

CARBON STEEL PIPES, BUTTWELD FITTINGS & FLANGES

	LINE PIPE
Specification	ASTM A53/A53M
Dimensions	ASME B36.10M
Product	Welded and Seamless Steel Pipe
Grades	A, B
Specification	ASTM A106/A106M
Dimensions	ASME B36.10M
Product	Seamless Carbon Steel Pipe for High Temperature Service
Grades	A,B,C
Specification	ASTM A335/A335M
Dimensions	ASME B36.10M
Product	Seamless Ferritic Alloy Steel Pipe for High Temperature Service
Grades	Refer Standard for grades
Specification	ASTM A333/A333M
Dimensions	ASME B36.10M
Product	Seamless & Welded Carbon and Alloy Steel Pipe for Low Temperature Services
Grades	Refer Standard for grades
Specification	API 5L/ISO 3183
Dimensions	ASME B36.10M, API 5L
Product	Seamless & Welded Carbon Steel for Line Pipe
Grades	A, B, X42, X52, X60, Refer API 5L specification for others

	STRUCTURAL STEEL
Specification	AS/NZS 1163
Dimensions	AS/NZS 1163
Product	Structural Steel Hollow Sections
Grade	C350L0, Refer standard for others

BUTT WELD FITTINGS

ASTM A234M	
Welded and Seamless Carbon and Alloy Steel Pipe Fittings for Moderate and High Temperature	
Specification	Service ASTM A420M Welded and Seamless Carbon and Alloy Steel Pipe Fittings for Low Temperature Service
Dimensions	ASME B16.9
Product	Elbows, Reducing Elbows, Returns, Tees, Crosses, Reducers, Stub Ends, Caps
Grade	ASTM A234M WPB, ASTM A420M WPL6. Refer standard for others
Flanges	
Specification	ASTM A105M Carbon Steel Forgings for Piping Applications
Dimensions	ASME B16.5
Product	Weld Neck, Slip-on, Blind Flanges. Others refer to the specification.
Face	Plain, Raised Face
Bore	Pipe Schedule
Class	150, 300, 400, 600, 900, 1500, 2500 (to 600mm only)
Grade	Carbon Steel
Specification	AS 2129 Flanges for Pipes, Valves and Fittings
Dimensions	AS 2129 "Table" flanges pressure – temperature ratings, materials and dimensions
Application	Slip-on, Blind "Table" Flanges
Face	Plain
Bore	To suit Pipe & Tube OD
Table	D, E, F and H

