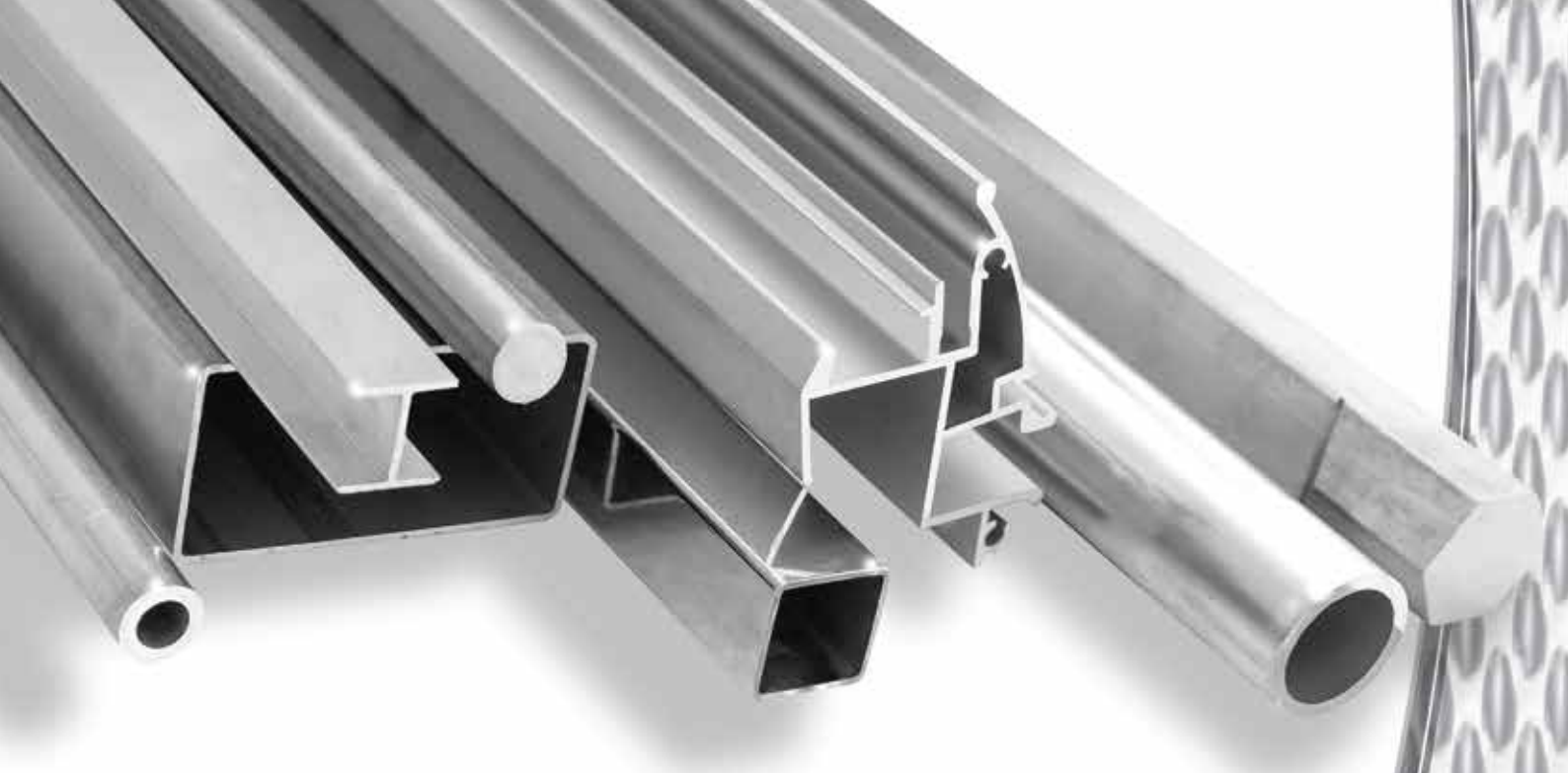


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STAINLESS STEEL APPROXIMATE GRADE EQUIVALENTS

OLD* EN SERIES	USA RSA	UNITED* KINGDOM	GERMANY* WERKSTOFF	DIN UNS GRADE	FRANCE*	SWEDEN*	ITALY* UNI	JAPAN* JIS	EURONORM*
-	201	284 S 16	1.4372	X 12 CrMnNi 17-7-5	-	-	-	SUS 201	X 12 CrMnNi 17-7.5
-	301	301 S 21	1.4310	X 10 CrNi 18-8	Z 12CN 17-08	14 2331	X 12 CrNi 1707	SUS 301	X 10 CrNi 18-8
58A	302	302 S 25	1.4325	X 9 CrNi 18-9	Z 10CN 18-08	14 23321	X 12 CrNi 1809	SUS 302	-
58 M	303	303 S 22	1.4305	X 10 CrNiS 18-9	Z 10CNF 18-09	-	-	-	X 8 CrNiS 18-9
-	303Se	303 S 41	1.4625	X 12 CrNiSe 18-9	Z 10CNF 18-09	14 2346	X 10 CrNiS 1809	SUS 303SR	-
58E	304	304 S 15	1.4301	X 5 CrNi 18-10	Z6CN 18-09	14 2333	X 5 CrNi 1810	SUS 304	X 4 CrNi 18-10
-	304L	304 S 11	1.4306	X 2 CrNi 19-11	Z2CN 18-10	14 2352	X 2 CrNi 1811	SUS 304L	X 2 CrNi 19-11
-	305	-	1.4312	X 4 CrNi 18-12	Z8CN 18-12	-	-	SUS 305	-
-	309	309 S 24	1.4828	X 15 CrNiSi 20-12	Z15CN 24-13	-	X 16 CrNi 2314	-	-
-	309S	-	1.4833	X 12 CrNi 23-13	-	-	-	-	-
-	310	310 S 24	1.4841	X 15 CrNiSi 25-21	Z12CN 25-20	14 2361	X 6 CrNi 2520	-	-
-	310S	-	1.4845	X 8 CrNi 25-21	-	14 2361	X 6 CrNi 2520	-	-
58J	316	316 S 31	1.4401	X 5 CrNiMo 17-12-2	Z6CND 17-11	14 2343	X 8 CrNiMo 1713	SUS 316	X 4 CrNiMo 17-12-2
-	316L	316 S 11	1.4435	X 2 CrNiMo 18-14-3	Z2CND 17-12	14 2348	X 2 CrNiMo 1712	SUS 316L	X 2 CrNiMo 18-14-3
-	316Ti	320 S 31	1.4571	X 6 CrNiMoTi 17-12-2	-	14 2350	-	-	-
-	317	317 S 16	1.4436	X 5 CrNiMo 17-13-3	-	-	-	SUS 317	X 4 CrNiMo 17-13-3
58C	321	321 S 31	1.4541	X 6 CrNiTi 18-10	Z6CNT 18-12	14 2337	X 6 CrNiTi 1811	SUS 321	X 6 CrNiTi 18-10
58G	347	347 S 31	1.4550	X 6 CrNiNb 18-10	Z6CNNb 18-11	14 2338	X 8 CrNiNb 1811	SUS 347	X 6 CrNiNb 18-10
-	403	403 S 17	1.4024	X 15 Crl 3	Z 12 C 13	14 2301	-	SUS 403	X 15Cr13
-	405	405 S 17	1.4002	X 6 CrAl 13	Z6CA 13	-	X 6 CrAl 13	SUS 405	X 6 CrAl 13
-	409	409 S 19	1.4512	X 2 CrTi 12	-	-	-	-	X 2 CrTi 12
56A	410	410 S 21	1.4006	X 10 Cr 13	Z 12C 13	14 2302	X 120-13	SUS 410	X 12Cr 13
56AM	416	416 S 21	1.4005	X 12 CrS 13	-	-	X 12 CrS 13	-	-
56D	420	420 S 45	1.4021	X 20 Cr 13	Z 20C 13	14 2304	X 30 Cr13	SUS 420JI	X 20 Cr 13
60	430	430 S 17	1.4016	X 6 Cr 17	Z 8C17	14 2320	X 8 Cr 17	SUS 430	X 6 Cr 17
-	430F	-	1.4104	X 12 CrMoS 17	Z 10CF 17	14 2383	X 10 CrS 17	SUS 430F	-
57	431	431 S 29	1.4057	X 17 NCrNi 16-2	Z 15CN 16-02	14 2321	X 16 CrNi 16	SUS 431	-
-		-	1.4462	X 2 CrNiMoN 22-5-3	Z 2CND 22-05-03	14 2337	-	-	X 2 CrNiMoN 22 5 3
-		-	1.4362	X 2 CrNiM 23-4	Z 2 CN 23-04 AZ	14 2327	-	-	X 2 CrNiN 23-4
-	441	-	1.4509	X 2 CrTiNb 18	-	-	-	SUS441	X 2 CrTiNb 18
-	439	-	1.4510	X 3 CrTi 17	-	-	-	SUS439	X 3 CrTi 17
-	444	-	1.4521	X 2 CrMoTi 18-2	-	14 2326	-	SUS 444	X 2 CrMoTi 18-2

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STAINLESS STEEL CHEMICAL ANALYSIS

A.I.S.I.	DIN	UNS	B.S. 1449	SS	ANFOR	C MAX	Mn	P MAX	S MAX	Si MAX	Cr	NI	Mo	Other
3CR12	EN No.	409 S1	S41003	-	-	0.03	2	0.04	0.015	1	10.5 - 12.5	0.03 - 1.5	-	-
410S	1.4003	-	S41008	-	-	0.08	1	0.04	0.015	1	11.5 - 13.5	0.6	-	-
409	1.4006	409 S19	S40900	-	Z 6 CT 12	0.03	1	0.04	0.015	1	10.5 - 11.75	0.5	-	Ti:6x(C+5) to 0.5
430	1.4512	430 S17	S430000	2320	Z 8 C 17	0.08	1	0.04	0.015	1	16 - 18	0.75	-	-
439	1.4016	-	S43932	-	-	0.03	1	0.04	0.015	1	17 - 18	-	-	Ti:x4(C+N+0.15 to 0.8)
441	1.4510	-	S43940	-	-	0.03	1	0.04	0.015	0.75	17.5 - 18.5	-	-	Nb(3xC+0.3-1.0) Ti(0.1-0.6)
434	1.4509	-	-	-	-	-	-	-	-	-	-	-	-	-
436	-	-	-	-	-	-	-	-	-	-	-	-	-	-
444	-	-	S544400	-	-	0.025	1	0.04	0.015	1	17.5 - 19.5	1	1.75 - 2.5	Ti:4x(C+N)+0.15 to 8
2001	1.4521	-	S32001	-	-	0.03	4-6	0.035	0.015	1	19 - 21.5	1 - 3	0.6	(CU: 1 max)
2304	1.4482	-	S32304	-	-	0.03	2	0.035	0.015	1	22 - 24	3.5 - 5.5	0.1 - 0.6	(CU 0.1 - 0.6)
LDX2101®	1.4362	-	S32101	-	-	0.04	4 - 6	0.04	0.03	1	21.5	1.5	0.3	-
2205	1.4162	318 S13	S32205	2377	Z1 NCDU 22.05	0.02	2	0.035	0.015	1	22 - 23	4.5 - 6.5	2.5 - 3.5	-
2507	1.4462	-	S32570	2328	Z3 CND 25.06	0.02	2	-	0.03	1	25	7	2	NO.27
201L	1.4410	284 516	S520100	-	-	0.03	5.5-7.5	0.045	0.03	1	16 - 18	3.5 - 5.5	-	NO.25
202	1.4371	-	S520200	-	-	0.08	6.5-8	0.045	0.015	0.75	15 - 17	3.5 - 5	2.5 - 3.5	NO.25
301	1.4373	301 S21	S30100	2331	Z10 CN 18.09	0.015	2	0.045	0.015	1	16 - 18	6 - 8	-	-
302	1.4318	-	S30200	-	Z10 CNF 18.09	0.12	2	0.06	0.35	1	17 - 19	8 - 10	0.5	-
303	1.4350	303 S31	S30300	2346	-	0.15	2	0.045	0.03	0.75	17 - 19	8 - 10	0.7	-
304	1.4305	304 S15	S30400	2332	Z6 18.09	0.07	2	0.045	0.015	0.75	17.5 - 19.5	8 - 10	-	-
304L	1.4301	304 S11	S30403	2352	Z6 18.09	0.03	2	0.045	0.015	0.75	17.5 - 19.5	8 - 10.5	-	-
304DDQ	1.4306	304 S16	-	-	Z8 CN 18.12	0.07	2	0.045	0.03	1	17 - 19	10.5 - 13	-	-
304H	1.4301	-	S30409	2333	-	0.06	2	0.045	0.03	0.75	17.5 - 19	9 - 11	-	-
305	1.4948	305 S19	S3500	-	Z15 CN 24.13	0.08	2	0.045	0.03	1	17 - 19	10.5 - 13	-	-
321	1.4303	321 S31	S32100	2324	Z6 CNT 18.10	0.08	2	0.045	0.015	0.75	17 - 19	9 - 12	-	-Ti:5X(C+N) to 0.7
329	1.4541	-	S32900	2328	-	0.1	2	0.04	0.03	1	25 - 30	3 - 6	1 - 2	-
316	1.4460	316 S33	S316000	2347	Z6 CN 17.11	0.03	2	0.045	0.015	0.75	16 - 18	10 - 13	2 - 2.5	-
316L	1.4404	316 S13	S316003	2353	Z2 CN 17.13	0.03	2	0.045	0.015	0.75	17 - 18	12.5 - 13	2 - 3	-
316LXK	1.4435	320 S33	-	2367	-	0.8	2	0.045	0.03	1	16.5 - 18.5	11.5 - 14.5	2.5 - 3	Ti5C/0.8
316Ti	1.4573	320 S31	S1635	-	Z6 CNDT 17.12	0.08	2	0.045	0.03	0.75	16.5 - 18	10.5 - 13.5	2 - 3	Ti:5x(C+N) to 0.7
316H	1.4571	-	-	2350	-	0.04-0.1	2	0.045	0.03	0.75	16 - 18	10 - 14	2 - 3	-
317L	1.4438	317 S12	S31703	2337	Z2 CD 19.15	0.03	2	0.045	0.03	1	18 - 20	11 - 15	3 - 4	-
309	1.4828	-	-	-	Z12 CNS 20.12	0.2	2	0.045	0.015	1.5 - 2.5	19 - 21	11 - 13	-	-
309S	1.4833	309 S24	S30908	-		0.08	2	0.045	0.015	0.75	22 - 24	12 - 14	-	-
310	1.4841	310 S24	S31400	-	Z12 CN 25.20	0.25	2	0.045	0.03	1.5	24 - 26	19 - 22	-	-
310S	1.4845	310 S24	S31008	2361	Z12 CN 25.20	0.08	2	0.045	0.015	0.75	24 - 26	19 - 22	-	-
904L	1.4539	904 S13	N08904	2562	Z1NCDU 25.2	0.01	-	-	-	-	19 - 21	24 - 26	4 - 5	(CU 1 -2)

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STAINLESS STEEL MECHANICAL PROPERTIES

Mechanical Properties/ General Information (properties for annealed condition in transverse direction)

Classification		Type	Tensile Strength (MPa)	0.2 Proof Stress (MPa)	Elongation (% in 50mm)	HRB max	Corrosion Properties	Pitting Resistance	Formability	Toughness	Welding Properties
FERRITICS	Utility	3CR12	460	280(<3), 300(≥3)	18(≤4.5), 20(>4.5)	95	Fair	Fair	Fair		Good
		3CR12L	455 - 650	320(≤6), 280(>6)	20(≤6), 18(>6)	95				Fair	
	Standard	410S	415	205	20(≤1.27), 22(>1.27)	89			Good		Restricted
		40910 40920	380 - 560	220	25	88				Low	
		430	450 - 630	280(CR), 260(HR)	20(≤1.27), 22(>1.27)	89	Moderate	Moderate	Very Good		
		430DDQ	450 - 630	280	26	89					
		439Nb	420 - 600	240	23	89					
		441	430 - 630	250	18	88					
	Moly	434	450 - 630	280	22	89		Good	Good		
		436	480 - 560	300	25	89	Very Good		Very Good		
		444	420 - 640	320	20	90					
DUPLEXES	Lean	2001	620	450	25	25*	Good	Very Good	Good	Very Good	Very Good
		LDX2101®	700 - 900(CR) 650 - 850(R)	530(CR) 450(HR)	30	-	Very Good		Very Good		
	Super Standard	2304	650 - 850(CR) 630 - 800(HR)	450(CR) 400(HR)	25	32*				Excellent	Good
		2507	700 - 950(CR)	500(HR)	15	32	Excellent	Excellent	Good	Very Good	Very Good
		2205	655 - 840(HR)	500(CR) 460(HR)	25	31*					
AUSTENITICS	Cr-Ni-Mn	202 301LN	515 650 - 850(CR) 630 - 830(HR)	205 350(CR) 330(HR)	40 45	99 100	Moderate	Moderate	Excellent	Excellent	Excellent
	Cr-Ni	304/ 304H	540 - 750(CR) 520 - 720(HR)	260(CR) 250(HR)	45	90	Good	Good	Drawing		
		304DQ							Deep Drawing		
		304DDQ									
		304L-ASTM	520 - 700(CR) 500 - 700(HR)	220(CR) 200(HR)	45	92			Excellent		
		304L-ASME									
		304LS							Deep Drawing		
		304LDDQ									
		304LN	550 - 750	290	40	95	Very Good	Very Good	Excellent		
		321	520 - 700(CR) 515 - 700(HR)	220(CR) 200(HR)	40	95					
		316L - 1.4404	530 - 700(CR) 520 - 680(HR)	240(CR) 220(HR)	40(CR) 45(HR)	95					
		316L - 1.4435	550 - 700(CR) 520 - 670(HR)	240(CR) 220(HR)	40(CR) 45(HR)	95					
		316LN	580 - 780	300(CR) 280(HR)	40	95					
	Cr-Ni-Mo	316Ti	540 - 690(CR) 520 - 670(HR)	240(CR) 220(HR)	40	95					
		904L	520 - 720(HR)	> - 220(HR)	≤35	70-90	Excellent		Good	Excellent	Good
	Heat Resistant	309S - 1.4833	515 - 700	210	40	95	Very good oxidation resistance		Very Good	Very Good	Very Good
		309S - 1.4828	550 - 750	230	30	96	Very good oxidation resistance				
		310S - 1.4845	515 - 700	210	40	95					

Minimum values, unless range is indicated. HR - Hot Rolled, CR - Cold Rolled, *HRC - Rockwell C.
This table assumes certification to both ASTM & EN 10088 - 2 or 10095, where applicable.

