S.M.E.I.

PROJECTS

PIPING CATALOGUE

PRODUCTS:

PIPING:

- ASTM A106 – Seamless/API 5lb Welded
- SABS 719 - Pipe Grade A, B and C
- SABS 62 – Uncoated, Screwed & Socketed – Light/Medium/Heavy
- SABS 62 – Galvanized, Screwed & Capped or Socketed – Light/Medium/Heavy
- ASTM A312 – Stainless 304L (Schedule 10S/40S/80S)
- ASTM A312 – Stainless 316L (Schedule 10S/40S/80S)

FLANGES:

- Flanges for Oil, Gas & Petro-Chemical industries (ASNI D 16.5 & BS 1560 Specs) Welding neck, Slip-on, screwed/socket weld & Blind.
- Common Flanges (BS EN 1092-1 (Formerly BS 4504), BS 10 & SABS 1123) Welding neck, Slip-on, Screwed & blind
- Available in Forged Carbon steel, Steel plate & stainless-steel grades.

FITTING:

- Buttweld ASTM A234 Grade WPB – Elbows, Reducers, Tees & Caps (ANSI B 16.9 & BS 1640 Specs)
- Forged Pipe Fittings – BSP/NPT Screwed/Socketed & Socket Weld (BS 3799, ANSI B 16.11, also 2000# - 6000# Series)
- Malleable Cast Iron Black/Galvanized fittings (BS 143, BS EN 10242, SABS 509, SANS 14, SABS ISO 49) BSP Screwed/Socketed
- Wrought Steel BSP Threaded/Socketed – Black, Galvanized or Steam Quality (BS 1740, BS EN 10241, SANS 62)

GASKETS:

- Pre-Cut - Compressed Sheet Fibre Gaskets
- Pre-Cut - PTFE Gaskets
- Spiral Wound Metallic Gaskets
- Pre-Cut - High Temperature Gaskets
- Gasket Material Rolls

VALVES:

- Ball Valves
- Butterfly Valves
- Gate Valves
- Globe Valves
- Non-Return Valves
- Strainers

HDPE PIPING:

- HDPE Pipe Material (ISO 4427) PE 36, PE 80, PE 100 (Coils)
- Fabricated fittings for jointing/flanging
- Compression Fittings (Non-permanent Jointing)

OTHER:

- SABS 657 – Structural Tube – Uncoated
- Borehole Casing
- Services & Supply

PIPING

ASTM A106 – Seamless/API 5lb Welded:

Pipe is intended for use in a pipeline system in the petroleum and natural gas industries however can be used in chemical plants and potable water distribution. Pipes are seamless, longitudinally, or spirally welded.

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ASTM A106 - Seamless/API 5lb Welded - Dimensions

Nominal Bore / inches	Outside Dia MM	Wall Thickness / Mass	Schd 10	Schd 20	Schd 30	Std/Wt	Schd 40	Extra Strong	Schd 60	Schd 80	Schd 100	Schd 120	Schd 140	Schd 160	Double X Strong
8mm	13.72	Mm =				2.24	2.24	3.02		3.02					
¼"		Kg/m =				0.63	0.63	0.08		0.8					
10mm	17.5	Mm =				2.31	2.31	3.2		3.2					
⅜"		Kg/m =				0.85	0.85	101		1.1					
15mm	21.34	Mm =				2.77	2.77	3.73		3.73				4.75	7.47
½"		Kg/m =				1.27	1.27	1.62		1.62				1.94	2.55
20mm	26.67	Mm =				2.87	2.87	3.91		3.91				5.56	7.82
¾"		Kg/m =				1.69	1.69	2.2		2.2				2.9	3.63
25mm	33.4	Mm =				3.38	3.38	4.55		4.55				6.35	9.09
1"		Kg/m =				2.5	2.5	3.24		3.24				4.24	6.45
32mm	42.16	Mm =				3.56	3.56	4.85		4.85				6.35	9.7
1¼"		Kg/m =				3.39	3.39	4.47		4.47				5.61	7.76
40mm	48.26	Mm =				3.69	3.69	5.08		5.08				7.14	10.15
1½"		Kg/m =				4.05	4.05	5.41		5.41				7.25	9.56
50mm	60.33	Mm =				3.91	3.91	5.54		5.54				8.74	11.07
2"		Kg/m =				5.44	5.44	7.48		7.48				11.11	13.44
65mm	73.03	Mm =				5.16	5.16	7.01		7.01				9.53	14.02
2½"		Kg/m =				8.63	8.63	11.41		11.4				14.92	20.39
80mm	88.9	Mm =				5.49	5.49	7.62		7.62				11.13	15.24
3"		Kg/m =				11.29	11.29	15.27		15.27				21.35	27.68
90mm	101.6	Mm =				5.74	5.74	8.08		8.08					
3½"		Kg/m =				13.57	13.57	18.63		18.63					
100mm	114.3	Mm =				6.02	6.02	8.56		8.56		11.13		13.49	17.12
4"		Kg/m =				16.07	16.07	22.32		22.32		28.32		33.54	41.03
125mm	141.3	Mm =				6.55	6.55	9.53		9.53		12.7		15.88	19.05
5"		Kg/m =				21.77	21.77	30.97		30.97		40.28		49.11	57.43
150mm	168.3	Mm =				7.11	7.11	10.97		10.97		14.27		18.26	21.95
6"		Kg/m =				28.26	28.26	42.56		42.56		54.2		67.56	79.22
200mm	219.1	Mm =		6.35	7.04	8.18	8.18	12.7	10.31	12.7	15.09	18.26	20.62	23.01	22.23
8"		Kg/m =		33.31	36.81	42.55	42.55	64.64	58.08	64.64	75.92	90.44	110.92	111.27	107.92
250mm	273.1	Mm =		6.35	7.8	9.27	9.27	12.7	12.7	15.09	18.26	21.44	25.4	28.58	25.4
10"		Kg/m =		41.77	51.03	60.31	60.31	81.55	81.55	96.001	114.75	133.06	155.15	172.33	155.15
300mm	323.9	Mm =		6.35	8.38	9.53	10.73	12.7	14.27	17.48	21.44	25.4	28.58	33.32	25.4
12"		Kg/m =		49.73	65.2	73.88	79.73	97.46	108.97	131.08	159.91	186.77	208.14	238.76	186.97
350mm	355.6	Mm =	6.35	7.92	9.53	9.53	11.13	12.7	15.09	19.05	23.83	27.79	31.75	35.71	
14"		Kg/m =	54.69	67.9	81.33	81.33	94.55	107.39	126.71	158.1	194.96	224.65	253.56	281.7	
400mm	406.4	Mm =	6.35	7.92	9.53	9.53	12.7	12.7	16.66	21.44	26.19	30.96	36.53	40.49	
16"		Kg/m =	62.64	77.83	93.27	93.27	123.3	123.3	160.12	203.53	245.56	286.64	333.19	365.35	
450mm	457.2	Mm =	6.35	7.92	11.13	9.53	14.27	12.7	19.05	23.83	29.36	34.93	39.67	45.24	
18"		Kg/m =	70.57	87.11	122.38	105.16	155.8	139.15	205.74	254.55	309.62	363.56	408.26	459.37	
500mm	508	Mm =	6.35	9.53	12.7	9.53	15.09	12.7	20.62	26.19	32.54	38.1	44.45	50.01	
20"		Kg/m =	78.55	117.15	155.12	117.15	183.42	155.12	247.83	311.17	381.53	441.49	508.11	564.81	
550mm	558.8	Mm =	6.35	9.53	14.27	9.53	17.48	12.7	24.61						
22"		Kg/m =	94.37	141.12	209.64	141.12	255.41	187.06	355.26						
600mm	609.6	Mm =	7.92	12.7		9.53		12.7							
24"		Kg/m =	127.36	202.72		152.87		202.72							
650mm	660.4	Mm =	7.9	9.5	12.7	9.5		12.7							
26"		Kg/m =	127.04	152.39	202.72	152.39		202.72							
700mm	711.2	Mm =	7.92	12.7	15.88	9.53		12.7							
28"		Kg/m =	137.32	218.69	271.21	164.85		218.69							
750mm	762	Mm =	7.92	12.7	15.88	9.53		12.7							
30"		Kg/m =	147.28	234.67	292.18	176.84		234.67							
800mm	813	Mm =	7.92	12.7	15.88	9.53	17.48	12.7							
31"		Kg/m =	157.24	260.64	312.15	188.92	342.91	250.64							
850mm	864	Mm =	7.92	12.7	15.88	9.53	17.48	12.7							
34"		Kg/m =	167.2	266.61	332.12	200.31	364.9	266.61							
900mm	914	Mm =	7.92	12.7	15.88	9.53	19.05	12.7							
36"		Kg/m =	176.96	282.27	351.7	212.56	420.42	282.27							

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Maximum Allowable Pressure (psig) Temperature (C°)

Pipe Size Inches	Pipe Schedule	38C°	93C°	149C°	204C°	260C°	316C°	343C°	371C°	399C°
1/2"	40	2984	2984	2984	2984	2984	2984	2984	2910	2661
	80	4202	4202	4202	4202	4202	4202	4202	4097	3747
	160	5536	5536	5536	5536	5536	5536	5536	5397	4936
3/4"	40	2447	2447	2447	2447	2447	2447	2447	2386	2182
	80	3439	3439	3439	3439	3439	3439	3439	3354	3067
	160	5115	5115	5115	5115	5115	5115	5115	4987	4560
1"	40	2857	2857	2857	2857	2857	2857	2857	2743	2476
	80	3950	3950	3950	3950	3950	3950	3950	3792	3423
	160	5757	5757	5757	5757	5757	5757	5757	5526	4989
1 1/2"	40	2116	2116	2116	2116	2116	2116	2116	2032	1834
	80	2983	2983	2983	2983	2983	2983	2983	2864	2585
	160	4331	4331	4331	4331	4331	4331	4331	4157	3753
2"	40	1783	1783	1783	1783	1783	1783	1783	1712	1545
	80	2575	2575	2575	2575	2575	2575	2575	2472	2232
	160	4217	4217	4217	4217	4217	4217	4217	4049	3655
3"	40	1693	1693	1693	1693	1693	1693	1693	1625	1467
	80	2394	2394	2394	2394	2394	2394	2394	2298	2074
	160	3600	3600	3600	3600	3600	3600	3600	3456	3120
4"	40	1435	1435	1435	1435	1435	1435	1435	1378	1244
	80	2075	2075	2075	2075	2075	2075	2075	1992	1798
	160	3376	3376	3376	3376	3376	3376	3376	3241	2926
5"	40	1258	1258	1258	1258	1258	1258	1258	1208	1090
	80	1857	1857	1857	1857	1857	1857	1857	1783	1610
	160	3201	3201	3201	3201	3201	3201	3201	3073	2774
6"	40	1143	1143	1143	1143	1143	1143	1143	1098	991
	80	1794	1794	1794	1794	1794	1794	1794	1722	1554
	160	3083	3083	3083	3083	3083	3083	3083	2960	2672
8"	40	1006	1006	1006	1006	1006	1006	1006	966	872
	80	1586	1586	1586	1586	1586	1586	1586	1523	1375
	160	2976	2976	2976	2976	2976	2976	2976	2857	2579
10"	40	913	913	913	913	913	913	913	876	791
	80	1509	1509	1509	1509	1509	1509	1509	1448	1308
	160	2950	2950	2950	2950	2950	2950	2950	2832	2557

SABS 719 - Pipe Grade A, B and C:

Pipe is Intended for water and other aqueous fluids. There are 3 grades namely: A, B & C. Pipe is manufactured longitudinally or spirally welded, depending on the diameter.

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Chemical Composition & Physical Properties of steels

Grade of Pipe	Chemical Composition per cent, max.				Physical properties, min.		
	C	Mn	P	S	Yield stress* Mpa	UTS Mpa	Elongation per cent
A	0.2	0.9	0.04	0.05	207	331	9266 divided by numerical value of actual UTS
B	0.26	1.15	0.04	0.05	241	414	
C	0.28	1.25	0.04	0.05	290	414	

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SABS 719 Grade A B & C Mass & Grade B & C Test Pressure in kPa

