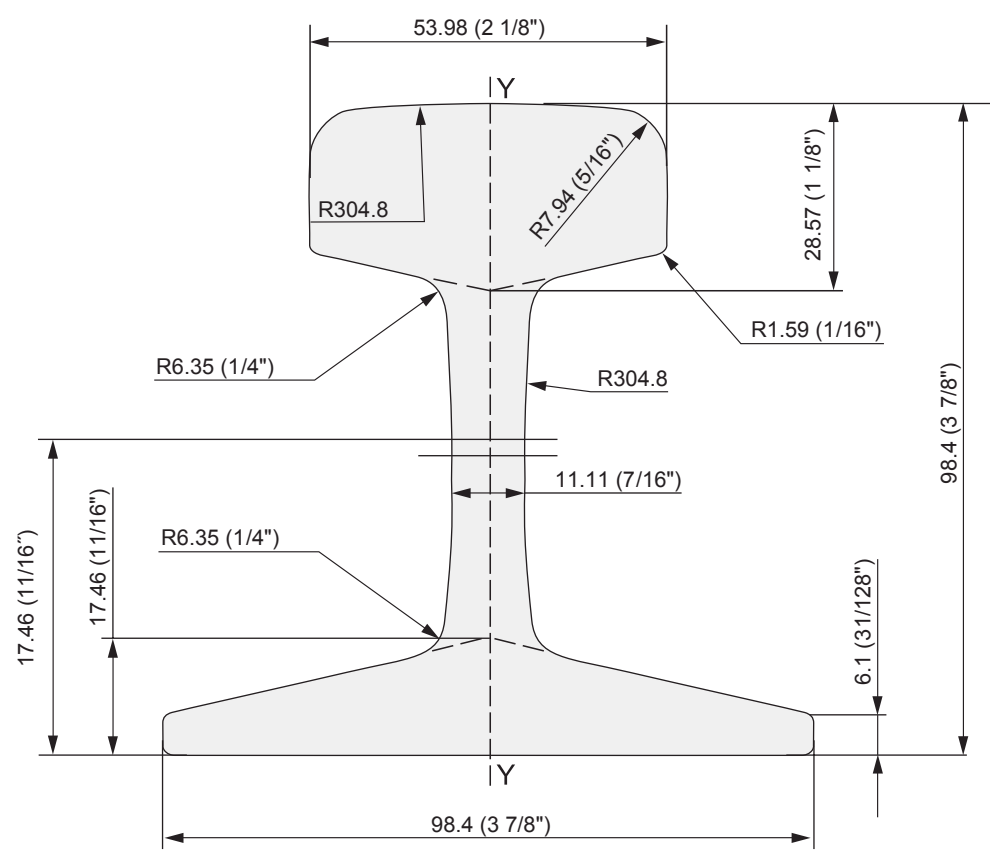
ASCE40

Weight 19.84 kg/m | 40.00 lb/yd



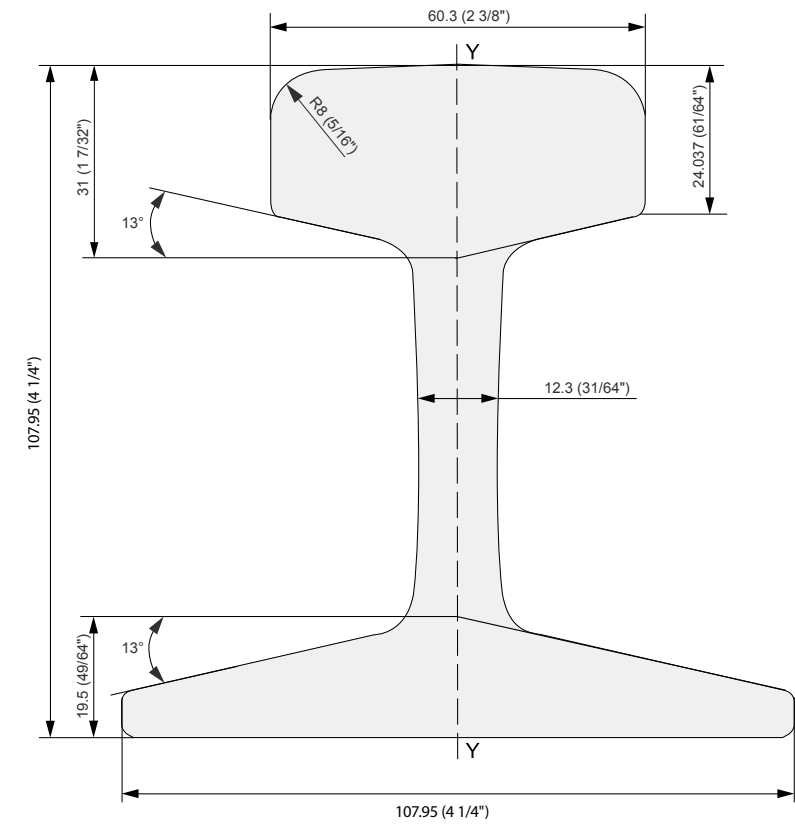
ASCE50 (TR25)

Weight 24.80 kg/m | 50.00 lb/yd



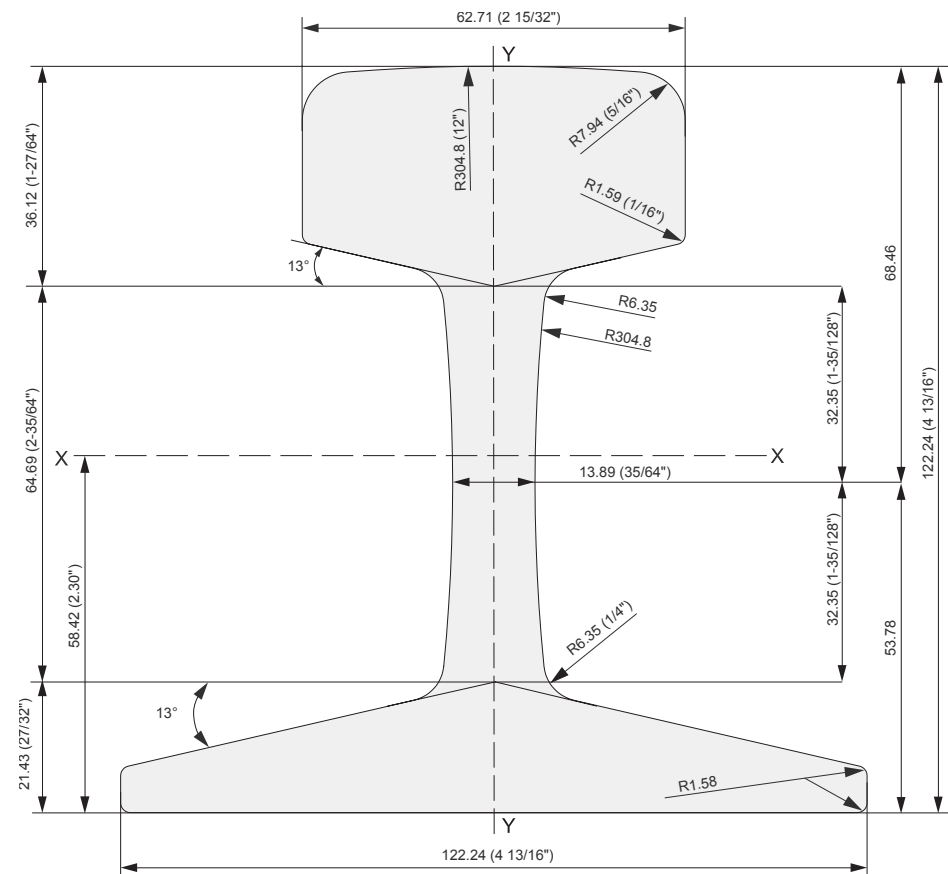
ASCE60

Weight 29.76 kg/m | 60.00 lb/yd



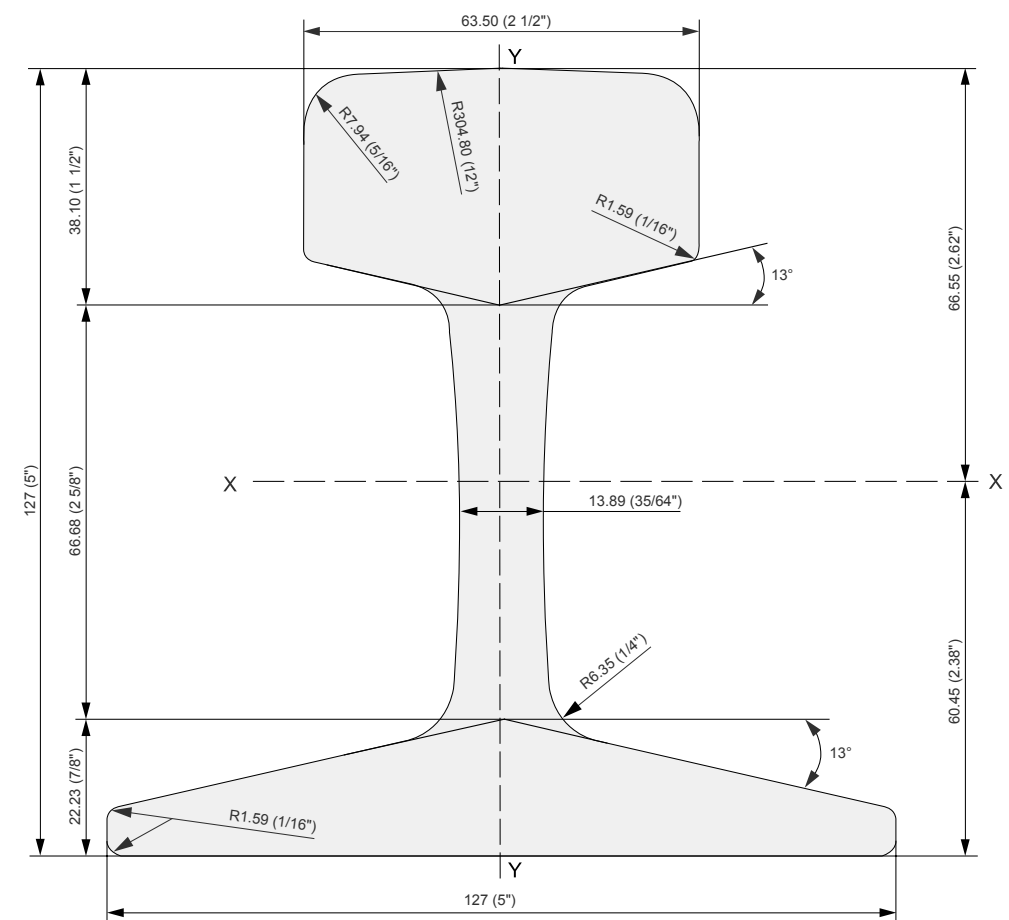
ASCE75 (JIS37, TR37)

Weight 37.20 kg/m | 75.00 lb/yd



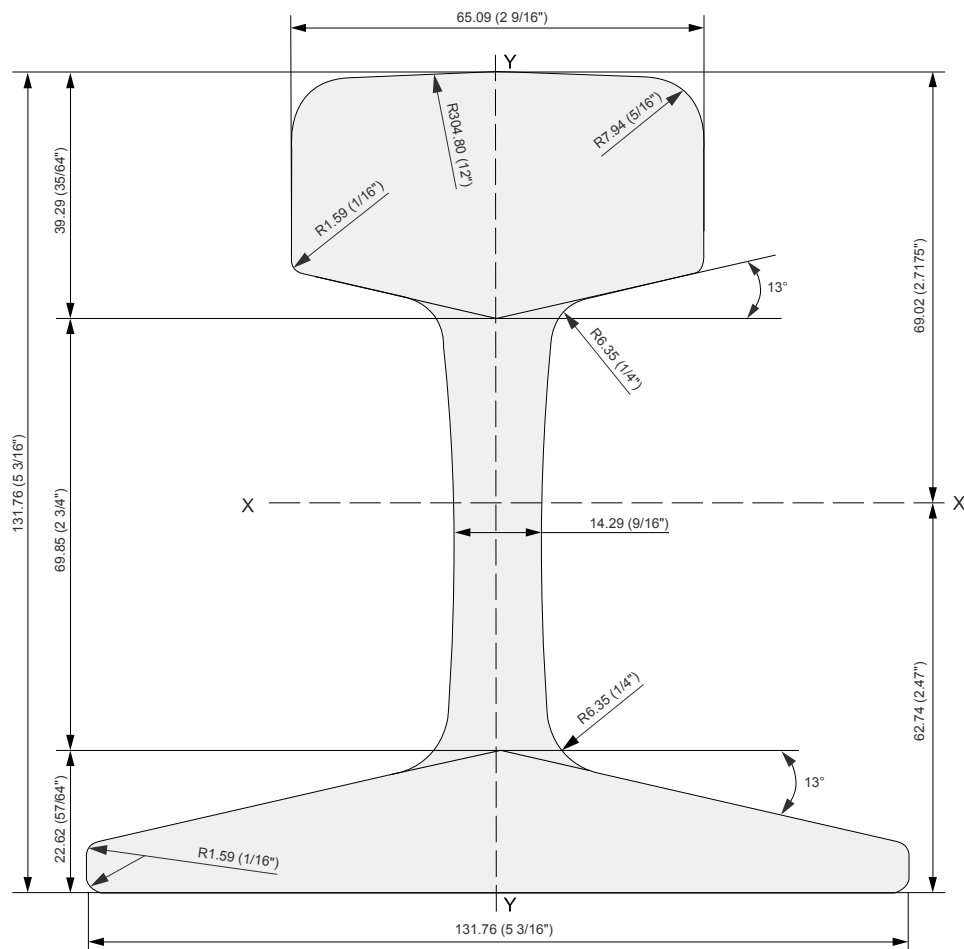
ASCE80

Weight 39.68 kg/m | 80.00 lb/yd



ASCE85

Weight 42.16 kg/m | 85.00 lb/yd





Light Rails

EUROPEAN PROFILES

In the early days of railroading, rolling stock and the loads they carried were much lighter than they were to become. One of the first rails with the familiar 'I' shape originated in the UK in 1829. (Coincidentally, Stephenson’s Rocket locomotive was created in the same year.) These rails weighed just 36 lbs/yard (17.9 kg/m) whereas a modern Transport rail might be 136 lbs/yard (67.4 kg/m).

Over time, lightweight rails have been superseded by larger & heavier rails for transportation purposes. Mining was an early adopter, and lightweight rails found other uses: light crane systems, assembly lines, automated warehouse retrieval systems, amusement parks and even car washes, to name only a few. As this shift took place, Light Rail formed a class distinct from Transportation Rail. Different countries have developed their own standards and the rails themselves evolved with different shapes, sizes and specifications. European and American standards dominate the Light Rail market.

Description

European Light Rails are offered in many sizes and shapes. Over the years, rail production has jumped between countries, but the products remain unchanged. The “S” rails were a German creation. Similarly “BS” rails were created in the UK, “UNI” rails were first produced in Italy, and “AFNOR” rails were originally French products. Today, you may find these rails produced in countries such as Luxembourg, Poland and Spain.

European Light Rails are finished in standard lengths of 9, 10, 12, 15 and 18 metres (29.528 to 59.055 ft), but other lengths can be supplied by special request. Drilled ends are the norm, with non-drilled (blank) ends supplied by special request.

Basic Dimensions

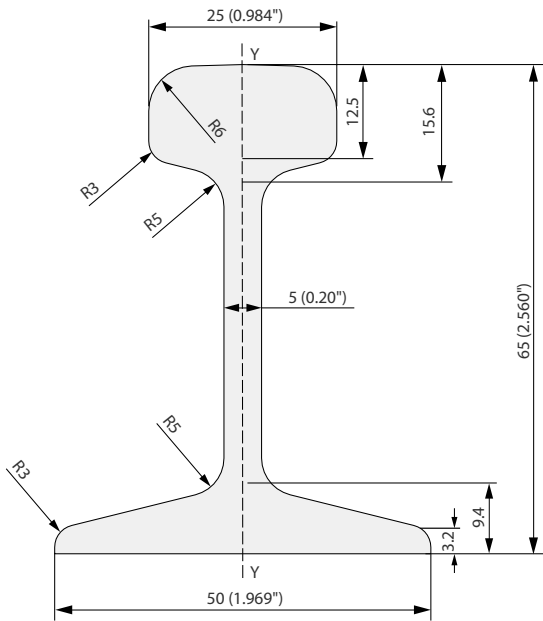
Profiles	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
S7	6.75	13.61	25.00	0.98	65.00	2.56	50.00	1.97	5.00	0.20
S10	10.00	20.16	32.00	1.26	70.00	2.76	58.00	2.28	6.00	0.24
S14	14.00	28.22	38.00	1.50	80.00	3.15	70.00	2.76	9.00	0.35
S18	18.30	36.89	43.00	1.69	93.00	3.66	82.00	3.23	10.00	0.39
S20	19.84	40.00	44.00	1.73	100.00	3.94	82.00	3.23	10.00	0.39
S24	24.43	49.25	53.00	2.09	115.00	4.53	90.00	3.54	10.00	0.39
S30	30.03	60.54	60.30	2.37	108.00	4.25	108.00	4.25	12.30	0.48
S31	31.57	63.64	56.00	2.20	125.00	4.92	106.00	4.17	12.00	0.47
S33 (33E1)	33.47	67.47	58.00	2.28	134.00	5.28	105.00	4.13	11.00	0.43
S41A	44.24	83.14	67.00	2.64	138.00	5.43	125.00	4.92	12.00	0.47
AFNOR26	26.27	52.96	50.00	1.97	110.00	4.33	100.00	3.94	10.00	0.39
AFNOR30	30.15	60.78	58.42	2.30	125.50	4.94	106.00	4.17	11.00	0.43
AFNOR36	36.59	73.76	58.27	2.29	128.00	5.04	115.00	4.53	13.00	0.51
BS35 M	17.40	35.08	42.86	1.69	80.96	3.19	76.20	3.00	9.13	0.36
BS35 R	17.40	35.08	44.45	1.75	85.73	3.38	82.55	3.25	8.33	0.33
BS80 A (39E1)	39.77	80.17	63.50	2.50	133.40	5.25	117.50	4.63	13.10	0.52

Mechanical Properties

Profiles	Grades available			
	≥ 160 HB	≥ 200 HB	≥ 260 HB	≥ 320 HB
S7, S10	✓			
S14, S18, S20, S24		✓		
S30, S31, S33, S39		✓	✓	
BS35M, BS35R		✓		
AFNOR26, AFNOR30, AFNOR36			✓	
S41A, BS80A			✓	✓