NOTES

1. It is important to note that the values given in the above table are typical/nominal for plate material with respect to those as in the American ASTM Specifications (with the exception of 3CR12). Therefore they must not be used for design or specification purposes.
The above is general properties or annealed condition in transverse direction.
Actual values can differ in different specifications, and/or for different product forms (plate, sheet, coil, bar, forgings, castings, etc.),and for different conditions of supply. (i.e. Annealed vs Heat treated)

STAINLESS STEEL - OTHER PHYSICAL PROPERTIES

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In addition to the usual mechanical properties of tensile strength, proof strength, elongation and hardness, other ancillary properties of Stainless Steel are often required

Property	Unit	Mild Steel	3CR12 3CR12L 410S	409	430 430DDQ	439 441	434	436 444	LDX2101® 2507 2001 2304 2205	202	301 304 304L	321	316L 316Ti	309S	310S	904L
Modulus of elasticity																
in tension	GPa	200	200	200	200	210	210	220	200	200	193	193	193	200	200	190
in torsion		65	77	77	65		65	65			86	86	70	70	70	
Specific heat capacity	J/ kg K	455	478	460	460	460	460	430	470	460	500	500	500	500	500	500
Thermal conductivity	W/ m K															
at 100˚C		73	30.0	23.0	26.1	24.2	26.1	26.8	17.0	24.2	16.2	16.1	16.2	15.6	14.2	
at 500˚C		70	40.0	25.0	26.3	26.3	26.3	27.1	21.1	30.6	21.5	22.2	21.5	18.7	18.5	
Electrical resistivity	1x10-8Ωm	65	67	61	60	63	65	57	80	74	72	72	74	78	78	-
Coefficient of	µm/ m K															
thermal expansion																
0 - 100˚C		12.5	11.1	11.1	10.4	10.2	10.4	10.8	13.0	16.2	17.2	16.6	15.9	15.9	15.9	15
0 - 300˚C		13.0	11.7	11.7	11.0	11.4	11.0	11.6	14.0	17.2	17.8	17.2	16.2	16.6	16.2	-
0 - 500˚C		13.8	12.3	12.4	11.4	11.6	11.4	12.0	14.5	18.6	18.4	18.6	17.5	17.2	17.0	-
Melting range	˚C	-	1430-1510	1480-1530	1425-1510	1390-1460	1480-1530	1405-1495	1410-1460	1400-1450	1400-1450	1390-1430	1390-1430	1400-1450	1400-1450	-
Magnetic		yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no	no

PROPERTIES AT ELEVATED TEMPERATURES

Short-time elevated temperature strength: tensile strength in MPa at indicated temperature.

Temperature ˚C	100	300	500	700	900
3CR12/ 410S	545	415	330		(1)
409	380	350	280	110	
430/ 430DDQ	490	450	330	100	(2)
439Nb	420	360	250	30	
441	460	400	350	200	
434	500	470	400	130	
436	540	480	410	200	
444	500	440	380	160	
2001	570	530			(3)
2304	580	490			(3)
2205	630	560			(3)
304 types	530	480	400	240	70
304L types	480	430	350	200	50
321	540	510	420	260	100
316L types	530	510	420	250	90
316Ti	540	500	450	320	130
309S	580	525	470	300	125
310S	600	530	475	315	135
2507	680	610			
LDX2101®	590				

MAXIMUM TEMPERATURES

Maximum recommended service temperature: in oxidising conditions.

Max Temperature ˚C	Contin-uous	Inter-mittent
Mild Steel	500	600
409/ 3CR12/ 410S	620	730
430/ 430DDQ	730	870
439	830	930
441	850	950
434/ 436	730	870
444	850	950
2001/ 2304/ 2205	300	300
202	780	750
304/ 304L/ 321 types	830	800
316L/ 316Ti types	920	870
309S types	1100	980
310S	1200	1030

CREEP STRENGTH

Stress in MPa required for a creep rate of 1% in 10 000hr.

Temperature ˚C	400	500	600	700	800
3CR12/ 410S	270	56	13	3	0.6
430/ 430DDQ	272	92	31	4	0.7
304 types		233	108	50	23
321			131	51	20
316Ti			147	63	29
309S types		141	72	29	8
310S		145	84	36	9

(1) Do not exceed 800˚C as a phase transformation occurs.
(2) Do not use in temperature range of 450˚C to 500˚C.
(3) Do not use in temperature range of 300˚C to 1 000˚C.

NOTE: the values given are typical. Stainless steels within the same classification (e.g. Austenitic stainless steels) will have similar values, but even slight variations of chemical composition within the specification limits of the same steels will affect the actual value. Reported values are often slightly different, depending on the reference. Many of these properties are temperature dependent. The values given below should not be used as guaranteed or minimum values. Values are typical values and should not be used for design purposes.

Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

ABBREVIATIONS & DEFINITIONS

ANSI	-	American National Standard Institute (most ANSI specifications has been replaced by ASME)
API	-	American Petroleum Institute
ASME	-	American Society of Mechanical Engineers
ASTM	-	American Society for Testing Materials
AWWA	-	American Water Works Association
BBE	-	Bevelled Both Ends
BLE	-	Bevelled Large End
BS	-	British Standards
BSP	-	British Standard Pipe Thread
CPLG	-	Coupling
DDQ	-	Deep Drawing Quality
DIA or 'D'	-	Diameter
DIN	-	Deutsches Institut fur Normung (German Standard)
DOM	-	Direct Off Mill
ECC	-	Eccentric
EFW	-	Electric Fusion Welded
EN	-	European Norms
FF	-	Flat Face
GR	-	Grade
ISO	-	International Standards Organization
JIS	-	Japanese Industrial Standard
LJ	-	Lap Joint
LR	-	Long Radius
LW	-	Lap Weld
MPT	-	Male Pipe Thread
MSS	-	Manufacturers Standardisation Society of the valve and fittings industry
NPS	-	Nominal Pipe Size
NPT	-	National Pipe Thread Taper
NOM	-	Nominal
OD	-	Outside Diameter
OHSACT	-	Occupational Health and Safety Act
PBE	-	Plain Both Ends
PE	-	Plain Ends
PIPE	-	A tube used to convey water, gas, oil, etc
POE	-	Plain One End
PSE	-	Plain Small End (Swage Nipple)
RED	-	Reducer
RF	-	Raised Face
RTJ	-	Ring Type Joint
SABS	-	South African Bureau of Standards
SANS	-	South African National Standards
SCH	-	Schedule
SCRWD	-	Screwed
SF	-	Smooth Finish
SMLS	-	Seamless
SO	-	Slip On
SR	-	Short Radius
SS	-	Stainless Steel
SW	-	Socket Weld
TBE	-	Threaded Both Ends
TOE	-	Thread One End
TOL	-	Threadolet or Tolerance
TPI	-	Thread Party Inspection
TS	-	Tensile Strength
TSE	-	Threaded Small End
TUBE	-	A long, hollow cylinder for conveying or holding liquids or gases.
USW	-	Ultrasonic Welding
UT	-	Ultrasonic Testing
UTS	-	Ultimate Tensile Strength
WN	-	Weld Neck or welding neck
WOG	-	Water Oil and Gas
WOL	-	Weldolet
WP	-	Wrought Product
WP-S	-	Wrought Product, Seamless (as part of the description for wrought fittings. E.g. (WP304L S)
WPW	-	Wrought Product Welded
WPWX	-	Welded with X-Ray (as part of the description for wrought fittings E.g. 90 Degree Elbow WP304L WX)
XS	-	Extra Strong as per ASME B36.10m
XXS	-	Double Extra Strong as per ASME B36.10m

Think Green... THINK EURO STEEL

FORMULAE FOR THEORETICAL MASS CALCULATION & SECTION TOLERANCE

EURO STEEL
STAINLESS STEEL • ALUMINIUM • SPECIAL STEELS

FORMULAE FOR THEORETICAL MASS CALCULATION							
Sections	Formula x Spec	ALI	Brass	Bronze	Copper	Steel	Stainless
Round	D x D x	0.002132	0.006675	0.006924	0.00701	0.00616	0.00631
Hollow	(D-T) x T x	0.0085	0.026	0.02778	0.028	0.02466	0.0253
Flat	W x T x	0.002712	0.00848	0.00882	0.00889	0.00786	0.00804
Square	S x S x	0.002712	0.00848	0.00882	0.00889	0.00786	0.00804
Hexagon	H x H x	0.00235	0.007344	0.007638	0.00776	0.0068	0.00693

TOLERANCE TABLES ROUND BARS ISO h-tolerances are minus tolerances						
ISO h-table Diameter mm	h6	h7	h8	h9	h10	h11
below 3.0	0.006	0.010	0.014	0.025	0.040	0.060
3.0 - 6.0	0.008	0.012	0.018	0.030	0.048	0.750
6.0 - 10.0	0.009	0.015	0.022	0.036	0.058	0.900
10.0 - 18.0	0.011	0.018	0.027	0.043	0.070	0.110
18.0 - 30.0	0.013	0.021	0.033	0.052	0.084	0.130
30.0 - 50.0	0.016	0.025	0.039	0.062	0.100	0.160
50.0 - 80.0	0.018	0.030	0.046	0.074	0.120	0.190
80.0 - 100.0	0.022	0.035	0.054	0.087	0.140	0.220

Reference symbols for hardness and tensile strength ranges of hardness and tempered material Note: Please consult Individual Specifications for Full Mechanical Properties.				
Symbol	Ton f/ SQ In	Mpa (Newtons / sq mm)	Hardness Brinell	Tensile Strength N/mm2
P	35/45	540/695	152/207	550/700
Q	40/50	618/772	179/229	625/775
R	45/55	695/849	201/255	700/850
S	50/60	772/926	223/277	775/925
T	55/65	849/1004	248/302	850/1000
U	60/70	926/1080	269/331	925/1075
V	65/75	1004/1158	293/352	1000/1150
W	70/80	1080/1235	311/375	1075/1225
X	75/85	1158/1312	341/401	1150/1300
Y	80/90	1235/1930	363/429	1225/1375
Z	100 min	1544 min	444 min	1550 min

DIN 1013-TABLE	
Diameter mm	Tolerance
8.0 - 15.0	+/-0.40
16.0 - 25.0	+/-0.50
26.0 - 35.0	+/-0.60
36.0 - 50.0	+/-0.70
51.0 - 80.0	+/-1.00
81.0 - 100.0	+/-1.30
101.0 - 120.0	+/-1.50
121.0 - 160.0	+/-2.00
161.0 - 200.0	+/-2.50

ISO k12-TABLE	
Diameter mm	Tolerance
below 3.0	-0/+0.10
3.0 - 6.0	-0/+0.12
6.0 - 10.0	-0/+0.15
10.0 - 18.0	-0/+0.18
18.0 - 30.0	-0/+0.21
30.0 - 50.0	-0/+0.25
50.0 - 80.0	-0/+0.30
80.0 - 120.0	-0/+0.35
120.0 - 180.0	-0/+0.40

ASTM A484/A484M	
Diameter mm	Tolerance
8.0 - 11.0	+/-0.15
11.0 - 15.5	+/-0.18
15.5 - 22.0	+/-0.20
22.0 - 25.0	+/-0.23
25.0 - 28.0	+/-0.25
28.0 - 31.5	+/-0.28
31.5 - 34.5	+/-0.30
34.5 - 38.0	+/-0.35
38.0 - 50.0	+0.4/-0
50.0 - 63.0	+0.80/-0
63.0 - 90.0	+1.20/-0
90.0 - 115.0	+1.60/-0
115.0 - 140.0	+2.00/-0
140.0 - 165.0	+3.00/-0
165.0 - 200.0	+4.00/-0
200.0 - 300	+4.80/-0
300 - 400	+5.50/-0
400 - 625	+6.50/-0

ASTM A484/A484M	
Diameter mm	Tolerance
8.0 - 11.0	+/-0.15
11.0 - 15.5	+/-0.18
15.5 - 22.0	+/-0.20
22.0 - 25.0	+/-0.23
25.0 - 28.0	+/-0.25
28.0 - 31.5	+/-0.28
31.5 - 34.5	+/-0.30
34.5 - 38.0	+/-0.35
38.0 - 50.0	+0.4/-0
50.0 - 63.0	+0.80/-0
63.0 - 90.0	+1.20/-0
90.0 - 115.0	+1.60/-0
115.0 - 140.0	+2.00/-0
140.0 - 165.0	+3.00/-0
165.0 - 200.0	+4.00/-0
200.0 - 300	+4.80/-0
300 - 400	+5.50/-0
400 - 625	+6.50/-0

• Weights are theoretical estimates, sizes given as a guideline

Think Green. Think EURO STEEL

Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

1 = Not if chlorides are present
2 = Limited data
3 = Depends on the acid
4 = Dry acid fumes, attack may occur if moisture builds up
5 = Anhydrous
6 = Depends on concentration
7 = May discolour with time
8 = In strong solutions only when inhibited
9 = Pitting possible in stagnant conditions
10 = Possibility of pitting
11 = May cause stress corrosion cracking
12 = When free of SO2
13 = May cause contamination of product
14 = Dilute hypochlorites can be used to sterilise some stainless steels
15 = General corrosion may become excessive
16 = 10%
17 = In the absence of impurities
18 = Dilute
19 = Some attack at high temperatures

NR = The material is not recommended
ND = No data is available
R = Indicates that the material is resistant to the named chemical up to the temperature shown, subject to limitations indicated by the footnotes.