Carbon Steel Pipe – Dimensions

Nominal size		OD	Welded & Seamless Carbon Steel Pipe to ASME B36.10M All dimensions are in mm																Structural Steel Hollow Sections to A S/NZ S1163 Grade C350L0									
			Schedule																Wall Thickness in mm									
DN	NPS	mm	5	10	20	30	40	Std	60	80	XS	100	120	140	160	XXS	4.8	5.5	6.0	6.4	7.1	8.2	9.3	9.5	12.7			
6	1/8	10.3		1.24		1.45	1.73	1.73		2.41	2.41																	
8	1/4	13.7		1.65		1.85	2.24	2.24		3.02	3.02																	
10	3/8	17.1		1.65		1.85	2.31	2.31		3.20	3.20																	
15	1/2	21.3	1.65	2.11		2.41	2.77	2.77		3.73	3.73				4.78	7.47												
20	3/4	26.7	1.65	2.11		2.41	2.87	2.87		3.91	3.91				5.56	7.82												
25	1	33.4	1.65	2.77		2.90	3.38	3.38		4.55	4.55				6.35	9.09												
32	1 1/4	42.2	1.65	2.77		2.97	3.56	3.56		4.85	4.85				6.35	9.70												
40	1 1/2	48.3	1.65	2.77		3.18	3.68	3.68		5.08	5.08				7.14	10.15												
50	2	60.3	1.65	2.77		3.18	3.91	3.91		5.54	5.54				8.74	11.07												
65	2 1/2	73.0	2.11	3.05		4.78	5.16	5.16		7.01	7.01				9.53	14.02												
80	3	88.9	2.11	3.05		4.78	5.49	5.49		7.62	7.62				11.13	15.24	✓											
90	3 1/2	101.6	2.11	3.05		4.78	5.74	5.74		8.08	8.08																	
100	4	114.3	2.11	3.05		4.78	6.02	6.02		8.56	8.56		11.13		13.49	17.12	✓		✓									
125	5	141.3	2.77	3.40			6.55	6.55		9.53	9.53		12.70		15.88	19.05												
150	6	168.3	2.77	3.40			7.11	7.11		10.97	10.97		14.27		18.26	21.95	✓		✓		✓							
200	8	219.1	2.77	3.76	6.35	7.04	8.18	8.18	10.31	12.70	12.70	15.09	18.26	20.62	23.01	22.23	✓		✓		✓							
250	10	273.0	3.40	4.19	6.35	7.80	9.27	9.27	12.70	15.09	12.70	18.26	21.44	25.40	28.58	25.40	✓		✓		✓		✓					
300	12	323.8	3.96	4.57	6.35	8.38	10.31	9.53	14.27	17.48	12.70	21.44	25.40	28.58	33.32	25.40			✓						✓			
350	14	355.6	3.96	6.35	7.92	9.53	11.13	9.53	15.09	19.05	12.70	23.83	27.79	31.75	36.71				✓						✓			
400	16	406.4	4.19	6.35	7.92	9.53	12.70	9.53	16.66	21.44	12.70	26.19	30.96	36.53	40.49				✓						✓			
450	18	457	4.19	6.35	7.92	11.13	14.27	9.53	19.05	23.83	12.70	29.36	34.93	39.67	45.24				✓						✓			
500	20	508	4.78	6.35	9.53	12.70	15.09	9.53	20.62	26.19	12.70	32.54	38.10	44.45	50.01													
550	22	559	4.78	6.35	9.53	12.70		9.53	22.23	28.58	12.70	34.93	41.28	47.63	53.98													
600	24	610	5.54	6.35	9.53	14.27	17.48	9.53	24.61	30.96	12.70	38.89	46.02	52.37	59.54													
650	26	660		7.92	12.70			9.53			12.70																	
700	28	711		7.92	12.70	15.88		9.53			12.70																	
750	30	762	6.35	7.92	12.70	15.88		9.53			12.70																	
800	32	813		7.92	12.70	15.88	17.48	9.53			12.70																	
850	34	864		7.92	12.70	15.88	17.48	9.53			12.70																	
900	36	914		7.92	12.70	15.88	19.05	9.53			12.70																	
950	38	965						9.53			12.70																	
1000	40	1016						9.53			12.70																	
1050	42	1067						9.53			12.70																	
1100	44	1118						9.53			12.70																	
1150	46	1168						9.53			12.70																	
1200	48	1219						9.53			12.70																	

Note 1: For dimensional tolerances refer to ASTM A53M or A106M
This table shows common sizes. Other wall thicknesses and larger diameter pipes are available subject to enquiry. Refer to ASME B36.10M for possible sizes.