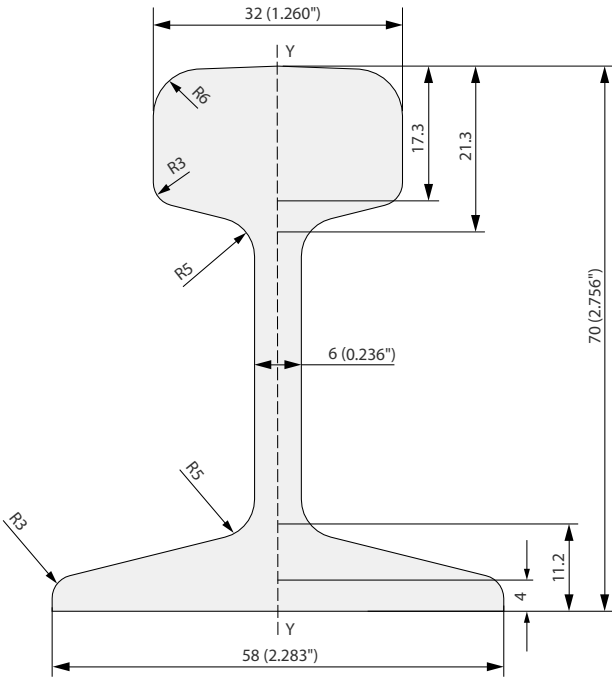
S7

Weight 6.75 kg/m | 13.61 lb/yd



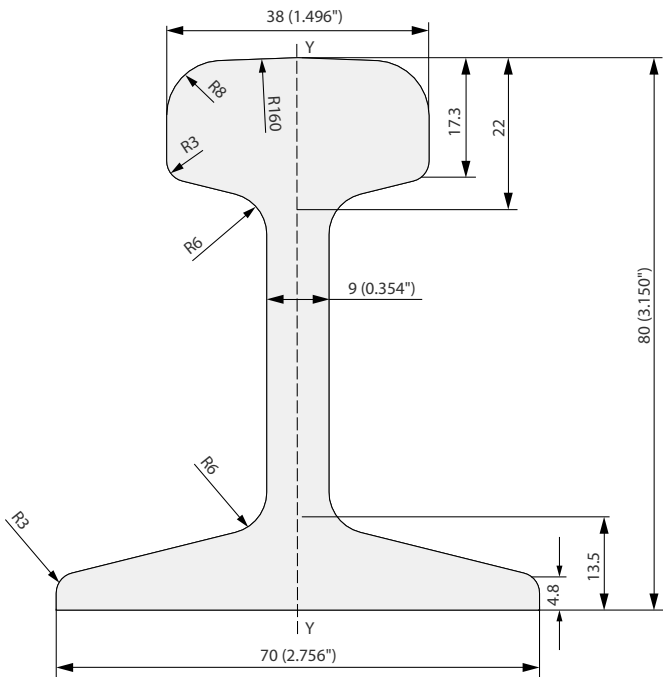
S10

Weight 10.00 kg/m | 20.16 lb/yd



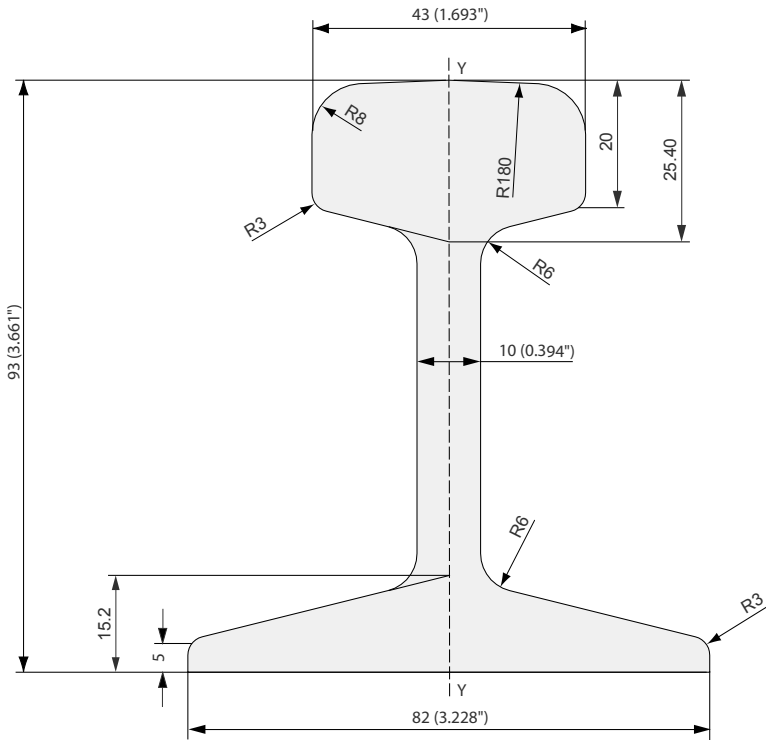
S14

Weight 14.00 kg/m | 28.22 lb/yd



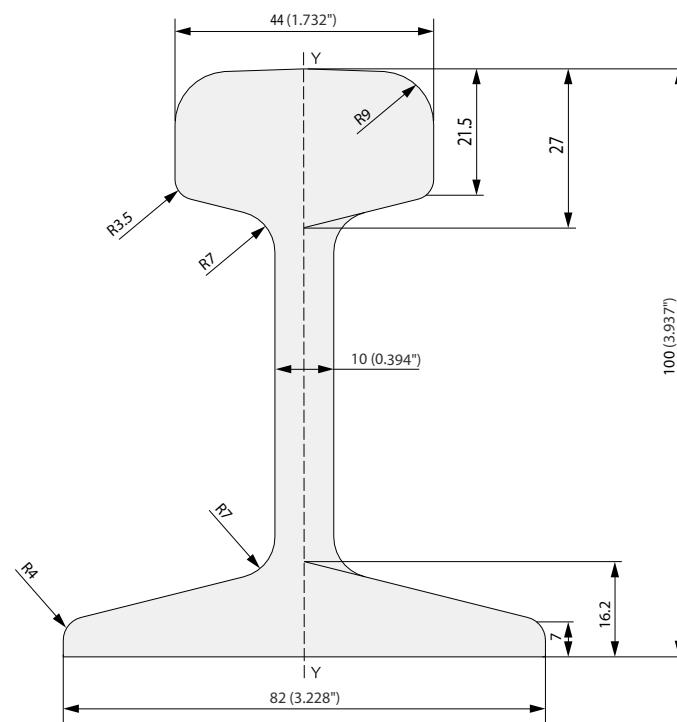
S18

Weight 18.30 kg/m | 36.89 lb/yd



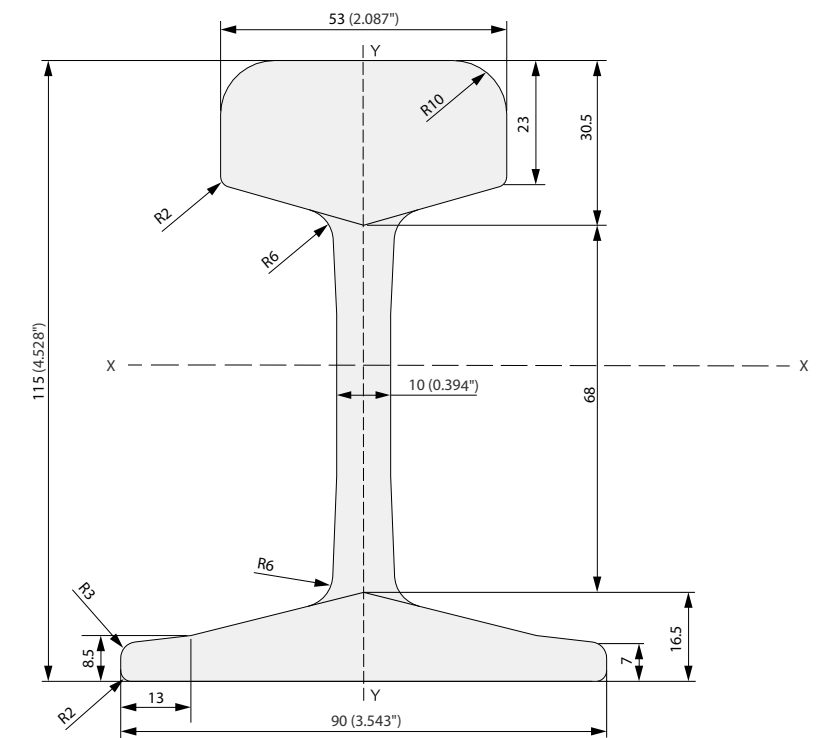
S20

Weight 19.84 kg/m | 40.00 lb/yd



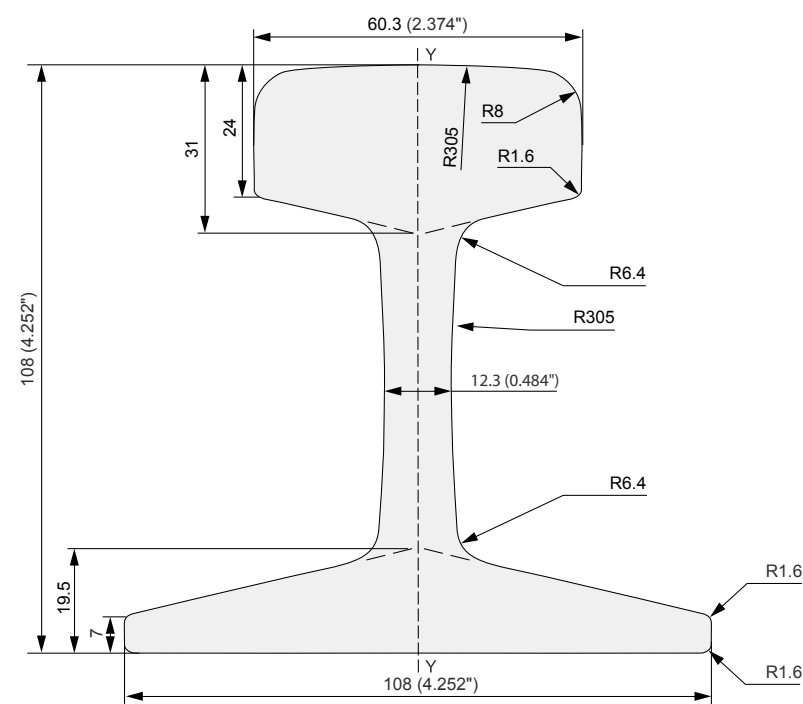
S24

Weight 24.43 kg/m | 49.25 lb/yd



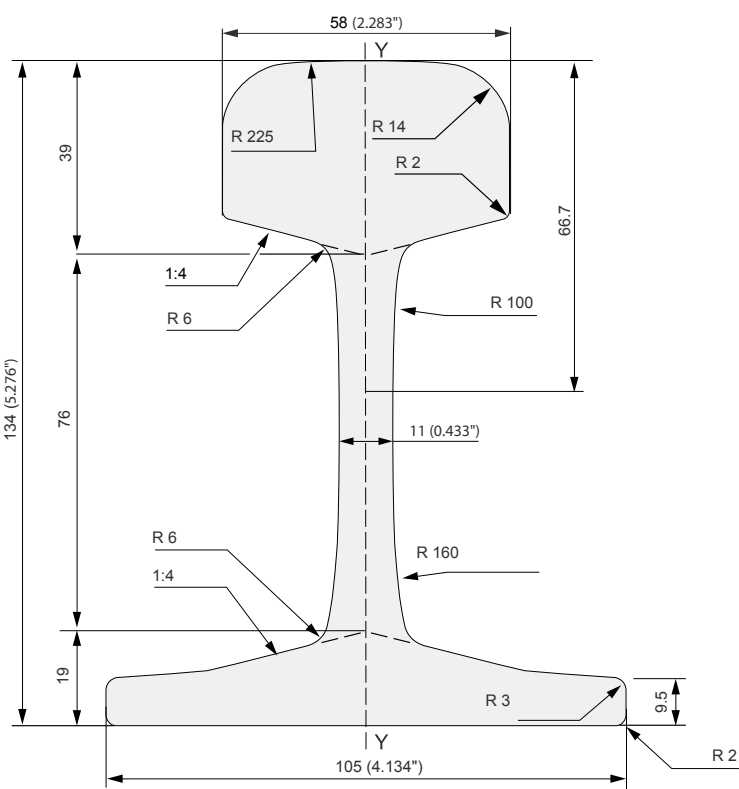
S30

Weight 30.03 kg/m | 60.54 lb/yd



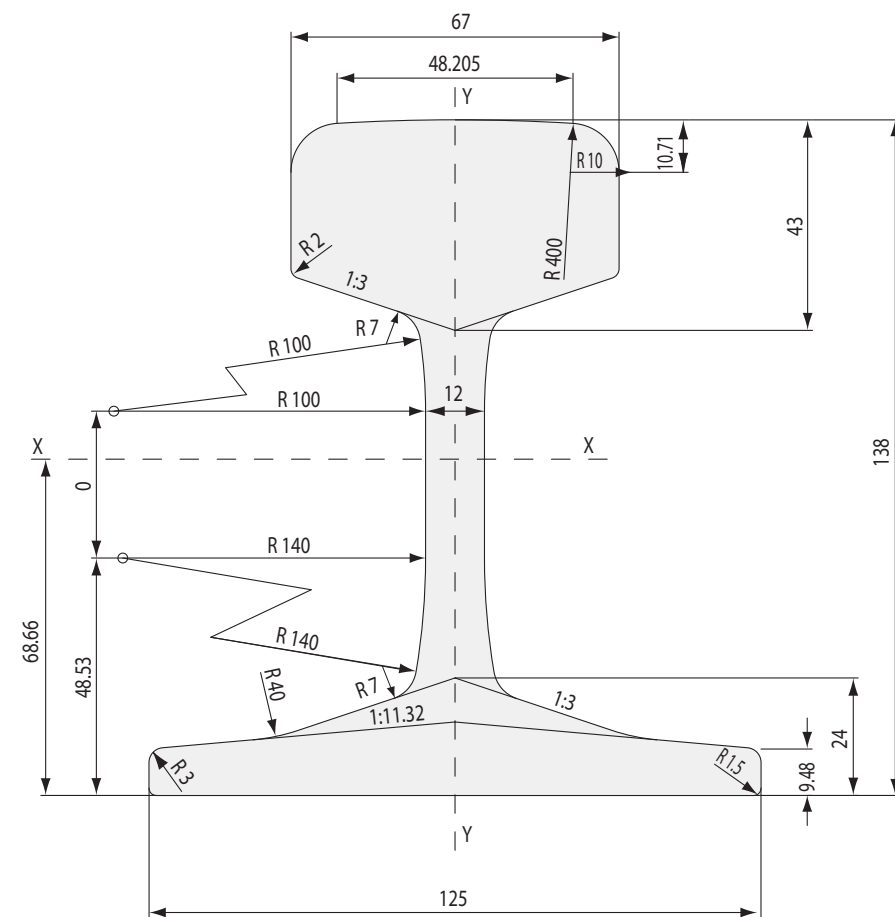
S33 (33E1)