MEDIA	UTILITY FERRITICS			Cr- Ni AUSTENITICS			Cr - Ni- Mo AUSTENITICS			DUPLEX		
	20°C	60°C	100°C	20°C	60°C	100°C	20°C	60°C	100°C	20°C	60°C	100°C
Aldehydes	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
Acetic Acid (10%)	R	R	ND	R	R	R	R	R	R	R	R	R
Acetic Acid (glacial & anhydrous)	ND	ND	ND	R	R	ND	R	R	R	R	R	ND
Acetic Anhydride	R2	NR	ND	R2	NR	NR	R	R	NR	R	R	R
Acetyle	NR	NR	NR	R3	R3	R3	R3	R3	R3	R4	NR	NR
Alcohols	R	R	R	R	R	R	R	R	R	R	R	R
Alphatic Esters	R	ND	ND	R	R	R	R	R	R	R	R	R
Alkyl Chlorides	R5	ND	ND	R5	R5	R5	R5	R5	R5	R	R	R
Alum	ND	ND	ND	R	R6	NR	R	R1	NR	R	R	NR
Ammonia	R	R	R	R	R	R	R	R	R	R	R	R
Amyl Acetate	R	R	R	R	R	R	R	R	R	R	R	R
Aniline	R	R	R	R	R	R	R	R	R	R	R	R
Antimony Trichloride	NR	NR	NR	R5	NR	NR	R5	R5	NR	R	R	NR
Aromatic Solvents	R	R	R	R	R	R	R	R	R	R	R	R
Atmospheric: Industrial	R7	ND	ND	R7	ND	ND	R	ND	ND	R	ND	ND
Atmospheric: Marine	R7	ND	ND	R7	ND	ND	R	ND	ND	R	ND	ND
Atmospheric: Rural	R7	ND	ND	R	ND	ND	R	ND	ND	R	ND	ND
Ascorbic Acid	R1	ND	ND	R1	R1	R1	R	R	R	R	R	R
Benzoic Acid	R	R	R	R	R	R	R	R	R	R	R	R
Boric Acid	R	R	R	R	R	R	R	R	R	R	R	R
Brines, Saturated	NR	NR	NR	R8	NR	NR	R8	NR	NR	R	R	R
Bromide (gaseous)	NR	NR	NR	R9	NR	NR	R9	R9	R9	R	ND	ND
Bromide (aqueous)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Butyl Acetate	R	R	R	R	R	R	R	R	R	R	R	R
Calcium Chloride	NR	NR	NR	NR	NR	NR	R8	NR	NR	R10	R10	R10
Carbon Disulphide	R	R	R	R	R	ND	R	R	ND	R	R	R
Carbonic Acid	R	R9	NR	R	R	R	R	R	R	R	R	R
Carbon Tetrachloride	R	R	R	R	R	R	R	R	R	R	R	R
Caustic Soda & Potash	ND	R6	R6	R	R	R6	R	R	R6	R6	R6	ND
Cellulose Paint	R	R	R	R	R	R	R	R	R	R	R	R
Chlorates of Na, K, Ba	ND	ND	ND	R1	R1	R1	R1	R1	R1	R	R	R
Chlorine, dry	ND	ND	ND	R	R	R	R	R	R	R	R	ND
Chlorine, wet	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Chlorides of Na, K, Mg, Ca, Ni, NH4, Al, Sn, Zn	R5	NR	NR	R10	NR	NR	R9	R11	R11	R	R	ND
Chlorosulphonic Acid	ND	ND	ND	NR	NR	NR	R10	NR	NR	ND	ND	ND
Chromic Acid (80%)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Citric Acid	NR	NR	NR	R6	R6	R6	R	R	R6	R	R	R
Cresylic Acids (50%)	R	R	R	R	R	R	R	R	R	R	R	R
Detergents, synthetic	R	R	R	R	R	R	R	R	R	R	R	R
Emulsifiers (all concentrations)	ND	ND	ND	R	R	R	R	R	R	R	R	R
Esters & Ethers	R	R	R	R	R	R	R	R	R	R	R	R
Fatty Acids (> C6)	R	R	R	R	R	R	R	R	R	R	R	R
Ferric Chloride	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluorinated Refrigerants, Aerosols, eg. Freon	R5	R	NR	R5	R	R	R5	R	R	R	R	R
Fluoride, dry	ND	ND	ND	R	ND	ND	R	ND	ND	R	R	ND
Formic Acid	NR	NR	NR	R	NR	NR	R	R	ND	R	R	ND
Fruit Juices	R12	NR	NR	R12	R	R	R	R	R	R	R	R
Gelatine	R1	R1	ND	R1	R	R	R1	R	R	R	R	R
Glycol	R	R	R	R	R	R	R	R	R	R	R	R
Hydrobromic Acid (50%)	NR	NR	NR	NR	NR	ND	NR	NR	ND	NR	NR	ND
Hydrochloric Acid (10%)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Hydrochloric Acid (concentrated)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Hydrocyanic Acid	R	ND	ND	R	R	ND	R	R	ND	R	R	ND
Hydrofluoric Acid	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

CORROSION

MEDIA	UTILITY FERRITICS			Cr- Ni AUSTENITICS			Cr - Ni- Mo AUSTENITICS			DUPLEX		
	20°C	60°C	100°C	20°C	60°C	100°C	20°C	60°C	100°C	20°C	60°C	100°C
Hydrogen Peroxide (30%)	R	R	ND	R	R	R	R	R	R	R	R	R
Hydrogen Sulphide	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5
Hydrochlorite (Na 12 - 14%)	R14	ND	ND	R14	NR	NR	R14	NR	ND	R14	ND	ND
Ketones	R	ND	ND	R	R	R	R	R	R	R	R	R
Lactic Acid (100%)	NR	NR	NR	R	NR	NR	R	R	NR	R	R	ND
Lead Acetate	R	R	R6	R	R	R	R	R	R	R	R	R
Lead Perchlorate	NR	NR	NR	R1	R1	R1	R	R1	ND	ND	ND	ND
Lime (CaO)	R	R	R	R	R	R	R	R	R	R	R	R
Manganate, Potassium (K)	R6	ND	ND	R	R	R	R	R	R	R	ND	ND
Meat Juices	R7	NR	NR	R	R	ND	R	R	ND	R	R	R
Mercuric Chloride	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	R	R
Milk & Milk Products	R	NR	NR	R	R	R	R	R	R	R	R	R
Molasses	R	R	R	R	R	R	R	R	R	R	R	R
Monoethanalamine	R	R	R	R	R	R	R	R	R	R	R	R
Naphthalene	R	R	R	R	R	R	R	R	R	R	R	R
Nitrates of Na, K, NH3, Ag	R	R	R	R	R	R	R	R	R	R	R	R
Nitric Acid (‹ 25%)	R	R15	NR	R	R	R	R	R	R	R	R	R
Nitric Acid (50%)	R	R15	NR	R	R	R	R	R	R	R	R	R
Nitric Acid (90%)	R	NR	NR	R	NR	NR	R	NR	NR	R	NR	ND
Nitric Acid, fuming	ND	NR	ND	R	R2	NR	R	NR	NR	R	NR	ND
Oil, Diesel, Petroleum Spirits	R	R	R	R	R	R	R	R	R	R	R	ND
Oils, essential	R	R	R	R	R	R	R	R	R	R	R	R
Oils, lube with aromatic adds	R	R	R	R	R	R	R	R	R	R	R	R
Oils, vegetable & animal	R	R	R	R	R	R	R	R	R	R	R	R
Oxalic Acid	NR	NR	NR	R6	NR	NR	R6	R16	R16	NR	R	R
Perchloric Acid	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenol	R	R	R	R	R	R	R	R	R	R	R	R
Phosphoric Acid (20%)	NR	NR	NR	R	R	R	R	R	R	R	R	R
Phosphoric Acid (50%)	NR	NR	NR	R	R	NR	R	R	R	R	R	R
Phosphoric Acid (95%)	NR	NR	NR	R	R	NR	R	R	NR	R17	R17	R17
Phosphorous Pentoxide	ND	ND	ND	R	R	R5	R	R	R5	R	R	R
Pyridine	R	R	R	R	R	R	R	R	R	R	R	R
Sea Water	NR	NR	NR	R17	NR	NR	R9	NR	NR	R	R	R
Silicic Acid	R	R	R	R	R	R	R	R	R	R	R	R
Sodium Peroxide	NR	NR	NR	R16	NR	NR	R6	R16	R16	R	R	R
Sodium Silicate	R	R	R	R	R	R	R	R	R	R	R	R
Sodium Sulphate	R6	R6	NR	R	R	NR	R	R	NR	R	R	NR
Starch	R	R	R	R	R	R	R	R	R	R	R	R
Sugar, Syrup & Jam	R12	R12	R12	R12	R	R	R	R	R	R	R	R
Sulphamic Acid	NR	NR	NR	R18	NR	NR	R	R	R19	R	R	NR
Sulphates (Na, K, Mg, Ca, Al, Fe)	R	R	R	R	R	R	R	R	R	R	R	R
Sulphates	NR	NR	NR	R	R	R	R	R	R	R	R	R
Sulphur Dioxide, dry	R	R	R	R	R	R	R	R	R	R	R	R
Sulphur Dioxide, wet	NR	NR	NR	R	NR	NR	R	R	NR	R	R	NR
Sulphur Dioxide, ag, soln (96%)	NR	NR	NR	R	NR	NR	R	R	R	R	R	R
Sulphur Trioxide	NR	NR	NR	NR	NR	NR	R5	R5	R5	R5	R5	R5
Sulphuric Acid (‹ 50%)	NR	NR	NR	NR	NR	NR	R16	NR	NR	R	R	R
Sulphuric Acid (70%)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sulphuric Acid (95%)	R15	NR	NR	R	NR	NR	R	NR	NR	R	NR	NR
Sulphuric Acid, fuming	R2	R2	NR	R	R2	NR	R	NR	NR	R	R	R
Tannic Acid (10%)	R	R	NR	R	R	R	R	R	R	R	R	R
Tartaric Acid	NR	NR	NR	R	R	R	R	R	R	R	R	R
Trichloroethylene	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5
Urea (30%)	R	R	R	R	R	R	R	R	R	R	R	R
Water, pure	R	R	R	R	R	R	R	R	R	R	R	R
Yeast	R	R	R	R	R	R	R	R	R	R	R	R

PITTING & CREVICE CORROSION RESISTANCE:
Exposure in chloride containing media can result in localised corrosion.
In order of increasing resistance to localised corrosion:
3CR12 < 430 < 304L < 316L < 2205

CONDITIONS FOR AVOIDING PITTING & CREVICE CORROSION:
- Design vessels for complete drainage - avoid sharp corners and stagnant areas.
- Close crevices and lap joints by continuous welding.
- Remove solids in suspension. Prevent sedimentation. Ensure continuous agitation and adequate flow rates.
- Use compressive non-absorbent gaskets or inert sealing compounds.
- Ensure non-impairment of passive surface. Repair / restore any affected areas

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Euro Steel offers a diverse range of Stainless Steel Flat Rolled Products, which are available in Plate, Sheet and Coil.
The most common grades of Stainless Steel Sheets that we offer are, 3CR12, 430, 304L, 316L, 310, 310S, 409, 441 and 444. Grade types such as 309, 321, 321H, 347, 904L, 2205, 2304, 2507, 316Ti, 316H, 304H, LDX2101® and other exotic grades are all available on request.



Stainless Steel Sheet, also commonly known as Cold Rolled Sheet, is available in the following finishes: 2B, No.4 with PVC and BA with PVC.
Sheets are also available paper interleaved and can be polished or embossed to your requirements. See Stainless Steel decorative finishes.
Stainless Steel plate, also referred to as hot rolled plate is also available in the same standard widths and lengths as sheet.
Plate is typically available in a No.1 finish which is in a hot rolled, heat treated (annealed) and descaled condition (pickled). Plate can be ordered ex- mill in the hot rolled (HR) condition suitable for products to be further worked.
The hot rolled and heat treated condition without descaling (HRA) is suitable for industrial heat resisting and materials handling applications.

When smoothness and uniformity are required the plates can be further cold rolled to a 2D finish. Standard lengths for Sheet & Plate (in mm) are: 2000, 2500, 3000 and 6000.
Standard widths (in mm) are 1000, 1250, 1500 & 2000.
All materials are produced to the following international specifications:
Tolerances to ASTM A480M, Chemical to ASTM A240, Mechanical to ASTM A240, ASME and other specifications available on request.
Test certificates are supplied as required on all materials delivered.
Density factors used for weight calculations: under 3mm thick Austenitics (such as Grades 304 and 316) 8.07kg/m2: Ferritics (Grades 430 and 3CR12) 8.00kg/m2. Products over 3mm (hot rolled products) or a No.1 finish in South Africa we use a density factor of 8.2 - this applies to Austenitics and Ferritics. Calculate sheet mass as follows:
length (m) x width (m) x thickness (mm) x density factor.
Euro Steel also offers in-house cutting to length, brushing (No.4 polishing or scotchbrite), slitting and blanking to size.

STAINLESS STEEL SHEET

SIZES (mm)	Kg / PLATE 304 / 316 AUSTENITIC	Kg / PLATE 430 / 3CR12 FERRITIC	SIZES (mm)	Kg / PLATE 304 / 316 AUSTENITIC	Kg / PLATE 430 / 3CR12 FERRITIC
2000 x 1000 x 0.5	8.07	8.00	2000 x 1000 x 1.6	25.82	25.60
2500 x 1250 x 0.5	12.61	12.50	2500 x 1250 x 1.6	40.35	40.00
			3000 x 1500 x 1.6	58.10	57.60
2000 x 1000 x 0.7	11.30	11.20			
2500 x 1250 x 0.7	17.65	17.50	2000 x 1000 x 2.0	32.28	32.00
			2500 x 1250 x 2.0	50.44	50.00
2000 x 1000 x 0.9	14.53	14.40	3000 x 1500 x 2.0	72.63	72.00
2500 x 1250 x 0.9	22.70	22.50			
			2000 x 1000 x 2.5	40.35	40.00
2500 x 1250 x 1.0	-	25.00	2500 x 1250 x 2.5	63.05	62.50
			3000 x 1500 x 2.5	90.79	90.00
2000 x 1000 x 1.2	19.37	19.20			
2500 x 1250 x 1.2	30.26	30.00	2000 x 1000 x 3.0	48.42	49.20
3000 x 1500 x 1.2	43.58	43.20	2500 x 1250 x 3.0	75.66	76.88
			3000 x 1500 x 3.0	108.95	110.70
2000 x 1000 x 1.5	24.21	24.00			
2500 x 1250 x 1.5	37.83	37.50	6000 x 1500 x 3.0	217.89	-
3000 x 1500 x 1.5	54.47	54.00	6000 x 2000 x 3.0	290.52	-

STAINLESS STEEL PLATE

SIZES (mm)	Kg / PLATE 304L / 316L / 3CR12 AUSTENITIC / FERRITIC / DUPLEX	SIZES (mm)	Kg / PLATE 304L / 316L / 3CR12 AUSTENITIC / FERRITIC / DUPLEX
2500 x 1250 x 4.5	115.31	6000 x 1500 x 12	885.60
3000 x 1500 x 4.5	166.05	6000 x 2000 x 12	1180.80
6000 x 1500 x 4.5	332.10		
6000 x 2000 x 4.5	442.80	2500 x 1250 x 16	410.00
		3000 x 1500 x 16	590.40
2500 x 1250 x 6	153.75		
3000 x 1500 x 6	221.40	2500 x 1250 x 20	512.50
6000 x 1500 x 6	442.80	3000 x 1500 x 20	738.00
6000 x 2000 x 6	590.40		
		2500 x 1250 x 25	640.63
2500 x 1250 x 8	205.00	3000 x 1500 x 25	922.50
3000 x 1500 x 8	295.20		
6000 x 1500 x 8	590.40	2500 x 1250 x 30	768.75
6000 x 2000 x 8	787.20	3000 x 1500 x 30	1107.00
2500 x 1250 x 10	256.25	2500 x 1250 x 40	1025.00
3000 x 1500 x 10	369.00	3000 x 1500 x 40	1476.00
6000 x 1500 x 10	738.00		
6000 x 2000 x 10	984.00	2500 x 1250 x 50	1281.25
		3000 x 1500 x 50	1845.00
2500 x 1250 x 12	307.50		
3000 x 1500 x 12	442.80		

STAINLESS STEEL COIL

Euro Steel stocks a wide range of cold rolled coils, these come in a variety of thicknesses ranging from (in mm) 0.5, 0.7, 0.9, 1.0, 1.2, 1.5, 2.0, 2.5, 3mm and heavier gauges available on request.
Standard widths (in mm) are 1000, 1250 and 1500. We offer cut to length and slitting to narrow coil widths.
Our services include: decoiling, slitting, blanking and recoiling facilities.
Maximum thickness we can decoil and slit is 3mm.
In coil the most common Grades are 430, 304 and 316. Other Grade types are available on request such as: 304DDQ, 409, 444, 3CR12 etc.

Coil is also typically supplied as Cold Rolled product, and is available in the following finishes: 2B, No.4, Scotch-brite with PVC and BA with PVC.
All materials are produced to the following international specifications: Tolerance to ASTM A480M, Chemical to ASTM A240, Mechanical to ASTM A240. Test certificates are supplied for all materials delivered.
Density factors used for weight calculations Austenitics & Ferritics over 3mm use a density factor of 8.2kg/m2.. Less than 3mm thick Austenitics (such as Grades 304 and 316) 8.07kg/m2: Ferritics (Grades 430 and 3CR12) 8.00kg/m2. Calculate sheet/ coil mass as follows: length (m) x width (m) x thickness (mm) x density factor.



TOLERANCES - HOT ROLLED			
Min gauge (mm)	Max gauge (mm)	- tol (mm)	+ tol (mm)
2.5	3	0.23	0.23
>3	3.5	0.26	0.26
>3.5	4	0.25	0.29
>4	5	0.25	0.31
>5	6	0.25	0.34
>6	8	0.25	0.38
>8	10	0.30	1.15
>10	20	0.30	1.40
>20	25	0.30	1.55
>25	50	0.30	1.80
>50	63.5	0.30	2.50

Tolerances are according to ASTM A480M, ISO 9444-2 and ISO 18286.

TOLERANCES - COLD ROLLED			
Min gauge (mm)	Max gauge (mm)	- tol (mm)	+ tol (mm)
-	0.3	0.030	0.030
>0.3	<0.5	0.040	0.040
0.5	<0.6	0.045	0.045
0.6	0.8	0.050	0.050
>0.8	1.0	0.055	0.055
>1.0	<1.2	0.060	0.060
1.2	<1.5	0.080	0.080
1.5	<2.0	0.080	0.080
2.0	<2.5	0.090	0.090
2.5	<3.0	0.110	0.110
3.0	<4.0	0.140	0.140
4.0	<5.0	0.150	0.150
5.0	6.0	0.150	0.150

Tolerances are according to ASTM A480M & EN ISO 9445-2.



