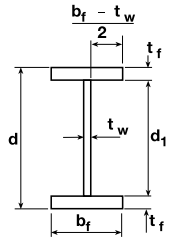
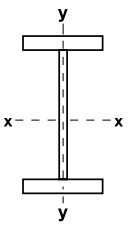
AUSTRALIAN MADE





Welded Beams

Table 9 Welded Beams – Dimensions and Properties

Designation	Depth of Section	Flange		Web Thickness	Depth Between Flanges			Gross Area of Cross Section	About x-axis				About y-axis				Torsion Constant	Warping Constant	Designation
		Width	Thickness			d_1	(b_f-t_w)												
						t_w	$2t_f$												
	d	b_f	t_f	t_w	d_1			A_g	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	I_w	
kg/m	mm	mm	mm	mm	mm			mm^2	10^6mm^4	10^3mm^3	10^3mm^3	mm	10^6mm^4	10^3mm^3	10^3mm^3	mm	10^3mm^4	10^9mm^6	
1200 WB 455	1200	500	40	16	1120	70.0	6.05	57900	15300	25600	28200	515	834	3330	5070	120	22000	280000	1200 WB 455
423	1192	500	36	16	1120	70.0	6.72	53900	13900	23300	25800	508	750	3000	4570	118	16500	251000	423
392	1184	500	32	16	1120	70.0	7.56	49900	12500	21100	23400	500	667	2670	4070	116	12100	221000	392
342	1184	400	32	16	1120	70.0	6.00	43500	10400	17500	19800	488	342	1710	2630	88.6	9960	113000	342
317	1176	400	28	16	1120	70.0	6.86	40300	9250	15700	17900	479	299	1500	2310	86.1	7230	98500	317
278	1170	350	25	16	1120	70.0	6.68	35400	7610	13000	15000	464	179	1020	1600	71.1	5090	58700	278
249	1170	275	25	16	1120	70.0	5.18	31700	6380	10900	12900	449	87.0	633	1020	52.4	4310	28500	249
1000 WB 322	1024	400	32	16	960	60.0	6.00	41000	7480	14600	16400	427	342	1710	2620	91.3	9740	84100	1000 WB 322
296	1016	400	28	16	960	60.0	6.86	37800	6650	13100	14800	420	299	1490	2300	89.0	7010	73000	296
258	1010	350	25	16	960	60.0	6.68	32900	5430	10700	12300	406	179	1020	1590	73.8	4870	43400	258
215	1000	300	20	16	960	60.0	7.10	27400	4060	8120	9570	385	90.3	602	961	57.5	2890	21700	215
900 WB 282	924	400	32	12	860	71.7	6.06	35900	5730	12400	13600	399	341	1710	2590	97.5	8870	67900	900 WB 282
257	916	400	28	12	860	71.7	6.93	32700	5050	11000	12200	393	299	1490	2270	95.6	6150	58900	257
218	910	350	25	12	860	71.7	6.76	27800	4060	8930	9960	382	179	1020	1560	80.2	4020	35000	218
175	900	300	20	12	860	71.7	7.20	22300	2960	6580	7500	364	90.1	601	931	63.5	2060	17400	175
800 WB 192	816	300	28	10	760	76.0	5.18	24400	2970	7290	8060	349	126	840	1280	71.9	4420	19600	800 WB 192
168	810	275	25	10	760	76.0	5.30	21400	2480	6140	6840	341	86.7	631	964	63.7	2990	13400	168
146	800	275	20	10	760	76.0	6.63	18600	2040	5100	5730	331	69.4	505	775	61.1	1670	10600	146
122	792	250	16	10	760	76.0	7.50	15600	1570	3970	4550	317	41.7	334	519	51.7	921	6280	122
700 WB 173	716	275	28	10	660	66.0	4.73	22000	2060	5760	6390	306	97.1	706	1080	66.4	4020	11500	700 WB 173
150	710	250	25	10	660	66.0	4.80	19100	1710	4810	5370	299	65.2	521	798	58.4	2690	7640	150
130	700	250	20	10	660	66.0	6.00	16600	1400	3990	4490	290	52.1	417	642	56.0	1510	6030	130
115	692	250	16	10	660	66.0	7.50	14600	1150	3330	3790	281	41.7	334	516	53.5	888	4770	115

Notes

1. All welds to AS/NZS 1554.1 Category SP (deep penetration).
2. Web to flange joints develop the minimum tensile strength of the web.
3. Flame cut surfaces not incorporated in welds have a minimum surface roughness of class 2, as defined in WTIA Technical Note 5.