NB in MM & Grade	OD in Mm	Wall Thickness Mm																	
		4,5		6,0		8,0		10		12		14		16		20		22	
		kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa	kg/m	kPa
200 B	219.1	23.8	7425	31.5	9900	41.6	13199	51.6	16499	61.3	19799	70.8	23099	80.1	26399	98.2	32999	106.9	36298
200 C			8934		11912		15883		19854		23825		27796		31766		39708		43679
250 B	273.0	29.8	5959	39.5	7945	52.3	10593	64.9	13242	77.2	15890	89.4	18538	101.4	21187	124.8	26484	136.2	29132
250 C			7170		9560		12747		15934		19121		22308		25495		31868		35055
300 B	323.9	35.4	5022	47.0	6697	62.3	8929	77.4	11161	92.3	13393	107.0	15625	121.5	17857	149.9	22322	163.8	24554
300 C			6044		8058		10744		13430		16116		18802		21488		26860		29546
350 B	355.6	39.0	4575	51.7	6100	68.6	8133	85.2	10166	101.7	12199	117.9	14232	134.0	16265	165.5	20332	181.0	22365
350 C			5505		7340		9786		12233		14679		17126		19573		24466		26912
400 B	406.4	44.6	4003	59.2	5337	78.6	7116	97.8	8895	116.7	10674	135.5	12453	154.0	14232	190.6	17790	208.6	19569
400 C			4817		6422		8563		10704		12844		14985		17126		21407		23548
450 B	457.2	50.2	3558	66.8	4744	88.6	6325	110.3	7907	131.8	9488	153.0	11070	174.1	12651	215.6	15814	236.1	17395
450 C			4281		5709		7612		9514		11417		13320		15223		19029		20932
500 B	508.0	55.9	3202	74.3	4270	89.6	5693	122.8	7116	146.8	8539	170.6	9963	194.1	11386	240.7	14232	263.7	15656
500 C			3853		5138		6850		8563		10276		11988		13701		17126		18839
600 B	609.6	67.2	2669	89.3	3558	118.7	4744	147.9	5930	176.9	7116	205.6	8302	234.2	9488	290.8	11860	318.8	13046
600 C			3211		4281		5709		7136		8563		9990		11417		14272		15699
650 B	660.4	72.8	2463	96.8	3284	128.7	4379	160.4	5474	191.9	6569	223.2	7664	254.3	8758	315.9	10948	346.4	12043
650 C			2964		3952		5270		6587		7904		9222		10539		13174		14491
700 B	711.2	78.4	2287	104.3	3050	138.7	4066	172.9	5083	206.9	6100	240.7	7116	274.3	8133	340.9	10166	373.9	11183
700 C			2752		3670		4893		6116		7340		8563		9786		12233		13456
750 B	762.0	84.1	2135	111.9	2846	148.8	3795	185.5	4744	222.0	5693	258.3	6642	294.4	7591	366.0	9488	401.5	10437
750 C			2569		3426		4567		5709		6850		7992		9134		11417		12559
800 B	812.8	89.7	2001	119.4	2669	158.8	3558	198.0	4448	237.0	5337	275.8	6227	314.4	7116	391.0	8895	429.1	9785
800 C			2408		3211		4281		5352		6422		7493		8563		10704		11774
850 B	863.6	95.3	1884	126.9	2512	168.8	3349	210.5	4186	252.0	5023	293.3	5860	334.4	6698	416.1	8372	456.6	9209
850 C			2267		3022		4030		5037		6044		7052		8059		10074		11082
900 B	914.4	101.0	1779	134.4	2372	178.8	3163	223.0	3953	267.1	4744	310.9	5535	354.5	6325	441.1	7907	484.2	8698
900 C			2141		2854		3806		4757		5709		6660		7612		9514		10466
950 B	965.2	106.6	1685	141.9	2247	188.8	2996	235.6	3745	282.1	4494	328.4	5243	374.5	5993	466.2	7491	511.7	8240
950 C			2028		2704		3605		4507		5408		6310		7211		9014		9915
1000 B	1016.0	112.3	1601	149.4	2135	198.9	2846	248.1	3558	297.1	4270	346.0	4981	394.6	5693	491.3	7116	539.3	7828
1000 C			1927		2569		3425		4281		5138		5994		6850		8563		9419
1050 B	1066.8	117.9	1525	157.0	2033	208.9	2711	260.6	3389	312.2	4066	363.5	4744	414.6	5422	516.3	6777	566.9	7455
1050 C			1835		2447		3262		4078		4893		5709		6524		8155		8971
1075 B	1092.2	120.7	1489	160.7	1986	213.9	2648	266.9	3310	319.7	3972	372.3	4634	424.7	5296	528.8	6620	580.6	7282
1075 C			1792		2390		3186		3983		4779		5576		6372		7966		8762
1100 B	1117.6	123.5	1456	164.5	1941	218.9	2588	273.2	3235	327.2	3882	381.0	4528	434.7	5175	541.4	6469	594.4	7116
1100 C			1752		2335		3114		3892		4671		5449		6228		7785		8563
1200 B	1219.2	134.8	1334	179.5	1779	239.0	2372	298.2	2965	357.3	3558	416.1	4151	474.8	4744	591.5	5930	649.5	6523
1200 C			1606		2141		2854		3568		4281		4995		5709		7136		7849
1225 B	1244.6	137.6	1307	183.3	1743	244.0	2324	304.5	2905	364.8	3485	424.9	4066	484.8	4647	604.0	5809	663.3	6390
1225 C			1573		2097		2796		3495		4194		4893		5592		6990		7689
1375 B	1397.0	154.5	1164	205.8	1553	274.0	2070	342.1	2588	409.9	3105	477.5	3623	544.9	4140	679.2	5175	746.0	5693
1375 C			1401		1868		2491		3114		3737		4359		4982		6228		6850
1400 B	1422.4	157.4	1144	209.6	1525	279.0	2033	348.3	2541	417.4	3050	486.3	3558	554.9	4066	691.7	5083	759.8	5591
1400 C			1376		1835		2447		3058		3670		4281		4893		6116		6728
1525 B	1549.4	171.4	1050	228.4	1400	304.1	1867	379.6	2333	455.0	2800	530.1	3266	605.1	3733	754.3	4666	828.7	5133
1525 C			1263		1685		2246		2808		3369		3931		4492		5615		6177
1600 B	1625.6	179.9	1001	239.7	1334	319.1	1779	398.4	2224	477.5	2669	556.4	3113	635.1	3558	791.9	4448	870.0	4892
1600 C			1204		1606		2141		2676		3211		3746		4281		5352		5887
1700 B	1727.2	191.2	942	254.7	1256	339.2	1674	423.5	2093	507.6	2512	591.5	2930	675.2	3349	842.0	4186	925.2	4605
1700 C			1133		1511		2015		2519		3022		3526		4030		5037		5541

Continued…

1800 B 1800 C	1828.8	202.5	890 1070	269.7	1186 1427	359.2	1581 1903	448.5	1977 2379	537.7	2372 2854	626.6	2767 3330	715.3	3163 3806	892.2	3953 4757	980.3	4349 5233
1900 B 1900 C	1930.4	213.7	843 1014	284.8	1124 1352	379.3	1498 1803	473.6	1873 2253	567.7	2247 2704	661.7	2622 3155	755.4	2996 3605	942.3	3745 4507	1035.4	4120 4958
2000 B 2000 C	2032.0	225.0	801 963	299.8	1067 1284	399.3	1423 1713	498.7	1779 2141	597.8	2135 2569	696.7	2491 2997	795.5	2846 3425	992.4	3558 4281	1090.5	3914 4710
2100 B 2100 C	2133.6	236.3	762 917	314.8	1017 1223	419.4	1355 1631	523.7	1694 2039	627.9	2033 2447	731.8	2372 2854	835.6	2711 3262	1042.5	3389 4078	1145.7	3728 4485
2200 B 2200 C	2235.5	247.6	728 876	329.9	970 1168	439.4	1294 1557	548.8	1617 1946	657.9	1941 2335	766.9	2264 2725	875.7	2588 3114	1092.6	3235 3892	1200.8	3558 4281

SABS 62 – Light/Medium/Heavy:

SABS 62 or (SANS 62) is a service pipe that is available in Light, Medium or Heavy wall, it comes in standard Lengths of 6 or 9 meter and can be plain ended, BSP Screwed/socketed either Raw (Black) or in HDG (galvanised).

The efficiency of taper/parallel screwed joints is highly dependent on the degree of care taken in assembly and jointing compound used.

Light pipes are not recommended for steam, air, or gas services. Reference to steam service applies to saturated steam only.

S.M.E.I. PROJECTS

SABS 62 Pipe Dimentions & Kg/Meter

Nominal Bore mm	Approx Outside Diameter	Outside Diameter				Minimum Wall Thickness			Uncoated Tubes Screwed & Socketed		
		Light		Medium & Heavy		Light	Medium	Heavy	Light	Medium	Heavy
		Max mm	Min mm	Max mm	Min mm	mm	mm	mm	kg/m	kg/m	kg/m
6	10.2	10.1	9.7	10.4	9.8	1.65	1.75	2.32	0.364	0.401	0.496
8	13.5	13.6	13.2	13.9	13.3	1.65	2.05	2.54	0.521	0.596	0.765
10	17.2	17.1	16.7	17.4	16.8	1.65	2.05	2.54	0.680	0.888	1.055
15	21.3	21.4	21.0	21.7	21.1	1.84	2.32	2.84	1.000	1.214	1.418
20	26.9	26.9	26.4	27.2	26.6	2.16	2.32	2.84	1.459	1.572	1.847
25	33.7	33.8	33.2	34.2	33.4	2.44	2.84	3.54	2.255	2.398	2.955
32	42.4	42.5	41.9	42.9	42.1	2.44	2.84	3.54	2.890	3.076	3.813
40	48.3	48.4	47.8	48.8	48.0	2.67	2.84	3.54	3.294	3.509	4.359
50	60.3	60.2	59.6	60.8	59.8	2.67	3.19	3.94	4.446	5.125	6.069
65	76.1	76.0	75.2	76.6	75.4	3.00	3.19	3.94	6.050	6.574	7.804
80	88.9	88.7	88.9	89.5	88.1	3.00	3.54	4.24	7.149	8.389	9.839
100	114.3	113.9	113.0	114.9	113.3	3.36	3.94	4.73	10.127	10.082	14.172
125	139.7	-	-	140.6	138.7	-	4.24	4.73	-	15.868	17.563
150	165.1	-	-	166.1	164.1	-	4.24	4.73	-	17.148	20.964

For Approximate Mass of galvanised tubes, add the following percentages to the mass indicated above:

A: Light Tube – add 6.5 per cent.

B: Med Tube – add 5.75 per cent.

C: Heavy Tube – add 5 per cent.

S.M.E.I. PROJECTS — SABS 62 Recommended Max Pressures

Nominal Bore mm	Maximum Working Pressure in kPa. Taper /Parallel joint				
	Water Service at ambient temperature			Steam, Air & gas at 260 °C (Max)	
	Light	Medium	Heavy	Medium	Heavy
6	1050	2100	2400	1050	1200
8	1050	2100	2400	1050	1200
10	1050	2100	2400	1050	1200
15	1050	2100	2400	1050	1200
20	1050	2100	2400	1050	1200
25	1050	2100	2400	1050	1200
32	850	1700	2100	850	1050
40	850	1700	2100	850	1050
50	700	1400	1700	700	850
65	700	1400	1700	700	850
80	700	1400	1700	700	850
100	550	1050	1400	550	700
125	-	1050	1400	550	700
150	-	850	1050	400	550

ASTM A312 / ASA / ASME / ANS B36.19 – Stainless Pipes

ASTM A312 Stainless Piping is intended for high-temperature and general corrosive service. Because most of the grades are authentic, piping is also suitable for low-temperature use. The most common grades being 304/304L and 316/316L.

These dimensions are applicable for all SS Pipe grades including ASTM A312 TP304L, TP316, TP316L, TP321, TP321H, TP347H, TP347, TP310S, TP304H, SS 202, SS 410, SS 317L, SS 310, SS 316H and other 200, 300 & 400 series seamless pipes & tubes.

S.M.E.I. PROJECTS — SABS 62 Pipe Dimensions & Kg/Meter

Nominal Bore mm	Approx Outside Diameter	Outside Diameter				Minimum Wall Thickness			Uncoated Tubes Screwed & Socketed		
		Light		Medium & Heavy		Light	Medium	Heavy	Light	Medium	Heavy
		Max mm	Min mm	Max mm	Min mm	mm	mm	mm	kg/m	kg/m	kg/m
6	10.2	10.1	9.7	10.4	9.8	1.65	1.75	2.32	0.364	0.401	0.496
8	13.5	13.6	13.2	13.9	13.3	1.65	2.05	2.54	0.521	0.596	0.765
10	17.2	17.1	16.7	17.4	16.8	1.65	2.05	2.54	0.680	0.888	1.055
15	21.3	21.4	21.0	21.7	21.1	1.84	2.32	2.84	1.000	1.214	1.418
20	26.9	26.9	26.4	27.2	26.6	2.16	2.32	2.84	1.459	1.572	1.847
25	33.7	33.8	33.2	34.2	33.4	2.44	2.84	3.54	2.255	2.398	2.955
32	42.4	42.5	41.9	42.9	42.1	2.44	2.84	3.54	2.890	3.076	3.813
40	48.3	48.4	47.8	48.8	48.0	2.67	2.84	3.54	3.294	3.509	4.359
50	60.3	60.2	59.6	60.8	59.8	2.67	3.19	3.94	4.446	5.125	6.069
65	76.1	76.0	75.2	76.6	75.4	3.00	3.19	3.94	6.050	6.574	7.804
80	88.9	88.7	88.9	89.5	88.1	3.00	3.54	4.24	7.149	8.389	9.839
100	114.3	113.9	113.0	114.9	113.3	3.36	3.94	4.73	10.127	10.082	14.172
125	139.7			140.6	138.7		4.24	4.73 -		15.868	17.563
150	165.1			166.1	164.1		4.24	4.73 -		17.148	20.964

S.M.E.I. PROJECTS

ASTM A312 / ANSI B36.19 - SS Pipe Allowable Working Pressure Ratings in (Mpa)

NB in mm & Inches		SCHEDULE 10S					SCHEDULE 40S				SCHEDULE 80S			
		37°C	93°C	204°C	315°C	400°C	93°C	204°C	315°C	400°C	93°C	204°C	315°C	400°C
13	1/2"	20	19.6	14.1	11.5	10.6	26.4	18.9	15.5	14.3	37.5	28.9	24.4	21.9
19	3/4"	166	163.0	11.7	9.6	8.8	21.5	15.4	12.6	11.7	30.8	23.7	20.0	19.0
25	1"	15.6	15.4	11.1	9.1	8.4	20.1	14.5	11.8	10.9	28.3	21.8	18.4	16.5
38	1 1/2"	11.3	11.0	7.9	6.5	6.0	14.9	10.7	8.8	8.1	21.4	16.5	13.9	12.5
50	2"	8.9	8.8	6.3	5.2	4.8	13.7	9.9	8.1	7.4	19.4	14.9	12.6	11.3
63	2 1/2"	8.1	7.9	5.7	4.7	4.3	12.5	9.0	7.4	6.8	18.5	14.2	12.0	10.8
75	3"	6.6	6.5	4.7	3.8	3.5	11.9	8.6	7.0	6.5	17.2	13.2	11.2	10.0
100	4"	5.1	5.0	3.6	3.0	2.7	10.1	7.3	5.9	5.5	14.9	11.5	9.7	8.7
150	6"	3.9	3.8	2.7	2.2	2.1	8.0	5.8	4.7	4.4	12.7	9.9	8.4	7.5
200	8"	3.3	3.2	2.3	1.9	1.7	7.1	5.1	4.2	3.8	11.4	8.8	7.4	6.3
250	10"	2.9	2.9	2.1	1.7	1.6	6.4	4.6	3.8	3.5	10.8	8.3	7.0	6.3
300	12"	2.7	2.6	1.9	1.6	1.4	6.0	4.3	3.5	3.3	10.6	8.1	6.9	6.2