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STAINLESS STEEL DECORATIVE FINISHES















Dimple patterns 5WL and 6WL are available in BA, 2B or No.4 (Satin) finish.

The above finishes are also available in Aluminium. ...to see more decorative finishes - visit our website: www.eurosteel.co.za



IMPRIMO DIMPLE RANGE













STAINLESS STEEL DECORATIVE FINISHES				
SHEET SIZES & THICKNESS (mm)	5WL & 6WL	Ring Polish	No. 4 Satin	Dimple Range
2000 x 1000 x 0.5	✓	✓	On Request	✓
2500 x 1250 x 0.5	✓	✓	On Request	✓
3000 x 1250 x 0.5	✓	✓	On Request	✓
3000 x 1500 x 0.5	✓	✓	On Request	—
2000 x 1000 x 0.7	✓	✓	✓	✓
2500 x 1250 x 0.7	✓	✓	✓	✓
3000 x 1250 x 0.7	✓	✓	✓	✓
3000 x 1500 x 0.7	✓	✓	✓	—
2000 x 1000 x 0.9	✓	✓	✓	—
2500 x 1250 x 0.9	✓	✓	✓	—
3000 x 1250 x 0.9	✓	✓	✓	—
3000 x 1500 x 0.9	✓	✓	✓	—
2000 x 1000 x 1.2	✓	✓	✓	—
2500 x 1250 x 1.2	✓	✓	✓	—
3000 x 1250 x 1.2	✓	✓	✓	—
3000 x 1500 x 1.2	✓	✓	✓	—
2000 x 1000 x 1.5	—	✓	✓	—
2500 x 1250 x 1.5	—	✓	✓	—
3000 x 1250 x 1.5	—	✓	✓	—
3000 x 1500 x 1.5	—	✓	✓	—
2000 x 1000 x 2	—	✓	✓	—
2500 x 1250 x 2	—	✓	✓	—
3000 x 1250 x 2	—	✓	✓	—
3000 x 1500 x 2	—	✓	✓	—

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STAINLESS STEEL TREAD PLATES

Stainless Steel tread plate is a functional, decorative, durable and inexpensive patterned plate commonly used for stair tread and walkways. There are three locally available pattern types of Stainless Steel Tread plate namely “Boomerang” FLOOREX®, “Diamond” and “Butterfly/ H” patterns.

All Patterns of these Stainless Steel tread plates are slip resistant solid floor plates and are available in all grades of Stainless Steel and 3CR12. Tread plate (also commonly referred to as ‘Vastrap’) is available in a variety of finishes namely 2B, shot blast and No.1 (being the most common).
Apart from slip resistance, the advantages of stainless steel tread plate is its corrosion resistance, easy cleaning, low maintenance,hygienic applications and it can withstand high traffic/ wear and tear environments.
Applications include flooring for hospitals, shopping centres and factories for high traffic areas, industrial walkways, pedestrian bridges, escalator approaches, kick plates, stair treads, emergency fire landings and a wide range of other architectural uses

BOOMERANG FLOOREX® PATTERN

Available in the following standard sheet sizes		
length (mm)	width (mm)	thickness (mm)
2500	1250	2
3000	1250	2
6000	1250	2
2500	1250	3
3000	1250	3
6000	1250	3
2500	1250	4.5
3000	1250	4.5
6000	1250	4.5

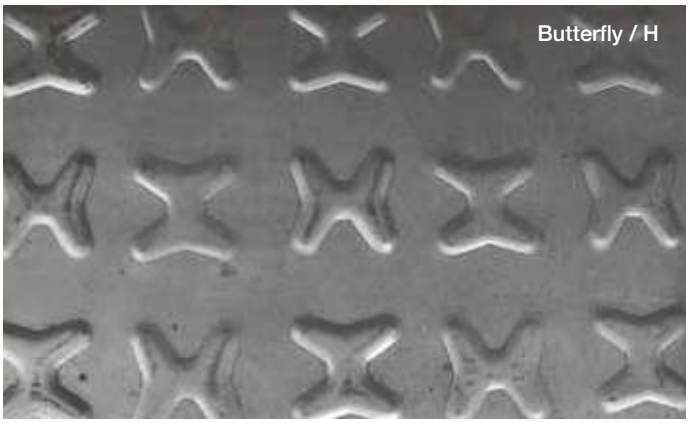


FLOOREX® press is open ended so the limit to the length is only dependant on the availability of input material.
The press width limit is 1250mm

BUTTERFLY H PATTERN

Available in the following standard sheet sizes		
length (mm)	width (mm)	thickness (mm)
2500	1250	4.5
3000	1500	4.5
6000	1500	4.5

Maximum width is 1500mm maximum length is 6000mm



DIAMOND PATTERN

Available in the following standard sheet sizes		
length (mm)	width (mm)	thickness (mm)
2500	1250	3
2500	1250	4.5
2500	1250	6

Please contact us for further details.



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STAINLESS STEEL ROUND BAR
Grades 316, 304, 303 & 431EN47

SIZES (mm)	Kg/m	SIZES (mm)	Kg/m	SIZES (mm)	Kg/m	SIZES (mm)	Kg/m
3	0.057	16	1.615	60	22.716	130	106.639
4	0.101	20	2.524	65	26.660	135	115.000
5	0.158	25	3.944	70	30.919	140	123.676
5.20	0.171	26	4.266	75	35.494	145	132.668
6	0.227	28	4.947	76.20	36.639	155	151.598
6.10	0.235	30	5.679	80	40.384	160	161.536
6.35	0.254	32	6.461	85	45.590	165	171.790
6.50	0.267	35	7.730	90	51.111	180	204.444
8	0.404	36	8.178	95	56.948	185	215.960
8.90	0.500	38	9.112	100	63.100	195	239.938
10	0.631	40	10.096	101.60	65.135	200	252.400
12	0.909	45	12.778	105	69.568	220	305.404
12.70	1.018	48	14.538	110	76.351	230	333.799
13	1.066	50	15.775	115	83.450	250	394.375
14	1.237	50.80	16.284	120	90.864	290	530.671
15.88	1.591	55	19.088	125	98.594	300	567.900



STAINLESS STEEL ANGLE
Grades 304, 304L, 303, 316 & 316L

SIZES (mm)	Kg/m	SIZES (mm)	Kg/m
3mm		5mm	
25 x 25	1.20	25 x 25	2.00
30 x 30	1.45	30 x 30	2.40
40 x 40	1.90	40 x 40	3.20
50 x 50	2.41		
		6mm	
4mm		40 x 40	3.86
25 x 25	1.6	50 x 50	4.82
30 x 30	1.92	65 x 65	6.27
40 x 40	2.57	75 x 75	7.30
50 x 50	3.22		

S/STEEL HEXAGONAL BAR
Grades 316

SIZES (mm)	Kg/m	SIZES (mm)	Kg/m
6	0.25	27	5.05
8	0.44	30	6.24
10	0.69	32	7.10
11	0.84	36	8.98
12	1.00	38	10.01
13	1.17	41	11.65
14	1.36	45	14.03
17	2.00	50	17.33
19	2.50	55	20.96
22	3.35	60	24.95
24	3.99	65	29.28



S/STEEL SQUARE BAR
Grades 316

SIZES (mm)	Kg/m	SIZES (mm)	Kg/m
6	0.29	30	7.24
8	0.51	35	9.85
10	0.80	40	12.86
12	1.16	50	20.10
16	2.06	60	28.94
20	3.22	80	51.46
22	3.89	90	65.12
25	5.03	100	80.40

STAINLESS STEEL FLAT BAR
Grades 304, 304L, 316 & 316L

SIZES (mm)	Kg/m	SIZES (mm)	Kg/m
20 x 3	0.482	50 x 3	1.206
		50 x 5	2.010
		50 x 6	2.412
25 x 3	0.603	50 x 8	3.216
25 x 5	1.005	50 x 10	4.020
25 x 10	2.010		
		65 x 6	3.136
30 x 3	0.724	65 x 10	5.226
30 x 5	1.206		
40 x 3	0.965	75 x 6	3.618
		75 x 10	6.030
40 x 5	1.608		
40 x 6	1.930		
40 x 10	3.216	100 x 6	4.824
		100 x 10	8.040

Weights are theoretical estimates, Sizes given as a guideline.
Other sizes and grades are available on request.

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STAINLESS STEEL ORNAMENTAL TUBING ASTM A554

EURO STEEL
STAINLESS STEEL • ALUMINIUM • SPECIAL STEELS



ORNAMENTAL S/STEEL ROUND TUBING
Grades 304, 316 & 444

SIZE: OD x WT	Kg / m
12.7 x 1.5	0.43
15.9 x 1.2	0.45
15.9 x 1.5	0.55
19.05 x 1.2	0.54
19.05 x 1.5	0.67
22 x 1.5	0.78
25.4 x 1.2	0.73
25.4 x 1.5	0.91
25.4 x 2.0	1.18
31.8 x 1.5	1.15
38.1 x 1.5	1.39
41.2 x 1.2	1.21
50.8 x 1.2	1.51
50.8 x 1.5	1.87
50.8 x 2	2.47
63.5 x 1.5	2.35
76.2 x 1.5	2.83
101.6 x 1.5	3.80

Standard Mirror Polish Finish
(Brushed Finish - Available on request only)

ORNAMENTAL S/STEEL SQUARE TUBING
Grades 304 & 316

SIZE: OD x WT	Kg / m
20 x 20 x 1.5	0.891
25 x 25 x 1.2	0.917
25 x 25 x 1.5	1.132
25 x 25 x 2	1.477
30 x 30 x 1.5	1.373
40 x 40 x 1.2	1.495
40 x 40 x 1.5	1.854
40 x 40 x 2	2.440
50 x 50 x 1.5	2.336
50 x 50 x 2	3.083
60 x 60 x 2	3.725
80 x 80 x 2	5.009
100 x 100x 2	6.293

Standard Brush Finish 180 Grit

ORNAMENTAL S/STEEL RECT. TUBING
Grades 304 & 316

SIZE: OD x WT	Kg / m
40 x 20 x 1.5	1.415
50 x 25 x 1.5	1.768
60 x 30 x 1.5	2.122
60 x 40 x 1.5	2.358
80 x 40 x 1.5	2.830
80 x 40 x 2	3.773
100 x 50 x 1.5	3.537
100 x 50 x 2	4.716

Standard Brush Finish 180 Grit



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ASTM STANDARDS FOR PIPE, FLANGES & FITTINGS

There are many International Standards for stainless and carbon steel pipes and fittings. The list below is a basic overview of some of these. For more in-depth details of these Standards please contact your nearest Euro Steel office.



ASTM Standards for Pipes - Stainless Steel and Carbon Steel

A106	- Seamless Carbon Steel Pipe for high temperature service
A179	- Seamless Cold-Drawn Low-Carbon Steel Heat Exchanger and Condenser Tubes
A213	- Seamless Ferritic and Austenitic Alloy - Steel Boiler, Superheater and Heat Exchanger Tubes
A249	- Welded Austenitic Steel Boiler, Superheater, Heat Exchanger and Condenser Tubes
A268	- Seamless and Welded Ferritic and Martensitic Stainless Steel tubing for general service
A269	- Seamless and Welded Austenitic Stainless Steel Tubing for general service
A270	- Seamless and Welded Austenitic Stainless Steel Sanitary Tube
A312	- Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
A333	- Seamless and Welded Steel Pipe for low temperature service
A335	- Seamless Ferritic Alloy Steel Pipe for high temperature service
A358	- Electric Fusion Welded Austenitic Chromium - Nickel Alloy Steel Pipe for high temperature service
A376	- Seamless Austenitic Steel Pipe for high temperature central station service
A409	- Welded Large Diameter Austenitic Steel Pipe for Corrosive or high temperature service
A450	- General Requirements for Carbon, Ferritic Alloy and Austenitic Alloy Steel Tubes
A530	- General Requirements for Specialised Carbon and Alloy Steel Pipe
A554	- Welded Stainless Steel Mechanical Tubing (also decorative tubing)
A669	- Seamless Ferritic and Austenitic Alloy Steel Tubes for Heat Exchangers
A688	- Welded Austenitic Stainless Steel Feed Water Heater Tubes
A731	- Seamless and Welded Ferritic Stainless Steel Pipe
A778	- Welded, un-annealed Austenitic Stainless Steel Tubular Products
A789	- Seamless and Welded Ferritic / Austenitic Stainless Steel Tubing for general service
A790	- Seamless and Welded Ferritic / Austenitic Stainless Steel Pipe
A928	- Ferritic / Austenitic (Duplex) Stainless Steel Pipe Electric Fusion Welded with addition of filler metal
A999	- General Requirements (dimensional tolerances etc.) for Alloy and Stainless Steel Pipe
A1016	- General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel and Stainless Steel Tubes

Dimensional Standards for Pipes

ASME scheduled pipes have 2 common dimensional standards namely:

ASME B36.10	- Welded and Seamless Wrought Steel Pipes
	- Sizes: 1/8” - 80” Schedules: 10 / 20 / 30 / STD / 40 / 60 / XS / 80 / 100 / 120 / 140 / 160 / XXS
ASME B36.19	- Stainless Steel Pipe
	- Sizes: 1/8” - 30” Schedules: 5S / 10S / 40S / 80S

SCH 40S / SCH 40 / STD and SCH 80S / SCH 80 / XS have the same wall thicknesses of 9.53mm and 12.7mm respectively.

ASTM Standards for Fittings - Stainless Steel

A182	- Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for high temperature service
A240 -	Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for general applications
A403	- Wrought Austenitic Stainless Steel Pipe Fittings
A774	- As-Welded Wrought Austenitic Stainless Steel Pipe Fittings for General Corrosive Service at low and moderate temperatures
A815	- Wrought Ferritic, Ferritic / Austenitic (Duplex) and Martensitic Stainless Steel Pipe Fittings

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ASTM STANDARDS FOR PIPE, FLANGES & FITTINGS

ASTM Standards for Fittings - Carbon Steel

A105 -Standard Specification for Carbon Steel Forgings for pipe applications
A181 - Standard Specification for Carbon Steel Forgings for general purpose piping
A234 - Standard Specification for Piping Fittings of Wrought Carbon Steel for moderate and high temperature service
A350 - Standard Specification for Low-Alloy Steel Forgings requiring Notch Toughness testing for Piping components
A420 -Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for low temperature service

Dimensional Standards for Fittings

ASME B16.3 - BSP Cast Fittings
ASME B16.9 - Butt Weld Fittings
ASME B16.11 - Forged Fittings, Socket Weld and Threaded
ASME B16.25 - Butt Weld Ends
ASME B16.28 - Wrought Steel Butt Weld Short Radius Elbows and Threaded fitting



Dimensional Standards for Fittings

ASME B16.3 - BSP Cast Fittings
ASME B16.9 - Butt Weld Fittings
ASME B16.11 - Forged Fittings, Socket Weld and Threaded
ASME B16.25 - Butt Weld Ends
ASME B16.28 - Wrought Steel Butt Weld Short Radius Elbows and Threaded fittings

ASTM Standards for Flanges - Stainless Steel

A182 - Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for high temperature service
A240 - Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for general applications

ASTM Standards for Flanges - Carbon Steel

A105 - Standard Specification for Carbon Steel Forgings for Piping applications
A181 - Standard Specification for Carbon Steel Forgings for general purpose piping
A266 - Standard Specification for Carbon Steel Forgings for Pressure Vessel components
A336 - Standard Specification for Alloy Steel Forgings for Pressure and high temperature Parts
A350 - Standard Specification for Low-Alloy Steel Forgings Requiring Notch Toughness testing for Piping components

Dimensional Standards for Flanges

ASME B16.5 - Forged Flanges (150 / 300 / 400 / 600 / 900 / 1500 / 2500 LBS - 24" & UNDER)
ASME B16.47 - Forged Flanges (150 / 300 / 400 / 600 / 900 / 1500 / 2500 LBS - 26" & OVER)
BS 10 - Plate Flanges (Table D / E / F / H / J)
EN1092 - 1 (BS 4504) - Forged and Plate Flanges (PN 6 / 10 / 16 / 25 / 40 / 64)
SANS 1123 - Forged Flanges (PN 600 / 1000 / 1600 / 2500 / 4000 / 6400)
ASME B16.11 - Forged Fittings

EN - European Norms - Inspection Documents

EN10204 - This Standard specifies different types of inspection documents supplied to the purchaser.
EN10204 3.1 - Document supplied by the manufacturer in which he declares that the products supplied are in compliance with the requirements of the order and in which he supplies test results.
EN10204 3.2 - Document prepared by both the manufacturer's authorized inspection representative, independent of the manufacturing department, compliance with the requirements of the order and in which test results are supplied.





