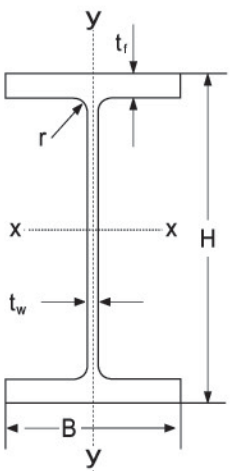
PRODUCT RANGE

Universal Beams & Columns, Channels and Rails

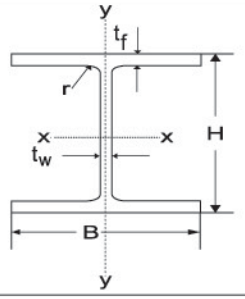
ANNEXURE - A

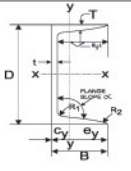
Description Beams	Sectional Weight	Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Root radius	Area of section	Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks
								X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	
	w	H	B	t_w	t_f	r	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	
	Kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4	cm^3	cm^3	cm	cm	
PARALLEL FLANGE BEAMS; UB SERIES														
UB 203 x 133 x 25	25.1	203.2	133.2	5.7	7.8	7.6	31.97	2340	307.6	230.3	46.2	8.56	3.10	
UB 203 x 133 x 30	30.0	206.8	133.9	6.4	9.6	7.6	38.21	2896	384.7	280	57.5	8.71	3.17	
UB 254 x 146 x 31	31.1	251.4	146.1	6	8.6	7.6	39.68	4413	447.5	351.1	61.3	10.55	3.36	
UB 254 x 146 x 37	37.0	256	146.4	6.3	10.9	7.6	47.17	5537	570.6	432.6	78	10.83	3.48	
UB 254 x 146 x 43	43.0	259.6	147.3	7.2	12.7	7.6	54.77	6544	677.4	504.1	92	10.93	3.52	
UB 305 x 165 x 40	40.3	303.4	165	6	10.2	8.9	51.32	8503	764.4	560.5	92.6	12.87	3.86	
UB 305 x 165 x 46	46.1	306.6	165.7	6.7	11.8	8.9	58.75	9899	895.7	645.7	108	12.98	3.90	
UB 305 x 165 x 54	54.0	310.4	166.9	7.9	13.7	8.9	68.77	11700	1063	753.6	127	13.04	3.93	
UB 356 x 171 x 45	45.0	351.4	171.1	7	9.7	10.2	57.33	12070	811.1	686.7	94.81	14.51	3.76	
UB 356 x 171 x 51	51.0	355	171.5	7.4	11.5	10.2	64.91	14140	968.3	796.4	112.9	14.76	3.86	
UB 356 x 171 x 57	57.0	358	172.2	8.1	13	10.2	72.56	16040	1108	896	128.7	14.87	3.91	
UB 356 x 171 x 67	67.1	363.4	173.2	9.1	15.7	10.2	85.49	19460	1362	1071	157.3	15.09	3.99	
UB 406 x 178 x 54	54.1	402.6	177.7	7.7	10.9	10.2	68.95	18720	1021	930	115	16.48	3.85	
UB 406 x 178 x 60	60.1	406.4	177.9	7.9	12.8	10.2	76.52	21600	1203	1063	135	16.8	3.97	
UB 406 x 178 x 67	67.1	409.4	178.8	8.8	14.3	10.2	85.54	24330	1365	1189	153	16.87	3.99	
UB 406 x 178 x 74	74.2	412.8	179.5	9.5	16	10.2	94.51	27310	1545	1323	172	17	4.04	
UB 457 x 152 x 52	52.3	449.8	152.4	7.6	10.9	10.2	66.64	21370	645	950	84.64	17.91	3.11	
UB 457 x 152 x 60	59.8	454.6	152.9	8.1	13.3	10.2	76.23	25500	794.6	1122	103.9	18.29	3.23	
UB 457 x 152 x 67	67.2	458	153.8	9	15	10.2	85.55	28930	912.6	1263	118.7	18.39	3.27	
UB 457 x 152 x 74	74.2	462	154.4	9.6	17	10.2	94.48	32670	1047	1414	135.6	18.6	3.33	
UB 457 x 152 x 82	82.1	465.8	155.3	10.5	18.9	10.2	104.5	36590	1185	1571	152.5	18.71	3.37	
UB 457 x 191 x 67	67.1	453.4	189.9	8.5	12.7	10.2	85.51	29380	1452	1296	152.9	18.54	4.12	
UB 457 x 191 x 74	74.3	457	190.4	9	14.5	10.2	94.63	33320	1671	1458	175.5	18.76	4.20	
UB 457 x 191 x 82	82.0	460	191.3	9.9	16	10.2	104.5	37050	1871	1611	195.6	18.83	4.23	
UB 457 x 191 x 89	89.3	463.4	191.9	10.5	17.7	10.2	113.8	41020	2089	1770	217.8	18.99	4.29	
UB 457 x 191 x 98	98.3	467.2	192.8	11.4	19.6	10.2	125.3	45730	2347	1957	243.5	19.11	4.33	