Weight 33.47 kg/m | 67.47 lb/yd



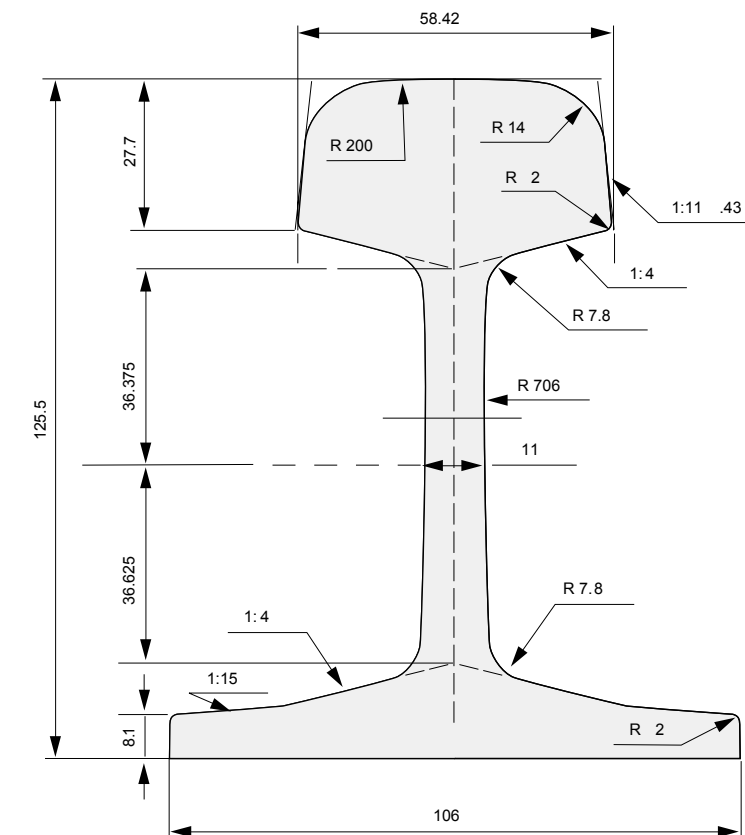
S41A

Weight 44.24 kg/m | 83.14 lb/yd



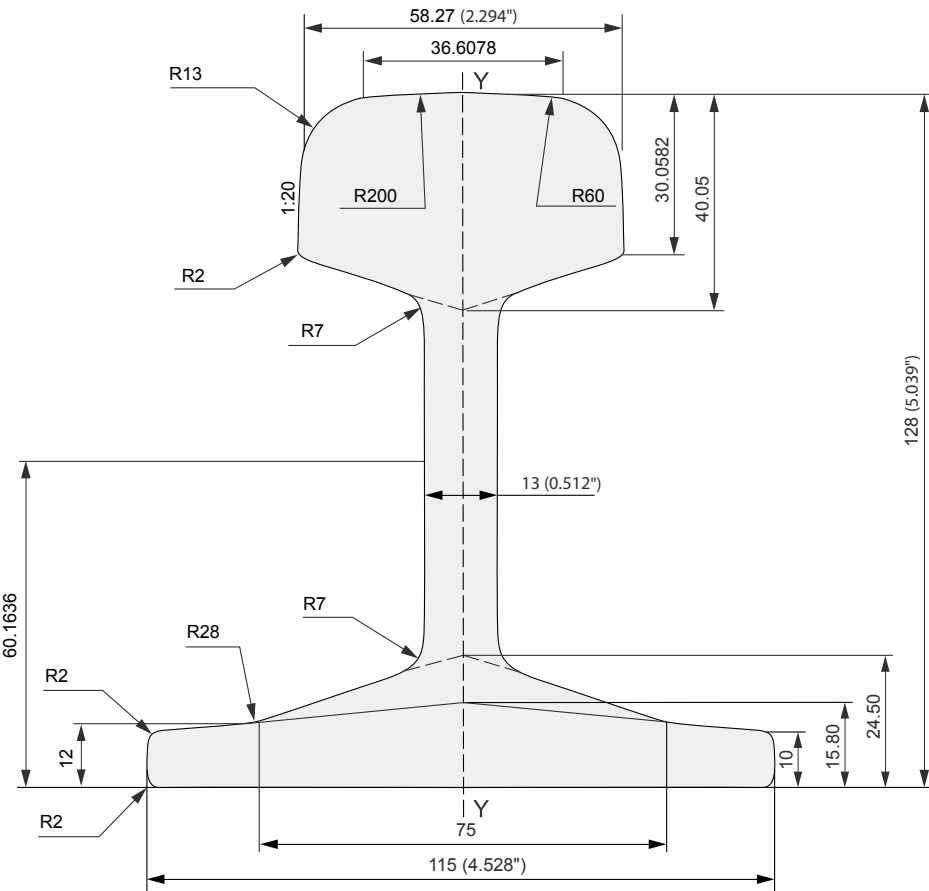
AFNOR 30

Weight 30.15 kg/m | 60.78 lb/yd



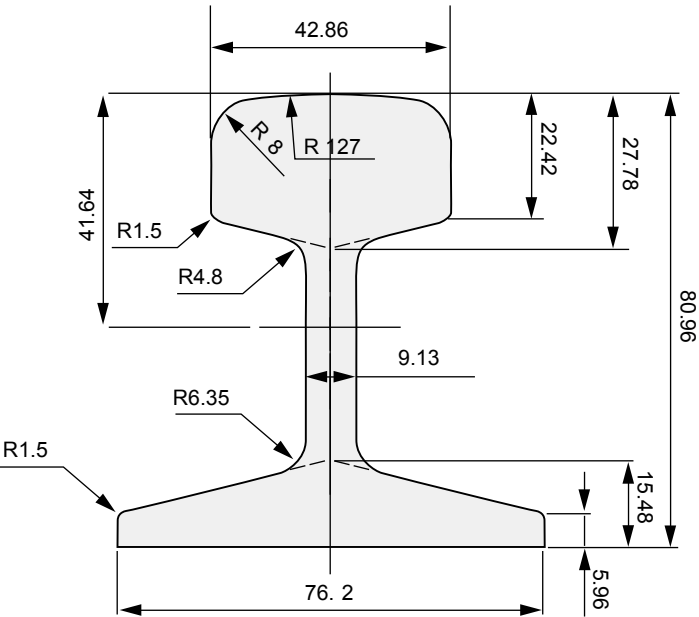
AFNOR 36

Weight 36.59 kg/m | 73.76 lb/yd



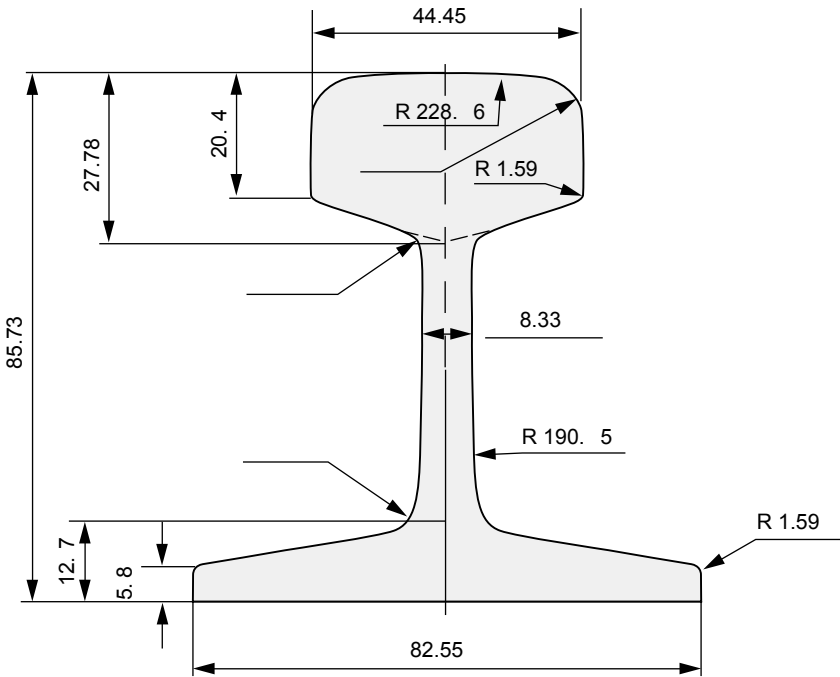
BS35 M

Weight 17.40 kg/m | 35.08 lb/yd



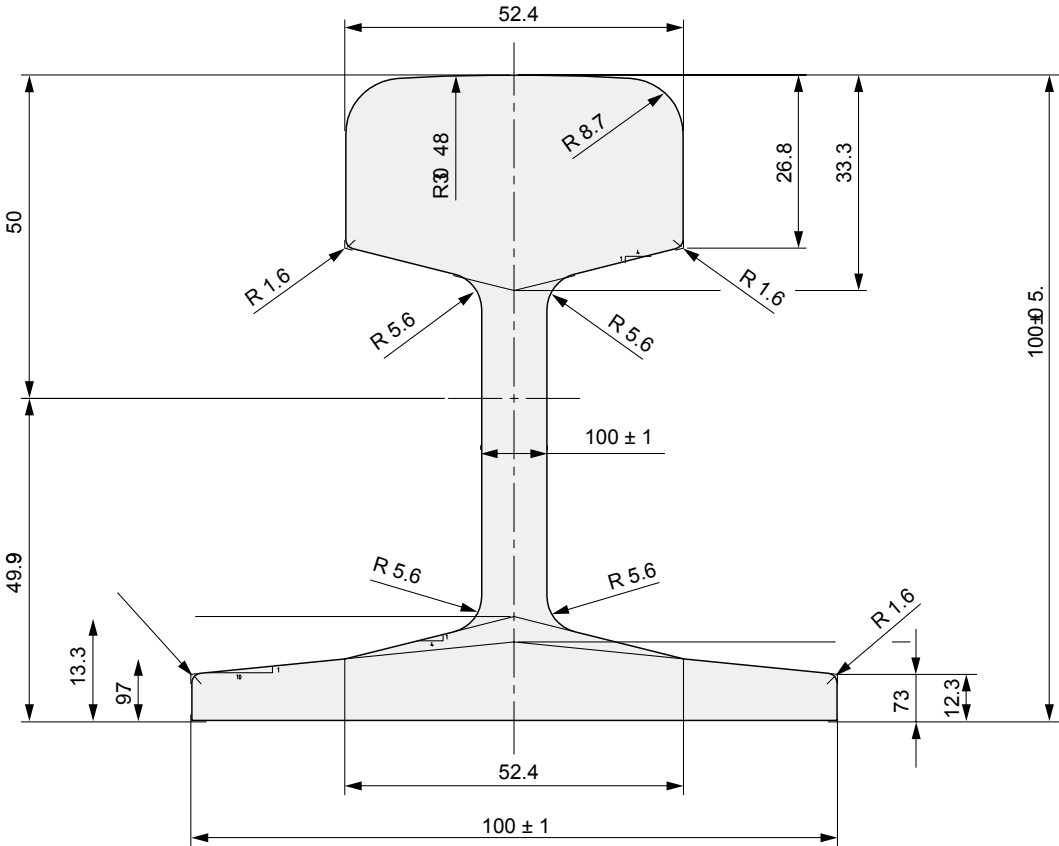
BS35 R

Weight 17.40 kg/m | 35.08 lb/yd

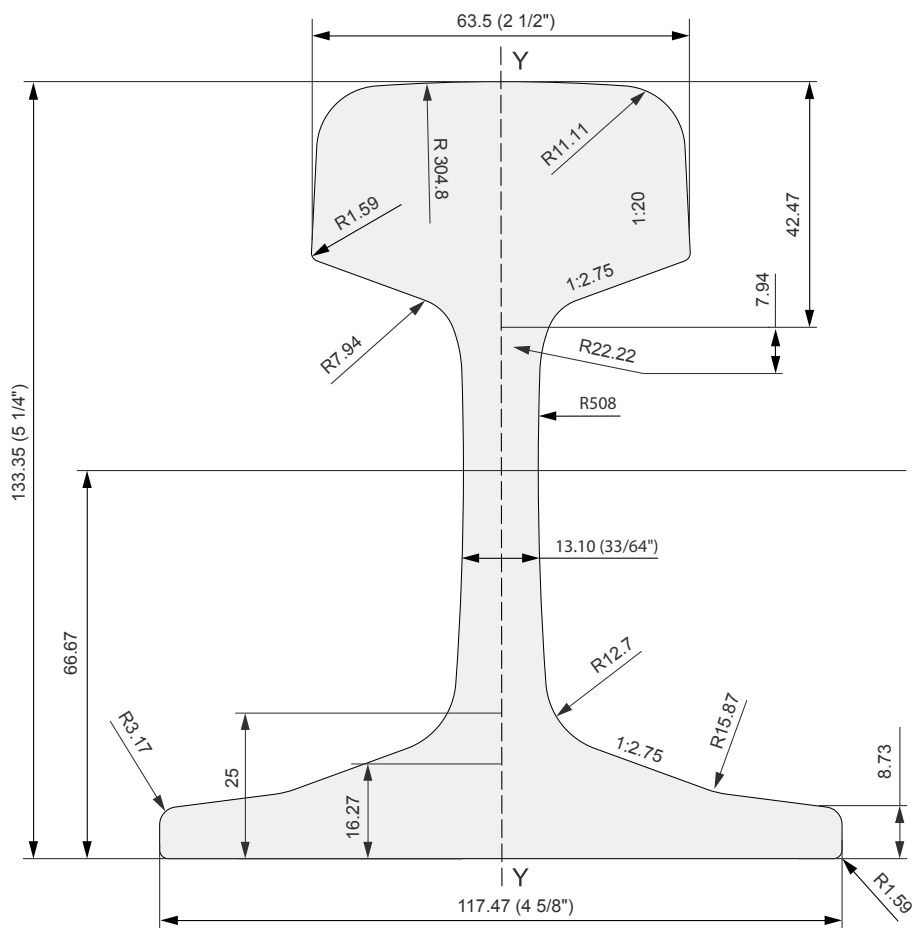


BS50 'O'

Weight 24.83 kg/m | 50.05 lb/yd



Weight 39.77 kg/m | 80.17 lb/yd





Transport Rails

AMERICAN PROFILES

Description

Many American organizations have contributed to the design of Transport rails. Not all of these organizations still exist but their names live on in the rails which they developed.

These organizations include:

- **ASTM** – American Society for Testing and Materials
- **AREMA** – American Railway Engineering and Maintenance-of-Way Association
- **AREA** – American Railway Engineering Association (now part of AREMA)
- **ARA** – American Railway Association (now part of AREMA)
 - **ARA-A** – higher grade rail for high speeds applications
 - **ARA-B** – lower grade rail for heavy loads at low speeds

For railway and industrial applications, rail sections weighing in the range 60 lbs/yard (29.76 kg/m) to 110 lbs/yard (54.57 kg/m) are typically governed by the ASTM A1 specification. Transport rails weighing more than 111 lbs/yard (55.06 kg/m) follow AREMA specifications. Wirth Rail offers American Transport rail profiles in a number of different grades to suit different applications. There are many grades available, but those defined by AREMA and ASTM are the most common. In general, relative to other rail types, American Transport Rails tend to be very hard to reduce in-service wear.

Various lengths are available, with the most common being 39ft (11.887m), 40ft (12.192m) and 80ft (24.384m).

Transport Rails are the most familiar rails produced. They are used by freight, passenger and public-transit railways to move goods and people long distances.

The installation of Transport Rails is usually on tie-and-ballast foundations. This has encouraged rail shapes with tall profiles to better transfer wheel loads from tie-to-tie. Transport rails are all relatively heavy sections, greater than 90 lbs/yard (44.64 kg/m).

Transport Rails are connected to one another by welding and/or by jointed connections. Rails can be furnished with either drilled or non-drilled (blank) ends as required.

Basic Dimensions

Profiles	Weight		Head Width		Height		Base Width		Web	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
90ARA-A (TR45)	44.64	90.00	65.09	2 9/16	142.88	5 5/8	130.18	5 1/8	14.29	9/16
100ARA-A	49.88	100.56	69.85	2 3/4	152.40	6	139.70	5 1/2	14.29	9/16
100ARA-B (100-8)	49.87	100.53	67.47	2 21/32	143.27	5 41/64	130.57	5 9/64	14.29	9/16
100RE (TR50)	50.35	101.50	68.26	2 11/16	152.40	6	136.53	5 3/8	14.29	9/16
115RE (TR57)	56.89	114.68	69.06	2 23/32	168.28	6 5/8	139.70	5 1/2	15.88	5/8
119RE	58.86	118.67	67.47	2 21/32	173.04	6 13/16	139.70	5 1/2	15.88	5/8
132RE	64.95	130.93	76.20	3	180.98	7 1/8	152.40	6	16.67	21/32
133RE	66.10	133.25	76.20	3	179.39	7 1/16	152.40	6	17.46	11/16
136RE (TR68)	67.41	135.88	74.61	2 15/16	185.74	7 5/16	152.40	6	17.46	11/16
141RE	69.80	140.70	77.79	3 1/16	188.91	7 7/16	152.40	6	17.46	11/16
136TW	87.95	177.30	74.61	2 15/16	185.74	7 5/16	152.40	6	42.86	1 11/16

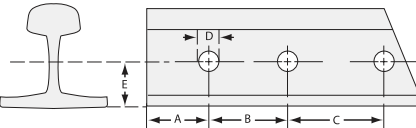
Mechanical Properties

Spec	Steel Grade	Hardness (HB)	Tensile Strength (ksi)	Yield Strength (ksi)	Elongation (%)
ASTM A1 for ≥ 85 lb/yd	Standard Strength	≥ 285	-	-	-
	High Strength	≥ 321	-	-	-
AREMA	Standard Strength	≥ 310	≥ 142.5	≥ 74.0	10
	Intermediate Strength	≥ 350	≥ 155.0	≥ 105.0	10
	High Strength	≥ 370	≥ 171.0	≥ 120.0	10

Chemical Compositon

Grades defined by ASTM or AREMA	C %	Mn %	P %	S %	Si %	Ni %	Cr %	Mb %	V %	Al %
AREMA (Carbon Steel)	0.74-0.86	0.75-1.25	≤ 0.020	≤ 0.020	0.10-0.60	≤ 0.25	≤ 0.30	≤ 0.060	≤ 0.010	≤ 0.010

Levels of the elements can differ than the ones indicated above



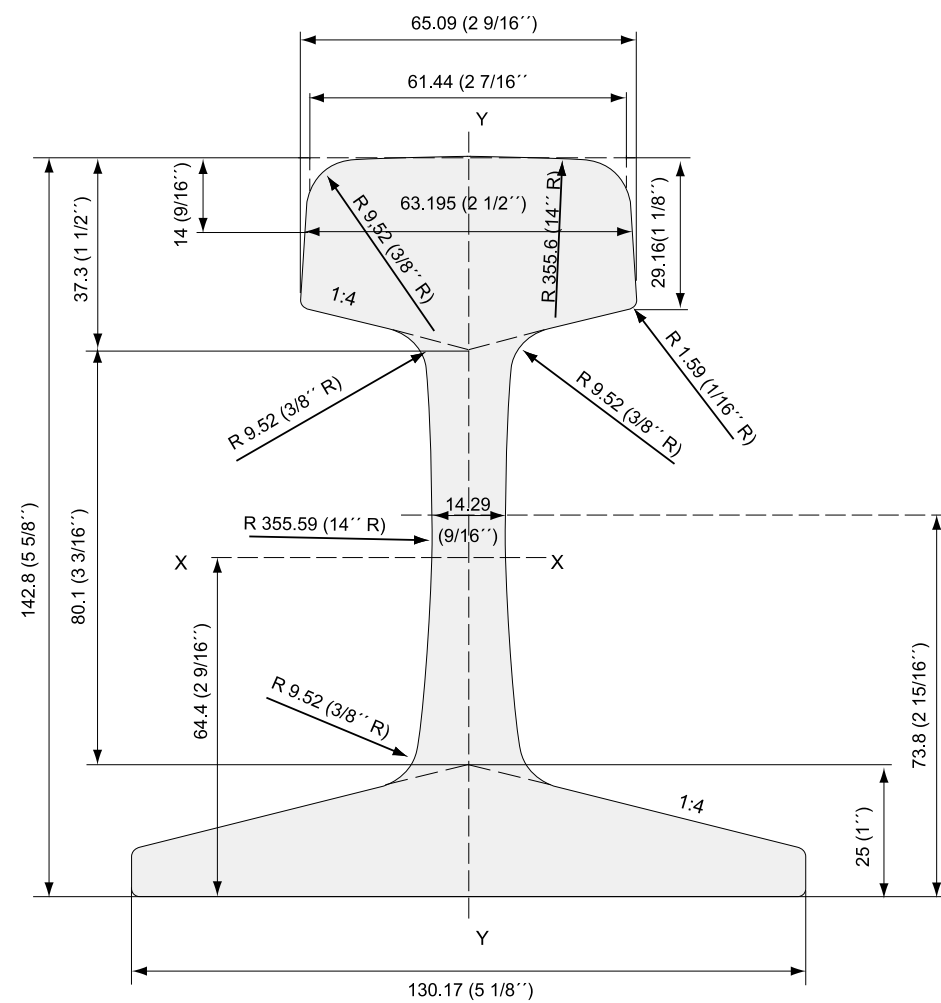
Drilling

These are the standard drilling dimensions for the various American Transport rails. Drilling can also be customized as needed.