Carbon Steel Pipe – Weights

Nominal size		OD	Welded & Seamless Carbon Steel Pipe to ASME B36.10M (kg/m)																	Structural Steel Hollow Sections to AS/NZS1163 Grade C350 (kg/m)									
DN	NPS	mm	5	10	20	30	40	Std	60	80	XS	100	120	140	160	XXS	4.8	5.5	6.0	6.4	7.1	8.2	9.3	9.5	12.7				
6	1/8	10.3		0.28		0.32	0.37	0.37		0.47	0.47																		
8	1/4	13.7		0.49		0.54	0.63	0.63		0.80	0.80																		
10	3/8	17.1		0.63		0.70	0.84	0.84		1.10	1.10																		
15	1/2	21.3	0.80	1.00	1.12	1.27	1.27	1.27		1.62	1.62				1.95	2.55													
20	3/4	26.7	1.03	1.28	1.44	1.69	1.69	1.69		2.20	2.20				2.90	3.64													
25	1	33.4	1.29	2.09	2.18	2.50	2.50	2.50		3.24	3.24				4.24	5.45													
32	1 1/4	42.2	1.65	2.69	2.87	3.39	3.39	3.39		4.47	4.47				5.61	7.77													
40	1 1/2	48.3	1.90	3.11	3.53	4.05	4.05	4.05		5.41	5.41				7.25	9.55													
50	2	60.3	2.39	3.93	4.48	5.44	5.44	5.44		7.48	7.48				11.11	13.44													
65	2 1/2	73.0	3.69	5.26	8.04	8.63	8.63	8.63		11.41	11.41				14.92	20.39													
80	3	88.9	4.52	6.46	9.92	11.29	11.29	11.29		15.27	15.27				21.35	27.68	10.0	11.3											
90	3 1/2	101.6	5.18	7.41	11.41	13.57	13.57	13.57		18.64	18.64																		
100	4	114.3	5.84	8.37	12.91	16.08	16.08	16.08		22.32	22.32		28.32		33.54	41.03	13.0	16.0											
125	5	141.3	9.46	11.56			21.77	21.77		30.97	30.97		40.28		49.12	57.43													
150	6	168.3	11.31	13.83			28.26	28.26		42.56	42.56		54.21		67.57	79.22	19.4		25.6	28.2									
200	8	219.1	14.78	19.97	33.32	36.82	42.55	42.55	53.09	64.64	64.64	75.92	90.44	100.93	111.27	107.93	25.4		33.6		42.6				64.6				
250	10	273.0	22.51	27.78	41.76	51.01	60.29	60.29	81.53	95.98	81.53	114.71	133.01	155.10	172.27	155.10	31.8		42.1			60.5			81.5				
300	12	323.8	31.24	36.00	49.73	65.20	79.73	73.88	108.96	132.08	97.43	159.91	186.97	208.14	238.76	186.97			50.1					73.7	97.5				
350	14	355.6	34.34	54.69	67.90	81.33	94.55	81.33	126.71	158.10	107.39	194.96	224.65	253.56	281.70				55.1					81.1	107.0				
400	16	406.4	41.56	62.64	77.83	93.27	123.30	93.27	160.12	203.53	123.30	245.56	286.64	333.19	365.38				63.1					93.0	123.0				
450	18	457	46.79	70.57	87.71	122.38	155.80	105.16	205.74	254.55	139.15	309.62	363.56	408.26	459.37				71.1					105.0	139.0				
500	20	508	59.32	78.55	117.15	155.12	183.42	117.15	247.83	311.17	155.12	381.53	441.49	508.15	564.85														
550	22	559	65.33	86.54	129.13	171.09		129.13	294.25	373.83	171.09	451.42	527.02	600.63	672.26														
600	24	610	82.58	94.53	141.12	209.64	255.41	141.12	355.26	442.08	187.06	547.71	640.03	720.15	808.22														
650	26	660		127.36	202.72			152.87			202.72																		
700	28	711		137.32	218.69	272.23		164.85			218.69																		
750	30	762	118.34	147.28	234.67	292.18		176.84			234.67																		
800	32	813		157.24	250.64	312.15	342.91	188.82			250.64																		
850	34	864		167.20	266.61	332.12	364.90	200.82			266.61																		
900	36	914		176.96	282.27	351.70	420.42	212.56			282.27																		
950	38	965						224.54			298.24																		
1000	40	1016						236.53			314.22																		
1050	42	1067						248.52			330.19																		
1100	44	1118						260.50			346.16																		
1150	46	1168						272.25			361.82																		
1200	48	1219						284.24			377.79																		

Note1: All weights are theoretical and approximate

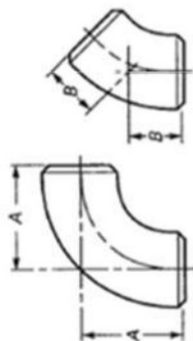
Note2: Formula for circular steel pipe kilograms/metre M = (D-t) x 0.02466

This table shows common sizes. Other wall thicknesses and larger diameter pipes are available subject to enquiry. Refer to ASME B36.10M for possible sizes.