Description Beams	Sectional Weight	Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Root radius	Area of section	Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks
								X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	
	w	H	B	t_w	t_f	r	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	
	Kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4	cm^3	cm^3	cm	cm	
PARALLEL FLANGE BEAMS; UB SERIES CONTD...														
UB 533 x 210 x 82	82.2	528.3	208.8	9.6	13.2	12.7	104.7	47540	2007	1800	192.3	21.31	4.38	
UB 533 x 210 x 92	92.1	533.1	209.3	10.1	15.6	12.7	117.4	55230	2389	2072	228.3	21.69	4.51	
UB 533 x 210 x 101	101.0	536.7	210	10.8	17.4	12.7	128.7	61520	2692	2292	256.4	21.87	4.57	
UB 533 x 210 x 109	109.0	539.5	210.8	11.6	18.8	12.7	138.9	66820	2943	2477	279.2	21.94	4.60	
UB 533 x 210 x 122	122.0	544.5	211.9	12.7	21.3	12.7	155.4	76040	3388	2793	319.7	22.12	4.67	
UB 610 x 229 x 101	101.2	602.6	227.6	10.5	14.8	12.7	128.9	75780	2915	2515	256	24.24	4.75	
UB 610 x 229 x 113	113.0	607.6	228.2	11.1	17.3	12.7	143.9	87320	3434	2874	301	24.63	4.88	
UB 610 x 229 x 125.1	125.1	612.2	229	11.9	19.6	12.7	159.3	98610	3932	3221	343	24.88	4.97	
UB 610 x 229 x 139.9	139.9	617.2	230.2	13.1	22.1	12.7	178.2	111800	4505	3622	391	25.05	5.03	
PARALLEL FLANGE BEAMS; NPB/IPE SERIES														
IPE 100/NPB 100X55	8.1	100	55	4.1	5.7	7	10.3	171	15.9	34.2	5.8	4.07	1.24	
IPE 120/NPB 120X60	10.37	120	64	4.4	6.3	7	13.2	318	27.7	53	8.6	4.9	1.45	
IPE 140/NPB 140X70	12.89	140	73	4.7	6.9	7	16.4	541	44.9	77.3	12.3	5.74	1.65	
IPE 160/NPB 160X80	15.77	160	82	5	7.4	9	20.1	869	68.3	108.7	16.7	6.58	1.84	
IPEA 180/NPB 180X90	15.37	177	91	4.3	6.5	9	19.6	1063	81.9	120.1	18	7.37	2.05	
IPE 180/NPB 180X90	18.8	180	91	5.3	8	9	23.9	1317	100.9	146.3	22.2	7.42	2.05	
IPEO 180/NPB 180X90	21.27	182	92	6	9	9	27.1	1505	117.3	165.4	25.5	7.45	2.08	
IPEA 200/NPB 200X100	18.42	197	100	4.5	7	12	23.5	1591	117.2	161.6	23.4	8.23	2.23	
IPE 200/NPB 200X100	22.36	200	100	5.6	8.5	12	28.5	1943	142.4	194.3	28.5	8.26	2.24	
IPEO 200/NPB 200X100	25.09	202	102	6.2	9.5	12	32	2211	168.9	218.9	33.1	8.32	2.3	
NPB 200X130	27.37	207	133	5.8	8.5	12	34.9	2666	334	257.5	50.2	8.74	3.1	
NPB 200X130	31.55	210	134	6.4	10	12	40.2	3153	401.9	300.3	60	8.86	3.16	
IPEA 220/NPB 220X110	22.18	217	110	5	7.7	12	28.3	2317	171.4	213.5	31.2	9.05	2.46	
IPE 220/NPB 220X110	26.2	220	110	5.9	9.2	12	33.4	2772	204.9	252	37.3	9.11	2.48	
IPEO 220/NPB 220X110	29.35	222	112	6.6	10.2	12	37.4	3134	239.8	282.3	42.8	9.16	2.53	
IPEA 240/NPB 240X120	26.15	237	120	5.2	8.3	15	33.3	3290	240.1	277.7	40	9.94	2.68	
IPE 240/NPB 240X120	30.71	240	120	6.2	9.8	15	39.1	3892	283.6	324.3	47.3	9.97	2.69	
IPEO 240/NPB 240X120	34.31	242	122	7	10.8	15	43.7	4369	328.5	361.1	53.9	10	2.74	
IPEA 270/NPB 270X135	30.73	267	135	5.5	8.7	15	39.1	4917	358	368.3	53	11.21	3.02	
IPE 270/NPB 270X135	36.07	270	135	6.6	10.2	15	45.9	5790	419.9	428.9	62.2	11.23	3.02	
IPEO 270/NPB 270X135	42.26	274	136	7.5	12.1	15	53.8	6947	513.5	507.1	75.5	11.36	3.09	
IPEA 300/NPB 300 x 150 x 36.5	36.5	297	150	6.1	9.2	15	46.53	7173	519	483.1	69.2	12.42	3.34	
IPE 300/NPB 300 x 150 x 42.2	42.2	300	150	7.1	10.7	15	53.81	8356	603.8	557.1	80.5	12.46	3.35	
IPEO 300/NPB 300 x 150 x 49.3	49.3	304	152	8	12.7	15	62.83	9994	745.7	657.5	98.12	12.61	3.45	