Rail profile	Spacing				Hole diameter		Elevation			
	A mm	in	B mm	in	C mm	in	D mm	in	E mm	in
90ARA-A (TR45)	68.26	2 11/16	139.70	5 1/2	-	-	28.58	1 1/8	65.48	2 37/64
100ARA-A	68.26	2 11/16	139.70	5 1/2	-	-	30.16	1 3/16	69.85	2 3/4
100ARA-B (100-8)	67.47	2 21/32	184.15	7 1/4	139.70	5 1/2	28.58	1 1/8	63.70	2 65/128
100RE (TR50)	68.26	2 11/16	139.70	5 1/2	-	-	28.58	1 1/8	68.66	2 45/64
115RE (TR57)	88.90	3 1/2	152.40	6	152.40	6	28.58	1 1/8	73.03	2 7/8
119RE	88.90	3 1/2	152.40	6	152.40	6	28.58	1 1/8	73.03	2 7/8
132RE	88.90	3 1/2	152.40	6	152.40	6	31.75	1 1/4	78.58	3 3/32
133RE	88.90	3 1/2	152.40	6	152.40	6	28.58	1 1/8	76.20	3
136RE (TR68)	88.90	3 1/2	152.40	6	152.40	6	31.75	1 1/4	78.58	3 3/32

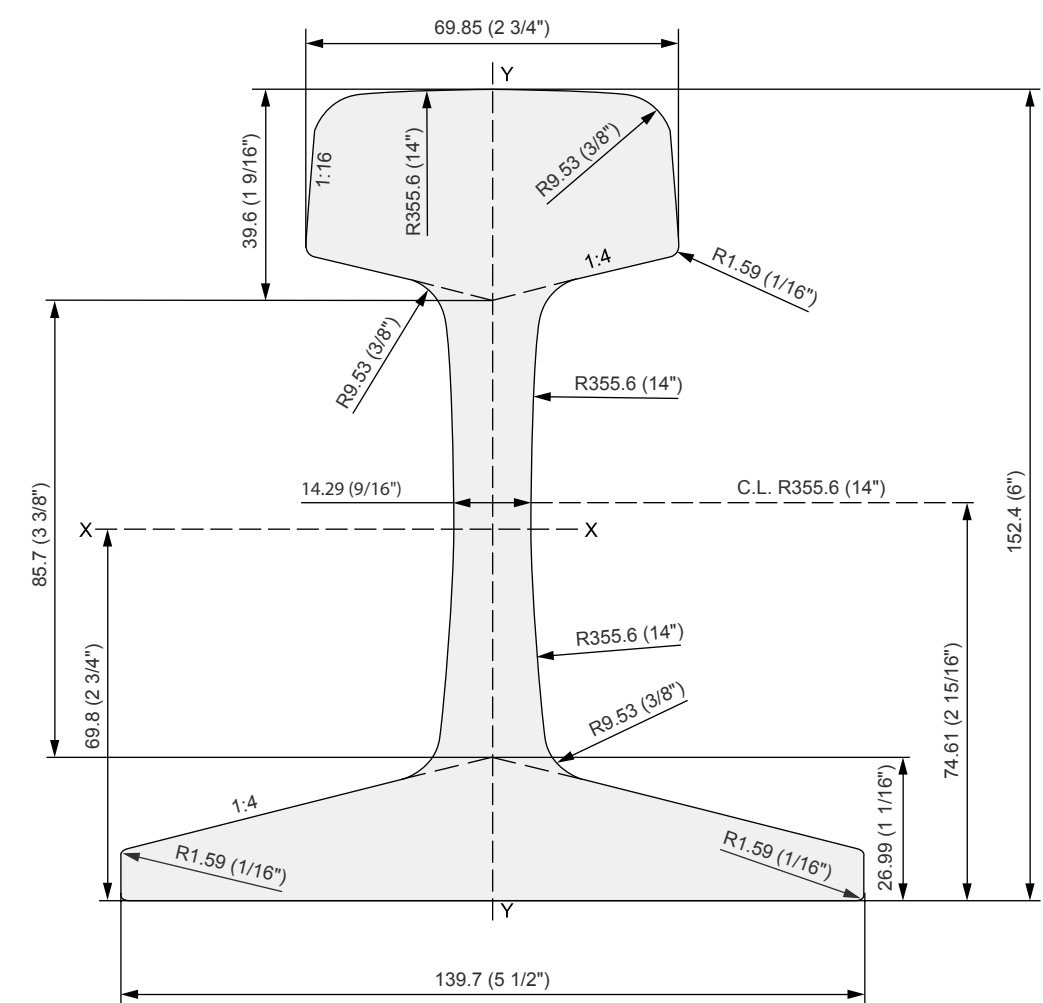
90ARA-A (TR45)

Weight 44.64 kg/m | 90 lb/yd



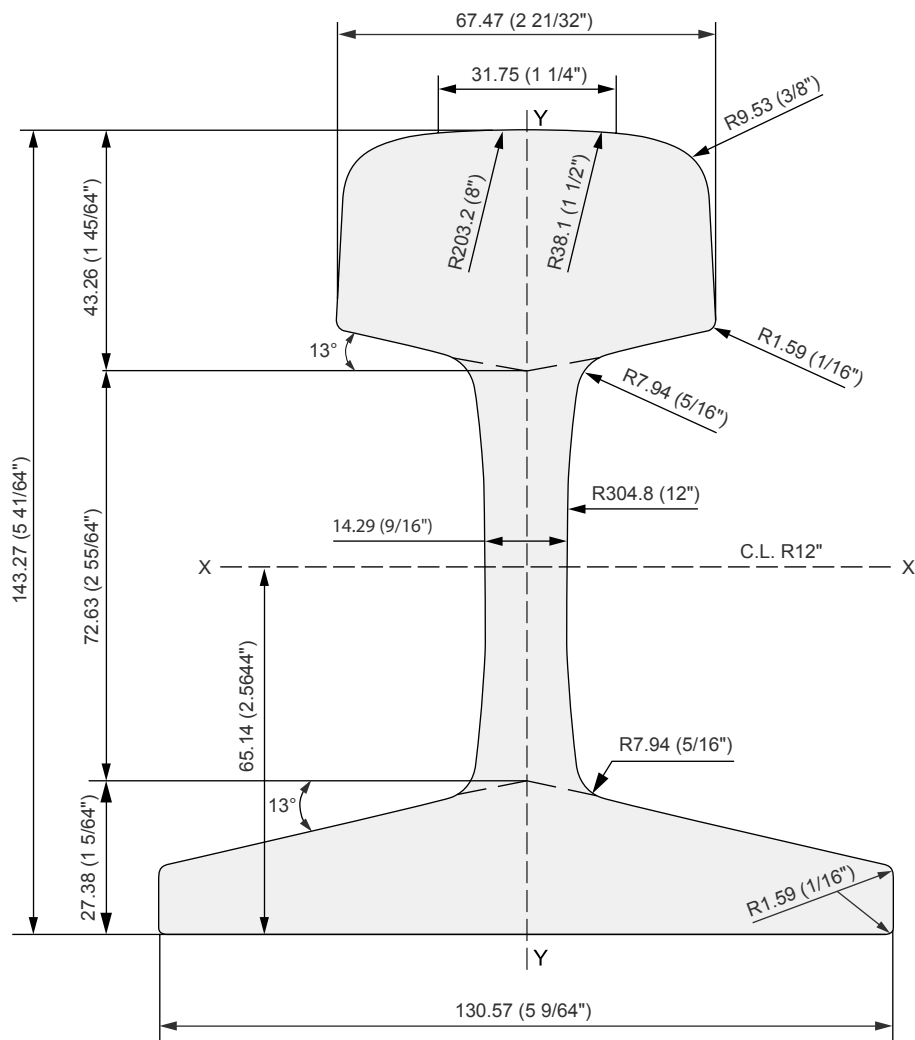
100ARA-A

Weight 49.88 kg/m | 100.56 lb/yd



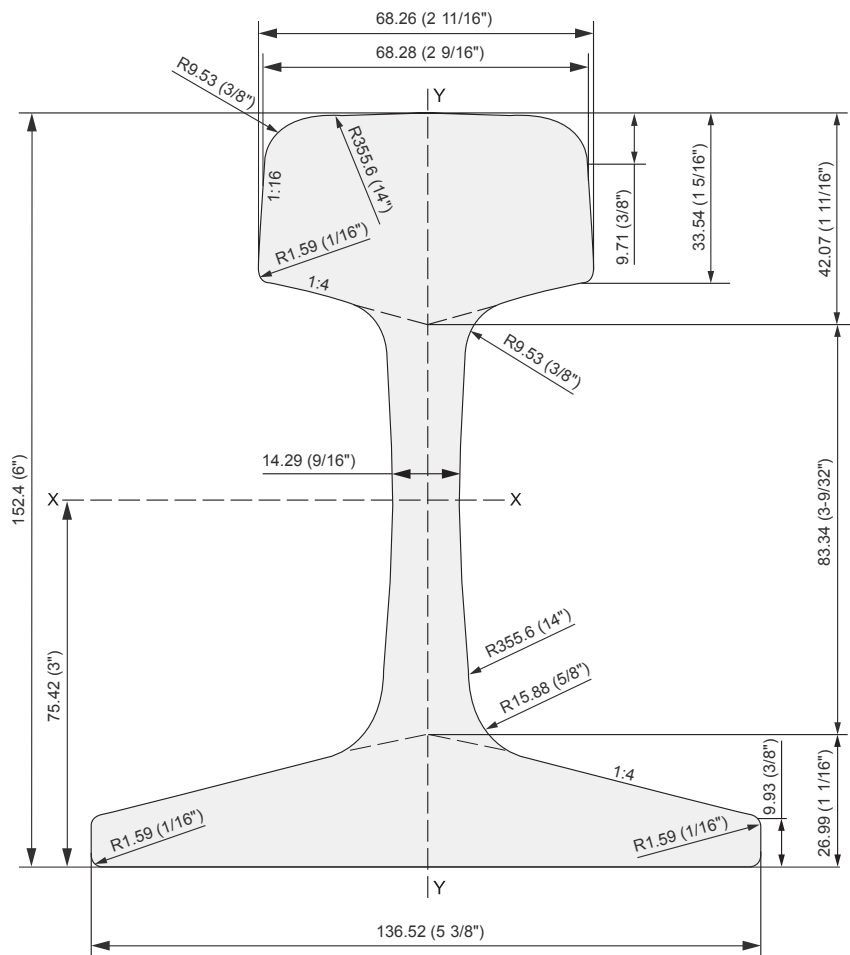
100ARA-B (100-8)

Weight 49.87 kg/m | 100.53 lb/yd



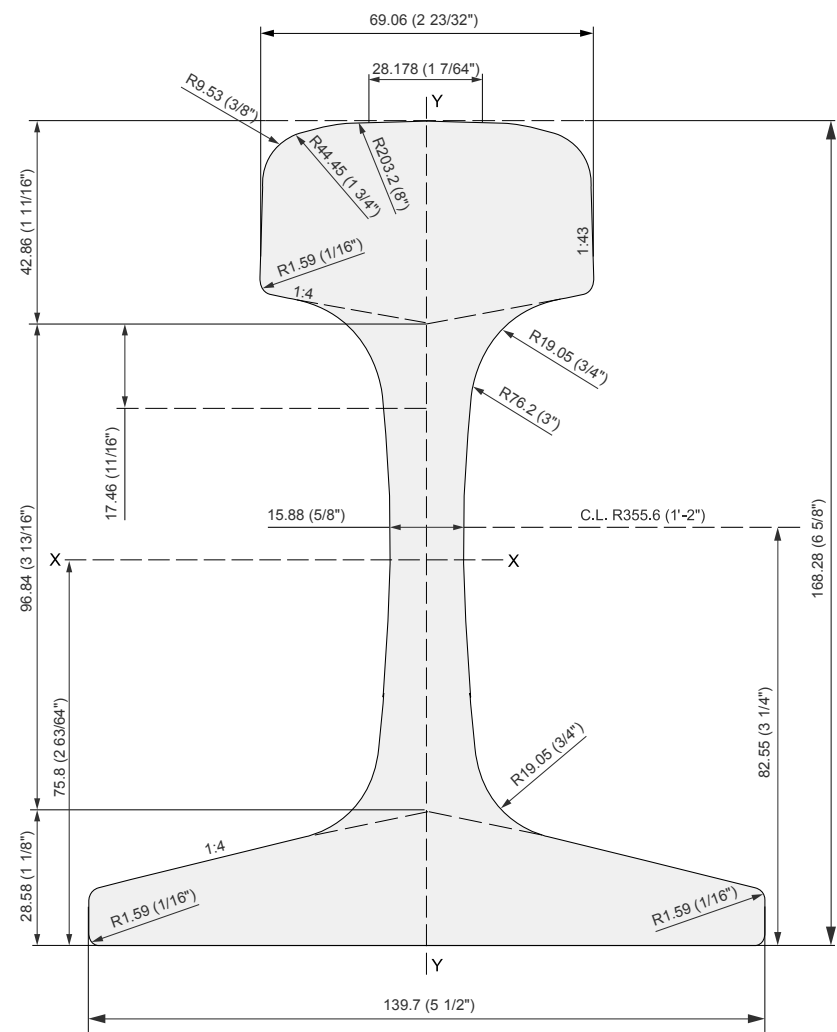
100RE (TR50)

Weight 50.35 kg/m | 101.50 lb/yd



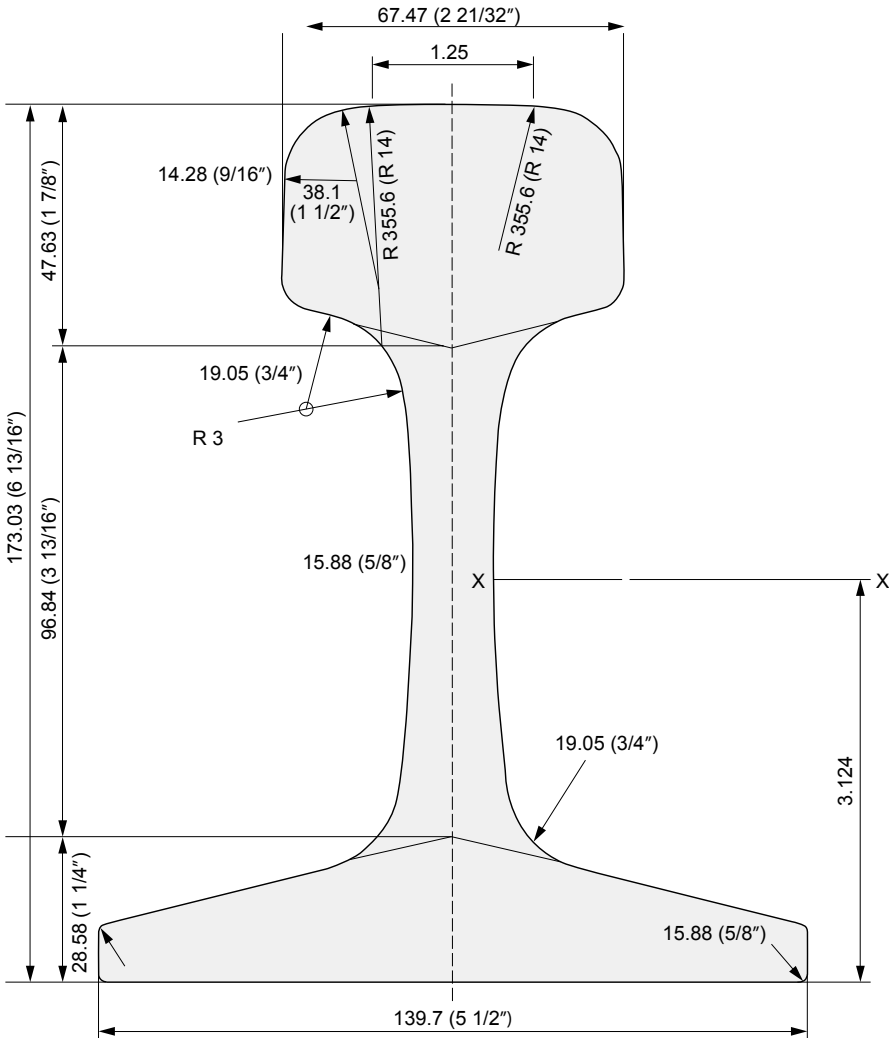
115RE (TR57)