Conversion Factors:

- 1 Bar = 14.5 psi
- 1 MPa – 10 Bars
- 10 Bars – 145psi

Large bore API 5lb Welded pipe is available on request,

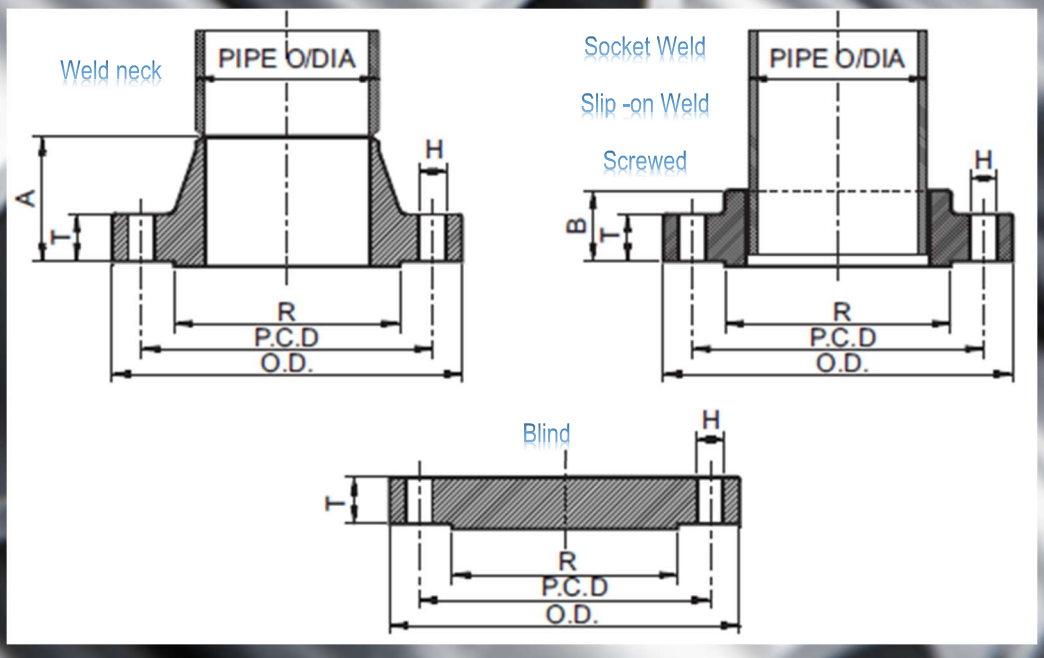
We also fabricate custom and standard Pipe Bends, Tee's, Reducers etc at any internationally recognised standard and can arrange for any coating/lining required, inside & out.

FLANGES:

Carbon Steel Flanges Intended for Oil, Gas & Petro-Chemical Applications to ANSI B 16.5 & BS 1560 Specifications:

- These Flanges are available in 3 classes namely 150lb, 300lb & 600lb
- And face types, either RF – Raised Face or FF – Flat Face
- And Connection types, WN – Weld Neck, SO – Slip-on weld, SW – Socket Weld & SC – Screwed

150 lb Flanges – ANSI B 16.5 & BS 1560:



NOTE: The 1.6mm raised face is included in thickness (T) and Lengths (A) & (B). To Calculate the Flat Face dimensions, subtract the 1.6mm from these.

S.M.E.I. PROJECTS

Carbon Steel Flanges to ANSI B16.5 & BS 1560 (150lb)

NB Name	Pipe O.D (O)	Flange O.D (O.D)	RF-Dia. (R)	Thickness (T)	Length (A)	Length (B)	Bolt PCD (P.C.D)	Bolts (Qty)	Bolt Hole Dia. (H)
15	21.4	88.9	34.9	11.1	47.6	15.9	60.3	4	15.9
20	27	98.4	42.9	12.7	52.4	15.9	69.8	4	15.9
25	34.1	107.9	50.8	14.3	55.6	17.5	79.4	4	15.9
32	42.9	117.5	63.5	15.9	57.1	20.6	88.9	4	15.9
40	48.4	127	73	17.5	61.9	22.2	98.4	4	15.9
50	60.3	152.4	92.1	19	63.5	25.4	120.6	4	19
65	73	177.8	104.8	22.2	69.8	28.6	139.7	4	19
80	88.9	190.5	127	23.8	69.8	30.2	152.4	4	19
90	101.6	215.9	139.7	23.8	71.4	31.7	177.8	8	19
100	114.3	228.6	157.2	23.8	76.2	33.3	190.5	8	19
125	141.3	254	185.7	23.8	88.9	36.5	215.9	8	22.2
150	165.1	279.4	215.9	25.4	88.9	39.7	241.3	8	22.2
150	168.3	279.4	215.9	25.4	88.9	39.7	241.3	8	22.2
200	219.1	342.9	269.9	28.6	101.6	44.4	298.4	8	22.2
250	273.1	406.4	323.8	30.2	101.6	49.2	361.9	12	25.4
300	323.9	482.6	381	31.7	114.3	55.6	431.8	12	25.4
350	355.6	533.4	412.7	34.9	127	57.1	476.2	12	28.6
400	406.4	596.9	469.9	36.5	127	63.5	539.7	16	28.6
450	457.2	635	533.4	39.7	139.7	68.3	577.8	16	31.7
500	508	698.5	584.2	42.9	144.5	73	635	20	31.7
600	609.6	812.8	692.1	47.6	152.4	82.5	749.3	20	34.9

Carbon Steel Flanges to ANSI B16.5 & BS 1560 (300lb)

NB Name	Pipe O.D (O)	Flange O.D (O.D)	RF-Dia. (R)	Thickness (T)	Length (A)	Length (B)	Bolt PCD (P.C.D)	Bolts (Qty)	Bolt Hole Dia. (H)
15	21.4	95.2	34.9	14.3	52.4	22.2	66.7	4	15.9
20	27	117.5	42.9	15.9	57.1	25.4	82.5	4	15.9
25	34.1	123.8	50.8	17.5	61.9	27	88.9	4	15.9
32	42.9	133.3	63.5	19	65.1	27	98.4	4	15.9
40	48.4	155.6	73	20.6	68.3	30.2	114.3	4	15.9
50	60.3	165.1	92.1	22.2	69.8	33.3	127	8	19

65	73	190.5	104.8	25.4	76.2	38.1	149.2	8	19
80	88.9	209.5	127	28.6	79.4	42.9	168.3	8	19
90	101.6	228.6	139.7	30.2	81	44.4	184.1	8	19
100	114.3	254	157.2	31.7	85.7	47.6	200	8	19
125	141.3	279.4	185.7	34.9	98.4	50.8	234.9	8	22.2
150	165.1	317.5	215.9	36.5	98.4	52.4	269.9	12	22.2
150	168.3	317.5	215.9	36.5	98.4	52.4	269.9	12	22.2
200	219.1	381	269.9	41.3	111.1	61.9	330.2	12	22.2
250	273.1	444.5	323.8	47.6	117.5	66.7	387.3	16	25.4
300	323.9	520.7	381	50.8	130.2	73	450.8	16	25.4
350	355.6	584.2	412.7	54	142.9	76.2	514.3	20	28.6
400	406.4	647.7	469.9	57.1	146	82.5	571.5	20	28.6
450	457.2	711.2	533.4	60.3	158.7	88.9	628.6	24	31.7
500	508	774.7	584.2	63.5	161.9	95.2	685.8	24	31.7
600	609.6	914.4	692.1	69.8	168.3	106.4	812.8	24	34.9

Carbon Steel Flanges to ANSI B16.5 & BS 1560 (600lb)

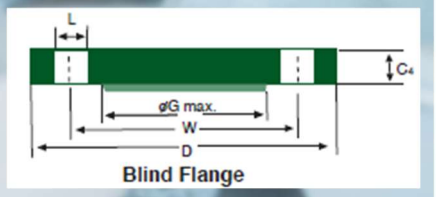
NB Name	Pipe O.D (O)	Flange O.D (O.D)	RF-Dia. (R)	Thickness (T)	Length (A)	Length (B)	Bolt PCD (P.C.D)	Bolts (Qty)	Bolt Hole Dia. (H)
15	21.4	95.2	34.9	14.3	52.4	22.2	66.7	4	15.9
20	27	117.5	42.9	15.9	57.1	25.4	82.5	4	19
25	34.1	123.8	50.8	17.5	61.9	27	88.9	4	19
32	42.9	133.3	63.5	20.6	66.7	28.6	98.4	4	19
40	48.4	155.6	73	22.2	69.8	31.7	114.3	4	19
50	60.3	165.1	92.1	25.4	73	36.5	127	8	19
65	73	190.5	104.8	28.6	79.4	41.3	149.2	8	22.2
80	88.9	209.5	127	31.7	82.5	46	168.3	8	22.2
90	101.6	228.6	139.7	34.9	85.7	49.2	184.1	8	25.4
100	114.3	273	157.2	38.1	101.6	54	215.9	8	25.4
125	141.3	330.2	185.7	44.4	114.3	60.3	266.7	8	28.6
150	165.1	355.6	215.9	47.6	117.5	66.7	292.1	12	28.6
150	168.3	355.6	215.9	47.6	117.5	66.7	292.1	12	28.6
200	219.1	419.1	269.9	55.6	133.3	76.2	349.2	12	31.7
250	273.1	508	323.8	63.5	152.4	85.7	431.8	16	34.9
300	323.9	558.8	381	66.7	155.6	92.1	488.9	20	34.9
350	355.6	603.2	412.7	69.8	165.1	93.7	527	20	38.1
400	406.4	685.8	469.9	76.2	177.8	106.4	603.2	20	41.3
450	457.2	742.9	533.4	82.5	184.1	117.5	654	20	44.4
500	508	812.8	584.2	88.9	190.5	127	723.9	24	44.4
600	609.6	939.8	692.1	101.6	203.2	139.7	838.2	24	50.8

C/S Flanges ANSI B16.5 & BS 1560 Approximate Mass (Kg)

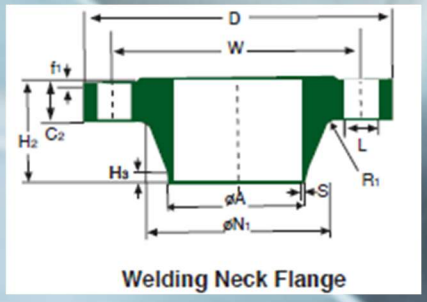
NB Name	150lb			300lb			600lb		
	WN	SO, SW & SC	Blind	WN	SO, SW & SC	Blind	WN	SO, SW & SC	Blind
15	0.79	0.45	0.57	0.91	0.73	0.79	0.91	0.82	0.91
20	0.86	0.68	0.91	1.41	1.25	1.13	1.59	1.47	1.36
25	1.09	0.95	1.09	1.81	1.36	1.77	1.86	1.7	1.95
32	1.41	1.13	1.25	2.27	2.04	2.68	2.72	2.18	2.72
40	1.81	1.36	1.7	3.06	2.81	2.83	3.74	3.36	3.74
50	2.83	2.22	2.77	3.74	3.13	3.52	4.65	3.97	4.31
65	4.42	3.82	4.04	5.56	4.54	5.44	6.44	5.49	6.53
80	5.22	4.08	5.44	7.37	6.12	7.26	8.5	6.8	8.62
90	5.44	4.99	6.35	9.53	7.71	9.98	12.25	9.93	13.15
100	7.48	5.94	7.37	11.79	9.53	11.79	17.24	15.42	18.14
125	9.53	6.12	9.07	15.42	12.7	15.88	30.84	29.03	30.84
150	11.34	8.16	12.7	19.96	16.33	20.87	34.02	34.02	37.19
200	19.05	12.7	21.7	32.21	25.4	38.1	52.16	45.36	63.05
250	25.4	17.24	31.75	44	35.38	55.34	90.36	79.83	108.86
300	38.1	27.22	45.36	64.41	50.8	86.18	101.6	97.52	133.81
350	51.26	35.38	58.97	84.37	74.39	107.05	157.4	117.93	171.46
400	63.5	42.18	77.71	111.58	101.6	145.15	209.11	166.01	239.04
450	68.04	52.62	102.51	138.35	126.1	181.89	217.27	215.46	301.64
500	81.65	65.32	123.38	174.63	149.69	231.33	312.98	277.6	387.82
600	118.84	91.63	203.21	247.21	222.26	342.92	443.16	370.13	521.63

BS EN 1092-1 is a British metric standard for steel flanges that replaced the obsolete BS 4504 standard. EN 1092-1 covers a wider range than BS 4504, but the flange drillings are generally the same.

- Flange types: EN 1092-1 covers steel flanges, while EN 1092-2 covers cast iron and ductile iron flanges, EN 1092-3 covers copper alloy flanges, and EN 1092-4 covers aluminium alloy flanges. All these are available on request.
- Pressure ratings: EN 1092-1 flanges are available in PN6, PN10, PN16, PN25 & PN40 pressure Classes.
- BS EN 1092-1 flanges are available in 4 main types namely: Weld Neck (WN) /2, Slip-on weld (SO) /3, Screwed (SCRWD) /4 & Blind (BLIND) /8 with either a flat or raised face.
- For Example, a "50NB PN16/3 FF" flange would indicate to be a PN16 (pressure class) /3 (Slip-on weld) FF (Flat Faced flange for a 50NB (Pipe size) application.