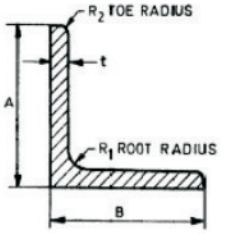
Description Beams	Sectional Weight	Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Root radius	Area of section	Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks
								X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	
	w	H	B	t_w	t_f	r	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	
	Kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4	cm^3	cm^3	cm	cm	
PARALLEL FLANGE BEAMS; NPB/IPE SERIES CONTD...														
IPE A360/NPB 350 x 170 x 50.2	50.2	357.6	170.0	6.6	11.5	18.0	64.0	14520	944.3	811.8	111.1	15.06	3.84	
IPE 360/NPB 350 x 170 x 57.1	57.1	360.0	170.0	8.0	12.7	18.0	72.7	16270	1043	903.6	122.8	14.95	3.79	
IPEO 360/NPB 350 x 170 x 66	66.0	364.0	172.0	9.2	14.7	18.0	84.0	19050	1251	1047	145.5	15.05	3.86	
IPEA 400/NPB 400 x 180 x 57.4	57.4	397	180	7	12	21	73.1	20293	1170.6	1022.3	130.1	16.66	4.00	
IPE 400/NPB 400 x 180 x 66.3	66.3	400	180	8.6	13.5	21	84.5	23128	1317.8	1156.4	146.4.	16.55	3.95	
IPEO 400/NPB 400 x 180 x 75.7	75.7	404	182	9.7	15.5	21	96.5	26747	1564.2	1324.1	171.9	16.66	4.03	
IPEA 450/NPB 450 x 190 x 67.2	67.2	447	190	7.6	13.1	21	85.5	29759	1502.4	1331.5	158.1	18.65	4.19	
IPE 450/NPB 450 x 190 x 77.6	77.6	450	190	9.4	14.6	21	98.8	33743	1675.9	1499.7	176.4	18.48	4.12	
IPEO 450/NPB 450 x 190 x 92.4	92.4	456	192	11	17.6	21	117.7	40923	2085.4	1794.9	217.2	18.65	4.21	
IPEA 500/NPB 500 x 200 x 79.4	79.4	497	200	8.4	14.5	21	101.3	42933	1939.2	1727.7	193.9	20.61	4.38	
IPE 500/NPB 500 x 200 x 90.7	90.7	500	200	10.2	16	21	115.5	48199	2141.7	1927.9	241.2	20.43	4.31	
IPEO 500/NPB 500 x 200 x 107	107.0	506	202	12	19	21	136.7	57777	2621.7	2283.7	259.6	20.56	4.38	
IPEA 600/NPB 600 x 220 x 108.0	108.0	597	220	9.8	17.5	24	137	82919	3116.3	2777.8	283.3	24.6	4.77	
IPE 600/NPB 600 x 220 x 122.0	122.0	600	220	12	19	24	156	92083	3387.3	3069.4	307.9	24.3	4.66	
IPEO 600/NPB 600 x 220 x 154.0	154.0	610	224	15	24	24	196.8	118302	4520.8	3678.8	403.6	24.52	4.79	