Weight 56.89 kg/m | 114.68 lb/yd



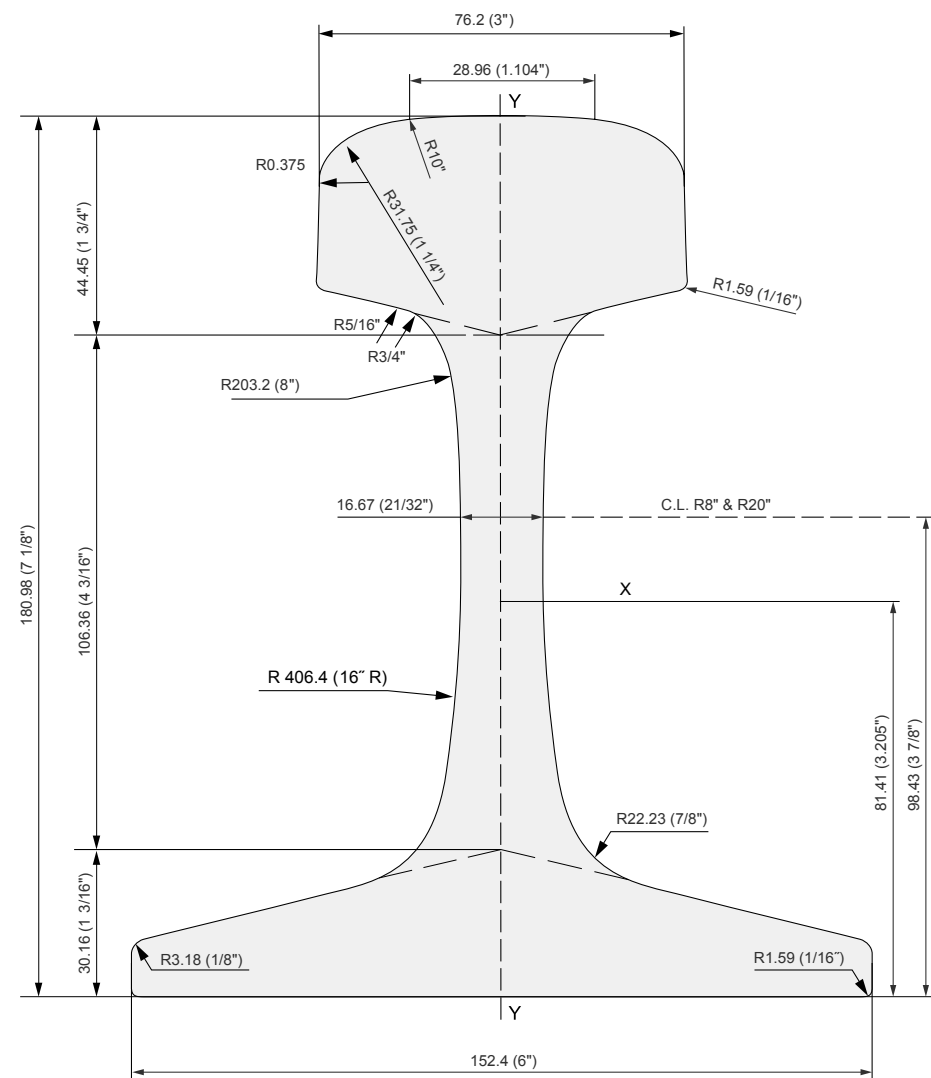
119RE

Weight 58.86 kg/m | 118.67 lb/yd



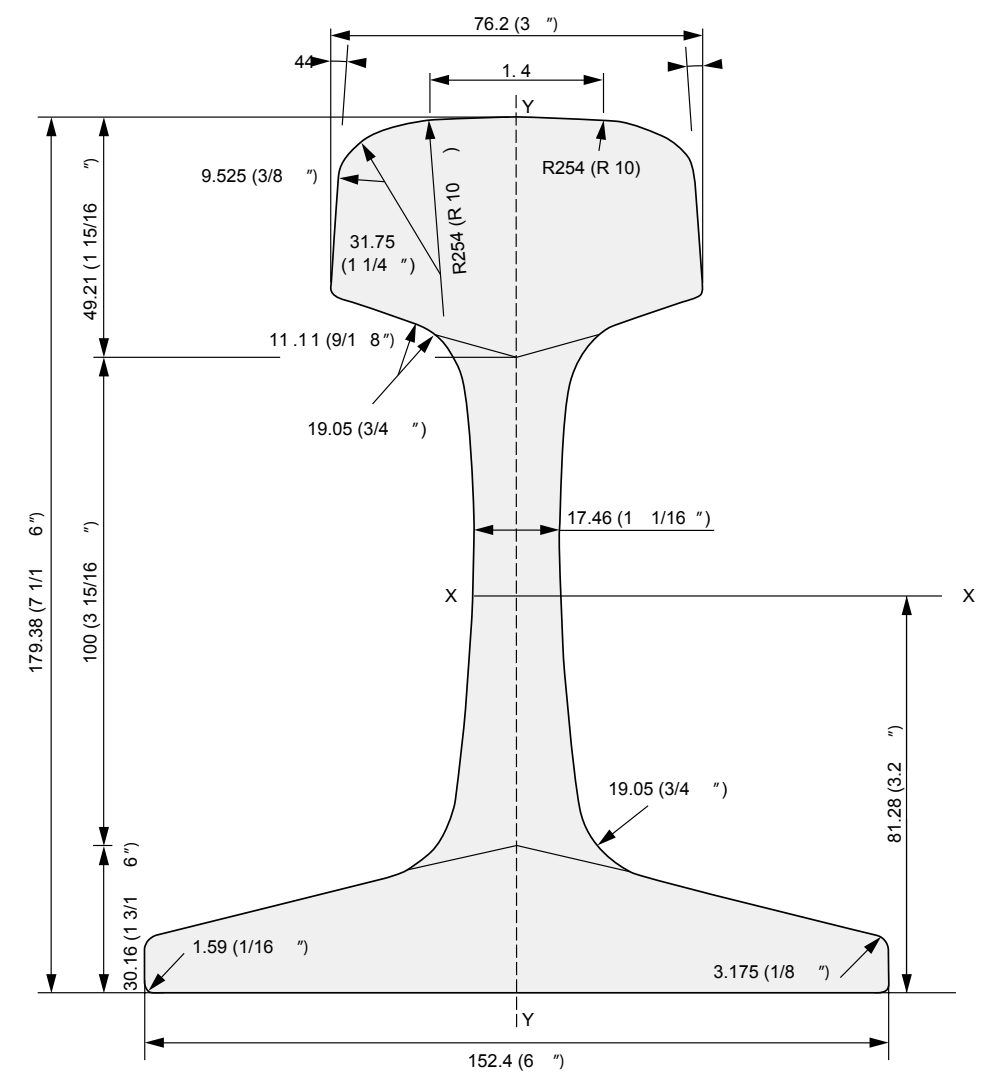
132RE

Weight 64.95 kg/m | 130.93 lb/yd



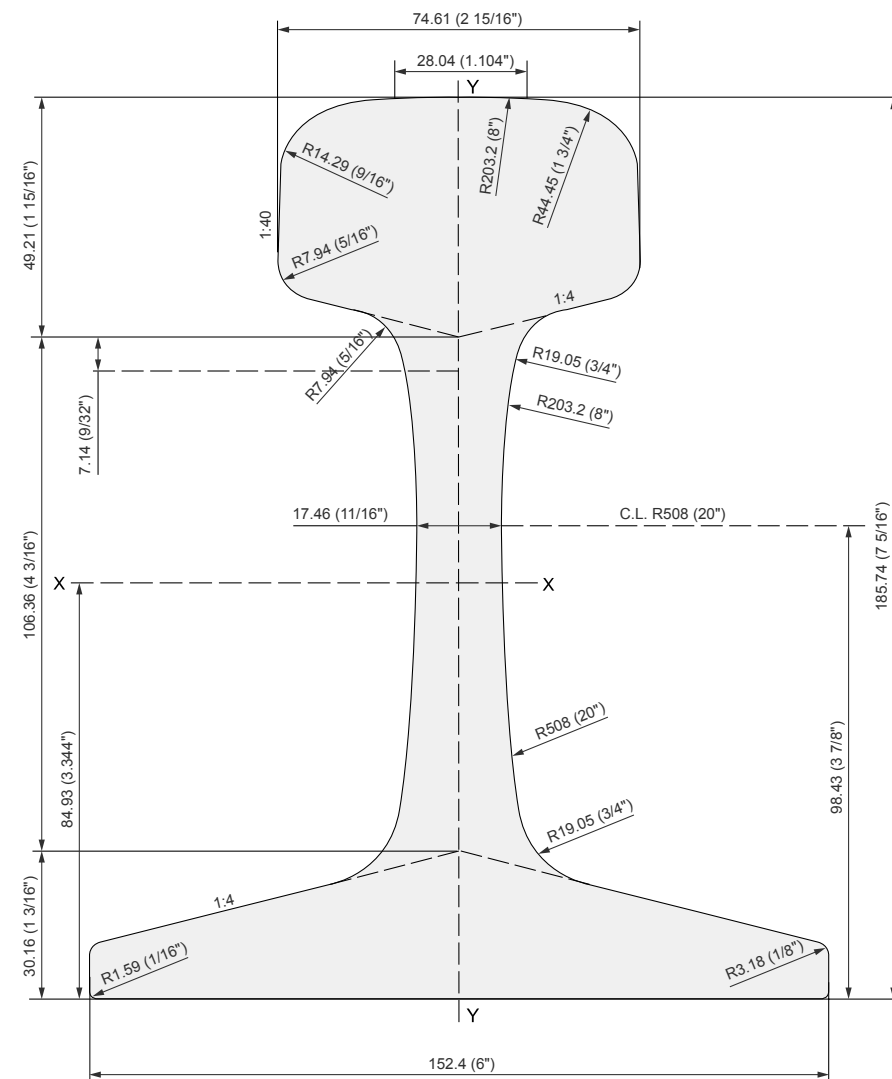
133RE

Weight 66.10 kg/m | 133.25 lb/yd



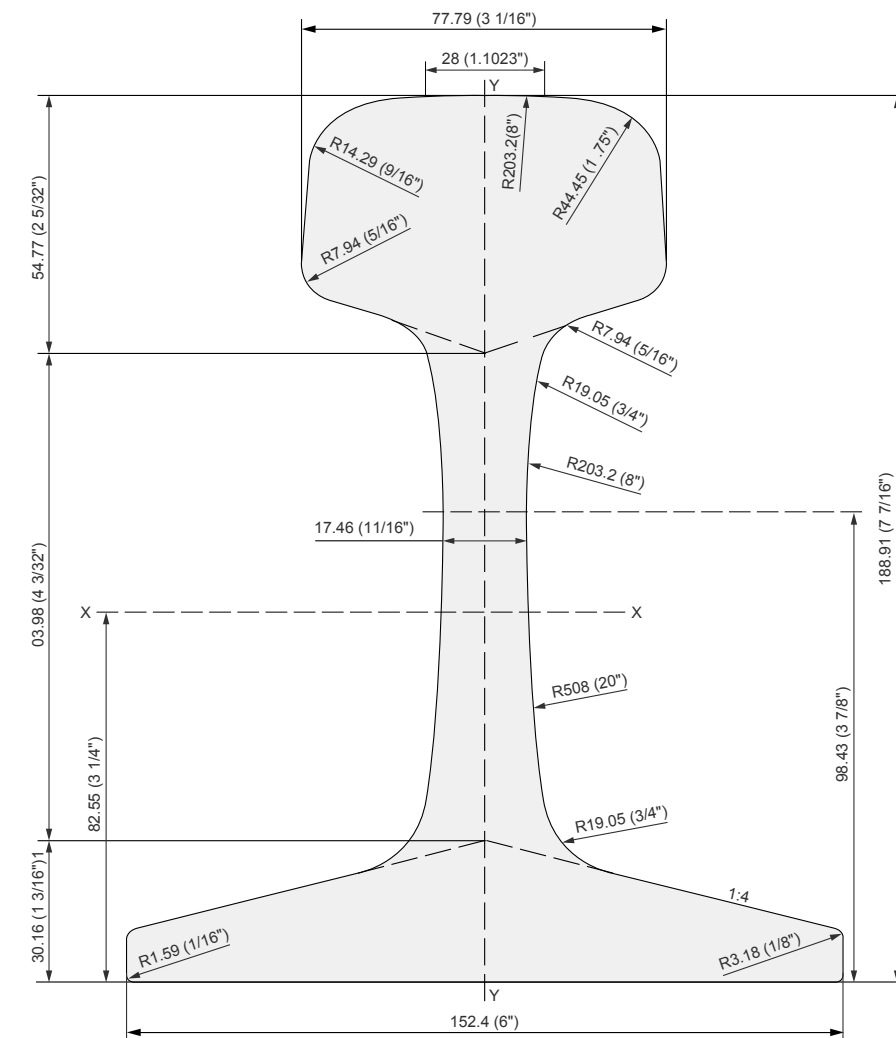
136RE (TR68)

Weight 67.41 kg/m | 135.88 lb/yd



141RE

Weight 69.80 kg/m | 140.70 lb/yd





Transport Rails

EUROPEAN PROFILES

Transport Rails are the most familiar rails produced. They are used by freight, passenger and public-transit railways to move goods and people long distances.

The installation of Transport Rails is usually on tie-and-ballast foundations. This has encouraged rail shapes with tall profiles to better transfer wheel loads from tie-to-tie. Transport rails are all relatively heavy sections, greater than 90 lbs/yard (44.64 kg/m).

Transport Rails are connected to one another by welding and/or by jointed connections. Rails can be furnished with either drilled or non-drilled (blank) ends as required.

Description

Similar to the American profiles, European Transport rails are relatively tall, with thin webs. They have a long history in Europe and in other parts of the world to which they were exported.

European Transport rails are produced in accordance with the latest European specification EN 13674-1. This standard was developed with the participation of various European countries in order to have one current and uniform European specification for rails which are produced by many Mills in many countries.

Various lengths are available, with the most common being 12, 18, 24 and 36 meters.

Mechanical Properties

Grade	Tensile Strength (MPa)	Elongation (%)	Hardness (HB)
R200	≥ 680	≥ 14	200 - 240
R260	≥ 880	≥ 10	260 - 300
R350HT	≥ 1,175	≥ 9	350 - 390
R350LHT	≥ 1,175	≥ 9	350 - 390

Basic Dimensions

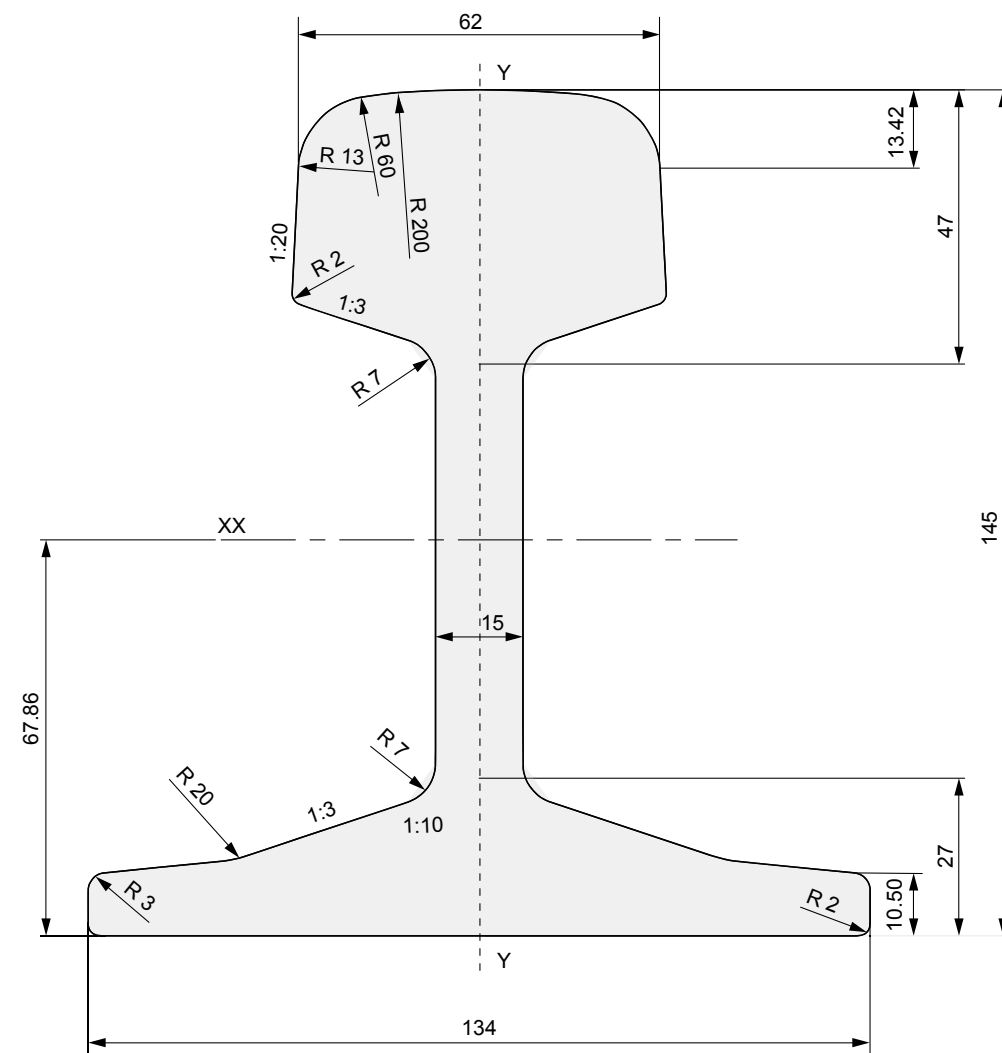
Profiles	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/ yd	mm	in	mm	in	mm	in	mm	in
45E1 (BS90A)	45.11	90.94	66.67	2.62	142.88	5.63	127.00	5.00	13.89	0.55
45E3 (RN45)	44.79	90.29	66.00	2.60	142.00	5.59	130.00	5.12	15.00	0.59
46E2 (U33)	46.27	93.28	62.00	2.44	145.00	5.71	134.00	5.28	15.00	0.59
49E1 (S49)	49.39	99.57	67.00	2.64	149.00	5.87	125.00	4.92	14.00	0.55
49E5	49.13	99.04	67.00	2.64	149.00	5.87	125.00	4.92	14.00	0.55
50E2 (50EB-T)	49.97	100.73	72.00	2.83	151.00	5.94	140.00	5.51	15.00	0.59
50E6 (U50)	50.90	102.61	65.00	2.56	153.00	6.02	140.00	5.51	15.50	0.61
54E1 (UIC54)	54.77	110.41	70.00	2.76	159.00	6.26	140.00	5.51	16.00	0.63
54E2 (UIC54E)	53.82	108.50	67.00	2.64	161.00	6.34	125.00	4.92	16.00	0.63
54E3 (S54)	54.57	110.01	67.00	2.64	154.00	6.06	125.00	4.92	16.00	0.63
54E4	54.31	109.48	67.00	2.64	154.00	6.06	125.00	4.92	16.00	0.63
54E5 (54E1AHC)	54.42	109.71	70.20	2.76	159.00	6.26	140.00	5.51	13.10	0.52
56E1 (BS113Lb)	56.30	109.71	70.20	2.76	159.00	6.26	140.00	5.51	13.10	0.52
60E1 (UIC60)	60.21	121.38	72.00	2.83	172.00	6.77	150.00	5.91	16.50	0.65
60E2	60.03	121.01	72.00	2.83	172.00	6.77	150.00	5.91	16.50	0.65
MAV48	48.50	97.77	65.80	2.59	148.00	5.83	120.00	4.72	14.00	0.55

Chemical Composition

Grade	C %	Mn %	Si %	P %	S %	Al %	V %	Cr %
R200	0.40 - 0.60	0.70 - 1.20	0.15 - 0.58	≤ 0.035	≤ 0.035	≤ 0.004	≤ 0.030	≤ 0.15
R260	0.62 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.025	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.15
R350HT	0.72 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.020	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.15
R350LHT	0.72 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.020	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.30

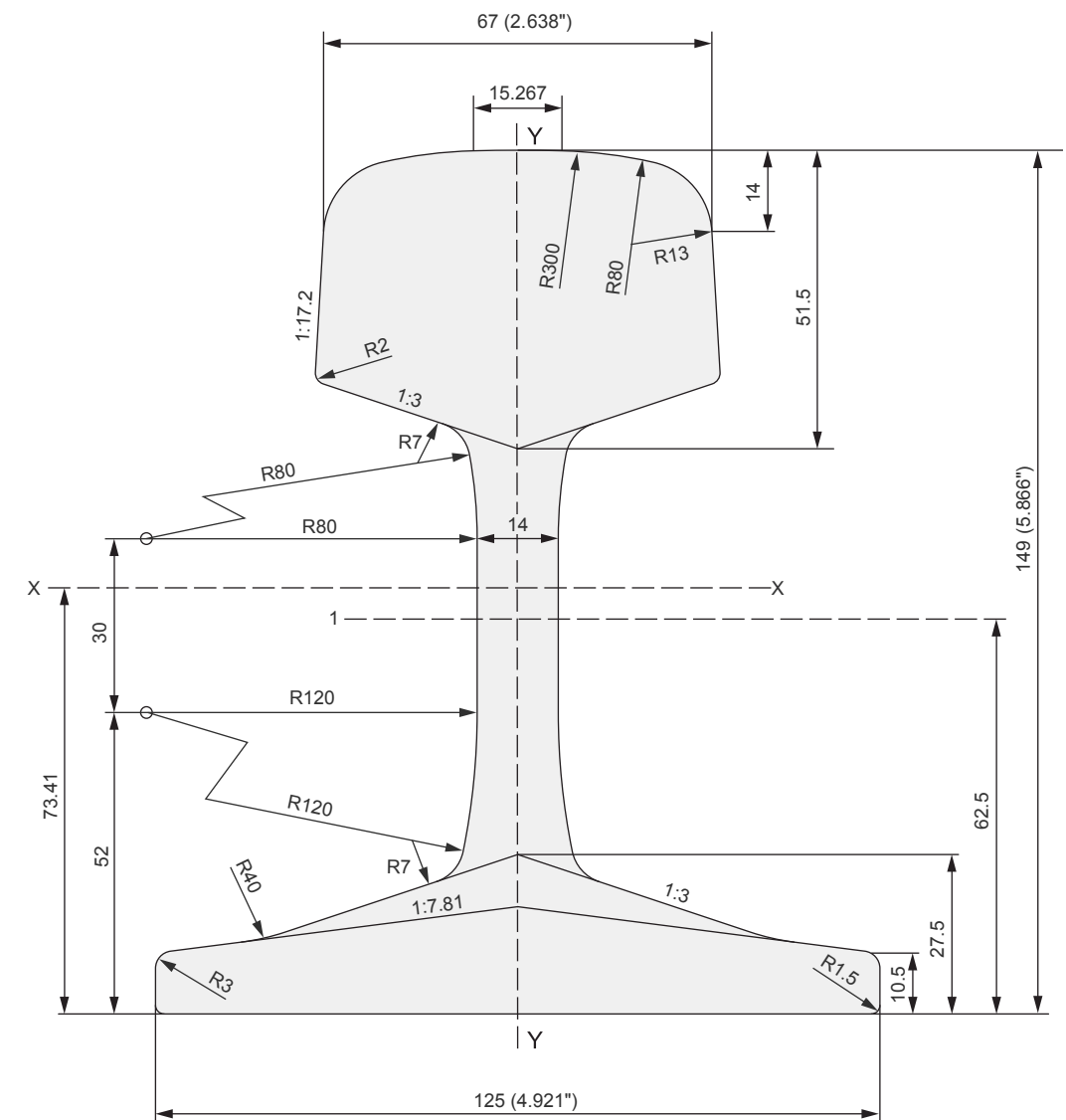
46E2 (U33)