Welded Beams

Table 10 Welded Beams – Properties for Assessing Section Capacity

Designation	Yield Stress		Form Factor	About x-axis		About y-axis		Yield Stress		Form Factor	About x-axis		About y-axis		Designation
	Flange	Web		Compactness		Compactness		Flange	Web		Compactness		Compactness		
	f_y	f_y	k_f		Z_{ex}		Z_{ey}	f_y	f_y	k_f		Z_{ex}		Z_{ey}	
	MPa	MPa			10^3mm^3		10^3mm^3	MPa	MPa			10^3mm^3		10^3mm^3	
	300PLUS® *							**AS/NZS 3679.2-400**							
1200 WB 455	280	300	0.837	C	28200	C	5000	360	380	0.820	N	28100	C	5000	1200 WB 455
423	280	300	0.825	C	25800	C	4500	360	380	0.806	N	25700	N	4500	423
392	280	300	0.811	C	23400	N	4000	360	380	0.791	N	23300	N	3900	392
342	280	300	0.783	C	19800	C	2560	360	380	0.760	N	19600	C	2560	342
317	280	300	0.766	C	17900	C	2240	360	380	0.741	N	17700	N	2230	317
278	280	300	0.733	C	15000	C	1530	360	380	0.705	N	14900	N	1530	278
249	280	300	0.701	C	12900	C	949	360	380	0.670	N	12800	C	949	249
1000 WB 322	280	300	0.832	C	16400	C	2560	360	380	0.807	C	16400	C	2560	1000 WB 322
296	280	300	0.817	C	14800	C	2240	360	380	0.791	C	14800	N	2230	296
258	280	300	0.790	C	12300	C	1530	360	380	0.760	C	12300	N	1530	258
215	300	300	0.738	C	9570	C	903	380	380	0.704	C	9570	N	887	215
900 WB 282	280	310	0.845	C	13600	C	2560	360	400	0.830	N	13500	C	2560	900 WB 282
257	280	310	0.830	C	12200	C	2240	360	400	0.813	N	12000	N	2220	257
218	280	310	0.800	C	9960	C	1530	360	400	0.780	N	9840	N	1530	218
175	300	310	0.744	C	7500	C	901	380	400	0.721	N	7320	N	882	175
800 WB 192	280	310	0.824	C	8060	C	1260	360	400	0.808	N	7850	C	1260	800 WB 192
168	280	310	0.799	C	6840	C	946	360	400	0.781	N	6640	C	946	168
146	300	310	0.763	N	5710	C	757	380	400	0.744	N	5510	N	754	146
122	300	310	0.718	N	4530	N	498	380	400	0.695	N	4340	N	486	122
700 WB 173	280	310	0.850	C	6390	C	1060	360	400	0.833	C	6390	C	1060	700 WB 173
150	280	310	0.828	C	5370	C	782	360	400	0.807	C	5370	C	782	150
130	300	310	0.795	C	4490	C	626	380	400	0.773	C	4490	C	626	130
115	300	310	0.767	C	3790	N	498	380	400	0.742	C	3790	N	486	115

* 300PLUS® welded sections are produced to exceed the minimum requirements of AS/NZS 3679.2-300.

Notes

1. For 300PLUS® sections the tensile strength (f_u) is 430 MPa.
2. For Grade 400 sections the tensile strength (f_u) is 480 MPa.
3. C: Compact Section; N: Non-compact Section; S: Slender Section.