PARALLEL FLANGE BEAMS; WPB/HE SERIES														
HEAA 320/WPB 320 x 300 x 74.2	74.2	301	300	8.0	11	27	94.58	16450	4959	1093	330.6	13.19	7.24	
HEA 320/WPB 320 x 300 x 97.6	97.6	310	300	9.0	15.5	27	124.4	22930	6985	1479	465.7	13.58	7.49	
HEB 320/WPB 320 x 300 x 127	127.0	320	300	11.5	20.5	27	161.3	30820	9239	1926	615.9	13.82	7.57	
HEM 320/WPB 320 x 300 x 245	245.0	359	309	21	40	27	312	68130	19710	3796	1276	14.78	7.95	
HEAA 600/WPB 600 x 300 x 129	129.0	571	300	12	15.5	27	164.1	91872	6993.4	3217.9	466.2	23.66	6.53	
HEA 600/WPB 600 x 300 x 178	178.0	590	300	13	25	27	226.5	141208	11271.3	4786.7	751.4	24.97	7.05	
HEB 600/WPB 600 x 300 x 212	212.0	600	300	15.5	30	27	270	171041	13530.2	5701.4	902	25.17	7.08	
HEM 600/WPB 600 x 300 x 285	285.0	620	305	21	40	27	363.7	237447	18975.5	7659.6	1244.3	25.65	7.22	
HEAA 700/WPB 700 x 300 x 150	150.0	670	300	13	17	27	190.9	142721	7673.1	4260.3	511.5	27.34	6.34	
HEA 700/WPB 700 x 300 x 204	204.0	690	300	14.5	27	27	260.5	215301	12178.8	6240.6	811.9	28.75	6.65	
HEB 700/WPB 700 x 300 x 241	241.0	700	300	17	32	27	306.4	256888	14440.8	7339.7	952.7	28.96	6.68	
HEM 700/WPB 700 x 300 x 301	301.0	716	304	21	40	27	383	329278	18797.4	9197.7	1236.7	29.32	7.01	
HEAA 800/WPB 800 x 300 x 172	172.0	770	300	14	18	30	218.5	208882	8133.7	5425.5	542.2	30.92	6.10	
HEA 800/WPB 800 x 300 x 224	224.0	790	300	15	28	30	285.8	303442	12638.7	7682.1	842.6	32.58	6.65	
HEB WPB 800 x 300 x 262	262.0	800	300	17.5	33	30	334.2	359083	14903.7	8977.1	993.6	32.78	6.68	
HEM 800/WPB 800 x 300 x 317	317.0	814	303	21	40	30	404.3	442598	18627.4	10875	1229.5	33.09	6.79	
HE 800 x 373*	373.0	826	308	25	46	30	474.6	523900	22530	12690	1463	33.23	6.89	
HEA 900/WPB 900 x 300 x 252	252.0	890	300	16	30	30	320.5	422075	13547.5	9484.8	903.2	36.29	6.50	
HEB 900/WPB 900 x 300 x 291	291.0	900	300	18.5	35	30	371.3	494065	15815.9	10979	1054.4	36.48	6.53	
HEM 900/WPB 900 x 300 x 333	333.0	910	302	27	40	30	423.6	570400	18450	12540	1222	36.7	6.60	