Carbon Steel Buttweld Fittings – Dimensions

Buttwelding Fittings to a SME B16.9													
Nominal size		OD		Elbows			Returns			Caps		Reducers Note 1	
				Long	45 deg	90 deg	Long	Short	Long				
DN	NPS	D	A	B	A	B	O	K	O	K	E	H	F
15	½	21.3	38	16			76	48			25		76
20	¾	26.7	38	19			76	51			25	38	76
25	1	33.4	38	22	25		76	56	51	41	38	51	102
32	1¼	42.2	48	25	32		95	70	64	52	38	51	102
40	1½	48.3	57	29	38		114	83	76	62	38	64	102
50	2	60.3	76	35	51		152	106	102	81	38	76	152
65	2½	73.0	95	44	64		190	132	127	100	38	89	152
80	3	88.9	114	51	76		229	159	152	121	51	89	152
90	3½	101.6	133	57	89		267	184	178	140	64	102	152
100	4	114.3	152	64	102		305	210	203	159	64	102	152
125	5	141.3	190	79	127		381	262	254	197	76	127	203
150	6	168.3	229	95	152		457	313	305	237	89	140	203
200	8	219.1	305	127	203		610	414	406	313	102	152	203
250	10	273.0	381	159	254		762	518	508	391	127	178	254
300	12	323.8	457	190	305		914	619	610	467	152	203	254
350	14	355.6	533	222	356		1067	711	711	533	165	330	305
400	16	406.4	610	254	406		1219	813	813	610	178	356	305
450	18	457	686	286	457		1372	914	914	686	203	381	305
500	20	508	762	318	508		1524	1016	1016	762	229	508	305
550	22	559	838	343	559		1676	1118	1118	838	254	508	305
600	24	610	914	381	610		1829	1219	1219	914	267	508	305
650	26	660	991	405							267	610	
700	28	711	1067	438							267	610	
750	30	762	1143	470							267	610	
800	32	813	1219	502							267	610	
850	34	864	1295	533							267	610	
900	36	914	1372	565							267	610	
950	38	965	1448	600							305	610	
1000	40	1016	1524	632							305	610	
1050	42	1067	1600	660							305	610	
1100	44	1118	1676	695							343	610	
1150	46	1168	1753	727							343	711	
1200	48	1219	1829	759							343	711	

Note 1: Reducer dimension "H" is based on large end nominal size



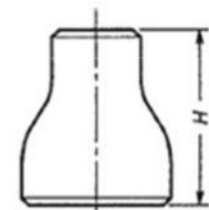
ELBOW



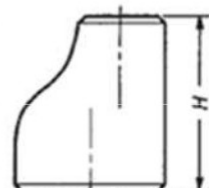
RETURN



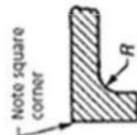
CAP



REDUCER



STUB END

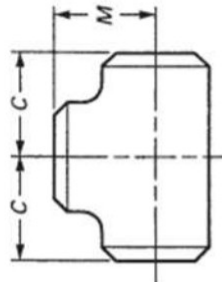
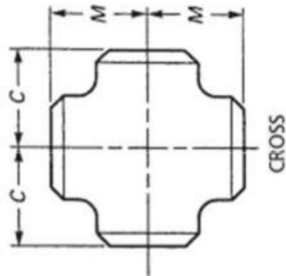


Note square corner

Enlarged Section of Lap

Carbon Steel Butt-Weld Fittings – Dimensions

Buttwelding Tees and Crosses to ASME B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Centre-to-End Outlet																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Nominal Size DN	Outside Diam. D	Centre- to-End Run C	M																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			8	10	15	20	25	32	40	50	65	80	90	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
8	3/8	13.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</



Carbon Steel Butt-weld Fittings – Weight

[illegible]