Weight 46.27 kg/m | 93.28 lb/yd



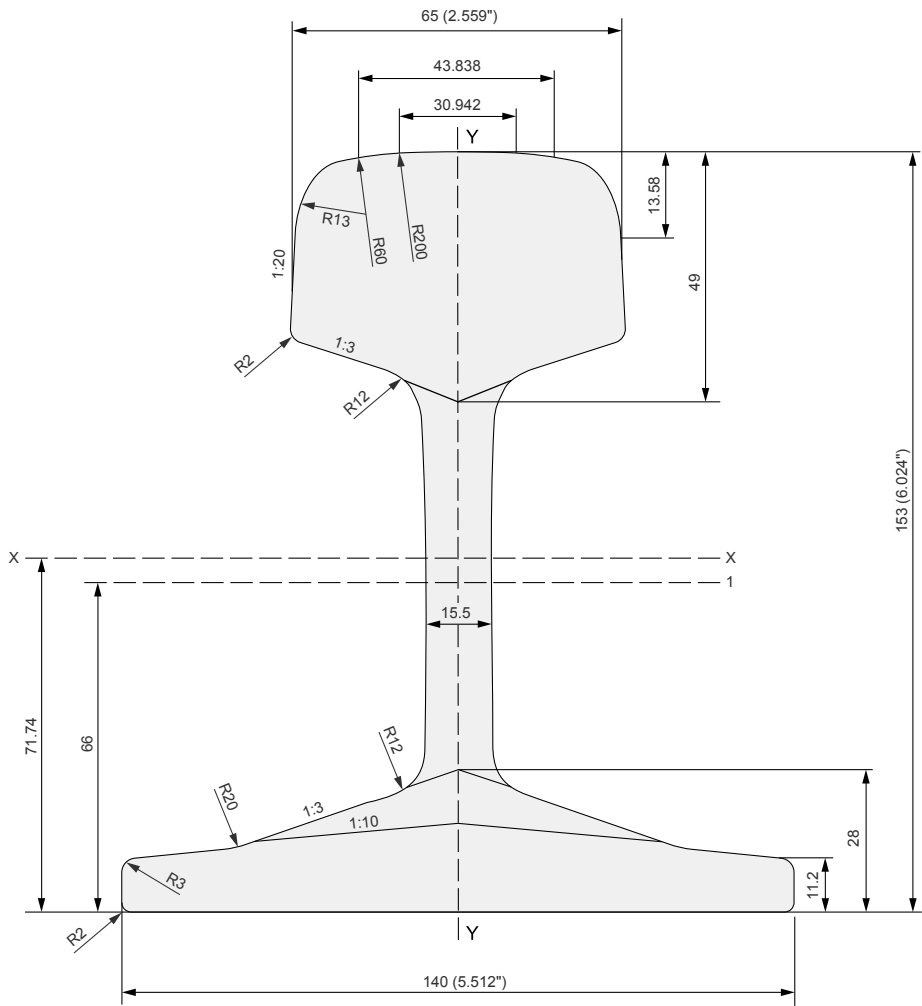
49E1 (S49)

Weight 49.39 kg/m | 99.57 lb/yd



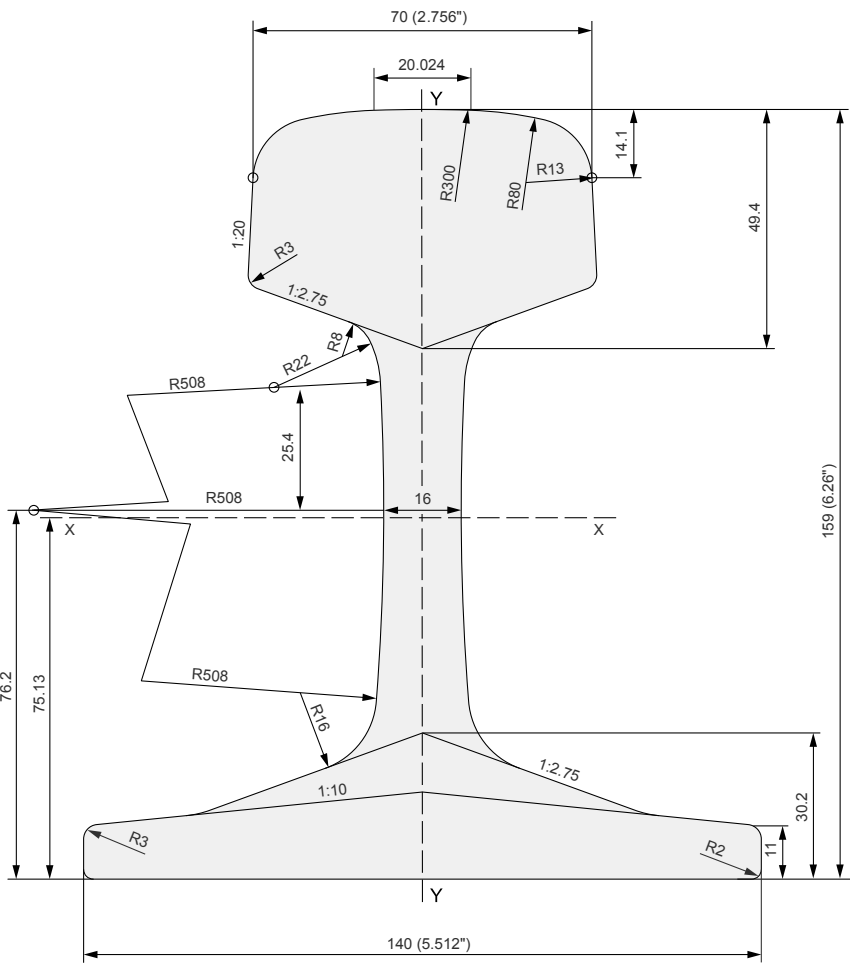
50E6 (U50)

Weight 50.90 kg/m | 102.61 lb/yd



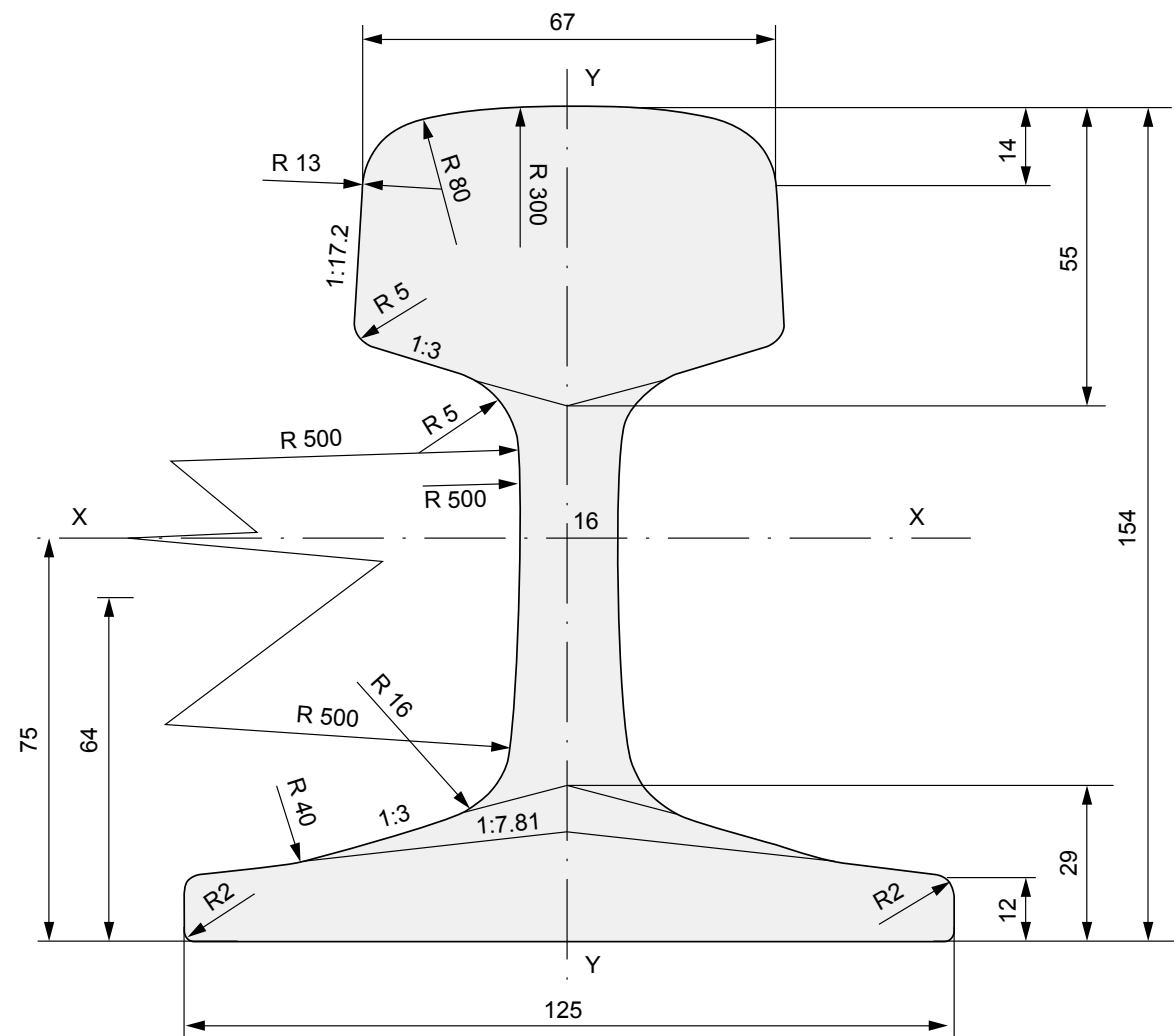
54E1 (UIC54)

Weight 54.77 kg/m | 110.41 lb/yd



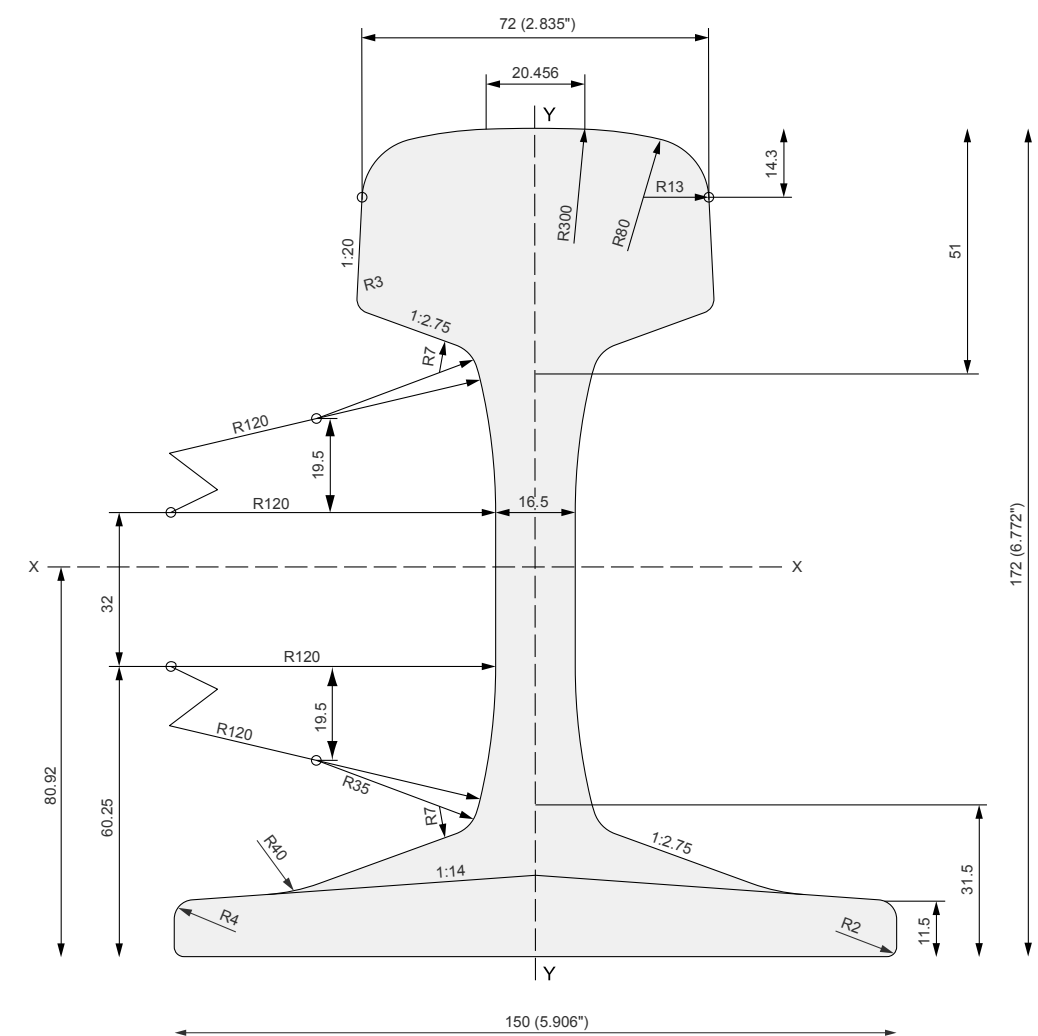
54E3 (S54)

Weight 54.57 kg/m | 110.01 lb/yd



60E1 (UIC60)

Weight 60.21 kg/m | 121.38 lb/yd





Grooved Rails

Description

Grooved Rails are produced according to EN 14811 specification and are supplied in standard grades such as R220 (min. 220BHN) and R260 (min. 260BHN). Heat treated grooved rails can also be supplied according to the following steel grades: R290GHT (min. 290BHN) and R340GHT (min. 340 BHN).

Grooved Rails are usually finished in 18m (59.06ft) with non-drilled (blank) ends.

Grooved Rails were invented by Alphonse Loubat in 1852 for use in the Tram systems being introduced in New York and Paris at that time.

For trams, vehicles and pedestrians to share roads, the heads of the rails need to be at the same level as the road surface. The challenge is to protect the wheel flanges from interference. Grooved rails share an unusual head shape which allows the road surface to abut the rails and not interfere with the wheels.

Now known by many names, such as Groove, Grooved, or Girder, this family of rails is found in urban rail systems around the world.

Block rails are a close subset of Grooved rails and are described elsewhere.

Basic dimensions

	Weight		Overall Head Width A		Height H		Base width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
51R1 (Ri52)	51.37	103.56	113.00	4.45	130.00	5.12	150.00	5.91	12.00	0.47
53R1 (Ri53)	52.98	106.80	113.00	4.45	130.00	5.12	150.00	5.91	12.00	0.47
54G1/54R1 (41GPU)	54.26	109.38	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
54G2 (Ri54G2)	54.55	109.97	116.60	4.59	152.50	6.00	141.50	5.57	13.00	0.51
54G4	50.09	100.98	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55G2 (41GP)	55.37	111.62	116.90	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55G3 (41GP13)	55.27	111.42	116.82	4.60	152.50	6.00	141.50	5.57	13.00	0.51
55R1 (Ri55NK)	55.45	111.78	113.00	4.45	150.00	5.91	150.00	5.91	12.00	0.47
57R1 (Ph37)	56.54	113.98	127.00	5.00	182.00	7.17	150.00	5.91	11.00	0.43
59R1 (Ri59)	58.97	118.88	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
59R2 (Ri59N)	58.14	117.20	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
60R1 (Ri60)	60.59	122.14	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
60R2 (Ri60N)	59.75	120.45	113.00	4.45	180.00	7.09	180.00	7.09	12.00	0.47
62R1 (NP4aM)	62.37	125.73	116.00	4.57	180.00	7.09	180.00	7.09	12.00	0.47
62R2 (NP4aS)	61.91	124.80	116.00	4.57	180.00	7.09	180.00	7.09	12.00	0.47

Mechanical Properties

Grade	Tensile Strength (MPa)	Elongation (min. %)	Hardness (HB)
R200	≥ 680	≥ 14	200 - 240
R200V	≥ 690	≥ 15	200 - 240
R220G1	≥ 780	≥ 12	220 - 260
R260	≥ 880	≥ 10	260 - 300
R260V	≥ 890	≥ 11	260 - 300
R290V	≥ 960	≥ 10	290 - 330

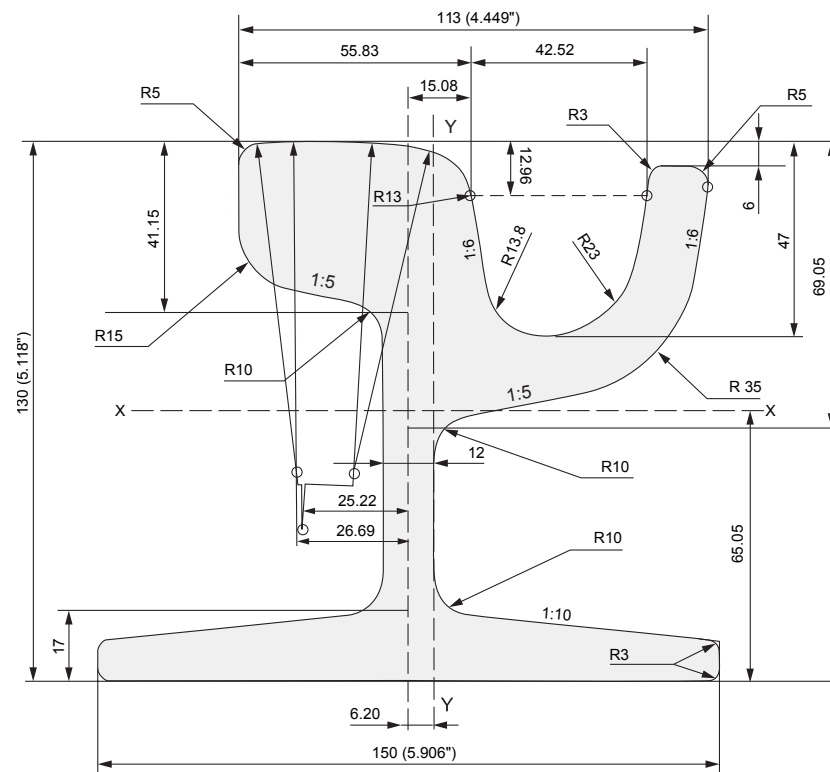
Chemical Composition

Grade	C %	Si %	Mn %	S %	Cr %
R200	0.40 - 0.60	0.15 - 0.58	0.70 - 1.20	≤ 0.035	≤ 0.015
R200V	0.30 - 0.48	0.15 - 0.58	0.70 - 1.20	≤ 0.035	≤ 0.015
R220G1	0.50 - 0.65	0.15 - 0.58	1.00 - 1.25	≤ 0.025	≤ 0.015
R260	0.62 - 0.80	0.15 - 0.58	0.70 - 1.20	≤ 0.025	≤ 0.015
R260V	0.45 - 0.58	0.15 - 0.58	0.70 - 1.20	≤ 0.015	≤ 0.015
R290V	0.45 - 0.58	0.15 - 0.58	1.00 - 1.25	≤ 0.015	≤ 0.015