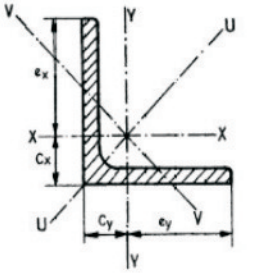
Description Beams	Sectional Weight	Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Root radius	Area of section	Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks
								X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	
	w	H	B	t_w	t_f	r	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	
	Kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4	cm^3	cm^3	cm	cm	
PARALLEL FLANGE COLUMNS; UC SERIES														
UC 152 x 152 x 23	23.0	152.4	152.2	5.8	6.8	7.6	29.25	1250	399.9	164	52.55	6.54	3.70	Equivalent to WPB 150 x 150 x 23
UC 152 x 152 x 30	30.0	157.6	152.9	6.5	9.4	7.6	38.26	1748	560.5	221.8	73.31	6.76	3.83	Equivalent to WPB 150 x 150 x 30
UC 152 x 152 x 37	37.0	161.8	154.4	8	11.5	7.6	47.11	2210	706.2	273.2	91.48	6.85	3.87	Equivalent to WPB 150 x 150 x 37
UC 203 x 203 x 46	46.1	203.2	203.6	7.2	11	10.2	58.73	4568	1548	449.6	152.1	8.82	5.13	
UC 203 x 203 x 52	52.0	206.2	204.3	7.9	12.5	10.2	66.28	5259	1778	510.1	174	8.91	5.18	
UC 203 x 203 x 60	60.0	209.6	205.8	9.4	14.2	10.2	76.27	6125	2065	584.4	200.6	8.96	5.20	
UC 203 x 203 X 71	71.0	215.8	206.4	10	17.3	10.2	90.43	7618	2537	706	245.9	9.18	5.30	
UC 203 x 203 x 86	86.1	222.2	209.1	12.7	20.5	10.2	109.6	9449	3127	850.5	299.1	9.28	5.34	
UC 254 x 254 x 73	73.1	254.1	254.6	8.6	14.2	12.7	93.1	11420	3908	897.9	307	11.07	6.48	
UC 254 x 254 x 89	88.9	260.3	256.3	10.3	17.3	12.7	113.3	14270	4857	1096	379	11.22	6.55	
UC 254 x 254 x 107	107.1	266.7	258.8	12.8	20.5	12.7	136.4	17510	5928	1313	458.1	11.33	6.59	
UC 254 x 254 x 132	132.0	276.3	261.3	15.3	25.3	12.7	138.1	22530	7531	1631	576.4	11.58	6.69	
UC 254 x 254 x 167	167.1	289.1	265.2	19.2	31.7	12.7	212.9	30000	9870	2075	744.3	11.87	6.81	
UC 305 x 305 x 97	96.9	307.9	305.3	9.9	15.4	15.2	123.4	22250	7308	1445	478.7	13.42	7.69	
UC 305 x 305 x 118	117.9	314.5	307.4	12	18.7	15.2	150.2	27670	9059	1760	589.4	13.57	7.77	
UC 305 x 305 x 137	136.9	320.5	309.2	13.8	21.7	15.2	174.4	32810	10700	2048	692.2	13.72	7.83	
UC 305 x 305 x 158	158.1	327.1	311.2	15.8	25	15.2	203.4	38750	12570	2369	807.8	13.87	7.90	
UC 305 x 305 x 198	198.1	339.9	314.5	19.1	31.4	15.2	252.4	50900	16300	2995	1037	14.2	8.04	
UC 305 x 305 x 240	240.0	352.5	318.4	23	37.7	15.2	305.8	64200	20310	3643	1276	14.49	8.15	
UC 305 x 305 x 283	282.9	365.3	322.2	26.8	44.1	15.2	360.4	78870	24630	4318	1529	14.79	8.27	
UC 356 x 368 x 129	129.0	355.6	368.6	10.4	17.5	15.2	164.3	40250	14610	2264	792.8	15.65	9.43	
UC 356 x 368 x 153	152.9	362	370.5	12.3	20.7	15.2	194.8	48590	17550	2684	947.5	15.79	9.49	
UC 356 x 368 x 177	177.0	368.2	372.6	14.4	23.8	15.2	225.5	57120	20530	310.3	1102	15.91	9.54	
UC 356 x 368 x 202	201.9	374.6	374.7	16.5	27	15.2	257.2	66260	23690	3538	1264	16.05	9.60	