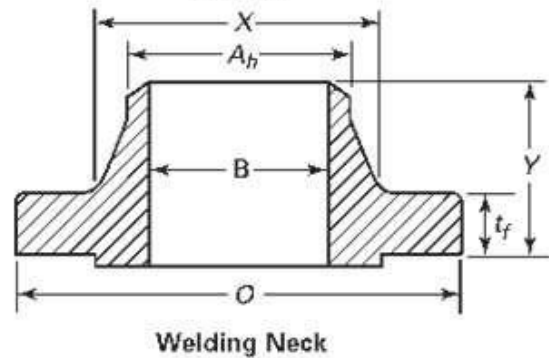
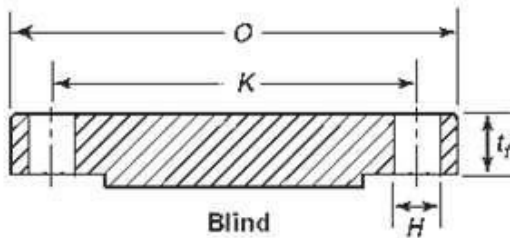
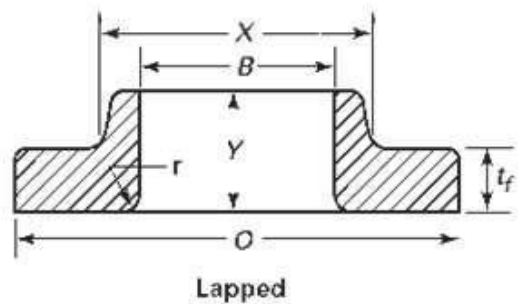
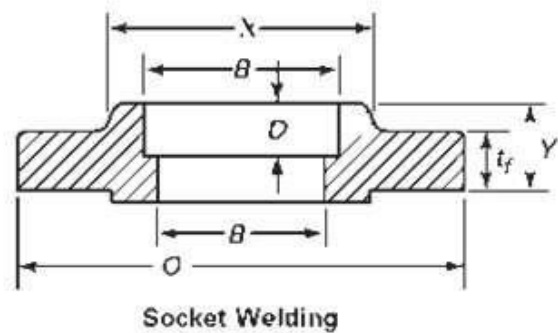
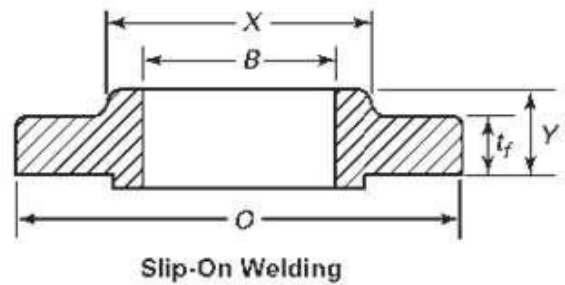
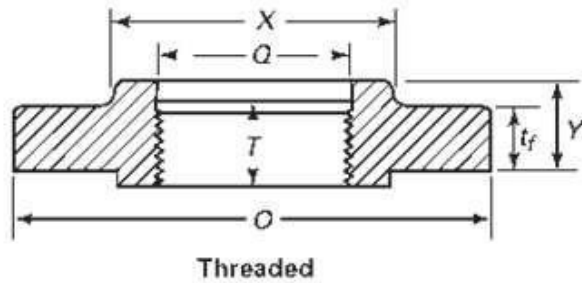
[illegible]

Butt-weld Fittings (kg per unit)								
Sch 160								
Nominal size		OD	Elbows			Caps	Reducers	
			Long		Short			
DN	NPS	mm	90 deg	45 deg	90 deg			
15	½	21.3	0.12			0.06		0.12
20	¾	26.7	0.13			0.09		0.21
25	1	33.4	0.25	0.13	0.17	0.20	0.19	0.41
32	1¼	42.2	0.42	0.21	0.28	0.25	0.25	0.69
40	1½	48.3	0.65	0.33	0.43	0.35	0.43	1.07
50	2	60.3	1.33	0.67	0.89	0.54	0.75	1.78
65	2½	73.0	2.33	1.17	1.49	0.77	1.20	2.86
80	3	88.9	3.83	1.92	2.55	1.40	1.71	4.55
90	3½	101.6	5.92	2.96	3.95	2.10	2.35	6.52
100	4	114.3	8.02	4.01	5.35	2.76	3.00	8.50
125	5	141.3	14.7	7.35	9.79	4.85	5.59	14.8
150	6	168.3	24.2	12.1	16.2	7.81	8.63	23.3
200	8	219.1	53.2	26.6	35.5	15.2	15.0	47.2
250	10	273.0	103	51.5	68.6	28.9	27.5	88.0
300	12	323.8	171	85.5	114	47.7	44.6	143
350	14	355.6	236	118	158	61.2	88.5	186
400	16	406.4	350	175	234	92.8	121	260
450	18	457	495	247	330	131	165	356
500	20	508	676	338	451	179	233	502
550	22	559	886	443	591	219		657
600	24	610	1160	580	773	307		800
650	26	660						
700	28	711						
750	30	762						
800	32	813						
850	34	864						
900	36	914						
950	38	965						
1000	40	1016						
1050	42	1067						
1100	44	1118						
1150	46	1168						
1200	48	1219						

Carbon Steel ASME/ANSI Flanges – Dimensions & Weights

These diagrams relate to the tables of flange specified dimensions on the following pages.