Blind Flange



Welding Neck Flange

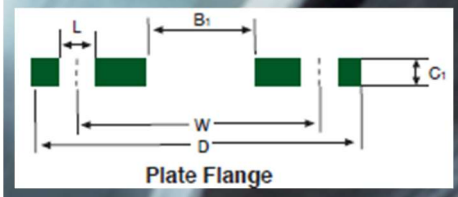


Plate Flange

S.M.E.I. PROJECTS

BS EN 1092-1 (PN6) - (6bar = 600kPa) Flange Dimensions.

General Size			Thickness			Length		Bolting		Drilling		Other	
NB Name	Pipe O.D	Flange O.D	C1	C2	C4	H2	H3	No.	Size	L	W	Bore (B1)	Raised Face
10	17.2	75	12	12	12	28	6	4	M10	11	50	18.0	2
15	21.3	80	12	12	12	30	6	4	M10	11	55	22.0	2
20	26.9	90	14	14	14	32	6	4	M10	11	65	27.5	2
25	33.7	100	14	14	14	35	6	4	M10	11	75	34.5	2
32	42.4	120	16	14	14	35	6	4	M12	14	90	43.5	2
40	48.3	130	16	14	14	38	7	4	M12	14	100	49.5	3
50	60.3	140	16	14	14	38	8	4	M12	14	110	61.5	3
65	76.1	160	16	14	14	38	9	4	M12	14	130	77.5	3
80	88.9	190	18	16	16	42	10	4	M16	18	150	90.5	3
100	114.3	210	18	16	16	45	10	4	M16	18	170	116.0	3
125	139.7	240	20	18	18	48	10	8	M16	18	200	141.5	3
150	168.3	265	20	18	18	48	12	8	M16	18	225	170.5	3
200	219.1	320	22	20	20	55	15	8	M16	18	280	221.5	3
250	273	375	24	22	22	60	15	12	M16	18	335	276.5	3
300	323.9	440	24	22	22	62	15	12	M20	22	395	327.5	4
350	355.6	490	26	22	24	62	15	12	M20	22	445	359.5	4
400	406.4	540	28	22	28	65	15	16	M20	22	495	411.0	4
450	457.2	595	30	22	24	65	15	16	M20	22	550	462.0	4
500	508	645	30	24	24	68	15	20	M20	22	600	-	4
600	609.6	755	32	30	30	70	16	20	M24	26	705	-	5

BS EN 1092-1 (PN10) - (10bar = 1000kPa) Flange Dimensions. Nominal size 10 -150 same as PN16

General Size			Thickness			Length		Bolting		Drilling		Other	
NB Name	Pipe O.D	Flange O.D	C1	C2	C4	H2	H3	No.	Size	L	W	Bore (B1)	Raised Face
200	219.1	340	24	24	24	62	16	8	M20	22	295	221.5	3
250	273	395	26	26	26	68	16	12	M20	22	292	276.5	3
300	323.9	445	26	26	26	68	16	12	M20	22	342	327.5	4
350	355.6	505	28	26	26	68	16	16	M20	22	385	359.5	4
400	406.4	565	32	26	26	72	16	16	M24	26	440	411.0	4
450	457.2	615	36	28	28	72	16	20	M24	26	488	462.0	4
500	508	670	38	28	28	75	16	20	M24	26	542	513.5	4
600	609.6	780	42	30	34	80	18	20	M27	30	642	616.5	5

BS EN 1092-1 (PN16) - (16bar = 1600kPa) Flange Dimensions.

General Size			Thickness			Length		Bolting		Drilling		Other	
NB Name	Pipe O.D	Flange O.D	C1	C2	C4	H2	H3	No.	Size	L	W	Bore (B1)	Raised Face
10	17.2	90	14	16	16	35	6	4	M12	14	60	18.0	2
15	21.3	95	14	16	16	38	6	4	M12	14	65	22.0	2
20	26.9	105	16	18	18	40	6	4	M12	14	75	27.5	2
25	33.7	115	16	18	18	40	6	4	M12	14	85	34.5	2
32	42.4	140	18	18	18	42	6	4	M16	18	100	43.5	2
40	48.3	150	18	18	18	45	7	4	M16	18	110	49.5	3
50	60.3	165	20	20	18	45	8	4	M16	18	125	61.5	3
65	76.1	185	20	20	18	45	10	8	M16	18	145	77.5	3
80	88.9	200	20	20	20	50	10	8	M16	18	160	90.5	3
100	114.3	220	22	20	20	52	12	8	M16	18	180	116.0	3
125	139.7	250	22	22	22	55	12	8	M16	18	210	141.5	3
150	168.3	285	24	22	22	55	12	8	M20	22	240	170.5	3
200	219.1	340	26	24	24	62	16	12	M20	22	295	221.5	3
250	273	405	29	26	26	70	16	12	M24	26	355	276.5	3
300	323.9	460	32	28	28	78	16	12	M24	26	410	327.5	4
350	355.6	520	35	30	30	82	16	16	M24	26	470	359.5	4
400	406.4	480	38	32	32	83	16	16	M27	30	525	411.0	4
450	547	640	42	34	40	83	16	20	M27	30	585	462.0	4
500	508	715	46	36	44	84	16	20	M30	33	650	613.5	4
600	610	840	55	40	54	88	18	20	M33	36	770	616.5	5

BS EN 1092-1 (PN25) - (25bar = 2500kPa) Flange Dimensions. Nominal size 10 -150 same as PN40

General Size			Thickness			Length		Bolting		Drilling		Other	
NB Name	Pipe O.D	Flange O.D	C1	C2	C4	H2	H3	No.	Size	L	W	Bore (B1)	Raised Face
200	219.1	360	32	30	30	80	16	12	M24	26	310	221.5	3
250	273	425	35	32	32	88	18	12	M27	30	370	276.5	3
300	323.9	485	38	34	34	92	18	16	M27	30	430	327.5	4
350	355.6	555	42	38	38	100	20	16	M30	33	490	359.5	4
400	406.4	620	48	40	40	110	20	16	M33	36	550	411.0	4
450	457.2	670	54	46	50	110	20	20	M33	36	600	462.0	4
500	508	730	58	48	51	125	20	20	M33	36	660	513.5	4
600	610	845	68	48	60	125	20	20	M36	39	770	616.5	5

BS EN 1092-1 (PN40) - (40bar = 4000kPa) Flange Dimensions.

General Size			Thickness			Length		Bolting		Drilling		Other	
NB Name	Pipe O.D	Flange O.D	C1	C2	C4	H2	H3	No.	Size	L	W	Bore (B1)	Raised Face
10	17.2	90	14	16	16	35	6	4	M12	14	60	18.0	2
15	21.3	95	14	16	16	38	6	4	M12	14	65	22.0	2
20	26.9	105	16	18	18	40	6	4	M12	14	75	27.5	2
25	33.7	115	16	18	18	40	6	4	M12	14	85	34.5	2
32	42.4	140	18	18	18	42	6	4	M16	18	100	43.5	2
40	48.3	150	18	18	18	45	7	4	M16	18	110	49.5	3
50	60.3	165	20	20	20	48	8	4	M16	18	125	61.5	3
65	76.1	185	22	22	22	52	10	8	M16	18	145	77.5	3
80	88.9	200	24	24	24	58	12	8	M16	18	160	90.5	3
100	114.3	235	26	24	24	65	12	8	M20	22	190	116.0	3
125	139.7	270	28	26	26	68	12	8	M24	26	220	141.5	3
150	168.3	300	30	28	28	75	12	8	M24	26	250	170.5	3
200	219.1	375	36	36	36	88	16	12	M27	30	320	221.5	3
250	273	450	42	38	38	105	18	12	M30	33	385	276.5	3
300	323.9	515	52	42	42	115	18	16	M30	33	450	327.5	4
350	355.6	580	58	46	46	125	20	16	M33	36	510	359.5	4
400	406.4	660	65	50	50	135	20	16	M36	39	585	411.0	4
450	457.2	685	*	57	57	135	20	20	M36	39	610	462.0	4
500	508	755	*	57	57	140	20	20	M39	42	670	513.5	4
600	610	890	*	72	72	150	20	20	M45	48	795	616.5	5

BS EN 1092-1 Approximate Weights in KG

Size	PN6				PN10				PN16				PN25				PN40			
NB Name	6/2	6/3	6/4	6/8	10/2	10/3	10/4	10/8	16/2	16/3	16/4	16/8	25/2	25/3	25/4	25/8	40/2	40/3	40/4	40/8
10	0.34	0.31	0.32	0.38	0.58	0.53	0.54	0.63	0.58	0.53	0.54	0.63	0.66	0.62	0.63	0.72	0.66	0.62	0.63	0.72
15	0.39	0.35	0.37	0.44	0.65	0.59	0.61	0.71	0.65	0.59	0.61	0.71	0.75	0.69	0.71	0.81	0.75	0.69	0.71	0.81
20	0.59	0.53	0.59	0.66	0.95	0.85	0.91	1.00	0.95	0.85	0.91	1.00	1.06	0.97	1.03	1.10	1.06	0.97	1.03	1.10
25	0.75	0.65	0.74	0.82	1.14	1.00	1.10	1.20	1.14	1.00	1.10	1.20	1.29	1.20	1.28	1.40	1.29	1.20	1.28	1.40
32	1.05	1.10	1.05	1.20	1.69	1.50	1.60	1.80	1.69	1.50	1.60	1.80	1.88	1.70	1.87	2.00	1.88	1.70	1.87	2.00
40	1.18	1.20	1.20	1.40	1.86	1.60	1.78	2.10	1.86	1.60	1.78	2.10	2.33	2.10	2.14	2.40	2.33	2.10	2.14	2.40
50	1.34	1.30	1.37	1.60	2.53	2.20	2.43	2.90	2.53	2.20	2.43	2.90	2.82	2.50	2.86	3.20	2.82	2.50	2.86	3.20
65	1.67	1.60	1.92	2.10	3.06	2.70	3.18	3.60	3.06	2.70	3.18	3.60	3.74	3.20	3.85	4.30	3.74	3.20	3.85	4.30
80	2.71	2.60	2.85	3.40	3.70	3.30	4.12	4.60	3.70	3.30	4.12	4.60	4.75	4.00	4.80	5.50	4.75	4.00	4.80	5.50
100	3.24	2.90	3.19	4.20	4.62	3.60	4.47	5.60	4.62	3.60	4.47	5.60	6.52	5.70	6.43	7.60	6.52	5.70	6.43	7.60
125	4.49	3.90	4.47	6.10	6.30	5.00	6.13	8.10	6.30	5.00	6.13	8.10	9.07	7.70	8.77	11.00	9.07	7.70	8.77	11.00
150	5.15	4.40	5.30	7.50	7.75	6.00	7.92	10.50	7.75	6.00	7.92	10.50	11.80	9.70	10.50	14.50	11.80	9.70	10.50	14.50
175	-	-	-	-	10.00	7.90	-	14.20	10.00	7.90	-	14.20	13.40	11.00	-	18.30	18.20	15.70	-	24.00
200	7.78	6.40	-	12.50	11.30	8.40	-	16.50	11.00	8.70	-	16.50	17.00	12.00	-	22.50	21.50	16.00	-	37.00
250	10.80	8.50	-	18.50	14.70	11.00	-	24.00	15.60	12.00	-	25.00	24.40	17.50	-	33.50	34.90	28.50	-	44.50
300	14.00	11.00	-	25.50	17.60	12.50	-	31.00	22.00	15.50	-	35.00	31.20	25.50	-	46.00	49.70	42.00	-	64.00
350	16.10	15.50	-	32.00	21.40	19.50	-	39.50	28.70	24.50	-	48.00	45.00	40.50	-	68.00	68.10	63.00	-	89.00
400	18.30	19.00	-	38.50	26.10	26.50	-	49.50	36.30	33.00	-	63.00	58.70	54.00	-	90.00	96.50	94.00	-	125.00
450	24.60	24.50	-	52.00	-	36.00	-	65.00	-	48.00	-	85.00	-	75.30	-	115.50	-	107.00	-	155.50
500	-	25.50	-	60.00	34.70	39.00	-	75.00	59.30	60.00	-	110.00	86.10	86.00	-	140.00	117.00	120.00	-	185.00
600	31.50	33.00	-	-	42.20	53.00	-	-	73.40	94.00	-	-	101.00	120.00	-	-	-	-	-	-

BS-10 is a set of British standard pipe flange tables that specify the working steam pressures over the variant range.

Most common tables include Table D, Table E, Table F & Table H.

- Table D for working steam pressure up to 50 lbs per sq. in.

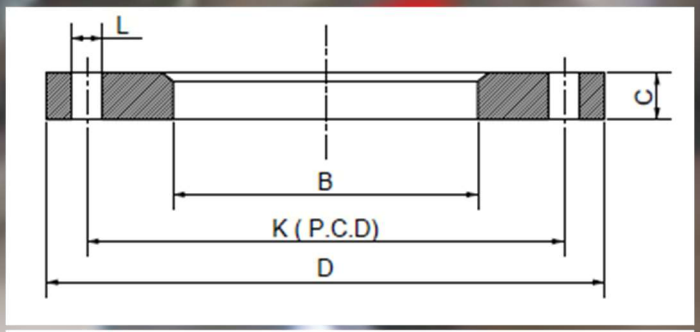
- Table E for working steam pressure from 50 lbs to 100 lbs per sq. in.

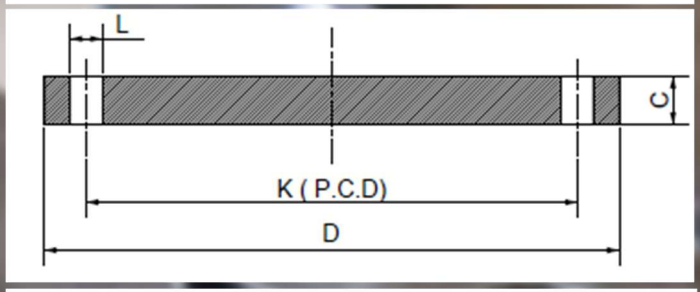
- Table F for working steam pressure from 100 lbs to 150 lbs per sq. in.