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A182 - Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, Valves and Parts for high temperature service.

This Standard covers forged, low alloy and stainless steel piping components for use in pressure systems. Included are flanges, fittings, valves and similar parts to specified dimensions or dimensional specifications. Products must be individually forged as close to finish shape as possible. They may not be machined from bar, except for small cylindrical parts.
Heat treatment: All forgings must be heat treated after forging.
Stainless steel shall be solution annealed.

A213 - Seamless Ferritic and Austenitic Alloy Steel Boiler, Superheater and Heat Exchanger Tubes

This Standard covers minimum wall thickness tubes.
Sizes and thicknesses usually are 3.2mm inside diameter to 127mm outside diameter and 0.4mm to 12.7mm inclusive in minimum wall thicknesses.

Mechanical properties are not required for tubes smaller than 3.2mm inside diameter or 0.4mm wall thickness.

General Requirements and Ordering Information: Conformance to A1016

Materials and Manufacture: Tubes shall be made by the seamless process and shall be either hot or cold finished as specified.

All tubes shall be finished in the heat treated condition.

A240 - Heat Resisting Chromium Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels

This Standard covers Chrome, Chrome Nickel, Chrome Manganese Nickel Stainless Steel Plate, Sheet and Strip for pressure vessel and general applications.

General Requirements for orders under this Standard shall conform to ASTM A480.

A249 - Welded Austenitic Steel Boiler, Superheater, Heat Exchanger and Condenser Tubes

This Standard covers nominal wall thickness tubes and welded tubes made from austenitic steel.
Sizes and thicknesses usually are 3.2mm inside diameter to 127mm outside diameter and 0.4mm to 12.7mm inclusive in minimum wall thickness.

Mechanical properties are not required for tubes smaller than 3.2mm inside diameter or 0.4mm wall thickness.

General Requirements and Ordering Information: Conformance to A450

Materials and Manufacture: Tubes shall be made from flat rolled steel by an automatic welding process with no addition of filler metal.
Tubes to be finished in a heat treated condition.



A269 - Seamless and Welded Austenitic Stainless Steel Tubing for general service

This Standard covers grades of nominal wall thickness, stainless steel tubing for general corrosion resisting applications and low or high temperature service. Sizes and thicknesses are usually 6.4mm inside diameter and larger, and 0.51mm in nominal wall thicknesses and heavier.

Mechanical properties are not required for tubes smaller than 3.2mm inside diameter or 0.38mm in thickness.

General Requirements and Ordering Information: Conformance to A1016

Materials and Manufacture: Tubes shall be made by seamless or welded process. Pipes can be either cold or hot finished.
Tubes to be finished in the heat treated condition.

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A312 - Seamless and Welded Austenitic Stainless Steel Pipes

This Standard covers both Seamless and Welded Austenitic Stainless Steel Pipe intended for high temperature and general corrosive service.
General requirements and ordering Information: Shall conform to the requirements of A999.
Manufacture: Pipe shall be seamless or welded. If welded, pipe shall be made by the automatic welding process, with no addition of a filler metal in the welding.
Operation:

- Welded pipes smaller and including NPS 14" shall have a single longitudinal weld. Above NPS 14" can be made from plate with two long welds when approved by the purchaser. Testing, examination and inspection to be done on each weld seam.
- Pipes can be either cold or hot finished.
- Pipes must be free from scale and contaminating iron particles. Pickling, blasting or surface finishing is not mandatory when the pipe is bright annealed.
- Pipes to be finished in the heat treated condition.

A358 - Electric Fusion Welded Austenitic Stainless Steel Pipe with addition of filler metal for high temperature service and general applications

Five classes of pipe are covered by the Standard:

Class 1 - Pipe shall be double welded by processes employing filler metal in all passes and shall be completely radiographed.
Class 2 - Pipe shall be double welded by processes employing filler metal in all passes. No radiography is required.
Class 3 - Pipe shall be single welded by processes employing filler metal in all passes and shall be completely radiographed.
Class 4 - Same as Class 3 except that the weld pass exposed to the inside of the pipe surface may be made without the addition of filler metal.
Class 5 - Pipe shall be double welded by processes employing filler metal in all passes and shall be spot radiographed.

General requirements and ordering Information: Conformance to A999.

Materials and Manufacture: Chemical composition and plate shall conform to A240.
Joints shall be full penetration double welded or single welded butt joints employing fusion welding processes as defined by ASME BPVC code Section IX. The crown or cap of weld not to exceed 3mm.
X-Ray to ASME VIII Para UW-51 or UW52, where applicable.

A403 - Wrought Stainless Steel Pipe Fittings

This Standard covers wrought stainless steel fittings for pressure piping applications. Several grades of austenitic stainless steel alloys are included. Wrought Products grades are designated with prefix WP.
For each WP stainless grade several classes of fittings are covered to indicate whether seamless or welded construction was utilized. Class designations are also utilized to indicate Non Destructive Test method and extent of NDE (Non Destructive Examination). This Standard does not apply to cast fittings.

Ordering Information: Purchaser to specify quantity, description, dimensions, material grade, class designation, construction method (seamless or welded), supplementary or any additional requirements.
The following are suffixes after the grades: S = Seamless (NDE None). W = Welded. WX = Welded with X-Rays. WU = Welded with Ultrasonic Testing

Manufacture - WP fittings ordered as Class S shall meet the requirements of ASME B16.9, ASME B16.11, MSS SP-79, MSS SP-83, or MSS SP-95. WP fittings ordered as Class W shall meet requirements of ASME B16.9 and all pipe welds with filler metal shall be radiographically tested over the entire length. Grade WP fittings ordered as Class WX shall meet the requirements of ASME B16.9 and shall have all welds radiographically examined to ASME 8 Div UW 51. Fittings machined from bar shall be limited to max NPS 4".
Elbows, bends and tees shall not be machined from bar.

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A554 - Welded Stainless Steel Mechanical Tubing

This Standard covers welded stainless steel tubing for mechanical applications where aesthetic appearance, mechanical properties, or corrosion resistance is needed.
Grades covered are most of the standard austenitic grades like 304 and 316 as well as ferritic grades 409, 430 and 430Ti.

Manufacture - Tubes to be made from the automatic welding process - no filler metal.
Condition - Tubes to be furnished in one of the following conditions:
Welded, welded and annealed, cold reduced, cold reduced & annealed

A774 - As Welded Wrought Austenitic Stainless Steel Pipe Fittings for general corrosive service at low and moderate temperatures

This Standard covers five grades of as welded wrought austenitic SS fittings for low pressure piping, low and moderate temperatures and general corrosive service. This Standard covers 3” to 48” in OD and 1.6mm through 12.7mm in wall thickness. This Standard does not cover cast fittings.

Ordering Information: Dimensions and grade
Manufacture: Fittings are made from A240 plate. Joints shall be full penetration welds.

A778 - Welded, un-annealed Austenitic Stainless Steel Tubular Products

This Standard covers welded un-annealed austenitic stainless steel tubular products intended for low and moderate temperatures and corrosive service where heat treatment is not necessary for corrosive resistance.
TP304L / TP316L / TP317L / TP321 and TP347 are the five grades covered by this specification.
Covers sizes from outside diameter 3” (75mm) to 48” (1200mm)
Wall thicknesses between 1.5mm and 12.5mm

Pipe made from coil, plate or sheet by a shielded arc welding process. Tubular products NPS 14” and smaller shall have a single longitudinal weld. Larger may have a maximum of three longitudinal welds. Circumferential welded joints of the same quality as longitudinal joints shall be permitted by agreement between manufacturer and purchaser. Tubular products to be clean and free from scale. Welds shall be made by the manual or automatic electric welding process. Weld crown or cap to be created no more than 1.6mm either side of the tube. The weld is not to be lower than the maximum wall thickness. The weld bead may be by removed with agreement between manufacturer and purchaser. Injurious weld defects shall be repaired by removal to sound metal and rewelding. Welding consumable to match that of the plate material designation.
No heat treatment required

A789 - Seamless and Welded Ferritic / Austenitic / Duplex Stainless Steel Tubing for general service

This Standard covers steel tubing requiring general corrosive resistance, with emphasis on resistance to stress corrosion cracking.
These steels are susceptible to embrittlement if used for prolonged periods at elevated temperatures.
Ordering Information as follows: quantity, product name, grade, size, length, optional requirements, e.g. product analysis, hydrostatic or non-destructive electric test, test report, specification designation, special requirements.
All products to conform to A1016.
Manufacture: Seamless or welded with no filler metal.

A790 - Seamless and Welded Ferritic, Austenitic and Duplex Stainless Steel Pipe

This Standard covers seamless and straight seam welded ferritic and austenitic stainless steel pipe intended for general corrosive service, with particular emphasis on resistance to stress corrosion cracking.
These steels are susceptible to embrittlement if used for prolonged periods at elevated temperatures (Duplex grades)
General requirements and ordering Information: Conformance to A999

Materials and Manufacture:
Seamless pipe shall be made by the seamless process which does not involve welding at any stage of production.
Pipes can be either cold or hot finished.
Pipes to be pickled free from scale. Pickling is not mandatory when pipe is bright annealed.
Pipes to be furnished in the heat treated condition.

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A815 - Wrought Ferritic, Ferritic / Austenitic and Duplex and Martensitic Stainless Steel Pipe Fittings

This Standard covers wrought stainless steel fittings of wrought ferritic, ferritic / austenitic and martensitic fittings.
Grades are designated with prefix WP. For each WP stainless steel grade several classes of fittings are covered to indicate whether seamless or welded construction was utilized.
Class designations are also utilized to indicate the Non Destructive Test method and extent of NDE (Non Destructive Examination).
This Standard does not apply to cast fittings.
Ordering Information: Purchaser to specify
The following suffixes after the grade:
S = Seamless (NDE None),
W = Welded (NDE is Radiography or Ultrasonic)
WX = Welded (NDE is Radiography)
WU = Welded (NDE is Ultrasonic)
Quantity, description, dimensions, grade, class designation, construction method (S or W), specification number (including specification year, date of issue), supplementary or additional requirements.
Manufacture - WP fittings ordered as Class S, shall meet the requirements of ASTM A960.
Fittings ordered as Class W, shall meet requirements of ASTM
A960 and all pipe welds with filler metal shall be radiographically tested over the entire length, radiographic inspection is not required for seam welds from pipe where filler metal is not utilized. Welds may be ultrasonically examined in place of radiography.
Grade WP fittings ordered as Class WX shall meet requirements of ASTM A960 and shall have all welds radiographically examined to ASME 8Div UW 51.
Fittings machined from bar shall be limited to max NPS 4". Elbows, bends and tees shall not be machined from bar. All fittings shall be heat treated.

A928 - Ferritic / Austenitic (Duplex) Stainless Steel Pipe Electric Fusion Welded with addition of filler metal

Five classes of pipe covered by this specification:

Class 1 - Pipe shall be double welded by processes employing filler metal in all passes and shall be completely radiographed.
Class 2 - Pipe shall be double welded by processes employing filler metal in all passes. No radiography is required.
Class 3 - Pipe shall be single welded by processes employing filler metal in all passes and shall be completely radiographed.
Class 4 - Same as Class 3 except that the weld pass exposed to the inside of the pipe surface may be made without the addition of filler metal.
Class 5 - Pipe shall be double welded by processes employing filler metal in all passes and shall be spot radiographed.

General requirements and ordering Information: Conformance to A999.
Materials and Manufacture: Chemical composition and plate shall conform to A240. Joints shall be full penetration double welded or single welded butt joints employing fusion welding processes as defined by ASME BPVC code Section IX. X-Ray to ASME VIII Para UW-51.
Circumferential welded joints of the same quality as longitudinal joints shall be permitted by agreement between manufacturer and purchaser.

A999 - General Requirements for Alloy and Stainless Steel Pipe

This specification covers a group of general requirements (dimensional tolerances etc.) that, unless otherwise specified in the individual specification, shall apply to all ASTM specifications for pipe already mentioned.

A1016 - General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel

This specification covers a group of general requirements that, unless otherwise specified in the individual specification, shall apply to all ASTM specifications for tube already mentioned.
There are many international Standards Specifications for stainless steel pipe, tube, flanges and fittings.
The list above is a basic overview of some of these.
For more in-depth details on these Specifications or it you cannot find what you are looking for, please contact your nearest Euro Steel office for assistance. You will be referred to our Quality Assurance Department who keeps an extensive library of all these specifications and more.





Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

SEAMLESS & WELDED AUSTENTIC STAINLESS STEEL PIPE
DIMENSIONS AND WEIGHTS ACCORDING TO ASME B 36.19 & B 36.10

DN	Nominal diameter in inches	Outside diameter in (OD) millimetres	ASME B36.19								ASME B36.10							
			Nominal thickness/ Wall Thickness and weight/mt.								Nominal thickness/ Wall Thickness and weight/mt.							
			5 S		10 S		Sched. 40 S		Sched. 80 S		10		20		30		Standard	
			WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.
-	1/8”	10.29	-	-	1.24	0.281	1.73	0.371	2.41	0.476			-	-	-	-	1.73	0.371
8	1/4”	13.72	-	-	1.65	0.499	2.24	0.644	3.02	0.809			-	-	1.85	-	2.24	0.644
10	3/8”	17.15	-	-	1.65	0.640	2.31	0.858	3.20	1.10			-	-	1.85	-	2.31	0.858
15	1/2”	21.34	1.65	0.814	2.11	1.016	2.77	1.26	3.73	1.62			-	-	2.41	-	2.77	1.26
20	3/4”	26.67	1.65	1.034	2.11	1.298	2.87	1.71	3.91	2.19			-	-	2.41	-	2.87	1.68
25	1”	33.40	1.65	1.312	2.77	2.125	3.38	2.54	4.55	3.23			-	-	2.90	-	3.38	2.50
32	1 1/4”	42.16	1.65	1.674	2.77	2.76	3.56	3.45	4.85	4.46			-	-	2.97	-	3.56	3.38
40	1 1/2”	48.26	1.65	1.926	2.77	3.155	3.68	4.11	5.08	5.40			-	-	3.18	-	3.68	4.05
50	2”	60.33	1.65	2.424	2.77	3.992	3.91	5.29	5.54	7.47			-	-	3.18	-	3.91	5.43
65	2 1/2”	73.03	2.11	3.747	3.05	5.345	5.16	8.80	7.01	11.40			-	-	4.78	-	5.16	8.62
80	3”	88.90	2.11	4.585	3.05	6.557	5.49	11.48	7.62	15.25			-	-	4.78	-	5.49	11.28
90	3 1/2”	101.60	2.11	5.272	3.05	7.526	5.74	13.56	8.08	18.62			-	-	4.78	-	5.74	13.56
100	4”	114.30	2.11	5.945	3.05	8.496	6.02	16.34	8.56	22.29			-	-	4.78	-	6.02	16.06
125	5”	141.30	2.77	9.639	3.40	11.740	6.55	22.12	9.52	30.92			-	-	-	-	6.55	21.76
150	6”	168.28	2.77	11.514	3.40	14.037	7.11	28.72	10.97	42.52			-	-	-	-	7.11	28.23
200	8”	219.08	2.77	15.049	3.76	20.334	8.18	43.27	12.7	64.57			6.35	33.28	7.04	36.80	8.18	42.49
250	10”	273.05	3.40	23.028	4.19	28.24	9.27	61.30	12.7	81.46			6.35	41.70	7.8	51.00	9.27	60.24
300	12”	323.85	3.96	31.806	4.57	36.58	9.53	75.04	12.7	97.36			6.35	49.68	8.38	65.14	9.53	73.76
350	14”	355.60	3.96	34.99	4.78	42.102	9.53	82.58	12.7	109.04	6.35	54.63	7.92	67.98	9.52	81.21	9.53	81.21
400	16”	406.40	4.19	42.35	4.78	48.07	9.53	94.70	12.7	125.20	6.35	62.58	7.92	77.90	9.52	93.13	9.53	93.13
450	18”	457.20	4.19	47.7	4.78	54.15	9.53	106.83	12.7	141.35	6.35	70.50	7.92	87.80	11.13	122.12	9.53	105.05
500	20”	508	4.78	60.32	5.54	69.766	9.53	118.93	12.7	157.51	6.35	78.47	9.52	116.97	12.7	155.00	9.53	116.97
550	22”	558.8	4.78	-	5.54	76.75	9.53	131.07	12.7	173.66	6.35	86.42	9.52	128.89	12.7	170.86	9.53	128.89
600	24”	609.6	5.54	84.10	6.35	96.215	9.53	143.20	12.7	181.82	6.35	96.215	9.52	140.80	14.27	209.54	9.53	140.81
650	26”	660.4	-	-	-	-	-	-	-	-	7.92	127.58	12.7	202.65	-	-	9.53	152.73
700	28”	711	-	-	-	-	-	-	-	-	7.92	137.52	12.7	218.54	15.88	271.94	9.53	164.65
750	30”	762	6.35	120.59	7.92	-	-	-	12.7	-	7.92	147.45	12.7	234.44	15.88	291.81	9.53	176.57
800	32”	812.8	-	-	-	147.45	9.53	-	-	-	7.92	157.39	12.7	250.33	15.88	311.67	9.53	188.50
850	34”	863.6	-	-	-	-	-	-	-	-	7.92	167.32	12.7	266.22	15.88	331.54	9.53	200.42
900	36”	914.4	-	-	-	-	-	-	-	-	7.92	177.26	12.7	282.12	15.88	351.41	9.53	212.34