The Notes shown on this page also relate to the tables on the following pages.



Note 1: To be specified by purchase

Note 2: Flange weights are approximate

Note 3: Welding neck flange bore sizes listed are for sch 40S / Standard Wall pi

Carbon Steel Table Flanges – Dimensions & Weights

Table D Flanges to AS 2129									
Nominal Size	Dimensions (mm)							Weight (kg)	
DN	OD A	Thickness D	Raised Face Diam. G	Drilling			Bolt Size & Thread	SOW	Blind
				Bolt Circle Diam. K	Bolt Hole Diam. H	Number of Bolts			
15	95	*5	47	67	14	4	M12	0.6	0.6
20	100	*5	53	73	14	4	M12	0.7	0.7
25	115	*5	65	83	14	4	M12	0.9	1.0
32	120	*6	67	87	14	4	M12	0.9	1.1
40	135	*6	78	98	14	4	M12	1.2	1.4
50	150	*8	90	114	18	4	M16	1.4	1.7
65	165	*8	103	127	18	4	M16	1.6	2.1
80	185	*10	122	146	18	4	M16	2.0	2.7
90	205	*10	141	165	18	4	M16	2.2	3.2
100	215	*10	154	178	18	4	M16	2.5	3.6
125	255	13	186	210	18	8	M16	3.3	4.9
150	280	13	211	235	18	8	M16	4.0	6.1
200	335	13	268	292	18	8	M16	5.0	8.8
250	405	16	328	356	22	8	M20	8.7	15.8
300	455	19	378	406	22	12	M20	11.3	23.6
350	525	22	438	470	26	12	M24	19.6	38.6
400	580	22	489	521	26	12	M24	22.3	44.9
450	640	25	532	584	26	12	M24	29.0	63.0
500	705	29	609	641	26	16	M24	39.9	86.0
550	760	29	637	699	30	16	M27	50.0	107.0
600	825	32	720	756	30	16	M27	58.0	125.0
700	910	35	809	845	30	20	M27		
750	995	41	888	927	33	20	M30		
800	1060	41	942	984	36	20	M33		
850	1090	44	974	1016	36	20	M33		
900	1175	48	1050	1092	36	24	M33		
1000	1255	51	1133	1175	36	24	M33		
1200	1490	60	1368	1410	36	32	M33		

Table E Flanges to AS 2129									
Nominal Size	Dimensions (mm)							Weight (kg)	
DN	OD A	Thickness D	Raised Face Diam. G	Drilling			Bolt Size & Thread	SOW	Blind
				Bolt Circle Diam. K	Bolt Hole Diam. H	Number of Bolts			
15	95	*6	47	67	14	4	M12	0.6	0.7
20	100	*6	53	73	14	4	M12	0.7	0.8
25	115	*7	63	83	14	4	M12	0.9	1.0
32	120	*8	67	87	14	4	M12	1.0	1.1
40	135	*9	78	98	14	4	M12	1.2	1.4
50	150	*10	90	114	18	4	M16	1.4	1.7
65	165	*10	103	127	18	4	M16	1.6	2.1
80	185	*11	122	146	18	4	M16	2.0	2.7
90	205	12	141	165	18	8	M16		
100	215	13	154	178	18	8	M16	2.5	3.6
125	255	14	186	210	18	8	M16	3.7	5.5
150	280	17	207	235	22	8	M20	5.0	8.3
200	335	19	264	292	22	8	M20	7.1	12.9
250	405	22	328	356	22	12	M20	11.4	21.9
300	455	25	374	406	26	12	M24	15.1	31.8
350	525	29	438	470	26	12	M24	25.3	47.6
400	580	32	489	521	26	12	M24	31.3	66.0
450	640	35	552	584	26	16	M24	40.8	87.0
500	705	38	609	641	26	16	M24	53.0	114.0
550	760	44	663	699	30	16	M27		
600	825	48	717	756	33	16	M30	85.0	195.0
700	910	51	806	845	33	20	M30		
750	995	54	885	927	36	20	M33		
800	1060	54	942	984	36	20	M33		
850	1090	57	974	1016	36	20	M33		
900	1175	64	1050	1092	36	24	M33		
1000	1255	67	1130	1175	39	24	M36		
1200	1490	79	1365	1410	39	32	M36		