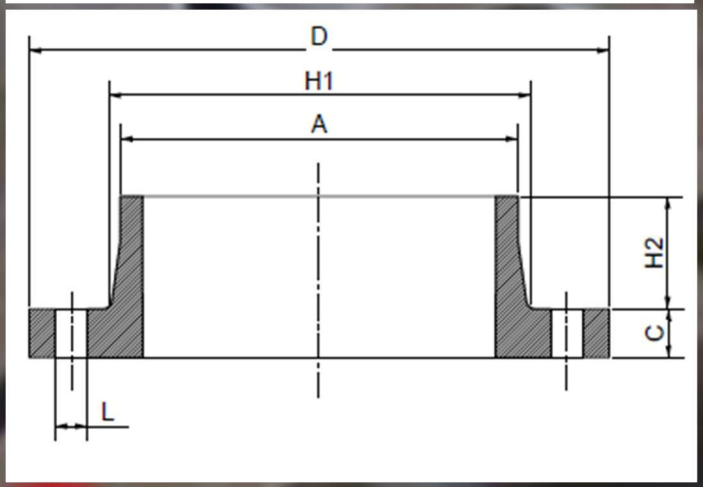
- Table H for working steam pressure from 150 lbs to 200 lbs per sq. in.

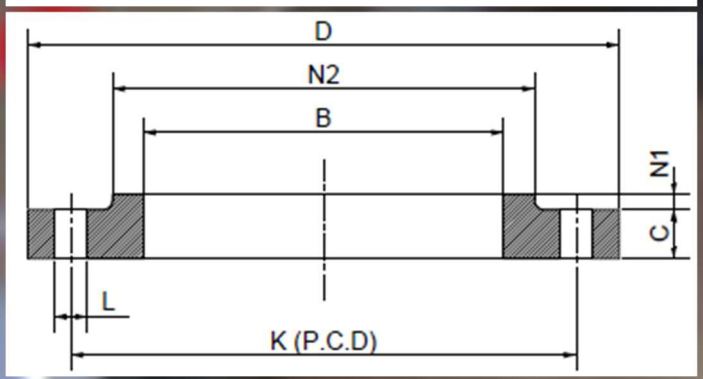
BS 10 flanges can be made from a variety of materials, including mild/carbon steel grades, 304, 304L, 316, and 316L S/S. They can come in different sizes, from ½" (15mm) to 48" (1200mm) in nominal bore size, and in different pressure classes, from 150 to 2500.

BS 10 flanges can have different face types, such as flat face, raised face, and ring type joint. They can also have different connection types, such as welded neck, socket weld, and blind flanges.









S.M.E.I. PROJECTS

BS 10 TABLE D Flange Specifications.

General Size (NB)		Dimensions								Bolting & Drilling		
INCH	MM	D	C	B	A	N1	N2	H1	H2	K	L	Holes
1/2"	15	95.3	4.8	22.4	21.3	27.0	33.3	9.5	22.2	66.8	14.5	4
3/4"	20	101.6	4.8	27.7	26.7	33.3	38.1	11.1	22.2	73.2	14.5	4
1"	25	114.3	4.8	34.6	33.5	42.9	47.6	11.1	22.2	82.6	14.5	4
1 1/4"	32	120.7	6.4	43.2	42.2	49.2	55.6	11.1	25.4	87.4	14.5	4
1 1/2"	40	133.4	6.4	49.5	48.3	58.7	61.9	12.7	28.6	98.6	14.5	4
2"	50	152.4	7.9	62.0	60.5	69.9	74.6	12.7	28.6	114.3	17.5	4
2 1/2"	65	165.1	7.9	74.7	73.2	82.6	90.5	15.9	31.8	127.0	17.5	4
3"	80	184.2	9.7	90.7	88.9	101.6	106.4	15.9	34.9	146.1	17.5	4
3 1/2"	88	203.2	9.7	103.4	101.6	114.3	119.1	17.5	34.9	165.1	17.5	4
4"	100	215.9	9.7	116.1	114.3	130.2	133.4	19.1	41.3	177.8	17.5	4
5"	125	254.0	12.7	143.8	141.2	152.4	160.3	19.1	44.5	209.6	17.5	8
6"	150	279.4	12.7	171.7	168.4	184.2	185.7	19.1	47.6	235.0	17.5	8
8"	200	336.6	12.7	221.5	219.2	241.3	241.3	22.2	50.8	292.1	17.5	8
10"	250	406.4	16.0	276.4	273.1	292.1	298.5	27.0	63.5	355.6	22.2	8
12"	300	457.2	19.1	325.9	323.9	342.9	349.3	28.6	69.9	406.4	22.2	12
14"	350	527.1	22.2	359.2	355.6	406.4	-	-	73.0	469.9	25.4	12
16"	400	577.9	22.2	410.5	406.4	-	-	-	-	520.7	25.4	12
18"	450	641.4	25.4	461.8	457.2	-	-	-	-	584.2	25.4	12
20"	500	704.9	28.6	513.1	508.0	-	-	-	-	641.4	25.4	16
24"	600	825.5	31.8	616.0	609.6	-	-	-	-	755.7	28.7	16

BS 10 TABLE E Flange Specifications.

General Size (NB)		Dimensions								Bolting & Drilling		
INCH	MM	D	C	B	A	N1	N2	H1	H2	K	L	Holes
1/2"	15	95.3	6.4	22.4	21.3	27.0	33.3	9.5	22.2	66.8	14.5	4
3/4"	20	101.6	6.4	27.7	26.7	33.3	38.1	11.1	22.2	73.2	14.5	4
1"	25	114.3	7.2	34.6	33.5	42.9	47.6	11.1	22.2	82.6	14.5	4
1 1/4"	32	120.7	7.9	43.2	42.2	49.2	55.6	11.1	25.4	87.4	14.5	4
1 1/2"	40	133.4	8.7	49.5	48.3	58.7	61.9	12.7	28.6	98.6	14.5	4
2"	50	152.4	9.5	62.0	60.5	69.9	74.6	12.7	28.6	114.3	17.5	4
2 1/2"	65	165.1	10.3	74.7	73.2	82.6	90.5	15.9	31.8	127.0	17.5	4
3"	80	184.2	11.1	90.7	88.9	101.6	106.4	15.9	34.9	146.1	17.5	4
3 1/2"	88	203.2	11.9	103.4	101.6	114.3	119.1	17.5	34.9	165.1	17.5	4
4"	100	215.9	12.7	116.1	114.3	130.2	133.4	19.1	41.3	177.8	17.5	4
5"	125	254.0	14.3	143.8	141.2	152.4	160.3	19.1	44.5	209.6	17.5	8
6"	150	279.4	17.5	171.7	168.4	184.2	185.7	19.1	47.6	235.0	17.5	8
8"	200	336.6	19.1	221.5	219.2	241.3	241.3	22.2	50.8	292.1	17.5	8

10"	250	406.4	22.2	276.4	273.1	292.1	298.5	27.0	63.5	355.6	22.2	8
12"	300	457.2	25.4	325.9	323.9	342.9	349.3	28.6	69.9	406.4	22.2	12
14"	350	527.1	28.6	359.2	355.6	406.4	-	-	73.0	469.9	25.4	12
16"	400	577.9	31.8	410.5	406.4	431.8	-	-	-	520.7	25.4	12
18"	450	641.4	34.9	461.8	457.2	-	-	-	-	584.2	25.4	12
20"	500	704.9	38.1	513.1	508.0	-	-	-	-	641.4	25.4	16
24"	600	825.5	47.6	616.0	609.6	-	-	-	-	755.7	28.7	16

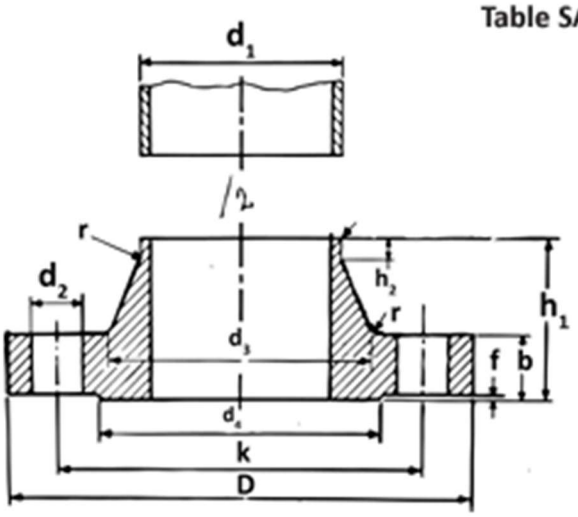
SANS 1123 flanges are used in a variety of industries, including petroleum, gas, power, chemical, construction, metallurgy, and shipbuilding.

SANS 1123 flanges can be made from a variety of materials, including stainless steel grades, nickel alloys, carbon steel, and alloy steel.

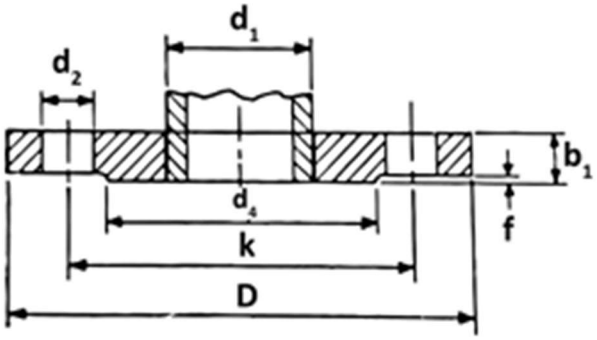
SANS 1123 flanges can be threaded, forged, screwed, or plate. They can also have flat, raised, ring-type, lap-joint, large male-female, or small male-female flange faces. Most common types are Weld Nech (PN/2), Slip-on/screwed (PN/3) & Blind (PN/8).

SANS 1123 flanges are available in standard sizes ranging from 15NB to 1200NB and in five pressure ratings namely 600, 1000, 1600, 2500 & 4000

Table SANS 1123 Flanges



Type NP/2



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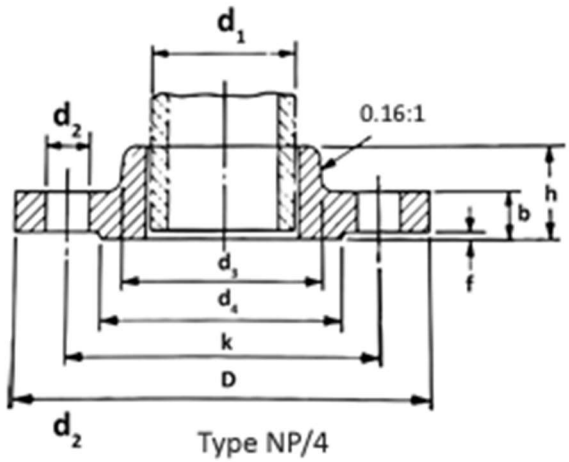

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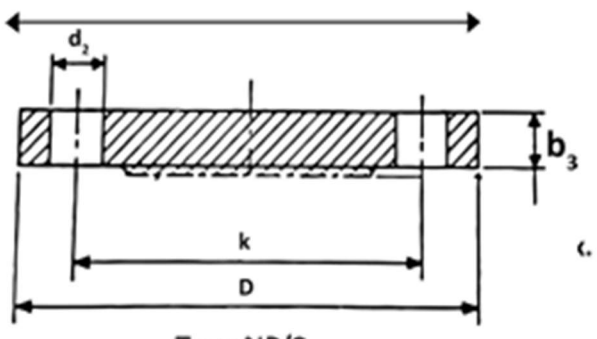