• for pipe sizes 36” and larger, please contact us for further assistance



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SEAMLESS & WELDED AUSTENTIC STAINLESS STEEL PIPE
DIMENSIONS AND WEIGHTS ACCORDING TO B 36.10 (continued)

Nominal diameter in DN	Outside diameter in inches	(OD) millimetres	ASME B36.10																	
			Nominal thickness/ Wall Thickness and weight/mt.																	
			40		60		Extra Strong		80		100		120		140		160		Double Extra Strong	
			WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.	WT mm	Kg./m.
-	1/8”	10.29	1.73	0.371	-	-	2.41	0.476	2.41	0.476	-	-	-	-	-	-	-	-	-	-
8	1/4”	13.72	2.24	0.644	-	-	3.02	0.809	3.02	0.809	-	-	-	-	-	-	-	-	-	-
10	3/8”	17.15	2.31	0.858	-	-	3.20	1.118	3.20	1.118	-	-	-	-	-	-	-	-	-	-
15	1/2”	21.34	2.77	1.26	-	-	3.73	1.62	3.73	1.62	-	-	-	-	-	-	4.78	1.95	7.47	2.54
20	3/4”	26.67	2.87	1.68	-	-	3.91	2.19	3.91	2.19	-	-	-	-	-	-	5.56	2.89	7.82	3.63
25	1”	33.40	3.38	2.50	-	-	4.55	3.23	4.55	3.23	-	-	-	-	-	-	6.35	4.23	9.09	5.45
32	1 1/4”	42.16	3.56	3.38	-	-	4.85	4.46	4.85	4.46	-	-	-	-	-	-	6.35	5.60	9.70	7.75
40	1 1/2”	48.26	3.68	4.05	-	-	5.08	5.40	5.08	5.40	-	-	-	-	-	-	7.14	7.23	10.16	9.54
50	2”	60.33	3.91	5.43	-	-	5.54	7.47	5.54	7.47	-	-	-	-	-	-	8.74	11.10	11.07	13.44
65	2 1/2”	73.03	5.16	8.62	-	-	7.01	11.40	7.01	11.40	-	-	-	-	-	-	9.52	14.90	14.02	20.39
80	3”	88.90	5.49	11.28	-	-	7.62	15.25	7.62	15.25	-	-	-	-	-	-	11.13	21.30	15.24	27.65
90	3 1/2”	101.60	5.74	13.56	-	-	8.08	18.62	8.08	18.62	-	-	-	-	-	-	-	-	-	-
100	4”	114.30	6.02	16.06	-	-	8.56	22.29	8.56	22.29	-	-	11.13	28.25	-	-	13.50	33.50	17.12	40.99
125	5”	141.30	6.55	21.76	-	-	9.52	30.92	9.52	30.92	-	-	12.70	40.20	-	-	15.88	49.00	19.05	57.37
150	6”	168.28	7.11	28.23	-	-	10.97	42.52	10.97	42.52	-	-	14.27	54.20	-	-	18.26	67.40	21.95	79.11
200	8”	219.08	8.18	42.49	10.30	53.00	12.7	64.57	12.70	64.57	15.10	75.70	18.26	90.20	20.62	100.80	23.00	111.20	22.22	107.78
250	10”	273.05	9.27	60.24	12.70	81.46	12.7	81.46	15.09	95.84	18.26	114.59	21.44	132.85	25.40	154.97	28.58	172.11	25.4	-
300	12”	323.85	10.31	79.71	14.27	108.97	12.7	97.36	17.48	131.81	21.44	159.67	25.40	186.70	28.58	207.87	33.32	238.60	25.4	-
350	14”	355.60	11.13	94.31	15.09	126.51	12.7	107.28	19.05	157.90	23.83	194.64	27.79	224.36	31.75	253.32	35.71	281.49	-	-
400	16”	406.40	12.70	123.18	16.66	160.04	12.7	123.18	21.44	203.26	26.19	245.34	30.96	286.33	36.53	332.72	40.49	364.94	-	-
450	18”	457.20	14.27	155.90	19.05	205.60	12.7	139.07	23.83	254.24	29.36	309.55	34.92	363.33	39.67	408.21	45.24	459.18	-	-
500	20”	508	15.09	183.14	20.62	247.79	12.7	154.97	26.19	310.91	32.54	381.20	38.10	441.06	44.45	507.63	50.01	564.24	-	-
550	22”	558.8	15.87	213.80	22.22	293.80	12.7	170.86	28.57	273.27	34.92	450.75	41.27	526.24	47.62	599.76	53.97	671.28	-	-
600	24”	609.6	17.48	254.74	24.61	354.82	12.7	186.75	30.96	441.30	38.89	546.84	46.02	639.18	52.37	719.18	59.54	800.74	-	-
650	26”	660.4	-	-	-	-	12.7	202.65	-	-	-	-	-	-	-	-	-	-	-	-
700	28”	711.6	-	-	-	-	12.7	218.54	-	-	-	-	-	-	-	-	-	-	-	-
750	30”	762	-	-	-	-	12.7	234.44	-	-	-	-	-	-	-	-	-	-	-	-
800	32”	812.8	17.48	242.17	-	-	12.7	250.33	-	-	-	-	-	-	-	-	-	-	-	-
850	34”	863.6	17.48	364.01	-	-	12.7	266.22	-	-	-	-	-	-	-	-	-	-	-	-
900	36”	914.4	19.05	420.21	-	-	12.7	282.12	-	-	-	-	-	-	-	-	-	-	-	-



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LARGE BORE PIPE PLANT



At Euro Steel we have our own in-house large bore pipe manufacturing plant. We can produce Long Weld Pipe in full 6 metre lengths up to 1700mm diameter (i.e. no circumferential welds) manufactured in accordance with most International Standards & Specifications.
As we are one of the largest stockists of plate, we are able to offer short lead times on pipe production.



Automated dual arc welding procedure
Filler metal welding process
In-house hydrostatic testing equipment
In-house pickling and passivating
In-house X-Ray facilities
Machine: Davi Pramau, automated welding equipment by Lincoln

12 inches - 80 inches in diameter
(325mm - 1700mm)
All schedules
Wall thickness 4.5mm up to 16mm
Diameter and wall thickness capabilities:
323mm 4.5mm up to 6mm thick
350mm 4.5mm up to 10mm
400mm 4.5mm up to 12mm
500mm 4.5mm up to 12.7mm
600mm - 1700mm 4.5mm up to 16mm
Larger than 1700mm rolled only



Euro Steel is a SASOL approved manufacturer and supplier of Large Bore Stainless Steel Pipe and Fittings.
For more details on our pipe rolling, please contact us.

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PIPING: ALLOWABLE WORKING PRESSURES

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Schedule 5s Grade 304/304L; 316/316L

TEMPERATURE °C

NB	Inches		37	66	93	121	149	177	204	232	260	288	316	330	343	357	371	385	399	414
15	1/2”	Mpa	15.40	15.40	15.40	14.86	14.31	13.08	11.85	11.35	10.86	10.44	10.02	9.85	9.67	9.50	9.33	9.16	8.98	8.83
20	3/4”	Mpa	12.18	12.18	12.18	11.75	11.32	10.34	9.37	8.98	8.59	8.26	7.92	7.79	7.65	7.52	7.38	7.24	7.10	6.99
25	1”	Mpa	9.64	9.64	9.64	9.30	8.96	8.18	7.41	7.10	6.80	6.54	6.27	6.16	6.05	5.94	5.884	5.73	5.62	5.53
40	1 1/2”	Mpa	6.60	6.60	6.60	6.36	6.13	5.61	5.07	4.86	4.65	4.47	4.30	4.22	4.14	4.07	4.00	3.92	3.85	3.79
50	2”	Mpa	5.25	5.25	5.25	5.07	4.88	4.46	4.04	3.87	3.70	3.56	3.42	3.36	3.30	3.24	3.18	3.12	3.06	3.01
65	2 1/2”	Mpa	5.54	5.54	5.54	5.35	5.16	4.71	4.27	4.09	3.91	3.76	3.61	3.54	3.48	3.42	3.36	3.30	3.23	3.18
80	3”	Mpa	4.54	4.54	4.54	4.38	4.22	3.85	3.49	3.34	3.20	3.08	2.95	2.90	2.85	2.80	2.75	2.70	2.65	2.61
100	4”	Mpa	3.52	3.52	3.52	3.39	3.27	2.99	2.70	2.59	2.48	2.39	2.29	2.25	2.21	2.17	2.13	2.09	2.05	2.02
150	6”	Mpa	3.13	3.13	3.13	3.02	2.91	2.66	2.41	2.31	2.21	2.12	2.04	2.01	1.97	1.93	1.90	1.86	1.83	1.80
200	8”	Mpa	2.40	2.40	2.40	2.32	2.23	2.04	1.85	1.77	1.69	1.63	1.56	1.54	1.51	1.48	1.45	1.43	1.40	1.38
250	10”	Mpa	2.36	2.36	2.36	2.28	2.20	2.01	1.82	1.74	1.67	1.61	1.54	1.52	1.49	1.46	1.43	1.41	1.38	1.36
300	12”	Mpa	2.32	2.32	2.32	2.24	2.16	1.97	1.79	1.71	1.64	1.57	1.51	1.48	1.46	1.43	1.41	1.38	1.36	1.33

Schedule 10s Grade 304/304L; 316/316L

TEMPERATURE °C

NB	Inches		37	66	93	121	149	177	204	232	260	288	316	330	343	357	371	385	399	414
15	1/2”	Mpa	19.98	19.98	19.98	19.28	18.58	16.97	15.37	14.73	14.09	13.54	13.00	12.78	12.56	12.33	12.10	11.88	11.66	11.47
20	3/4”	Mpa	15.75	15.75	15.75	15.20	14.64	13.38	12.11	11.61	11.11	10.68	10.25	10.07	9.89	9.72	9.554	9.36	9.19	9.04
25	1”	Mpa	16.56	16.56	16.56	15.98	15.40	14.07	12.74	12.21	11.68	11.23	10.78	10.59	10.40	10.22	10.03	9.85	9.66	9.50
40	1 1/2”	Mpa	11.25	11.25	11.25	10.85	10.46	9.56	8.65	8.29	7.94	7.63	7.32	7.19	7.07	6.94	6.81	6.69	6.56	6.45
50	2”	Mpa	8.93	8.93	8.93	8.61	8.29	7.58	6.87	6.58	6.30	6.05	5.81	5.71	5.61	5.51	5.41	5.31	5.221	5.12
65	2 1/2”	Mpa	8.09	8.09	8.09	7.81	7.52	6.87	6.23	5.96	5.71	5.49	5.27	5.18	5.08	4.99	4.90	4.81	4.72	4.64
80	3”	Mpa	6.61	6.61	6.61	6.38	6.14	5.62	5.09	4.87	4.66	4.48	4.30	4.23	4.15	4.08	4.01	3.93	3.85	3.79
100	4”	Mpa	5.12	5.12	5.12	4.94	4.76	4.34	3.94	3.77	3.61	3.47	3.33	3.27	3.21	3.16	3.10	3.04	2.99	2.94
150	6”	Mpa	3.86	3.86	3.86	3.72	3.59	3.28	2.97	2.85	2.72	2.62	2.51	2.47	2.43	2.39	2.34	2.30	2.25	2.21
200	8”	Mpa	3.27	3.27	3.27	3.15	3.04	2.78	2.52	2.41	2.30	2.21	2.12	2.09	2.05	2.02	1.98	1.94	1.91	1.88
250	10”	Mpa	2.92	2.92	2.92	2.82	2.72	2.48	2.25	2.15	2.06	1.98	1.90	1.87	1.83	1.80	1.77	1.74	1.70	1.68
300	12”	Mpa	2.68	2.68	2.68	2.59	2.50	2.28	2.06	1.98	1.89	1.82	1.74	1.72	1.69	1.65	1.63	1.59	1.57	1.54

Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

Schedule 40s Grade 304/304L; 316/316L

TEMPERATURE °C

NB	Inches		37	66	93	121	149	177	204	232	260	288	316	330	343	357	371	385	399	414
15	1/2”	Mpa	26.86	26.61	26.35	24.46	22.56	20.75	18.94	17.82	16.71	16.10	15.50	15.29	15.07	14.85	14.64	14.47	14.29	14.12
20	3/4”	Mpa	21.91	21.70	21.48	19.94	18.40	16.92	15.44	14.53	13.62	13.13	12.64	12.47	12.29	12.11	11.94	11.80	11.66	11.51
25	1”	Mpa	20.49	20.29	20.09	18.65	17.20	15.82	14.45	13.59	12.74	12.28	11.82	11.66	11.49	11.33	11.16	11.03	10.90	10.77
40	1 1/2”	Mpa	15.18	15.03	14.89	13.81	12.74	11.72	10.70	10.07	9.44	9.09	8.76	8.63	8.52	8.39	8.27	8.17	8.07	7.98
50	2”	Mpa	12.78	12.67	12.54	11.64	10.74	9.87	9.02	8.48	7.95	7.66	7.38	7.27	7.17	7.07	6.96	6.89	6.81	6.72
65	2 1/2”	Mpa	13.98	13.85	13.71	12.73	11.74	10.80	9.86	9.27	8.69	8.38	8.07	7.96	7.84	7.73	7.62	7.53	7.44	7.35
80	3”	Mpa	12.14	12.02	11.91	11.05	10.20	9.38	8.56	8.05	7.55	7.27	7.01	6.91	6.81	6.72	6.61	6.54	6.46	6.38
100	4”	Mpa	10.29	10.19	10.09	9.37	8.65	7.95	7.26	6.83	6.40	6.17	5.94	5.85	5.77	5.69	5.61	5.54	5.47	5.41
150	6”	Mpa	8.20	8.12	8.04	7.46	6.88	6.33	5.78	5.44	5.10	4.92	4.73	4.66	4.60	4.53	4.47	4.41	4.36	4.31
200	8”	Mpa	7.22	7.14	7.07	6.57	6.06	5.57	5.09	4.79	4.49	4.32	4.16	4.10	4.05	3.99	3.93	3.89	3.84	3.79
250	10”	Mpa	6.54	6.48	6.42	5.96	5.50	5.05	4.62	4.34	4.07	3.92	3.78	3.72	3.68	3.62	3.56	3.52	3.48	3.44
300	12”	Mpa	6.13	6.07	6.01	5.58	5.15	4.74	4.32	4.07	3.81	3.68	3.54	3.49	3.44	3.39	3.34	3.30	3.26	3.22

Schedule 80s Grade 304/304L; 316/316L

TEMPERATURE °C

NB	Inches		37	66	93	121	149	177	204	232	260	288	316	330	343	357	371	385	399	414
15	1/2”	Mpa	37.54	37.18	36.82	34.17	31.52	28.99	26.47	24.90	23.34	22.50	21.66	21.35	21.06	20.75	20.46	20.22	19.97	19.73
20	3/4”	Mpa	30.77	30.47	30.17	28.01	25.84	23.77	21.69	20.41	19.13	18.44	17.75	17.51	17.26	17.01	16.76	16.57	16.37	16.17
25	1”	Mpa	28.32	28.05	27.78	25.78	23.78	21.88	19.97	18.79	17.61	16.98	16.34	16.11	15.89	15.66	15.43	15.25	15.07	14.89
40	1 1/2”	Mpa	21.39	21.18	20.98	19.47	17.96	16.52	15.09	14.19	13.30	12.82	12.34	12.17	12.00	11.82	11.65	11.51	11.38	11.25
50	2”	Mpa	18.46	18.29	18.11	16.81	15.51	14.27	13.02	12.25	11.48	11.07	10.65	10.50	10.36	10.21	10.06	9.94	9.83	9.71
65	2 1/2”	Mpa	19.37	19.19	19.00	17.63	16.27	14.96	13.66	12.85	12.05	11.61	11.18	11.02	10.87	10.71	10.56	10.43	10.31	10.18
80	3”	Mpa	17.16	17.00	16.83	15.62	14.41	13.26	12.10	11.39	10.67	10.29	9.90	9.76	9.63	9.49	9.35	9.24	9.13	9.03
100	4”	Mpa	14.88	14.73	14.59	13.54	12.49	11.49	10.49	9.87	9.25	8.92	8.58	8.46	8.34	8.23	8.11	8.01	7.92	7.82
150	6”	Mpa	12.86	12.74	12.61	11.71	10.80	9.94	9.07	8.54	8.00	7.71	7.42	7.32	7.21	7.11	7.01	6.92	6.84	6.76
200	8”	Mpa	11.38	11.27	11.16	10.36	9.55	8.78	8.02	7.54	7.07	6.82	6.56	6.47	6.38	6.29	6.20	6.12	6.05	5.98
250	10”	Mpa	10.82	10.71	10.61	9.85	9.09	8.36	7.63	7.18	6.73	6.49	6.24	6.16	6.07	5.98	5.90	5.83	5.76	5.69
300	12”	Mpa	10.56	10.45	10.36	9.61	8.87	8.16	7.45	7.01	6.56	6.33	6.09	6.01	5.92	5.83	5.75	5.68	5.62	5.55

Think EURO STEEL

BUTT WELD, CLASS 3000 &
BSP FITTINGS SPECIFICATIONS



Butt Weld fittings in accordance with ASME/ ASTM SA/A 403 and ASME B16.9

ASTM stands for American Society for Testing and Materials. ASME stands for American Society of Mechanical Engineers. Euro Steel offers a range of Stainless Steel Butt Weld fittings in 90° and 45° Elbows, Concentric and Eccentric Reducers, End Caps, Stainless Steel Equal and Reducing Tees, Stub Ends and Weld on Collars. We carry the full range of Buttweld fittings in both grade 304L and 316L schedule 10s, 40s and 80s.