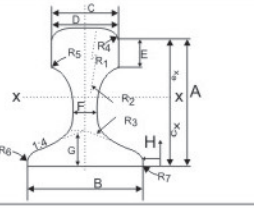
Description Beams	Sectional Weight	Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Flange Slope, Max	Distance of Centre of Gravity	Area of section	Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks
									X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	
	w	H	B	t_w	t_f	r	Cyy	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	
	Kg/m	mm	mm	mm	mm	deg.	mm	cm^2	cm^4	cm^4	cm^3	cm^3	cm	cm	
INDIAN CHANNELS															
MC 75	7.14	75	40	4.8	7.5	96	1.32	9.1	78.5	12.9	20.9	4.81	2.94	1.19	
MC 100	9.56	100	50	5.0	7.7	96	1.54	12.2	192	26.7	33.5	7.71	3.97	1.48	
MC 125	13.1	125	65	5.3	8.2	96	1.95	16.7	425	61.1	68.1	13.4	5.05	1.91	
MC 150	16.8	150	75	5.7	9.0	96	2.20	21.3	788	103	105	19.5	6.08	2.20	
MC 175	19.6	175	75	6.0	10.2	96	2.19	24.9	1240	122	141	23.0	7.04	2.21	
MC 200	22.3	200	75	6.2	11.4	96	2.20	28.5	1830	141	181	26.4	8.02	2.22	
MC 250	30.6	250	80	7.2	14.1	96	2.30	39.0	3880	211	307	38.5	9.92	2.37	As per IS 808 & tolerance as per IS 1852
ISMC 250	34.2	250	82	9	14.1		2.23	43.5	4080	244	326	40.9	9.68	2.37	
MC 300	36.3	300	90	7.8	13.6	96	2.35	46.3	6420	313	428	47.1	11.80	2.60	
ISMC 400	50.1	400	100	8.8	15.3		2.42	63.8	15200	508	760	67	15.4	2.82	