Type NP/8

S.M.E.I. PROJECTS

SANS 1123 SC Flange Dimensions

Size & Rating		Flange				R/Face		Bolting & Drilling				Neck		KG/Each		
NB/O.D	Rating	D	b	b1	h1	d4	f	k	d2	No.	M...	d3	h2	/2	/3	/8
15mm / 21.3 (d1)	600	80	8	10	30	40	2	55	11	4	M10	30	6	0.26	0.33	0.37
	1000	95	8	10	35	45	2	65	14	4	M12	32	6	0.37	0.48	0.41
	1600	95	8	10	35	45	2	65	14	4	M12	32	6	0.37	0.48	0.41
	2500	95	14	14	38	45	2	65	14	4	M12	32	6	0.65	0.76	0.71
	4000	95	14	14	38	45	2	65	14	4	M12	32	6	0.65	0.76	0.71
20mm / 26.9 (d1)	600	90	10	10	32	50	2	65	11	4	M10	38	6	0.34	0.42	0.47
	1000	105	10	10	38	58	2	75	14	4	M12	40	6	0.48	0.58	0.50
	1600	105	10	10	38	58	2	75	14	4	M12	40	6	0.48	0.58	0.50
	2500	105	14	14	40	58	2	75	14	4	M12	40	6	0.82	1.04	0.86
	4000	105	14	14	40	58	2	75	14	4	M12	40	6	0.82	1.04	0.86
25mm / 33.7 (d1)	600	100	8	10	35	60	2	75	11	4	M10	42	6	0.43	0.49	0.59
	1000	115	8	10	38	68	2	85	14	4	M12	46	6	0.57	0.69	0.60
	1600	115	8	10	38	68	2	85	14	4	M12	46	6	0.57	0.69	0.60
	2500	115	16	16	40	68	2	85	14	4	M12	46	6	1.15	1.24	1.24
	4000	115	16	16	40	68	2	85	14	4	M12	46	6	1.15	1.24	1.24
32mm / 42,4 (d1)	600	120	8	10	35	70	2	90	14	4	M12	55	6	0.60	0.71	0.86
	1000	140	10	10	40	78	2	100	18	4	M16	56	6	1.06	1.01	1.13
	1600	140	10	10	40	78	2	100	18	4	M16	56	6	1.06	1.01	1.13
	2500	140	18	18	42	78	2	100	18	4	M16	55	6	1.88	1.80	2.00
	4000	140	18	18	42	78	2	100	18	4	M16	55	6	1.88	1.80	2.00
40mm / 48,3 (d1)	600	130	8	10	38	80	3	100	14	4	M12	62	7	0.67	0.84	1.00
	1000	150	10	10	42	88	3	110	18	4	M16	64	7	1.16	1.15	1.31
	1600	150	10	10	42	88	3	110	18	4	M16	64	7	1.16	1.15	1.31
	2500	150	18	20	45	88	3	110	18	4	M16	64	7	2.33	2.30	2.67
	4000	150	18	20	45	88	3	110	18	4	M16	64	7	2.33	2.30	2.67
50mm / 60,3 (d1)	600	140	8	10	38	90	3	110	14	4	M12	74	8	0.77	0.92	1.14
	1000	165	12	10	45	102	3	125	18	4	M16	75	8	1.69	1.36	1.93
	1600	165	12	12	45	102	3	125	18	4	M16	75	8	1.69	1.63	1.93
	2500	165	20	20	48	102	3	125	18	4	M16	75	8	2.82	2.72	3.20
	4000	165	20	20	48	102	3	125	18	4	M16	75	8	2.82	2.72	3.20
65mm / 76,1 (d1)	600	160	8	10	38	110	3	130	14	4	M12	88	9	0.95	1.15	1.50
	1000	185	12	12	45	122	3	145	18	4	M16	90	10	2.04	1.98	2.40
	1600	185	12	12	45	122	3	145	18	4	M16	90	10	2.04	1.98	2.40
	2500	185	22	22	52	122	3	145	18	8	M16	90	10	3.74	3.64	4.30
	4000	185	22	22	52	122	3	145	18	8	M16	90	10	3.74	3.64	4.30
80mm / 88,9 (d1)	600	190	10	10	42	128	3	150	18	4	M16	102	10	1.69	1.64	2.13
	1000	200	14	12	50	138	3	160	18	8	M16	105	10	2.59	2.17	3.22
	1600	200	14	14	50	138	3	160	18	8	M16	105	10	2.59	2.64	3.22
	2500	200	24	22	58	138	3	160	18	8	M16	105	12	4.75	3.95	5.04
	4000	200	24	22	58	138	3	160	18	8	M16	105	12	4.75	3.95	5.04
100mm / 114,3 (d1)	600	210	10	10	45	148	3	170	18	4	M16	130	10	2.00	1.81	2.63
	1000	220	14	12	52	158	3	180	18	8	M16	131	12	3.23	2.39	3.92
	1600	220	14	14	52	158	3	180	18	8	M16	131	12	3.23	2.90	3.92
	2500	235	24	25	65	162	3	190	22	8	M20	134	12	6.52	6.04	7.92
	4000	235	24	25	65	162	3	190	22	8	M20	134	12	6.52	6.04	7.92

125mm / 139,7 (d1)	600	240	13	12	48	178	3	200	18	8	M16	155	10	3.24	2.60	4.07
	1000	250	16	14	55	188	3	210	18	8	M16	156	12	4.58	3.45	5.89
	1600	250	16	15	55	188	3	210	18	8	M16	156	12	4.58	4.07	5.89
	2500	270	26	28	68	188	3	220	26	8	M24	162	12	9.07	8.21	11.85
	4000	270	26	28	68	188	3	220	26	8	M24	162	12	9.07	8.21	11.85
150mm / 168,3 or 165,1 (d1) (To be specified)	600	265	13	12	48	202	3	225	18	8	M16	184	12	3.72	2.91	5.00
	1000	285	18	16	55	212	3	240	22	8	M20	184	12	6.34	4.81	8.59
	1600	285	18	18	55	212	3	240	22	8	M20	184	12	6.34	5.41	8.59
	2500	300	28	30	75	218	3	250	26	8	M24	192	12	11.80	10.42	15.54
	4000	300	28	30	75	218	3	250	26	8	M24	192	12	11.80	10.42	15.54
200mm / 219,1 (d1)	600	320	13	14	55	258	3	280	18	8	M16	236	15	5.06	4.40	8.75
	1000	340	18	18	62	268	3	295	22	8	M20	235	16	8.18	6.97	12.38
	1600	340	22	22	62	268	3	295	22	12	M20	235	16	10.08	7.51	15.13
	2500	360	27	28	80	278	3	310	26	12	M24	244	16	15.30	12.59	21.00
	4000	375	34	32	88	285	3	320	26	12	M24	244	16	21.50	16.96	25.41
250mm / 273,0 (d1)	600	375	16	16	60	312	3	335	18	12	M16	290	15	7.85	6.02	13.45
	1000	395	20	20	68	320	3	350	22	12	M20	292	16	11.31	9.14	18.46
	1600	405	24	25	70	320	3	355	26	12	M24	292	16	14.04	12.36	24.04
	2500	425	30	30	88	335	3	370	26	12	M24	298	18	22.88	17.90	31.41
	4000	450	38	38	105	345	3	385	33	12	M30	306	18	34.90	29.44	44.50
300mm / 323,9 (d1)	600	440	20	20	62	365	4	395	22	12	M20	342	15	12.73	9.96	23.18
	1000	445	22	22	68	370	4	400	22	12	M20	344	16	14.89	11.65	26.23
	1600	460	28	28	78	378	4	410	26	12	M24	344	16	22.00	16.65	35.00
	2500	485	34	32	92	395	4	430	26	16	M24	352	18	31.20	23.16	43.29
	4000	515	42	40	115	410	4	450	33	16	M30	362	18	49.70	43.39	60.95
350mm / 355,6 (d1)	600	490	22	22	62	415	4	445	22	12	M20	385	15	16.10	14.29	32.00
	1000	505	26	25	68	430	4	460	22	16	M20	385	16	21.40	18.23	37.98
	1600	520	30	30	82	438	4	470	26	16	M24	390	16	28.07	24.15	48.00
	2500	555	38	35	100	450	4	490	33	16	M30	398	20	45.00	34.87	62.63
	4000	580	46	45	125	465	4	510	33	16	M30	408	18	68.10	64.43	87.07
400mm / 406,4 (d1)	600	540	22	22	65	465	4	495	22	16	M20	438	15	18.30	15.69	38.50
	1000	565	26	25	72	482	4	515	26	16	M24	400	16	26.10	21.88	47.60
	1600	580	32	35	85	490	4	525	26	16	M24	445	16	36.30	34.13	59.06
	2500	620	40	40	110	505	4	550	33	16	M30	452	20	58.70	49.00	90.00
	4000	660	50	50	135	535	4	585	39	16	M36	462	20	96.50	74.58	125.00
450mm / 457,2 (d1)	600	595	24	25	65	520	4	550	22	16	M20	492	15	-	21.07	54.17
	1000	615	28	30	72	532	4	565	26	20	M24	492	16	-	28.29	69.64
	1600	640	34	40	87	550	4	585	26	20	M24	496	16	-	45.68	100.00
	2500	670	42	45	110	555	4	600	33	20	M30	505	20	-	60.00	123.75
	4000	685	52	60	140	560	4	610	39	20	M36	510	20	-	95.55	149.52
500mm / 508,0 (d1)	600	645	24	25	68	570	4	600	22	20	M20	538	15	24.60	22.52	62.50
	1000	670	28	32	75	585	4	620	26	20	M24	542	16	34.70	34.65	75.00
	1600	715	34	40	90	610	4	650	33	20	M30	548	16	59.30	56.51	122.22
	2500	730	44	50	125	615	4	660	33	20	M30	558	20	86.10	77.31	155.56
	4000	755	52	70	140	615	4	670	39	20	M36	562	20	117.00	121.81	198.21
600mm / 609,6 (d1)	600	755	24	30	70	670	5	705	26	20	M24	640	16	31.50	33.63	-
	1000	780	28	38	80	685	5	725	26	20	M24	642	18	42.20	51.58	-
	1600	840	36	50	95	725	5	770	33	20	M30	652	18	73.40	95.26	-
	2500	845	46	60	125	720	5	770	39	20	M36	660	20	101.00	114.86	-
	4000	890	-	84	-	735	5	795	48	20	M45	-	-	-	192.21	-

FITTINGS

Buttweld ASTM A234 Grade WPB (ANSI B 16.9 & BS 1640 Spec).

ASTM A234 WPB buttweld fittings are carbon steel pipe fittings that are used in high-temperature and high-pressure applications. They are known for their durability, strength, and corrosion resistance.

Made of carbon steel, killed steel, forgings, bars, plates, and seamless or fusion-welded tubular products. Joined together by butt welding to bevelled ends of pipe.

It is used in a variety of industries, including oil and gas, power plants, chemical plants, and more, common fittings include elbows, tees, reducers, caps, and crosses.

They can have pressure ratings of 150 lbs, 300 lbs, 600 lbs, 900 lbs, 1500 lbs, 2000 lbs, 3000 lbs to 9000 lbs and a minimum tensile strength of 60 ksi (415 MPa) and a minimum yield strength of 35 ksi (240 MPa).

Forged (Steam) Fittings to BS 3799 (ANSI B 16.11).

Forged Pipe Fittings – BSP/NPT Screwed/Socketed & Socket Weld (BS 3799, ANSI B 16.11, also known as 2000LB – 9000LB Series Fittings).

Made from Forged Carbon Steel, High nickel Alloys or Stainless steel, the process produces very strong and durable fittings.

Forged Fittings are available in different sizes and pressure classes namely Class 2000 or 2000 LB, also 3000, 6000 and 9000. They can either be threaded in BSP or NPT or socketed for welding.

They are superior in strength and durability therefore it is the choice fitting to use for Explosive Fluids, Gasses, Steam, Acids and Toxic Fluids, or any other Long Service/durable installation.

Malleable Cast Iron Black or Hot Dipped Galvanized fittings (BS 143, BS EN 10242, SABS 509, SANS 14, SABS ISO 49) BSP Threaded.

Malleable cast iron fittings are durable and resistant to mechanical stress, relatively shock resistant, and easy to install, but they tend to have a low Corrosion resistance and is not as strong as ductile/forged options.

Applications:

- Industrial: Used in manufacturing plants to transport chemicals, steam, and other industrial fluids
- Oil and gas: Used in pipelines to handle high-pressure and high-temperature applications
- Water and gas transportation: Used for household and commercial applications

Wrought Steel BSP Threaded/Socketed – Black, Galvanized or Steam Quality (BSEN 10241-2000 (former BS 1740), SANS 62)

Threaded Wrought Steel fittings are made from steel tubes, bars, and forgings. Female threading is parallel while Male threading is tapered ensuring easy use, these fittings are commonly used in air and water utilities but most commonly steam applications.

Threaded Wrought steel fittings are screwed for use with medium and heavy quality pipe to SANS 62. Maximum temperatures shall not exceed 232°C (450°F). Test pressure is 48.5 bar maximum.

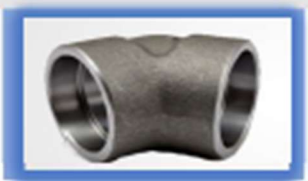
S.M.E.I. PROJECTS

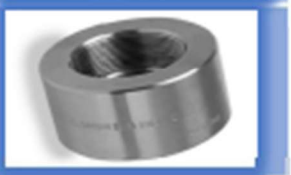
ASTM A234 Carbon Steel Fittings to ANSI B16.9 & BS 1640

Type		Size	Class/Pressure rating
90° Elbow/Long Radius to ANSI B16.9		15mm-600mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.
45° Elbow/Long Radius to ANSI B16.9		15mm-600mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.
90° Elbow/Short Radius to ANSI B16.9		25mm-600mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.
180° bend /Long Radius to ANSI B16.9		20mm-600mm	Available in Standard & Extra strong.
Equal Tee to B16.9 & BS 1640		15mm to 600mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.
Un-equal Tee to B16.9 & BS 1640		15mm to 600mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.
Concentric Reducers to B16.9 & BS 1640		20mm to 450mm	Available in Schedule 40 & Schedule 80.
Eccentric Reducers to B16.9 & BS 1640		20mm to 450mm	Available in Schedule 40 & Schedule 80.
End Cap to Ansi B16.9 & BS1640		15mm to 1200mm	Available in Standard/Shedule 40, Schedule 80 & Extra strong.