Carbon Steel Table Flanges – Dimensions & Weights

Table F Flanges to AS 2129									
Nominal Size	Dimensions (mm)							Weight (kg)	
DN	OD A	Thickness D	Raised Face Diam. G	Drilling			Bolt Size & Thread	SOW	Blind
				Bolt Circle Diam. K	Bolt Hole Diam. H	Number of Bolts			
15	95	10	47	67	14	4	M12	0.6	0.7
20	100	10	53	73	14	4	M12	0.7	0.8
25	120	10	63	87	18	4	M16	0.9	1.0
32	135	13	74	98	18	4	M16	1.1	1.3
40	140	13	81	105	18	4	M16	1.2	1.4
50	165	16	103	127	18	4	M16	2.2	2.6
65	185	16	122	146	18	4	M16	2.5	3.0
80	205	16	141	165	18	8	M16	3.0	3.8
90	215	19	154	178	18	8	M16		
100	230	19	167	191	18	8	M16	4.3	5.9
125	280	22	207	235	22	8	M20	7.4	10.1
150	305	22	232	260	22	12	M20	8.1	11.9
200	370	35	296	324	22	12	M20	12.7	20.3
250	430	29	349	381	26	12	M24	18.1	31.4
300	490	32	406	438	26	16	M24	23.9	44.7
350	550	35	459	495	30	16	M27	35.3	63.0
400	610	41	516	552	30	20	M27	47.6	90.0
450	675	44	571	610	33	20	M30	62.0	120.0
500	735	51	634	673	33	24	M30	80.0	162.0
550	785	54	685	724	33	24	M30		
600	850	57	739	781	36	24	M33	112.0	
700	935	60	815	857	36	24	M33		
750	1015	67	898	940	36	28	M33		
800	1060	68	942	984	36	28	M33		
850	1090	70	974	1016	36	32	M33		
900	1185	76	1060	1105	39	32	M36		
1000	1275	83	1149	1194	39	36	M36		
1200	1530	95	1385	1441	42	40	M39		

Table H Flanges to AS 2129									
Nominal Size	Dimensions (mm)							Weight (kg)	
DN	OD A	Thickness D	Raised Face Diam. G	Drilling			Bolt Size & Thread	SOW	Blind
				Bolt Circle Diam. K	Bolt Hole Diam. H	Number of Bolts			
15	115	57	57	83	18	4	M16	0.8	1.0
20	115	57	57	83	18	4	M16	0.9	1.0
25	120	64	64	87	18	4	M16	1.1	1.2
32	135	76	76	98	18	4	M16	1.5	1.8
40	140	83	83	105	18	4	M16	1.7	2.0
50	165	102	102	127	18	4	M16	2.6	3.1
65	185	114	114	146	18	8	M16	3.1	3.8
80	205	127	127	165	18	8	M16	4.3	5.4
90	215	140	140	178	18	8	M16		
100	230	152	152	191	18	8	M16	5.8	7.9
125	280	178	178	235	22	8	M20	9.9	12.6
150	305	210	210	260	22	12	M20	10.8	15.4
200	370	260	260	324	22	12	M20	18.3	28.2
250	430	311	311	381	26	12	M24	22.1	38.0
300	490	362	362	438	26	16	M24	31.0	58.0
350	550	419	419	495	30	16	M27	47.7	85.0
400	610	483	483	552	30	20	M27	62.0	118.0
450	675	533	533	610	33	20	M30	105.0	196.0
500	735	597	597	673	33	24	M30		
550	785	648	648	724	33	24	M30		
600	850	699	699	781	36	24	M33		