Grooved Rails

51R1 (Ri52)

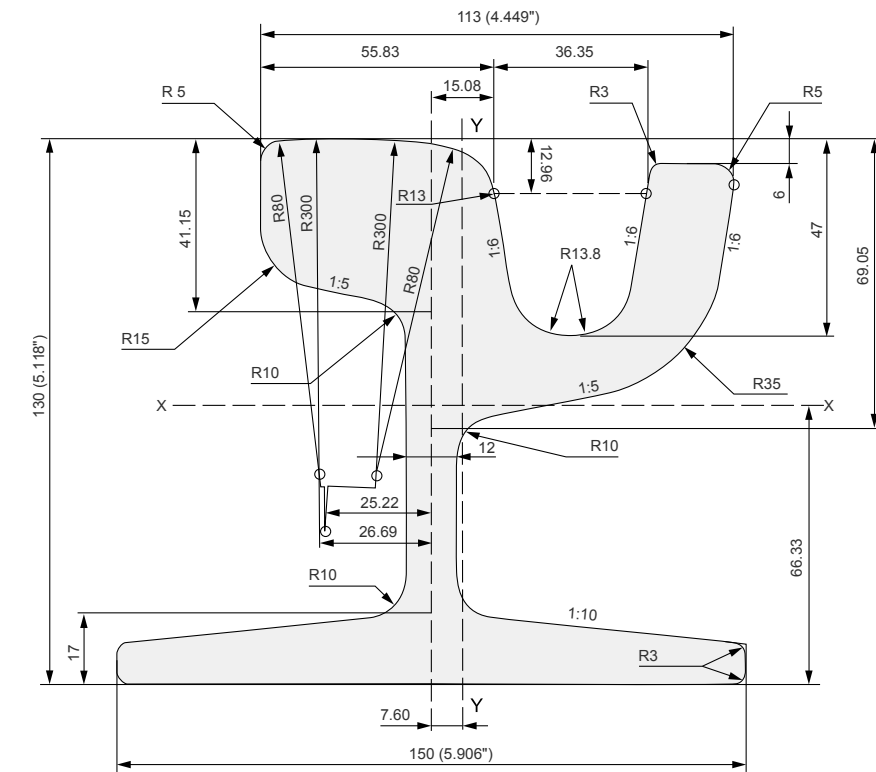
Weight 51.37 kg/m | 103.56 lb/yd



Grooved Rails

53R1 (Ri53)

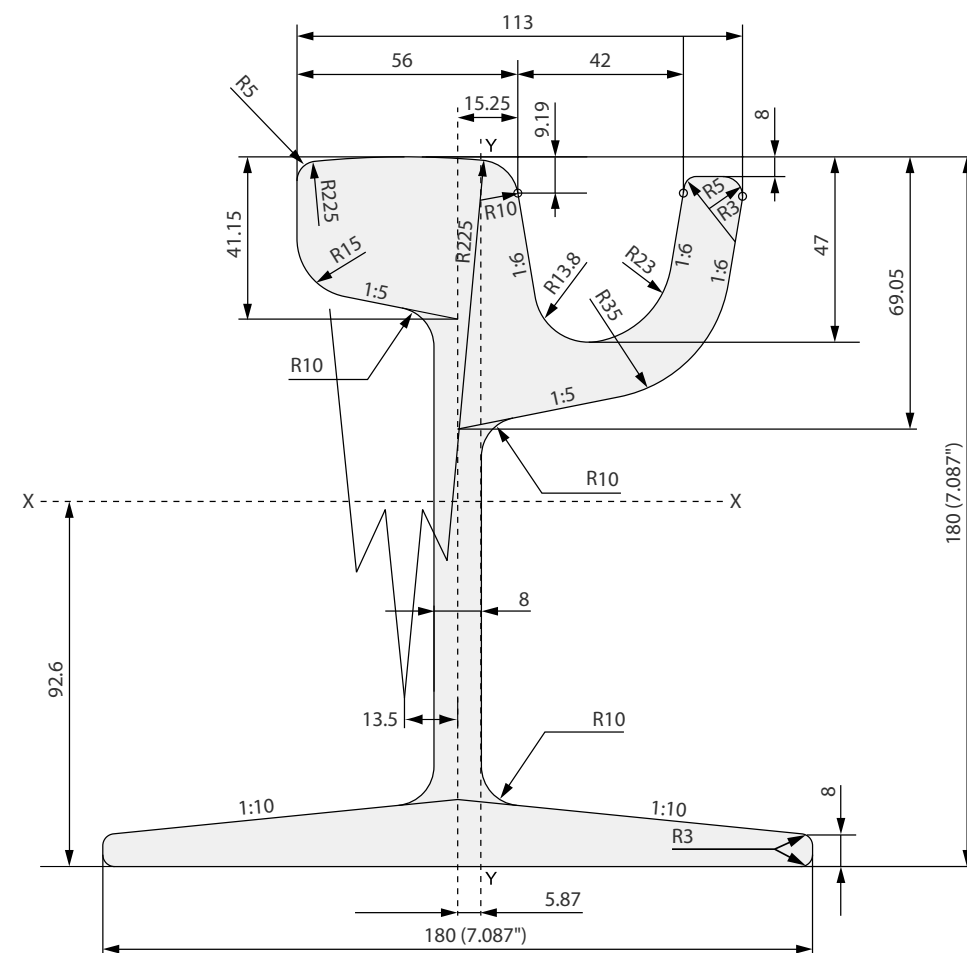
Weight 52.98 kg/m | 106.80 lb/yd



Grooved Rails

59R1 (Ri59)

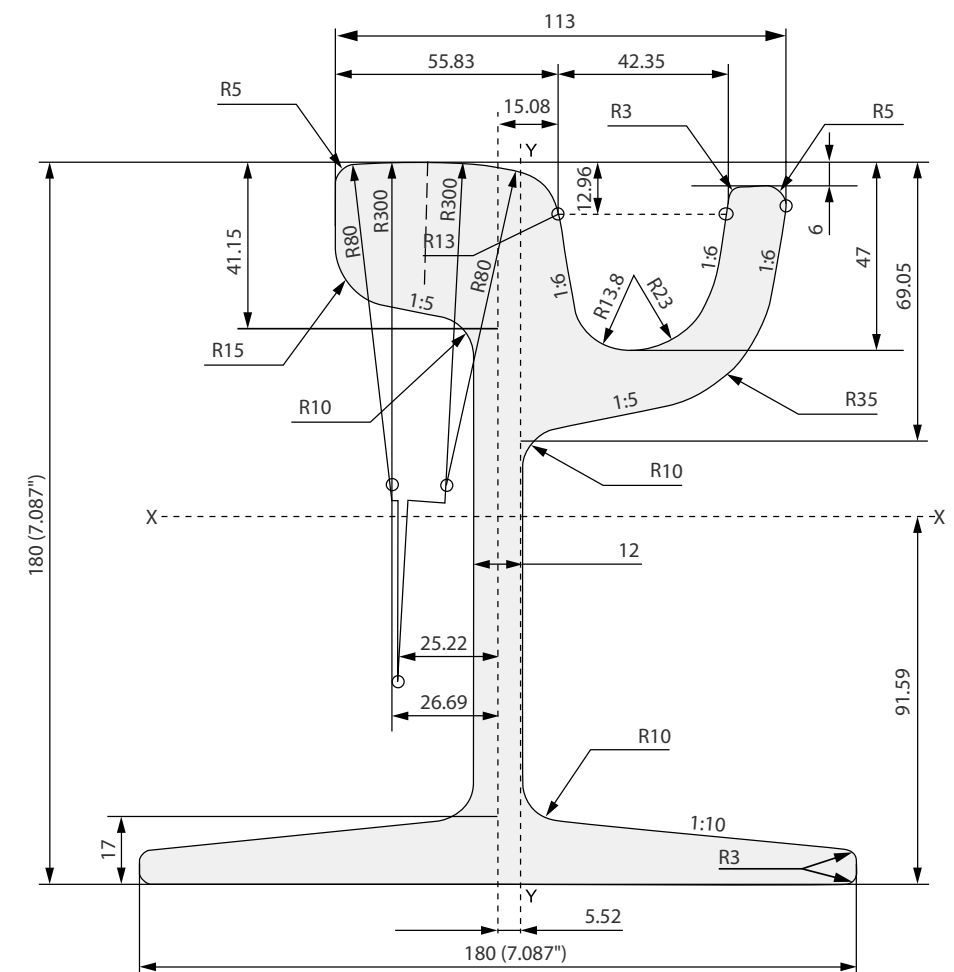
Weight 58.97 kg/m | 118.88 lb/yd



Grooved Rails

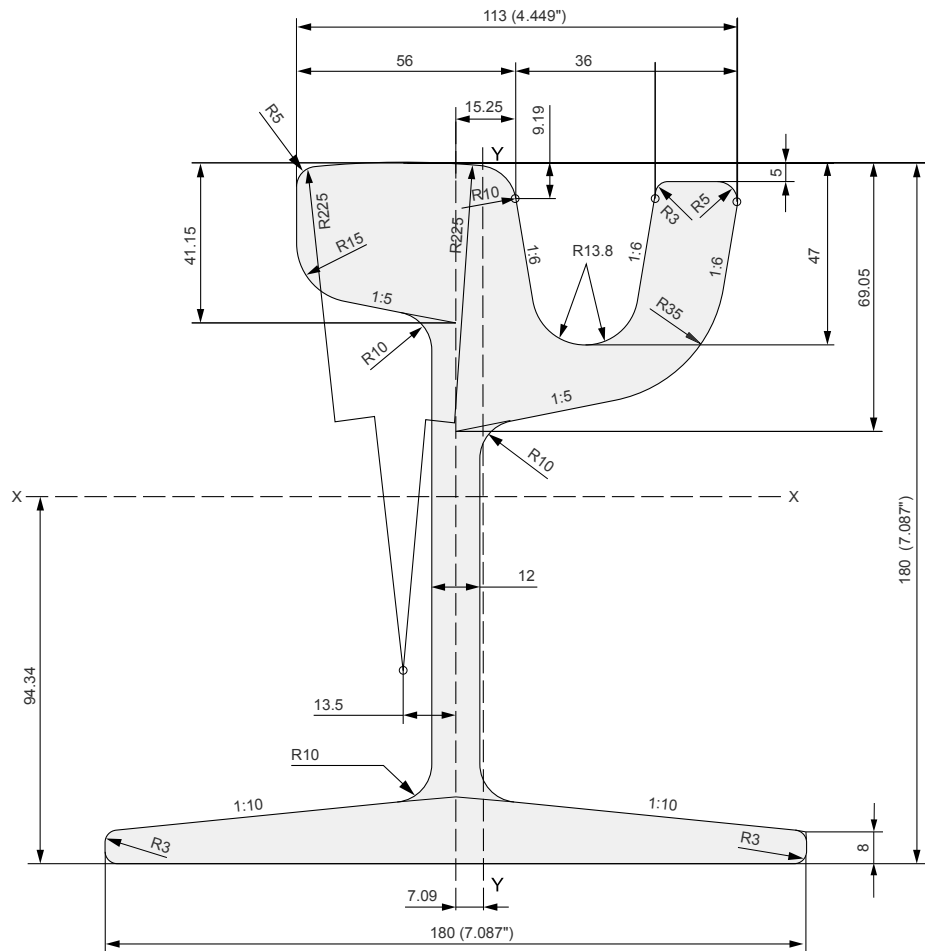
59R2 (Ri59N)

Weight 58.14 kg/m | 117.20 lb/yd



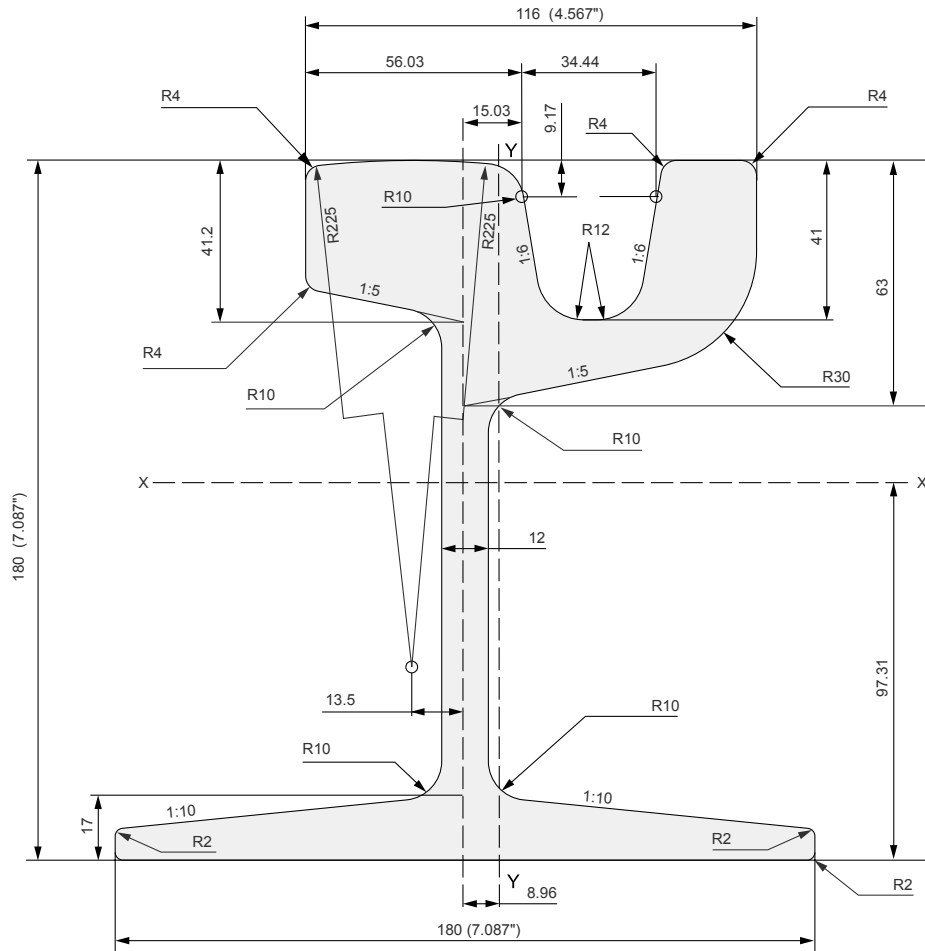
60R1 (Ri60)

Weight 60.59 kg/m | 122.14 lb/yd



62R1 (NP4aM)

Weight 62.37 kg/m | 125.73 lb/yd



Block Rails



Block Rails

Block Rails are a subset of the family of Grooved rails.

Grooved Rails were invented by Alphonse Loubat in 1852 for use in the Tram systems being introduced in New York and Paris at that time.

For trams, vehicles and pedestrians to share roads, the heads of the rails need to be at the same level as the road surface. The challenge is to protect the wheel flanges from interference. Grooved rails share an unusual head shape which allows the road surface to abut the rails and not interfere with the wheels.

Now known by many names, such as Groove, Grooved, or Girder, this family of rails is found in urban rail systems around the world.

Description

Block Rails are a subset of Grooved rails and offer engineers a low-profile solution for transit systems. These rails are produced according to EN 14811 specification and are supplied in standard grades such as R220 (min. 220 BHN) and R260 (min. 260 BHN). Heat treated grooved rails can also be supplied according to the following steel grades: R290GHT (min. 290 BHN) and R340GHT (min. 340 BHN).

Block rails are usually finished in 18 m (59.06 ft) lengths with non-drilled (blank) ends. Other lengths, such as 40 ft (12.192 m), are also available.