S.M.E.I. PROJECTS

Forged Fittings (BS 3799 (ANSI B 16.11) 2000, 3000, 6000 & 9000Lb Series

Type		Size	Class/Pressure rating
45° Elbow, Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
45° Elbow, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (2000, 3000 & 6000Lb)	2000LB, 3000LB & 6000LB for pipe class SCH 40, SCH 80/XS, SCH 160
90° Elbow, Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
90° Elbow, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (2000, 3000 & 6000Lb)	2000LB, 3000LB & 6000LB for pipe class SCH 40, SCH 80/XS, SCH 160
Equal TEE, Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
Equal TEE, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (2000, 3000 & 6000Lb)	2000LB, 3000LB & 6000LB for pipe class SCH 40, SCH 80/XS, SCH 160
45 degree Lateral Tee, Threaded		1/2"-2 1/2"/ DN15-DN65 (2000Lb) 1/2"-2"/DN15-DN50 (3000Lb)	2000LB & 3000LB for pipe class SCH 40 & SCH 80 only.
45 degree Lateral Tee, Socketed		1/2"-2 1/2"/ DN15-DN65 (3000Lb) 1/2"-2"/DN15-DN50 (6000Lb)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
Cross, Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
Cross, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (2000, 3000 & 6000Lb)	2000LB, 3000LB & 6000LB for pipe class SCH 40, SCH 80/XS, SCH 160
Full Coupling (Socket), Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS

Full Coupling (Socket), Threaded BSP/NPT		1/8"-4"/DN6-DN100 (3000 & 6000Lb) - No 2000Lb available	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
Half Coupling (Socket), Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
Half Coupling (Socket), Threaded BSP/NPT		1/8"-4"/DN6-DN100 (3000 & 6000Lb) - No 2000Lb available	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
End CAP, Socketed		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb) & 1/2"-2"/DN15-DN50 (9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
End CAP, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (3000 & 6000Lb) - No 2000Lb available	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
Round, Square & Hex Head Plug, Threaded		1/8"-4"/DN6-DN100	Solid Plug
Street Elbow, Threaded BSP/NPT		1/8"-2"/DN6-DN50 (3000 & 6000Lb only)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
BOSS, Socketed		1/8"-3"/DN6-DN80 (3000Lb), 1/2"-3"/DN15-DN80 (6000Lb)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
BOSS, Threaded BSP/NPT		1/8"-4"/DN6-DN100 (3000Lb), 1/8"-2"/DN6-DN50 (6000Lb)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
Hex Nipple (Full size)		1/8"-4"/DN6-DN100 (3000, 6000 & 9000Lb)	3000LB, 6000LB & 9000LB for pipe class SCH 80/XS, SCH 160 & XXS
Hex Nipple (Reducing)		1/8"-2"/DN6-DN50 (3000 & 6000Lb only)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only
Threaded end Union		1/8"-3"/DN6-DN75 (3000 & 6000Lb only)	3000LB & 6000LB for pipe class SCH 80/XS & SCH 160 only

GASKETS

We have come to know and trust Novus Sealing as a product of excellence and affordability therefore we have partnered up with them to offer our clients only the best.

Novus offers pre-cut Gaskets and full sheets in all their materials. They also produce spiral wound gaskets and a range of other piping specific products, following is a couple of their most popular and relevant products:

Novus SPRAY BARRIER® Safety Spray Shields:

- **commonly used in chemical plants to prevent injury to personnel, damage to environment or surrounding equipment in the event of leak or spray-out from flanged connections. Their purpose is to temporarily contain hazardous leaks and sprays.**

Service

Novus SPRAY BARRIER® CLEAR - Safety Spray Shield is designed to prevent injury to personnel or damage to adjoining equipment in the event of a spray out or leak at a joint or connection in accordance with Healthy and Safety Guidelines for Pressure Equipment Regulations. The Novus SPRAY BARRIER® - CLEAR Safety Shield is fabricated for use on flanges or special applications. The design enables leaks to be released without danger, avoiding pressure build-up within the shield.

Application

Novus SPRAY BARRIER® CLEAR - Safety Spray Shield are recommended in the chemical, power generation, pharmaceutical, pulp paper, food and other vital manufacturing applications in which corrosive environments are frequently used.

Material of Construction

Novus SPRAY BARRIER® CLEAR - Safety Shields are constructed of ECTFE with a reinforced ETFE Mesh and a heavy duty, over centred quick release Velcro fastener with a leak detection PH indicator.

Physical properties

Temperatures up to 200°C and 75 Bar




- **Novus Economy – This is a general grade and used for process applications such as water (Not potable / Drinking water), air, fire systems etc. (Gold water cooling sections)**

TECHNICAL SPECIFICATION

COMPRESSED NON-ASBESTOS JOINT SHEET *ECONOMY*

Characteristic

General purpose jointing made from synthetic fiber with nitrile rubber binder. Medium quality cost effective sheet material for low temperature and pressure applications. For most industrial and marine applications suitable for use with solvents, gases, lubricating oil, low pressure steam and most dilute acids and alkalis.

Application Standards

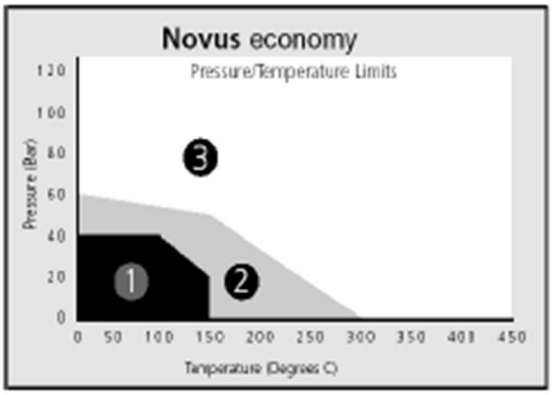
ASTM F 104

Properties

Test Item		Unit	Result
Density		g/cm^3	1.7-1.8
Tensile Strength		km/mm^2	1.2 Min
Compressibility		%	7-17
Recovery		%	40 Min
ASTM OIL #3	Thickness Increase	%	10 Max
	Tensile Loss	%	30 Max
ASTM Fuel B	Thickness Increase	%	10 Max
	Weight Increase	%	10 Max
Ignition Loss		%	35 Max
Flexibility (F≤12)			No-Break

* All data are typical values.

Use



1) - Suitable Subject to Chemical Compatibility
2) - Suitable in some cases but check your application with Novus
3) - Contact Novus Technical Team

Standard Size

(Unit: mm)

Thickness	0.4 ~ 4.8
Size	2000x1500mm

- **Novus 34 – Potable water, low temp steam (Inlet side), especially there where certification is important.**

Data / Specification Sheet • Novus 34

Novus 34 is a superior performance universal compressed sheet material based on a blend of aramid/ inorganic fibres and special additives, with high quality nitrile rubber binder system.

Service

Novus 34, a superior performance material with excellent mechanical properties, it is suitable for many applications including oils, solvents, high pressure steam and gases including oxygen.

Approvals / Compliance

WRAS Potable Water:
Registration No. 1406501

BAM (Oxygen service) up to 60°C and 160 bar

Complies with BS Specification 7531 Grade X

TA-LUFT
(in accordance with VDI Guideline 2440)

GL Approval cert 37702 – 12HH

API 6FB Fire-safe

Availability

Thickness range:
0.25mm to 6.0mm

Standard sheet sizes:
2.0m x 2.0m
2.0m x 1.5m
2.0m x 1.0m
1.5m x 1.5m
1.5m x 1.0m

Standard roll sizes:
Up to a maximum size of 6.0m x 2.0m

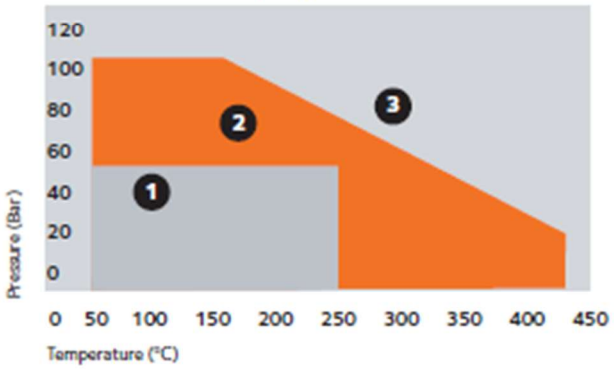
Available with fine mesh mild steel reinforcement: Novus 34 Metallic or gauze mild steel wire reinforcement: Novus 34 GWI.

It can be supplied with anti-stick coating and graphite coating.

Typical Physical Properties

Thickness		1.5mm	3mm
Density		1.75g/cc	1.77g/cc
Tensile Strength	ASTM F152	9-11MPa	8-10MPa
Compression	ASTM F36	9%	8%
Recovery	ASTM F36	55% min	55% min
Residual Stress	BS 7531 (300°C) DIN 52913	26MPa 32MPa	17MPa
Gas Leakage	BS 7531	<1.0cc/min	<1.0cc/min
ASTM Oil 1	Thickness increase	1.0%	1.5%
IRM 903 Oil	Thickness increase	2.5%	2.7%
ASTM Fuel B	Thickness increase	3.0%	3.2%

Novus 34 Pressure/Temperature Limits



1. Suitable subject to chemical compatibility.
2. Suitable in some cases but check your application requirements with Flexitallic.
3. Contact the Technical Team for applications with higher temperatures and pressures. Applicable to 2.0mm and below.

The operating temperature of non-asbestos sheet material is related to the thickness of materials selected. Thinner materials give better temperature and pressure properties.

- **Uniflon 50 – Acidic applications especially for Sulphuric Acids (Copper / Uranium and Zinc operations), HCL etc.**

Data / Specification Sheet • Novus Uniflon 50

Novus Uniflon 50 is a superior performance biaxially orientated PTFE sheet sealing material with highly conformable properties, ideally suited to standard and irregular flanges.

Service

Novus Uniflon 50 is specifically designed for use in low bolt loaded irregular flanges. Typical flanges include glass lined, ceramic, plastic coated or uneven and badly distorted flanges. It is suitable for sealing all chemicals across the whole pH range with the exception of molten alkali metals. (See the chemical resistance chart for information).

Approvals / Compliance

Conforms with FDA21 CFR 177.1550 regulations.

Availability

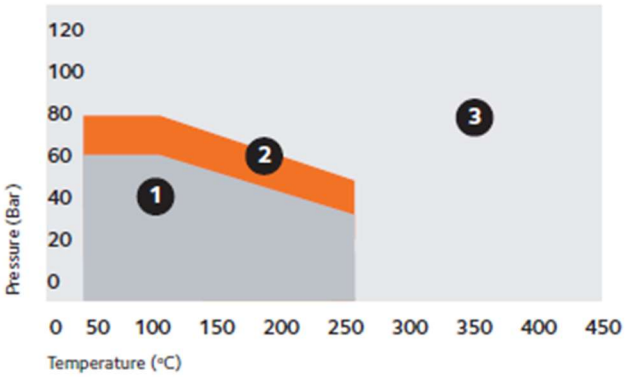
Thickness range:
0.75mm to 3.0mm

Standard sheet sizes:
1.0m x 1.0m
1.5m x 1.0m
2.0m x 1.0m
1.5m x 1.5m
2.0m x 1.5m
2.0m x 2.0m

Physical properties

Thickness		1.5mm
Density		1.4g/cc
Tensile Strength	ASTM F152	11MPa
Compression	ASTM F36	40%
Recovery	ASTM F36	30% min
Residual Stress	DIN @ 175°C	25MPa
Creep Relaxation	ASTM F38	35%
Gas Permeability	DIN 3535	<0.02cc/min
Liquid Leakage	ASTM F37	0.23ml/hr

Novus Uniflon 50 Pressure/ Temperature Limits



1. Suitable subject to chemical compatibility.
2. Suitable in some cases but check your application requirements with Flexitallic.
3. Contact the Technical Team for applications with higher temperatures and pressures. Applicable to 1.5mm and below.

The operating temperature of non-asbestos sheet material is related to the thickness of materials selected. Thinner materials give better temperature and pressure properties.

- **Uniflon 53 – High PH applications such as Caustic soda (Will most probably find in some Uranium and Copper plants).**

Data / Specification Sheet • Novus Uniflon 53

Novus Uniflon 53 is a high performance biaxially orientated PTFE sheet material with a barium sulphate filler.

Service

Novus Uniflon 53 is a general purpose grade for sealing applications across the whole pH range. It is suitable for use with hydrofluoric acid, but not pure liquid hydrogen fluoride. It can also be used with alkalis, solvents, fuels, water, steam and chlorine.

Temperature / Pressure

Maximum recommended service temperature 260°C.

Maximum recommended operating pressure 85 bar (1235psi).

The maximum temperature and pressure cannot necessarily be used simultaneously.

Approvals / Compliance

Conforms with FDA21 CFR 177.1550 regulations.

Availability

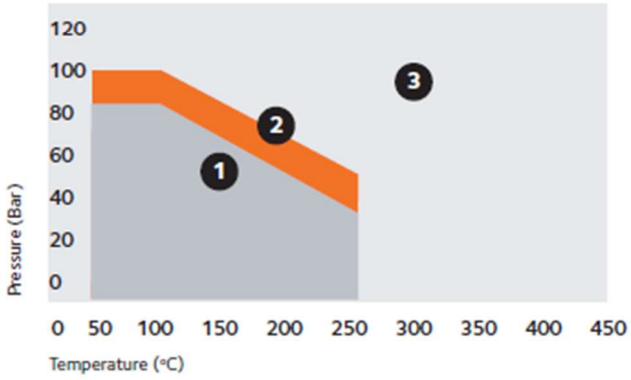
Thickness range:
0.75mm to 3.0mm

Standard sheet sizes:
1.0m x 1.0m
1.5m x 1.0m
2.0m x 1.0m
1.5m x 1.5m
2.0m x 1.5m
2.0m x 2.0m

Physical properties

Thickness		1.5mm
Density		3.0g/cc
Tensile Strength	ASTM F152	14MPa
Compression	ASTM F36	5%
Recovery	ASTM F36	40% min
Residual Stress	DIN @ 175°C	30MPa
Creep Relaxation	ASTM F38	21%
Gas Permeability	DIN 3535	<0.01cc/min
Liquid Leakage	ASTM F37	0.22ml/hr

Novus Uniflon 53 Pressure/ Temperature Limits



1. Suitable subject to chemical compatibility.
2. Suitable in some cases but check your application requirements with Flexitallic.
3. Contact the Technical Team for applications with higher temperatures and pressures. Applicable to 1.5mm and below.

The operating temperature of non-asbestos sheet material is related to the thickness of materials selected. Thinner materials give better temperature and pressure properties.

- **Spirals – recommended for High Temperature or Pressure applications (Steam plants / Boilers and converters)**

Data / Specification Sheet • Novus Spiral Wound Gaskets

Novus Spiral Wound Gaskets consist of a V-shaped metal strip spirally wound in combination with a soft, filler material. The metal strip provides outstanding recovery, while the flexible filler guarantees excellent sealing. Due to this combination of materials the spiral wound gasket is suitable for sealing under severely fluctuating temperature and pressure conditions. Depending on the application, the spiral wound gasket can be specified with outer and/or inner rings.

Properties

Spiral wound gaskets are suitable for use across a wide gasket stress range.

