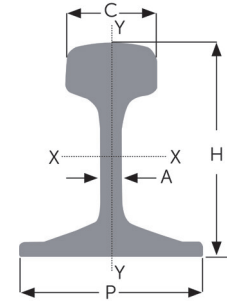


Knowing exactly which profile is suitable for your track can sometimes be a challenge. The technical tables below show the range of rail products and grades we manufacture in the UK.

Available in lengths of up to 120m (216m welded), these can be precisely matched to track conditions, track types, environmental conditions and a host of other variables to ensure that every rail we deliver provides the best performance throughout its service life.



### EN 13674-1 Flat bottom rails >46kg/m

Rail profile	Equivalent profile name	Section weight kg/m	Rail height mm (H)	Head width mm (C)	Web thickness mm (A)	Foot width mm (P)	Moment of inertia $I_{xx}$ cm <sup>4</sup>	Moment of inertia $I_{yy}$ cm <sup>4</sup>
54E1	UIC 54	54.77	159.00	70.00	16.00	140.00	2337.9	419.2
54E4	–	54.31	154.00	67.00	16.00	125.00	2056.2	352.7
56E1	BS 113lb	56.3	158.75	69.85	20.00	140.00	2321.0	421.6
60E1	UIC 60	60.21	172.00	72.00	16.50	150.00	3038.3	512.3
60E2	–	60.03	172.00	72.00	16.50	150.00	3021.5	510.5

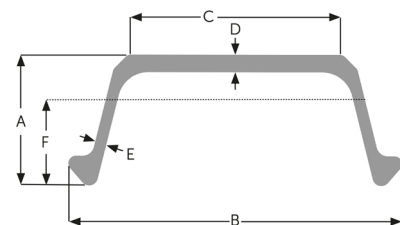
### EN 13674-4 Flat bottom rail 27kg/m to 46kg/m

Rail profile	Equivalent profile name	Section weight kg/m	Rail height mm (H)	Head width mm (C)	Web thickness mm (A)	Foot width mm (P)	Moment of inertia $I_{xx}$ cm <sup>4</sup>	Moment of inertia $I_{yy}$ cm <sup>4</sup>
39E1	BS 80A	39.77	133.35	63.50	13.10	117.47	1204.9	219.6

### Special rail sections

Rail profile	Equivalent profile name	Section weight kg/m	Rail height mm (H)	Head width mm (C)	Web thickness mm (A)	Foot width mm (P)	Moment of inertia $I_{xx}$ cm <sup>4</sup>	Moment of inertia $I_{yy}$ cm <sup>4</sup>
BS 95RBH	Bullhead	47.07	145.26	69.85	19.05	69.85	1458.00	171.00
Section 65*	Conductor	65.41	102.00	89.00	70.00	70.00	677.04	483.57
Section 75	Conductor	75.17	138.00	89.00	22.50	140.00	2163.93	891.66

\*Available by agreement – please contact us to discuss your requirements.



### Steel sleepers

Sleeper profile	Plate weight kg/m	Section height mm (A)	Section width mm (B)	Rail seat width mm (C)	Rail seat thickness mm (D)	Leg thickness mm (E)	Moment of inertia $I_{xx}$ cm <sup>4</sup>	Section modulus cm <sup>3</sup>	Height of neutral axis from base mm (F)
202	22.10	82	240	160	7.5/12.0	6.75	200.0	34.4	58.1
300	28.36	92	254	160	12.0	7.0	283.3	42.3	67.0
402	28.54	100	260	168	10.0	7.0	426.0	62.8	67.1
436	31.69	100	260	168	12.0	7.0	432.8	65.8	68.4
600	39.53	115	280	168	14.5	7.6	654.7	81.3	80.5

Notes: Can be supplied for all rail sizes and with the inclination required for your network. Can be tailored to any rail gauge – 1,000mm, 1,067mm (3' 6"), standard and broadgauge.

## Rail application steel grades

The tables below indicate the typical steel compositions and mechanical properties for British Steel's rail application grades.

### Flat bottom rail grades

Specification	Grade	Chemical composition % by mass									Mechanical properties		
		C	Si	Mn	P	S	Cr	Al	V	H2 (ppm)	Rm (MPa)	Elongation (%)	HBW running surface
UIC 860-R	700	0.40-0.60	0.05-0.35	0.80-1.25	≤ 0.050	≤ 0.050	-	-	-	-	680-830	≥ 14	-
	900A	0.60-0.80	0.10-0.50	0.80-1.30	≤ 0.040	≤ 0.040	-	-	-	-	880-1030	≥ 10	-
	900B	0.55-0.75	0.10-0.50	1.30-1.70	≤ 0.040	≤ 0.040	-	-	-	-	880-1030	≥ 10	-
EN 13674-1	R200	0.40-0.60	0.15-0.58	0.70-1.20	≤ 0.035	0.008-0.035	≤ 0.15	≤ 0.004	≤ 0.03	≤ 3.0	≥ 680	≥ 14	200-240
	R220	0.50-0.60	0.20-0.60	1.00-1.25	≤ 0.025	0.008-0.025	≤ 0.15	≤ 0.004	≤ 0.03	≤ 3.0	≥ 770	≥ 12	220-260
	R260	0.62-0.80	0.15-0.58	0.70-1.20	≤ 0.025	0.008-0.025	≤ 0.15	≤ 0.004	≤ 0.03	≤ 2.5	≥ 880	≥ 10	260-300
	R260Mn	0.55-0.75	0.15-0.60	1.30-1.70	≤ 0.025	0.008-0.025	≤ 0.15	≤ 0.004	≤ 0.03	≤ 2.5	≥ 880	≥ 10	260-300
IRS	880	0.60-0.80	0.10-0.50	0.80-1.30	≤ 0.030	≤ 0.030	-	≤ 0.015	-	≤ 16	≥ 880	≥ 10	≥ 260
British Steel	Premium: BLF320*	0.10-0.30	0.80-1.80	1.20-1.80	≤ 0.025	≤ 0.025	0.30-0.80	≤ 0.004	-	≤ 2.0	≥ 950	≥ 12	340-380
	Premium: HP335	0.87-0.97	0.75-1.00	0.75-1.00	≤ 0.020	0.008-0.020	≤ 0.10	≤ 0.004	0.09-0.13	≤ 2.5	≥ 1175	≥ 8	335-375

\*Available by agreement – please contact us to discuss your requirements.

### Conductor rail grade

Specification	Grade	Chemical composition % by mass									Electrical properties
		C	Si	Mn	P	S	Cr	Al	V	H2 (ppm)	Resistance (μΩ.cm)
BS 7865	Conductor rail	≤ 0.08	≤ 0.05	≤ 0.30	≤ 0.05	≤ 0.05	-	-	-	-	<11.04

### Steel sleeper grade

Specification	Grade	Chemical composition % by mass									Mechanical properties	
		C	Si	Mn	P	S	Cr	Al	V	H2 (ppm)	Rm (MPa)	Elongation (%)
EN 10025	S275	≤ 0.21	0.14-0.25	≤ 1.50	≤ 0.035	≤ 0.035	-	≤ 0.008	-	-	410-560	≥ 23

Other rail profiles and grades may be available – please contact us to discuss your requirements.

### Additional processing for corrosion protection

For aggressive track conditions, our rail can also be coated to provide superior durability and corrosion protection – please contact us to discuss your Zinoco® requirements.

**BRITISHSTEEL.CO.UK/RAIL**

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