Butt Welded fittings are stocked in accordance to ASTM / ASME SA/A 403 WP - W (Welded), WP - S (Seamless) and WP - WX (welded with X ray). All materials is marked in accordance with the applicable standards and fully traceable to EN 10201 3.1 material certifications. We can also assist with Duplex and Super Duplex materials.

BSP fittings in accordance with ASTM A351 and ASME B16.3

BSP stands for British Standard Pipe (Thread). ASTM stands for American Society for Testing and Materials. ASME stands for American Society of Mechanical Engineers.

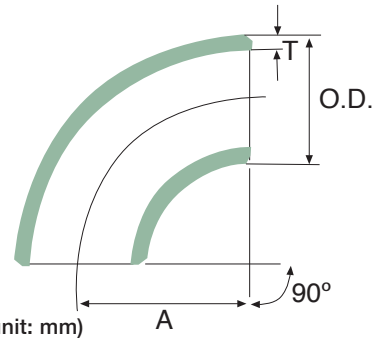
Euro Steel offers a comprehensive range of Stainless Steel 150 LBS Rated BSP threaded Investment Cast Fittings. The most commonly requested BSP fittings are from 1/8inch - 4inch. Dimensions are in accordance with the American standard ASME B16.3 1 - Piece Ball Valve, Reducing Bore, 1000 WOG and 3 - Piece Ball Valve, Full Bore, 1000 WOG, BSP threaded are also stocked in grade 316 stainless to compliment our BSP 150LB fittings. These are stocked from I" - 3". WOG stands for Water, Oil and Gas.

Class 3000 Fittings in accordance with ASTM A182 and ASME B16.11

In addition to our stock of BSP fittings, is a complete range of Forged High Pressure Class 3000 fittings in socket weld and NPT threaded from I" - 2". These fittings are manufactured according to ASME / ASTM SA/A 182 with dimensions to ASME B16.11. Stock includes unions, caps, plugs, tees, reducing tees, 90° and 45° Elbows, full couplings, half couplings, reducing couplings. For more information on these high pressure fittings contact Euro Steel.

EURO STEEL
STAINLESS STEEL • ALUMINIUM • SPECIAL STEELS

90º ELBOWS BUTT WELDED - LONG RADIUS



ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9

DIMENSIONS (unit: mm)

Nominal Pipe Sizes in inches	Outside Diameter (OD) in mm	Wall Thickness (T) in mm				Centre to End (A)
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S	
1/2”	21.34	1.65	2.11	2.77	3.73	38.10
3/4”	26.67	1.65	2.11	2.87	3.91	38.10
1”	33.40	1.65	2.77	3.38	4.55	38.10
1 1/4”	42.16	1.65	2.77	3.56	4.85	47.75
1 1/2”	48.26	1.65	2.77	3.68	5.08	57.15
2”	60.32	1.65	2.77	3.91	5.54	76.20
2 1/2”	73.02	2.11	3.05	5.16	7.01	95.25
3”	88.90	2.11	3.05	5.49	7.62	114.30
3 1/2”	101.60	2.11	3.05	5.74	8.08	133.35
4”	114.30	2.11	3.05	6.02	8.56	152.40
5”	141.30	2.77	3.40	6.55	9.53	190.50
6”	168.27	2.77	3.40	7.11	10.97	228.60
8”	219.08	2.77	3.76	8.18	12.70	304.08
10”	273.05	3.40	4.19	9.27	12.70	381.00
12”	323.85	3.96	4.57	9.53	12.70	457.20
14”	355.60	3.96	4.78	9.53	12.70	533.40
16”	406.40	4.19	4.78	9.53	12.70	609.60
18”	457.20	4.19	4.78	9.53	12.70	685.80
20”	508.00	4.78	5.54	9.53	12.70	762.00
22”	558.80	4.78	5.54	9.53	12.70	838.20
24”	609.60	5.54	6.35	9.53	12.70	914.40
26”	660.40	-	-	-	12.70	990.60
28”	711.20	-	-	-	12.70	1066.80
30”	762.00	6.35	7.92	9.53	12.70	1143.00
32”	812.80	-			12.70	1219.20
34”	863.60	-			12.70	1295.40
36”	914.40	-			12.70	1371.60
38”	965.20	-			12.70	1447.80
40”	1016.00	-			12.70	1524.00
42”	1066.80	-			12.70	1600.20
44”	1117.60	-			12.70	1676.40
46”	1168.40	-			12.70	1752.60
48”	1219.20	-			12.70	1828.80

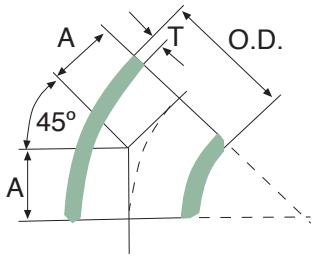
Nominal Pipe Sizes in inches	Weight (unit: Kg)			
	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2”	0.049	0.061	0.078	0.100
3/4”	0.062	0.078	0.103	0.14
1”	0.078	0.128	0.154	0.204
1 1/4”	0.125	0.206	0.260	0.349
1 1/2”	0.170	0.283	0.368	0.507
2”	0.286	0.478	0.652	0.9
2 1/2”	0.576	0.812	1.37	1.79
3”	0.810	1.14	2.04	2.87
3 1/2”	1.08	1.53	2.82	4.00
4”	1.39	1.97	3.84	5.45
5”	2.83	3.42	6.48	9.69
6”	4.03	4.87	9.94	15.99
8”	7.06	10.00	20.10	31.7
10”	13.20	15.50	37	49.83
12”	22.30	25.90	53	72.48
14”	27.9	33.6	69	91.6
16”	38.6	43.9	91	121
18”	48.9	56	116	153
20”	68.9	79	140	188
22”	88.3	96.4	170	229
24”	114	138	206	274
26”	161	201	242	322
28”	183	229	275	369
30”	215	269	324	423
32”	232	290	349.53	466
34”	263	328	395.24	528
36”	294	367	443.71	590
38”		411	497.71	658
40”		454	551.98	729
42”		501	606.16	803
44”		551	669.04	885
46”		602	731.69	966
48”		655	797.28	1051

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45º ELBOWS BUTT WELDED - LONG RADIUS

EURO STEEL
STAINLESS STEEL • ALUMINIUM • SPECIAL STEELS

ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9



DIMENSIONS (unit: mm)

Nominal Pipe Sizes in inches	Outside Diameter (OD) in mm	Wall Thickness (T) in mm				Centre to End (A)
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S	
1/2”	21.34	1.65	2.11	2.77	3.73	15.88
3/4”	26.67	1.65	2.11	2.87	3.91	19
1”	33.40	1.65	2.77	3.38	4.55	22.22
1 1/4”	42.16	1.65	2.77	3.56	4.85	25.40
1 1/2”	48.26	1.65	2.77	3.68	5.08	28.45
2”	60.32	1.65	2.77	3.91	5.54	35.05
2 1/2”	73.02	2.11	3.05	5.16	7.01	44.45
3”	88.90	2.11	3.05	5.49	7.62	50.80
3 1/2”	101.60	2.11	3.05	5.74	8.08	57.15
4”	114.30	2.11	3.05	6.02	8.56	63.50
5”	141.30	2.77	3.40	6.55	9.53	79.25
6”	168.27	2.77	3.40	7.11	10.97	95.25
8”	219.08	2.77	3.76	8.18	12.70	127.00
10”	273.05	3.40	4.19	9.27	12.70	158.75
12”	323.85	3.96	4.57	9.53	12.70	190.50
14”	355.60	3.96	4.78	9.53	12.70	222.25
16”	406.40	4.19	4.78	9.53	12.70	254.00
18”	457.20	4.19	4.78	9.53	12.70	285.75
20”	508.00	4.78	5.54	9.53	12.70	317.50
22”	558.80	4.78	5.54	9.53	12.70	342.90
24”	609.60	5.54	6.35	9.53	12.70	381.00
26”	660.40	-	-	-	-	406.40
28”	711.20	-	-	-	-	438.15
30”	762.00	6.35	7.92	9.53	12.70	469.90
32”	812.80					501.65
34”	863.60					533.40
36”	914.40					565.15
38”	965.20					599.95
40”	1016.00					631.95
42”	1066.80					660.40
44”	1117.60					695.45
46”	1168.40					726.95
48”	1219.20					758.95

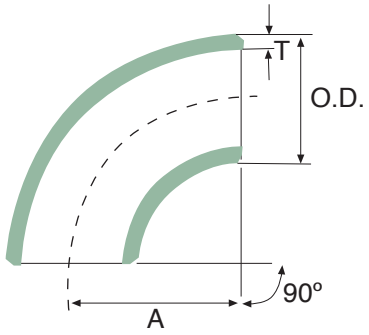
Nominal Pipe Sizes in inches	Weight (unit: Kg)			
	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2”	0.024	0.030	0.039	0.050
3/4”	0.031	0.039	0.052	0.078
1”	0.039	0.064	0.077	0.100
1 1/4”	0.063	0.103	0.130	0.177
1 1/2”	0.085	0.142	0.184	0.254
2”	0.143	0.239	0.326	0.471
2 1/2”	0.288	0.406	0.683	0.897
3”	0.405	0.571	1.02	1.44
3 1/2”	0.540	0.764	1.41	2.05
4”	0.696	0.985	1.92	2.81
5”	1.42	1.71	3.24	4.85
6”	2.01	2.43	4.97	8.02
8”	3.53	5.01	10.10	16.22
10”	6.62	8.3	17.70	25.37
12”	11.10	12.50	28.10	36.8
14”	14.40	17.3	32.93	47.2
16”	19.90	22.7	43.31	62
18”	25.20	28.7	54.99	79
20”	35.5	41.1	68.13	97.2
22”	43	49.80	81.13	118
24”	59	71.3	98.57	141
26”	82.9	104	114.11	166
28”	94.3	118	132.73	190
30”	111	139	152.75	218
32”	120	149	156.24	240
34”	135	169	196.96	272
36”	151	189	221.20	304
38”	169	212	248.15	339
40”	187	234	257.35	376
42”	207	258	301.34	414
44”	227	284	333.68	456
46”	248	310	365.07	498
48”	270	338	397.69	542

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Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

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90º ELBOWS BUTT WELDED - SHORT RADIUS



ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray)
ASME B16-9 B16.9
(previously B16.28)

DIMENSIONS (unit: mm)

Nominal Pipe Sizes in inches	Outside Diameter (OD) in mm	Wall Thickness (T) in mm				Centre to End (A)
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S	
1	33.40	1.65	2.77	3.38	4.55	25.40
1 1/4	42.16	1.65	2.77	3.56	4.85	31.75
1 1/2	48.26	1.65	2.77	3.68	5.08	38.10
2	60.32	1.65	2.77	3.91	5.54	50.80
2 1/2	73.02	2.11	3.05	5.16	7.01	63.50
3	88.90	2.11	3.05	5.49	7.62	76.20
3 1/2	101.60	2.11	3.05	5.74	8.08	88.90
4	114.30	2.11	3.05	6.02	8.56	101.60
5	141.30	2.77	3.40	6.55	9.53	127.00
6	168.27	2.77	3.40	7.11	10.97	152.40
8	219.08	2.77	3.76	8.18	12.70	203.20
10	273.05	3.40	4.19	9.27	12.70	254.00
12	323.85	3.96	4.57	9.53	12.70	304.80
14	355.60	3.96	4.78	9.53	12.70	355.60
16	406.40	4.19	4.78	9.53	12.70	406.40
18	457.20	4.19	4.78	9.53	12.70	457.20
20	508.00	4.78	5.54	9.53	12.70	508.00
22	558.80	4.78	5.54	9.53	12.70	558.80
24	609.60	5.54	6.35	9.53	12.70	609.60

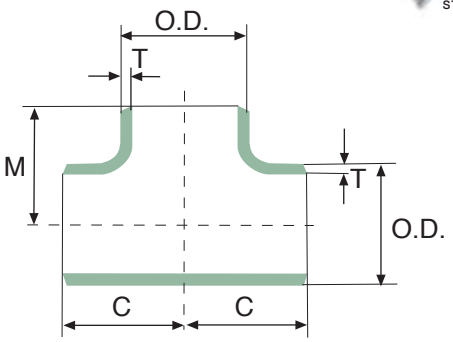
Nominal Pipe Sizes in inches	Weight (unit: Kg)			
	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1	0.077	0.094	0.118	0.122
1 1/4	0.101	0.152	0.204	0.217
1 1/2	0.114	0.189	0.245	0.317
2	0.191	0.318	0.434	0.593
2 1/2	0.383	0.541	0.909	1.13
3	0.540	0.761	1.36	1.82
3 1/2	0.719	1.02	1.88	2.61
4	0.928	1.31	2.56	3.56
5	1.89	2.28	4.32	6.20
6	2.68	3.24	7.05	10.26
8	4.71	6.68	13.40	20.84
10	8.83	10.40	23.60	32.94
12	14.8	16.70	35.80	47.30
14	18.6	22	46.4	59.25
16	25.60	29.3	61	81.81
18	32	37	77	103.96
20	45	53	95	128.79
22	55	64	115	156.29
24	76	92	137	186.41



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EQUAL TEES

ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9



DIMENSIONS (unit: mm)

Nominal Pipe Sizes in inches	Outside Diameter (OD) in mm	Wall Thickness (T) in mm					
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S	Centre to End (A)	M
1/2	21.34	1.65	2.11	2.77	3.73	25.40	25.40
3/4	26.67	1.65	2.11	2.87	3.91	28.70	28.70
1	33.40	1.65	2.77	3.38	4.55	38.10	38.10
1 1/4	42.16	1.65	2.77	3.56	4.85	47.75	47.75
1 1/2	48.26	1.65	2.77	3.68	5.08	57.15	57.15
2	60.32	1.65	2.77	3.91	5.54	63.50	63.50
2 1/2	73.02	2.11	3.05	5.16	7.01	76.20	76.20
3	88.90	2.11	3.05	5.49	7.62	85.85	85.85
4	114.30	2.11	3.05	6.02	8.56	104.90	104.90
5	141.30	2.77	3.40	6.55	9.53	123.95	123.95
6	168.27	2.77	3.40	7.11	10.97	143.00	143.00
8	219.08	2.77	3.76	8.18	12.70	177.80	177.80
10	273.05	3.40	4.19	9.27	12.70	215.90	215.90
12	323.85	3.96	4.57	9.53	12.70	254.00	254.00
14	355.60	3.96	4.78	9.53	12.70	279.40	279.40
16	406.40	4.19	4.78	9.53	12.70	304.80	304.80
18	457.20	4.19	4.78	9.53	12.70	342.90	342.90
20	508.00	4.78	5.54	9.53	12.70	381.00	381.00
22	558.80	4.78	5.54	9.53	12.70	419.10	419.10
24	609.60	5.54	6.35	9.53	12.70	431.80	431.80

WEIGHT (unit: kg)

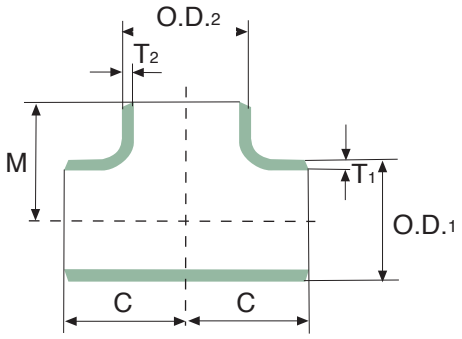
Nominal Pipe Sizes in inches	Weight (unit: Kg)			
	Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.11	0.13	0.16	0.22
3/4	0.129	0.16	0.2	0.294
1	0.18	0.31	0.34	0.399
1 1/4	0.356	0.51	0.59	0.8
1 1/2	0.497	0.76	0.91	1.26
2	0.681	1.24	1.59	2.26
2 1/2	1.20	1.77	2.72	3.7
3	1.34	1.94	3.18	4.42
4	2.15	3.05	5.45	7.74
5	4.48	5.43	9.53	13.8
6	6.64	8.18	15.4	23.8
8	9.24	12.7	25	38.7
10	15.4	16	26	52.9
12	25.1	27.86	39	72.48
14	34	41	74.21	99.78
16	42.5	48.7	88.56	114.23
18	54	62	112.33	150
20	85	99	155	207
22	103	120	188	250
24	153	175	240	319