Basic dimensions

	Weight		Overall Head Width A		Height H		Base width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
53K2 (MSzTS52)	53.34	107.53	116.00	4.57	70.00	2.76	156.00	6.14	n/a	n/a
57K2 (LK1)	57.68	116.28	115.00	4.53	72.00	2.83	156.00	6.14	n/a	n/a
58K2 (112T)	58.20	117.51	120.00	4.72	72.00	2.83	156.00	6.14	n/a	n/a

Block Rails

Mechanical Properties

Grade	Tensile Strength (MPa)	Elongation (min. %)	Hardness (HB)
R200	≥ 680	≥ 14	200 - 240
R200V	≥ 690	≥ 15	200 - 240
R220G1	≥ 780	≥ 12	220 - 260
R260	≥ 880	≥ 10	260 - 300
R260V	≥ 890	≥ 11	260 - 300
R290V	≥ 960	≥ 10	290 - 330

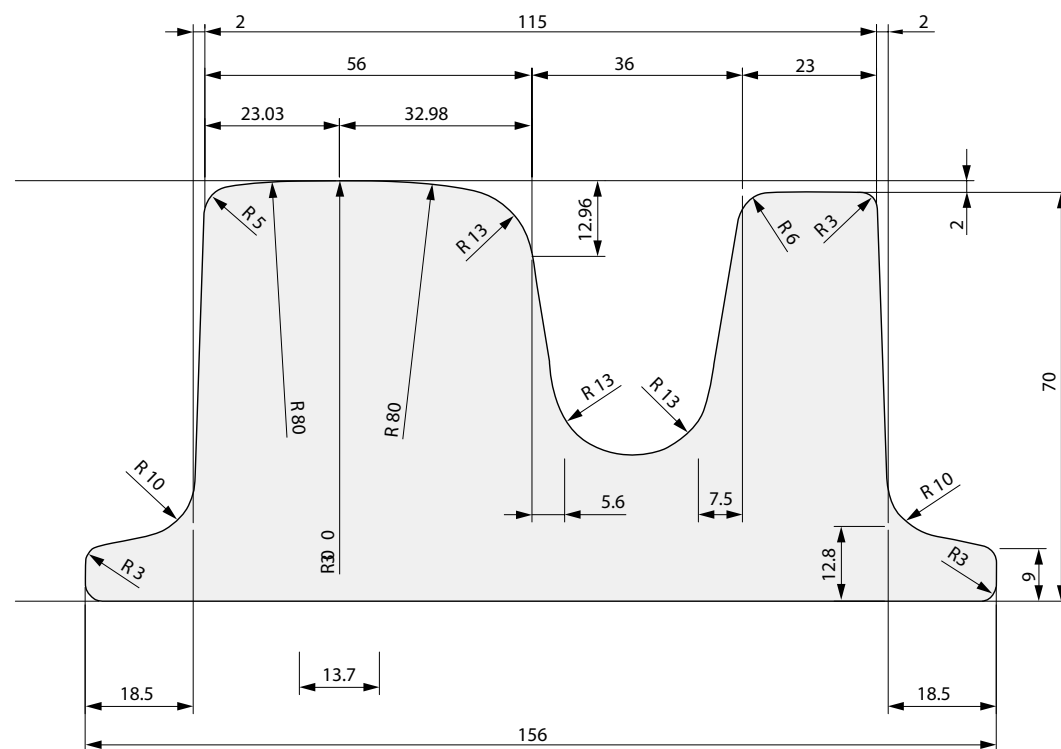
Chemical Composition

Grade	C %	Si %	Mn %	S %	Cr %
R200	0.40 - 0.60	0.15 - 0.58	0.70 - 1.20	≤ 0.035	≤ 0.015
R200V	0.30 - 0.48	0.15 - 0.58	0.70 - 1.20	≤ 0.035	≤ 0.015
R220G1	0.50 - 0.65	0.15 - 0.58	1.00 - 1.25	≤ 0.025	≤ 0.015
R260	0.62 - 0.80	0.15 - 0.58	0.70 - 1.20	≤ 0.025	≤ 0.015
R260V	0.45 - 0.58	0.15 - 0.58	0.70 - 1.20	≤ 0.015	≤ 0.015
R290V	0.45 - 0.58	0.15 - 0.58	1.00 - 1.25	≤ 0.015	≤ 0.015

Block Rails

57K2 (LK1)

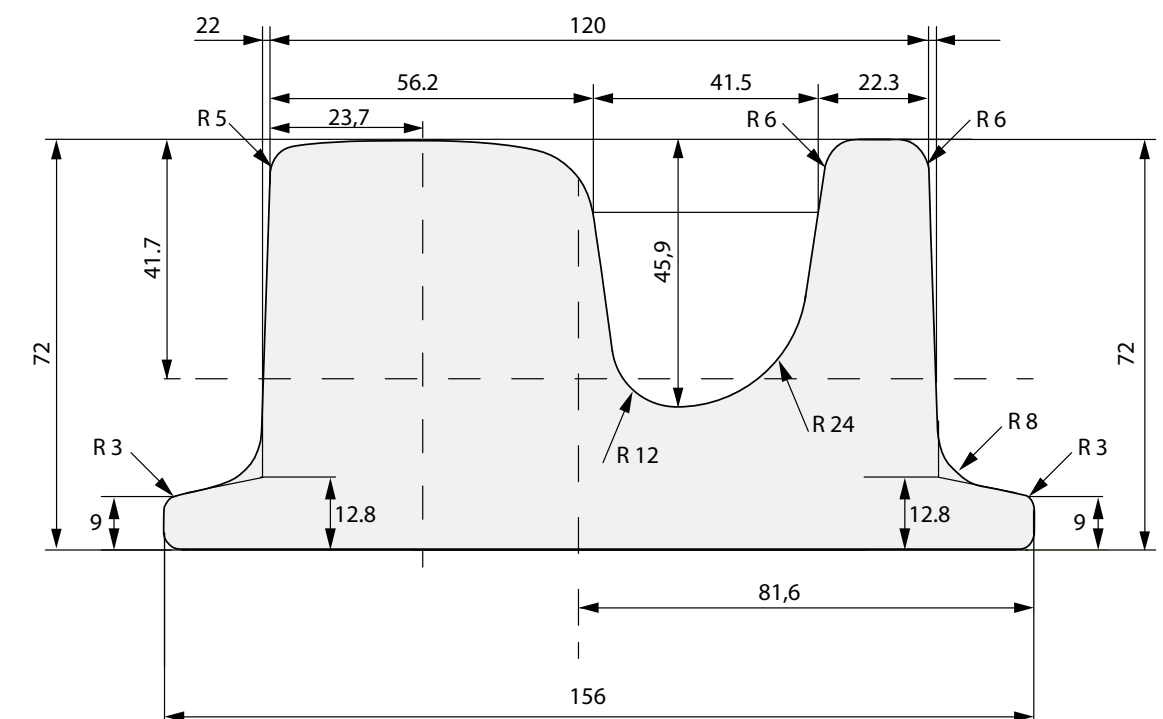
Weight 57.68 kg/m | 116.28 lb/yd



Block Rails

58K2 (112T)

Weight 58.20 kg/m | 117.51 lb/yd





Contact Rails

Contact rail, also known as ‘third rail’, is used to provide electrical power to the railway trains by placing the contact rail alongside the running rail.

We can offer 33C1 guard rail in 3 different steel grades as follows: R260 (min.260B HN), R320Cr (min. 320 BHN) and S1200 (min. 350 BHN). The 33C1 can be supplied in 40’, 39’ and 26’ lengths and is produced according to EN 13674 specification.

Description

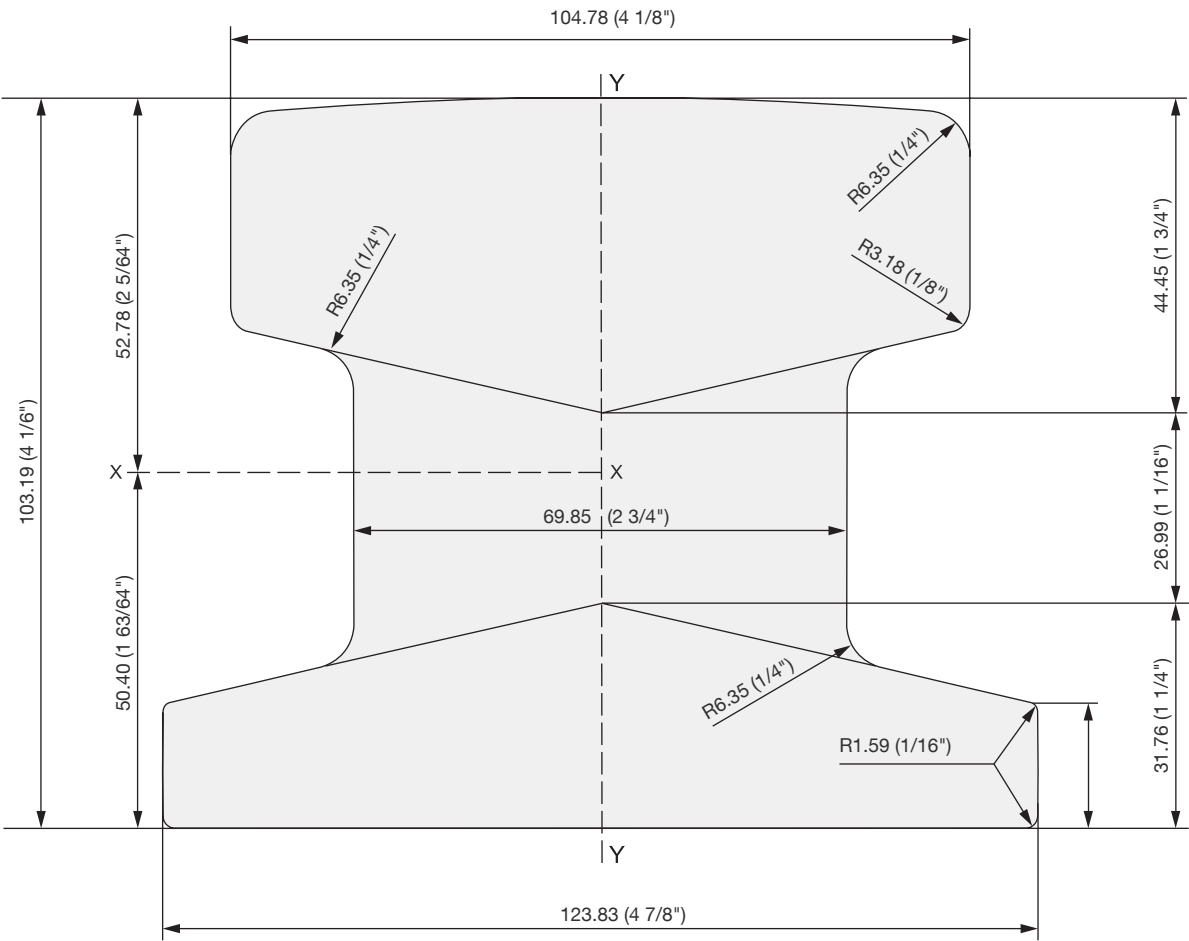
Contact rails are used as electrical conductors in public transit systems.

Basic Dimensions

Profiles	Weight		Head Width A		Height H		Base Width B		Web W	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
STR74 (150NMC)	74.00	149.18	104.80	4 1/8	103.19	4 1/16	123.83	4 7/8	69.85	2 3/4
STR40	40.27	81.18	80.00	3.15	105.00	4.13	80.00	3.15	18.00	0.71
T52	52.31	105.45	101.00	3.98	100.50	3.96	45.00	1.77	45.00	1.77

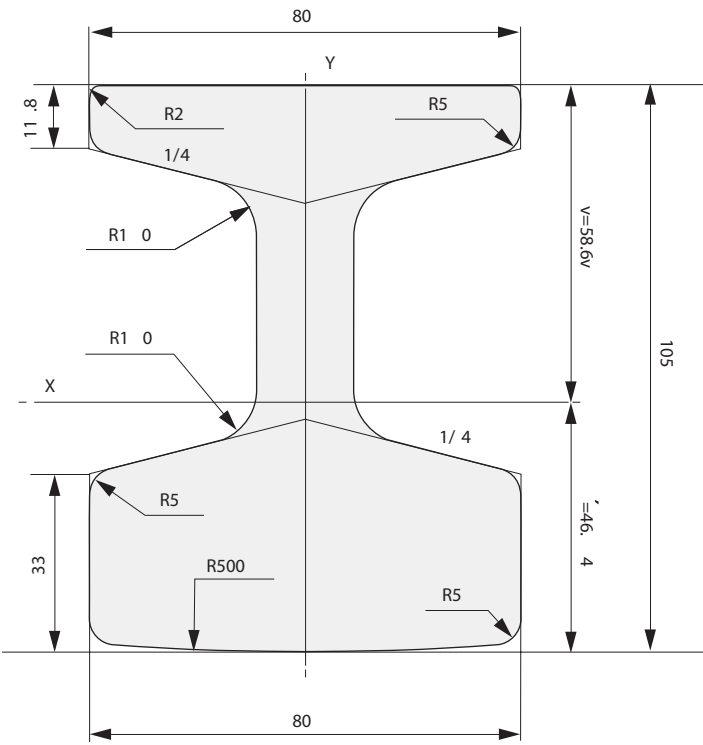
150NMC (STR74)

Weight 74 kg/m | 149.16 lb/yd



STR40

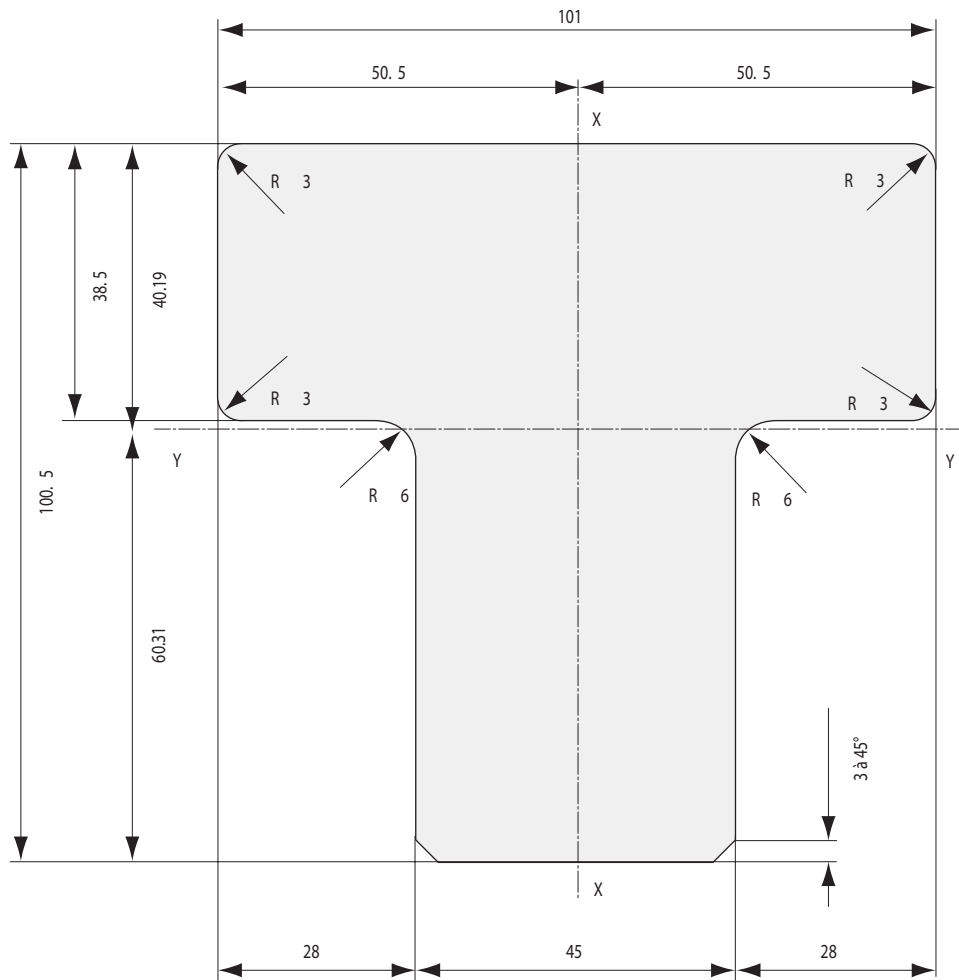
Weight 40.27 kg/m | 81.18 lb/yd



Contact Rails

T52

Weight 52.31 kg/m | 105.45 lb/yd





Guard Rails

Guard Rails are used to reduce rail wear and to discourage derailment. They are found in track-work, in locations where tracks have sharp curves, and in restricted locations such as bridges and tunnels.

Guard rails are known by many names such as Guard, Guardrail, Restraining rail and Check rail. Those shown here have shapes that are specific to the task. Alternatively, some engineers are able to employ Light or Transport rails to perform the same functions.

Description

The rail 33C1 is also known as Guide Bar or Guard Rail. It serves two roles: electrical conductor like a Contact rail, and a structural role to limit the lateral movements of the transit cars in curves. It also finds application in special track work.

We can offer 33C1 guard rail in 3 different steel grades as follows: R260 (min.260BHN), R320Cr (min. 320BHN) and S1200 (min. 350BHN). The 33C1 can be supplied in 40', 39' and 26' lengths and is produced according to EN 13674 specification.

Basic Dimensions

Profiles	Weight		Head Width		Height		Base Width		Web	
	kg/m	lb/yd	mm	in	mm	in	mm	in	mm	in
33C1 (UIC33, U69, RL1-60)	32.99	66.50	80.00	3.15	93.00	3.66	40.00	1.57	20.00	0.79
SBB Radlenker	40.56	81.77	80.00	3.15	104.00	4.09	40.00	1.57	20.00	0.79

Mechanical Properties

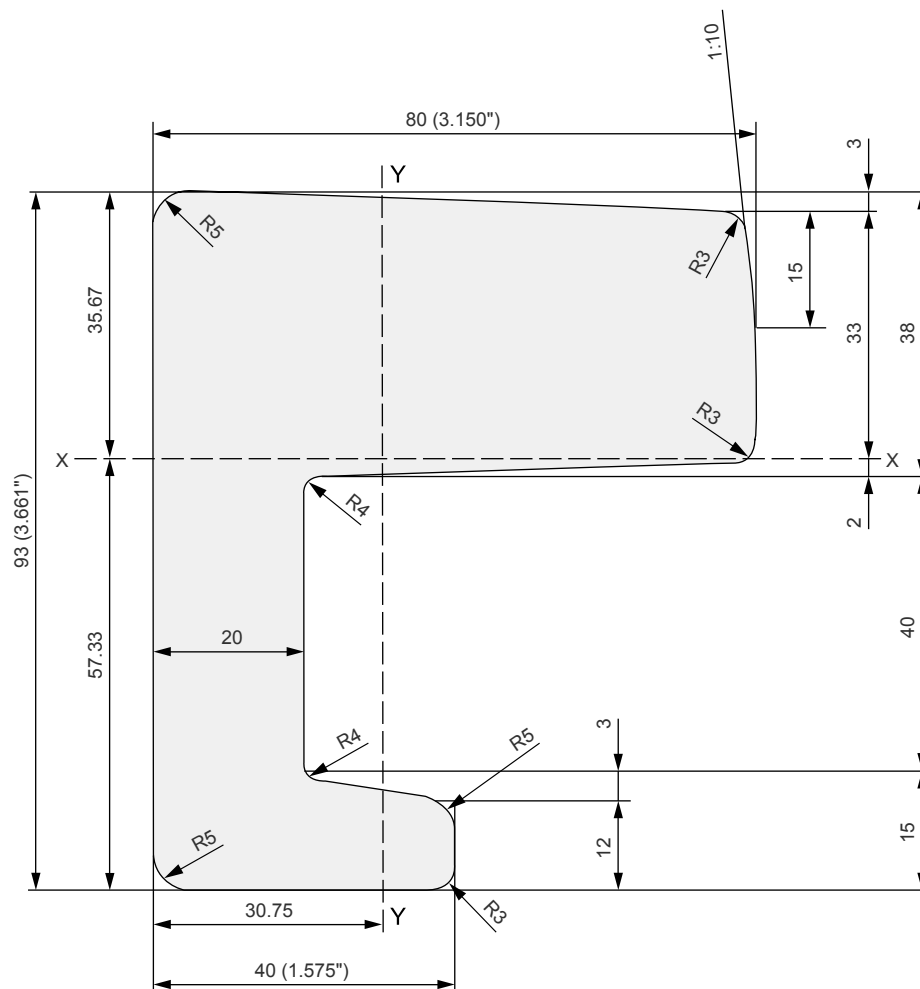
Grade	Tensile Strength (MPa)	Elongation (%)	Hardness (HB)
R200	≥ 680	≥ 14	200 - 240
R260	≥ 880	≥ 10	260 - 300
R350HT	≥ 1,175	≥ 9	350 - 390
R350LHT	≥ 1,175	≥ 9	350 - 390

Chemical Composition

Grade	C %	Mn %	Si %	P %	S %	Al %	V %	Cr %
R200	0.40 - 0.60	0.70 - 1.20	0.15 - 0.58	≤ 0.035	≤ 0.035	≤ 0.004	≤ 0.030	≤ 0.15
R260	0.62 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.025	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.15
R350HT	0.72 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.020	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.15
R350LHT	0.72 - 0.80	0.70 - 1.20	0.15 - 0.58	≤ 0.020	≤ 0.025	≤ 0.004	≤ 0.030	≤ 0.30

33 C1 (UIC33, U69, RL1-60)

Weight 32.99 kg/m | 66.50 lb/yd





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