Spiral wound gaskets can be used to seal fluid pressures up to 250 bar and from cryogenic temperatures up to elevated temperatures of 1000°C.

Because of the robust design of the spiral wound gasket, it is simple to install without damage, although care should be taken in transporting and installing large diameter gaskets without inner or outer guide rings.

The outer guide ring simplifies assembly and prevents blow out of the gasket.

By combining different winding materials and metals, the gasket can be tailored to suit a wide variety of operating conditions.

The gasket in non adhesive and is easily removed.

Spiral wound gaskets will not damage flange surfaces.

Flange surface

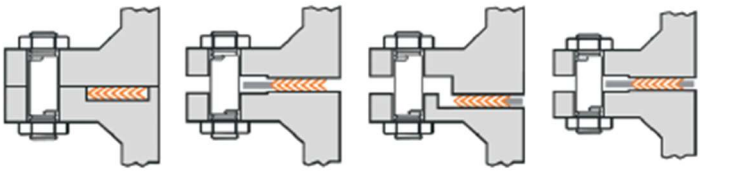
The recommended surface roughness of the flange faces, between which a spiral wound gasket is to be mounted, is 3.2 - 6.3 umRa (125-250 RMS), also referred to as a smooth finish.

Seating stress

Spiral wound gaskets should preferably be mounted within the following gasket stress range to ensure a leak-proof connection.

Filler	Single side confined			Both sides confined		
	Gasket stress (20°C)			Gasket stress (20°C)		
	Min (N/mm²)	Opt (N/mm²)	Max (N/mm²)	Min (N/mm²)	Opt (N/mm²)	Max (N/mm²)
Graphite	50	95	180	50	122	400
PTFE	50	80	130	50	110	250
Non-Asbestos	55	90	150	55	130	300

Standard profiles

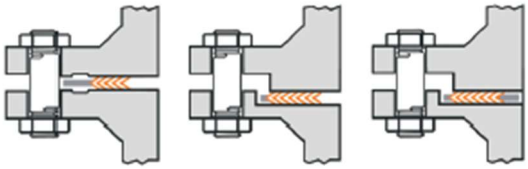


Type RF1
Gasket only

Type SG
Gasket with guide ring to act as compression stop

Type RF-IR
Gasket with inner ring

Type SG-IR
Standard gasket with inner ring and outer rings



Type SG-RTJ
Special gasket for RTJ flanges

Type HX-R
For large diameter heat exchangers

Type HX-RIR
As HX-R but with inner ring

Continued…

Data / Specification Sheet • Novus Spiral Wound Gaskets

Special profiles

In the event of a graphite filled spiral wound possibly causing an undesirable reaction between graphite and the medium to be sealed, or of a possible medium contamination, the problem can be solved by using a spiral wound gasket with a GT-Zone.

The spiral wound element of a GT-Zone gasket consists of outer windings of non-asbestos or ceramic material with a central winding zone made of graphite or PTFE (depending on the operating conditions) to improve gas tightness.

The result is a spiral wound gasket which will not pollute the sealed medium and gives excellent gas tightness.

Profile selection

Advantages of centering ring:

- Optimum gasket positioning between bolts
- Protection of the sealing element
- Additional security against gasket blow-out
- Acts as a compression limiter preventing overloading and over-compression of the spiral wound element
- Prevents radial flow of soft fillers, such as PTFE

Advantages of inner ring:

- Prevents radial flow of soft fillers, such as PTFE
- Reduces turbulence, minimising flow resistance and crevice corrosion
- Acts as an additional heat shield when the spiral wound gasket is subjected to high temperatures
- Inner and outer rings are particularly recommended for use on spiral wound gaskets exceeding class 600lbs, but specifically recommended for high temperatures and pressures to optimise reliable sealing performance
- For special flanges (male-female, tongue and groove etc) the type of spiral wound gasket selected will depend on the flange geometry, operating conditions and bolt specifications. Novus specialists will be pleased to assist you were necessary.

Filler material

The table below may be used to select the correct filler. It should be pointed out that graphite will be the optimum filler in most cases. Only where graphite could cause media pollution, or is not chemically resistant, should the use of another type of filler material be recommended, In such cases, an alternative solution might be to use a gasket with a GT-Zone.

Material	Temp (°C) Min	Temp (°C) Max	Max. Op Pressure (Bar)	Gas Tightness	Application
Graphite	-200	550	250	Good	Aggressive Media
PTFE	-200	250	100	Good	Aggressive Media
Non-Asbestos	-100	250	100	Good	Liquids & Gases
Novus Hi-Temp	-200	1100	100	Poor	Very High Temp.

Graphite

Graphite is a universally applicable, high quality material with the following properties:

- Very good chemical resistance
- Resistance to high (fluctuating) temperatures and pressures
- Resistant to ageing
- Excellent gastightness

PTFE

PTFE is a high quality synthetic material with the following properties:

- Excellent chemical resistance
- Resistant to temperatures up to 250°C
- Resistant to ageing
- Excellent gastightness

Novus Hi-Temp

Is an aluminium silicate suitable for applications at high operating temperatures. The material is characterised by poor gastightness and is therefore used in combination with graphite.

VALVES

S.M.E.I. PROJECTS

Gate Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Brass gate valve		Screwed BSP	8 mm to 80mm	PN20/Class 125 (8mm to 80mm)- suitable for 20 bar at 100°C/9 bar at 180°C, (15mm to 100mm)- suitable for 16 bar at 100°C	Screwed bonnet
Bronze gate valve		Screwed BSP	8 mm to 80mm	PN25/Class 150 (8mm-80mm) - suitable for 25 bar at 100°C, PN32/Class 200 (15mm-50mm) - suitable for 32 bar at 120°C,	Screwed or Union bonnet
Cast-Iron gate Valve		Flanged BST10 Table" D or E" & Flanged ANSI 125	50 mm to 200mm	Class 100 (50mm-200mm) - suitable for 14 bar at 38°C, Class 125 (50mm-600mm) - suitable for 13,8 bar at 65°C,	Rising & Non-rising stem
Cast Steel Gate Valve		Flanged ANSI 150RF,300 RF 600 RF	50mm to 600mm	Class 150 (50mm to 600mm)- suitable for 19,6 bar at 38°C,Class 300 (50mm to 300mm)- suitable for 51,1 bar at 38°C, Class 600 (50mm to 200mm)- suitable for 102,1 bar at 38°C	Enclosed bevel gearbox operated 150mm,200mm &300mm above.
Forged Steel Gate Valve		Screwed or Flanged	15mm to 50mm	(15mm to 50m) - Suitable for 19,6 bar/51,0 bar/102 bar/255 bar at 38°C.	Bolted or Welded Bonnet
Stainless Steel Gate Valve		Screwed or Flanged	15mm to 50mm	(15mm to 50mm)- Suitable for 13,8 bar up to 177°C, (25mm to 200mm)- Suitable for 19,0 bar at 38°C	Solid/ Flexi Wedge Disc, Screwed Bonnet
Ductile iron Gate Valve		Flanged	15mm to 400mm	PN16-Suitable for up to 16 bar. Max temperature -20°C to 100°C	Bolted bonnet, rising or Non-rising spindle, hand wheel operated.EPDM encapsulated gate.
Knife Gate Valve with metal/EPDM Seat		Semi Lugged Wafer Body Drilled and Tapped to Suit PN10 RF Flanges	50mm to 600mm	Suitable for up to 10 bar (size determined) Max temperature determined on the Type of body.	Cast Iron/Ductile iron Body ,304SS Gate, Gearbox Operated. Optional- Rubber Sleeves, backing plates & Guards

Globe Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Bronze Globe Valve		Screwed BSP	15mm to 50mm	PN20/Class 125 (15mm-50mm) - suitable for 20 bar at 100°C, PN32/ Class 200 (15mm-50mm) - suitable for 32 bar at 100°C,(8mm to 80mm- suitable for 32 bar at 120°C	Screwed or Union bonnet
Cast Iron Globe Valve		Flanged ANSI 125	15mm to 300mm	Class 125- suitable for 13,8 bar at 65°C/8,6 bar at 230°C	Angle disc, rising stem
Carbon Steel Globe Valve		Flanged ANSI 150RF/300RF/600RF	15mm to 200mm	(50mm to 200mm) - suitable for 19,6 bar at 38°C, (50mm to 150mm)- suitable for 51,1 bar at 38°C, (50mm to 100mm- suitable for 102,1 bar at 38°C, (15mm to 50mm)-suitable for 136 bar at 38°C	Swivel Plug Disc, bolted or welded bonnet
Stainless Steel Globe Valve		Screwed BSP or Flanged ANSI 150RF	15mm to 300mm	(15mm to 50mm)- suitable for 13,8 bar up to 177°C, (25mm to 100mm)- suitable for 19,0 bar at 38°C/12 bar at 250°C	Swivel plug Disc, screwed bonnet

Ball Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Nickel plated Brass Ball Valve		Screwed BSP	15mm to 25mm	Suitable for 15 to 12 bar at 20°C	Full bore, chrome plated ball, standard lever
Cast Iron Ball Valve		Flanged ANSI 150 RF/300RF	15mm to 300mm	Class 150 (15mm to 300mm) - suitable for 19 bar at 38°C/ 10 bar at 200°C, Class 300 (15mm to 300mm)- suitable for 50 bar at 38°C/10 bar at 200°C	Reduced / Full bore,1,2 or 3 piece body, lockable lever
Stainless Steel Ball Valve		Screwed or Flanged	8mm to 100mm	(8mm to 100mm)- suitable for 69 bar at 38°C/ 5 bar at 200°C, (150mm to 200mm) - suitable for 19 bar at 38°C/10 bar at 200°C, (8mm to 80mm) - suitable for 136 bar at 38°C/10 bar at 200°C	Reduced/Full Bore,1,2 or 3 piece body, lockable lever,PTFE seats, L/T Ports

Strainers & Piston Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Brass Y-Type Strainers		Screwed BSP	8mm to 100mm	Suitable for up to 16 to 20 bar (size determined) at 100°C	304 Stainless steel screen
Bronze Y-Type Strainers		Screwed BSP	15mm to 50mm	PN32-Suitable for 32 bar at 100°C/14 bar at 260°C	304 Stainless steel screen with 0,75mm holes
Cast Iron Y-Type Strainers		Screwed BSP or Flanged PN10/16 FF	15mm to 80mm	PN16- Suitable for up to 16 bar and up to 100°C	304 Stainless steel screen with 0,6 to 2mm holes(15mm to 80 mm), 1-3mm holes (50mm to 250mm)
Stainless Steel Y-Type Strainers		Screwed BSP	15mm to 50mm	Suitable for 20 bar up to 230°C	304 Stainless steel screen with 1,7mm holes
Piston Valves		Screwed BSP, Flanged or Socketed	15mm to 200mm	PN40 -(15mm to 200mm) /PN63 -(15mm to 50mm)- Suitable for -10°C to 400°C	Bolted bonnet, graphite rings, handwheel operated. Materials: Cast iron (PN16 Only), Cast steel & Stainless Steel (PN63)

Butterfly & Pressure Reducing Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Stainless Steel or Cast Iron Butterfly Valve		Wafer Type Body	50mm to 600mm	PN16 (50mm to 600mm)- suitable for up to 16 bar. Max temperature 80°C-100°C	Pinless disc, lockable trigger lever operated or gearbox operated
Brass Pressure Reducing Valve		Screwed BSP	15mm to 20mm	(15mm to 20mm)- suitable for up to 15 bar max inlet & adjustable between 1-4 bar outlet, (15mm to 100mm)- suitable for up to 25 bar max inlet & adjustable between 1-6 bar outlet. min/max temperature of 0°C/+80°C	8mm outlet pressure gauge connection
Cast Iron Pressure Reducing Valve		Screwed BSP	15mm to 20mm	Suitable for 10 bar max inlet & adjustable between 1-4 bar outlet, min/max temperature of 0°C/+200°C	

Check Valves

Type		Connection Type	Size	Pressure & Temperature rating	Additional Information
Brass Check Valve		Screwed BSP	10mm to 100mm	Suitable for 16 to 8 bar(size determined) at 90°C maximum	Swing Type, NBR Seat (sizes 10mm to 50mm), metal seat (sizes 65mm to 100mm)
Bronze Check Valve		Screwed BSP	15mm to 50mm	PN20/Class 125 (15mm-50mm) - suitable for 20 bar at 100°C, PN32/ Class 200 (8mm-15mm) - suitable for 32 bar at 100°C,PN25/Class 150 (10mm to 50mm) -suitable for 25 bar at 100°C, PN32-Class 200 (15mm to 50mm)-suitable for 32 bar at 120°C	Y/Straight pattern, swing/lift type, Screwed & Union cap
Cast Iron Check Valve		Flanged ANSI 125	50mm to 300mm	Class 125- Suitable for 13,8 bar at 65°C/ 8,6 bar at 230°C	Swing type
Carbon Steel Check Valve		Flanged ANSI 150RF/300RF/600RF or Screwed NPT,SW or BW	15mm to 50mm	(15mm to 50mm) -Suitable for 136 bar at 38°C or 255 bar at 38°C, (50mm to 150mm)- suitable for 102,1 bar at 38°C, (50mm to 200mm) suitable for 51,1 bar at 38°C, (50mm to 250mm)- suitable for 19.6 bar at 38°C	Bolted Cap, piston/ Ball type Disc
Stainless Steel Check Valve		Flanged ANSI 150 RF or Screwed BSP	15mm to 50mm	(15mm to 50mm)- suitable for 13,8 bar up to 177°C, (25mm to 200mm)- suitable for 19,0 bar at 38°C/12 bar at 250°C	Swing type, bolted or Screwed cap
Wafer Cast Iron Dual plate Check Valve		Wafer Type Body	15mm to 600mm	PN16 - suitable for 16 bar up to 100°C	Nickel plated ductile iron plates or stainless steel plates, vulcanised NBR seat,316SS pins and springs