***Cyy is centre of gravity along YY Axis**

Description	Sectional Weight	Thickness	Root radius		Distance of Centre of Gravity		Area of section	Moment of Inertia				Sectional Modulus		Radius of gyration				Remarks
								X Axis	Y Axis	U Axis	V Axis	X Axis	Y Axis	X Axis	Y Axis	U Axis	V Axis	
	w	t	R1	R2	Cx	Cy	A	Ixx	Iyy	Iuu	Ivv	Zxx	Zyy	rxx	ryy	Iuu	Ivv	
	Kg/m	mm	mm	mm	cm	cm	cm^2	cm^4	cm^4	cm^4	cm^4	cm^3	cm^3	cm	cm	cm^4	cm^4	
EQUAL LEG ANGLES																		
100 100 x 8	12.1	8.0	8.5	should be reasonably square	2.76	2.76	15.4	145	145	232	58.4	20.0	20.0	3.07	3.07	3.88	1.95	
x 10	14.9	10.0			2.84	2.84	19.0	177	177	282	71.8	24.7	24.7	3.05	3.05	3.85	1.94	
x 12	17.7	12.0			2.92	2.92	22.6	207	207	329	84.7	29.2	29.2	3.03	3.03	3.82	1.94	
110 110 x 8	13.4	8.0	10.0	4.8	3.00	3.00	17.1	197	197	313	81.0	24.6	24.6	3.40	3.40	4.28	2.18	
x 10	16.6	10.0			3.09	3.09	21.1	240	240	381	98.9	30.4	30.4	3.37	3.37	4.25	2.16	
x 12	19.7	12.0			3.17	3.17	25.1	281	281	446	116	35.9	35.9	3.35	3.35	4.22	2.15	
130 130 x 10	19.7	10.0	10.0	4.8	3.59	3.59	25.1	405	405	640	166	43.1	43.1	4.02	4.02	5.07	2.57	
x 12	23.5	12.0			3.67	3.67	29.9	476	476	757	196	51.0	51.0	3.99	3.99	5.03	2.56	
150 150 x 10	22.9	10.0	12	4.8	4.08	4.08	29.2	634	634	1010	260	58.0	58.0	4.66	4.66	5.87	2.98	
x 12	27.3	12.0			4.16	4.16	34.8	746	746	1190	306	68.8	68.8	4.63	4.63	5.84	2.97	
x 16	35.8	16.0			4.31	4.31	45.6	959	959	1520	395	89.7	89.7	4.58	4.58	5.77	2.94	
200 200 x 16	48.5	16.0	15	4.8	5.56	5.56	61.8	2370	2370	3760	968	164	164	6.19	6.19	7.80	3.96	
x 20	60.0	20.0			5.71	5.71	76.4	2880	2880	4570	1180	201	201	6.14	6.14	7.73	3.93	





INDIAN CRANE RAILS	Sectional Weight (Kg/m)		
CR-80	64.2	As per IS : 3443 -1980 (INDIAN SPECIFICATION FOR CRANE RAIL SECTIONS)	
CR-100	89.0		

TRACK RAILS	Sectional Weight (Kg/m)	
UIC 54	54.43	As per IRS-T-12-2009, UIC-860-R, or EN-13674-1
UIC 60	60.34	
IRS 52	51.89	As per IRS-T-12-2009

Delivery Conditions for Beams/ Columns/ Channels and Rails

	For Structurals		For Rails
Length :	For prime	10 - 13 meter (-0/+100mm)	13 meter, length tolerance as per norm
	For non-prime	10 - 13 meter (-0/+100mm)	
	For short length	As per lot information	
Dimensional Norms : (for prime & short-length material only)	For UB/UC sections	As per BS4-1:1993	As per UIC/ EN/ IRS norm as applicable
	For IPE/NPB sections	As per IS:12778/ equivalance with EN-19-57	
	For HE/WPB sections	As per IS:12778/ equivalance with EN-53-62	
Surface Condition :	For prime	Blue or with slight atmospheric rust	
	For non-prime / short length	Superficial rust to slight rusted material to be acceptable	
Packing :	Bare, Loose and / or in bundles of max 5 MT each		Bare, Loose and / or in bundles of max 5 MT each
Marking :	For prime	Size length / Grade / Heat no., Order no., Desired shipping marks	As per norms
	For non-prime / short length	As per mutual agreement	
Minimum Order Qty. :	For domestic sales : 5 MT per size per length and 22 MT in total. (In case of lesser order quantitiy, freight for full trailor/truck to buyer's account)		As per mutual agreement
	For exports : 30 MT per size per length per grade for grades S275JR/equivalent and lower; Total order quantity : Min 500 MT 50 MT per size per length and 100 MT per grade for grades S355JR/equivalent and higher; Total order quantity : Min 500 MT		
Invoicing :	For domestic sales : On actual weight basis or as per mutual agreement		For domestic sales : On actual weight basis
	For exports : On theoretical weight basis on nominal size & length		For exports : On theoretical weight basis