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REDUCING TEES

ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9



Nominal Pipe Sizes Run	Outlet	Outside Ø OD_1	Outside Ø OD_2	Wall Thickness (T) in mm								Centre to End (C)	Centre to End (M)
				Sch. 5S		Sch. 10S		STD Sch. 40S		XS Sch. 80S			
				T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2		
3/4	1/2	26.67	21.34	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	28.70	28.70
1	1/2	33.40	21.34	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	38.10	38.10
1	3/4	33.40	26.67	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	38.10	38.10
1 1/4	3/4	42.16	26.67	1.65	1.65	2.77	2.11	3.56	2.87	4.85	3.91	47.75	47.75
1 1/4	1	42.16	33.40	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	47.75	47.75
1 1/2	1/2	48.26	21.34	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	57.15	57.15
1 1/2	3/4	48.26	26.67	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	57.15	57.15
1 1/2	1	48.26	33.40	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	57.15	57.15
1 1/2	1 1/4	48.26	42.16	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	57.15	57.15
2	3/4	60.32	26.67	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	63.50	44.45
2	1	60.32	33.40	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	63.50	50.80
2	1 1/4	60.32	42.16	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	63.50	57.15
2	1 1/2	60.32	48.26	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	63.50	60.45
2 1/2	1 1/2	73.02	48.26	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	76.20	66.80
2 1/2	2	73.02	60.32	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	76.20	69.85
3	1 1/2	88.90	48.26	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	85.85	73.15
3	2	88.90	60.32	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	85.85	76.20
3	2 1/2	88.90	73.02	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	85.85	82.55
4	1 1/2	114.30	48.26	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	104.90	85.85
4	2	114.30	60.32	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	104.90	88.90
4	2 1/2	114.30	73.02	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	104.90	95.25
4	3	114.30	88.90	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	104.90	98.55
5	3	141.30	88.90	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	123.95	111.25
5	4	141.30	114.30	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	123.95	117.60
6	2 1/2	168.27	73.02	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	143.00	120.65
6	3	168.27	88.90	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	143.00	123.95
6	4	168.27	114.30	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	143.00	130.30
6	5	168.27	141.30	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	143.00	136.65

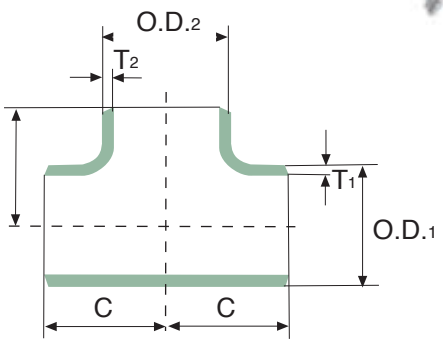
Nominal Pipe Sizes in inches	Outlet	Weight (unit: Kg)			
		Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
3/4	1/2	0.14	0.19	0.23	0.31
1	1/2	0.22	0.36	0.40	0.54
1	3/4	0.23	0.38	0.42	0.57
1 1/4	3/4	0.35	0.58	0.68	0.92
1 1/4	1	0.35	0.58	0.68	0.92
1 1/2	1/2	0.45	0.76	0.91	1.26
1 1/2	3/4	0.48	0.81	0.97	1.34
1 1/2	1	0.49	0.82	0.99	1.37
1 1/2	1 1/4	0.50	0.85	1.02	1.41
2	3/4	0.68	1.15	1.48	2.10
2	1	0.73	1.24	1.59	2.26
2	1 1/4	0.75	1.27	1.63	2.31
2	1 1/2	0.78	1.33	1.70	2.41
2 1/2	1 1/2	1.13	1.63	2.50	3.40
2 1/2	2	1.22	1.77	2.72	3.70
3	1 1/2	1.19	1.73	2.84	3.95
3	2	1.24	1.80	2.95	4.10
3	2 1/2	1.29	1.87	3.06	4.25
4	1 1/2	1.97	2.83	5.06	7.19
4	2	1.99	2.86	5.11	7.26
4	2 1/2	2.00	2.87	5.13	7.28
4	3	2.06	2.95	5.27	7.48
5	3	4.27	5.18	9.08	13.2
5	4	4.48	5.43	9.53	13.8
6	2 1/2	6.25	3.70	14.5	22.4
6	3	6.35	7.82	14.80	22.9
6	4	6.54	8.06	15.2	23.4
6	5	6.23	8.30	15.7	24.1

(continued)
see next page for 8" and larger

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REDUCING TEES (cont.)

ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9



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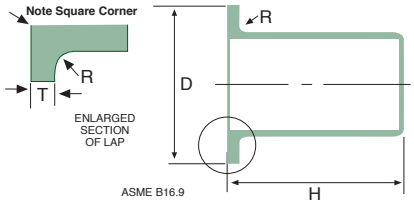
Nominal Pipe Sizes Run	Outlet	Outside Ø OD_1	Outside Ø OD_2	Wall Thickness (T) in mm								Centre to End (C)	Centre to End (M)
				Sch. 5S		Sch. 10S		STD Sch. 40S		XS Sch. 80S			
				T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2		
3/4	1/2	26.67	21.34	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	28.70	28.70
1	1/2	33.40	21.34	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	38.10	38.10
1	3/4	33.40	26.67	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	38.10	38.10
1 1/4	3/4	42.16	26.67	1.65	1.65	2.77	2.11	3.56	2.87	4.85	3.91	47.75	47.75
1 1/4	1	42.16	33.40	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	47.75	47.75
1 1/2	1/2	48.26	21.34	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	57.15	57.15
1 1/2	3/4	48.26	26.67	1.65	1.65	2.77	2.11	3.68	2.87	5.08	3.91	57.15	57.15
1 1/2	1	48.26	33.40	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	57.15	57.15
1 1/2	1 1/4	48.26	42.16	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	57.15	57.15
2	3/4	60.32	26.67	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	63.50	44.45
2	1	60.32	33.40	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	63.50	50.80
2	1 1/4	60.32	42.16	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	63.50	57.15
2	1 1/2	60.32	48.26	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	63.50	60.45
2 1/2	1 1/2	73.02	48.26	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	76.20	66.80
2 1/2	2	73.02	60.32	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	76.20	69.85
3	1 1/2	88.90	48.26	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	85.85	73.15
3	2	88.90	60.32	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	85.85	76.20
3	2 1/2	88.90	73.02	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	85.85	82.55
4	1 1/2	114.30	48.26	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	104.90	85.85
4	2	114.30	60.32	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	104.90	88.90
4	2 1/2	114.30	73.02	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	104.90	95.25
4	3	114.30	88.90	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	104.90	98.55
5	3	141.30	88.90	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	123.95	111.25
5	4	141.30	114.30	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	123.95	117.60
6	2 1/2	168.27	73.02	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	143.00	120.65
6	3	168.27	88.90	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	143.00	123.95
6	4	168.27	114.30	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	143.00	130.30
6	5	168.27	141.30	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	143.00	136.65

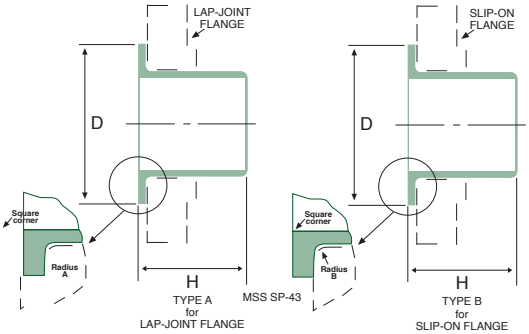
Nominal Pipe Sizes in inches	Outlet	Weight (unit: Kg)			
		Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
3/4	1/2	0.14	0.19	0.23	0.31
1	1/2	0.22	0.36	0.40	0.54
1	3/4	0.23	0.38	0.42	0.57
1 1/4	3/4	0.35	0.58	0.68	0.92
1 1/4	1	0.35	0.58	0.68	0.92
1 1/2	1/2	0.45	0.76	0.91	1.26
1 1/2	3/4	0.48	0.81	0.97	1.34
1 1/2	1	0.49	0.82	0.99	1.37
1 1/2	1 1/4	0.50	0.85	1.02	1.41
2	3/4	0.68	1.15	1.48	2.10
2	1	0.73	1.24	1.59	2.26
2	1 1/4	0.75	1.27	1.63	2.31
2	1 1/2	0.78	1.33	1.70	2.41
2 1/2	1 1/2	1.13	1.63	2.50	3.40
2 1/2	2	1.22	1.77	2.72	3.70
3	1 1/2	1.19	1.73	2.84	3.95
3	2	1.24	1.80	2.95	4.10
3	2 1/2	1.29	1.87	3.06	4.25
4	1 1/2	1.97	2.83	5.06	7.19
4	2	1.99	2.86	5.11	7.26
4	2 1/2	2.00	2.87	5.13	7.28
4	3	2.06	2.95	5.27	7.48
5	3	4.27	5.18	9.08	13.2
5	4	4.48	5.43	9.53	13.8
6	2 1/2	6.25	3.70	14.5	22.4
6	3	6.35	7.82	14.80	22.9
6	4	6.54	8.06	15.2	23.4
6	5	6.23	8.30	15.7	24.1

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EURO STEEL
STAINLESS STEEL • ALUMINIUM • SPECIAL STEELS

STUB ENDS: SHORT & LONG
Type A & Type B





ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9

Nominal Pipe Sizes	Outside Ø OD	Wall Thickness (T) in mm				Ø of Lap (D)	Length H		Radius R	
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S		Long ASME	ASME Short & MSS	MSS Type A (Max) & ASME	MSS Type B (Max)
1/2	21.34	1.65	2.11	2.77	3.73	34.93	76.20	50.80	3.30	0.76
3/4	26.67	1.65	2.11	2.87	3.91	42.88	76.20	50.80	3.30	0.76
1	33.40	1.65	2.77	3.38	4.55	50.80	101.60	50.80	3.30	0.76
1 1/4	42.16	1.65	2.77	3.56	4.85	63.50	101.60	50.80	4.83	0.76
1 1/2	48.26	1.65	2.77	3.68	5.08	73.02	101.60	50.80	6.35	0.76
2	60.32	1.65	2.77	3.91	5.54	92.07	152.40	63.50	7.87	0.76
2 1/2	73.02	2.11	3.05	5.16	7.01	104.77	152.40	63.50	7.87	0.76
3	88.90	2.11	3.05	5.49	7.62	127.00	152.40	63.50	9.65	0.76
4	114.30	2.11	3.05	6.02	8.56	157.18	152.40	76.20	11.18	0.76
5	141.30	2.77	3.40	6.55	9.53	185.75	203.20	76.20	11.18	1.52
6	168.27	2.77	3.40	7.11	10.97	215.90	203.20	88.90	12.70	1.52
8	219.08	2.77	3.76	8.18	12.70	269.88	203.20	101.60	12.70	1.52
10	273.05	3.40	4.19	9.27	12.70	323.85	254.00	127.00	12.70	1.52
12	323.85	3.96	4.57	9.53	12.70	381.00	254.00	152.40	12.70	1.52
14	355.60	3.96	4.78	9.53	12.70	412.75	304.80	152.40	12.70	1.52
16	406.40	4.19	4.78	9.53	12.70	469.90	304.80	152.40	12.70	1.52
18	457.20	4.19	4.78	9.53	12.70	533.40	304.80	152.40	12.70	1.52
20	508.00	4.78	5.54	9.53	12.70	584.20	304.80	152.40	12.70	1.52
22	558.80	4.78	5.54	9.53	12.70	641.35	304.80	152.40	12.70	1.52
24	609.60	5.54	6.35	9.53	12.70	692.15	304.80	152.40	12.70	1.52

Approximate Weight (unit: Kg)				
Nominal Pipe Sizes in inches	Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.049	0.062	0.079	0.129
3/4	0.064	0.086	0.101	0.17
1	0.82	0.140	0.160	0.240
1 1/4	0.109	0.178	0.263	0.349
1 1/2	0.129	0.213	0.376	0.458
2	0.204	0.376	0.471	0.743
2 1/2	0.313	0.448	0.797	1.060
3	0.4	0.574	1.133	1.508
4	0.606	0.870	1.68	2.56
5	0.985	1.237	2.28	3.601
6	1.34	1.95	3.37	5.57
8	1.96	2.65	5.67	10.12
10	3.57	4.38	9.55	13.95
12	5.85	6.74	13.8	19.93
14	6.42	7.75	15.46	20.62
16	7.91	9.00	17.98	23.98
18	9.24	10.5	21.00	28.00
20	11.7	13.54	23.30	31.07
22	14.1	16.22	25.86	34.00
24	16.5	18.94	28.41	37.88



Think Green... Think EURO STEEL

CONCENTRIC & ECCENTRIC REDUCERS
BUTT WELD (1 of 3)

ASME/ASTM SA/A403 WPS

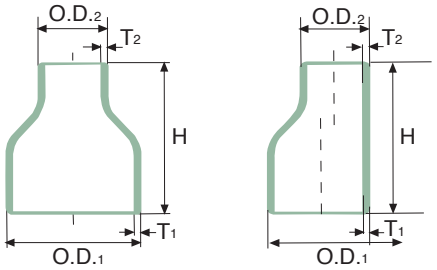
(Seamless) ASME B16-9

ASME/ASTM SA/A403 WPW

(Welded) ASME B16-9

ASME/ASTM SA/A403 WPWX

(Welded, 100% X-Ray) ASME B16-9



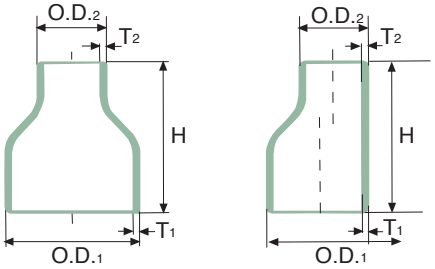
Nominal Pipe Sizes Run		Outside Ø OD_1	Outside Ø OD_2	Wall Thickness (T) in mm								Length H
				Sch. 5S		Sch. 10S		STD Sch. 40S		XS Sch. 80S		
				T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	
3/4	1/2	26.67	21.34	1.65	1.65	2.11	2.11	2.87	2.77	3.91	3.73	38.10
1	1/2	33.40	21.34	1.65	1.65	2.77	2.11	3.38	2.77	4.55	3.73	50.80
1	3/4	33.40	26.67	1.65	1.65	2.77	2.11	3.38	2.87	4.55	3.91	50.80
1 1/4	1	42.16	33.40	1.65	1.65	2.77	2.77	3.56	3.38	4.85	4.55	50.80
1 1/2	1/2	48.26	21.34	1.65	1.65	2.77	2.11	3.68	2.77	5.08	3.73	63.50
1 1/2	3/4	48.26	26.67	1.65	1.65	2.77	2.11	3.68	2.87	5.008	3.91	63.50
1 1/2	1	48.26	33.40	1.65	1.65	2.77	2.77	3.68	3.38	5.08	4.55	63.50
1 1/2	1 1/4	48.26	42.16	1.65	1.65	2.77	2.77	3.68	3.56	5.08	4.85	63.50
2	3/4	60.32	26.67	1.65	1.65	2.77	2.11	3.91	2.87	5.54	3.91	76.20
2	1	60.32	33.40	1.65	1.65	2.77	2.77	3.91	3.38	5.54	4.55	76.20
2	1 1/4	60.32	42.16	1.65	1.65	2.77	2.77	3.91	3.56	5.54	4.85	76.20
2	1 1/2	60.32	48.26	1.65	1.65	2.77	2.77	3.91	3.68	5.54	5.08	76.20
2 1/2	1	73.02	33.40	2.11	1.65	3.05	2.77	5.16	3.38	7.01	4.55	88.90
2 1/2	1 1/4	73.02	42.16	2.11	1.65	3.05	2.77	5.16	3.56	7.01	4.85	88.90
2 1/2	1 1/2	73.02	48.26	2.11	1.65	3.05	2.77	5.16	3.68	7.01	5.08	88.90
2 1/2	2	73.02	60.32	2.11	1.65	3.05	2.77	5.16	3.91	7.01	5.54	88.90
3	1	88.90	33.40	2.11	1.65	3.05	2.77	5.49	3.38	7.62	4.55	88.90
3	1 1/4	88.90	42.16	2.11	1.65	3.05	2.77	5.49	3.56	7.62	4.85	88.90
3	1 1/2	88.90	48.26	2.11	1.65	3.05	2.77	5.49	3.68	7.62	5.08	88.90
3	2	88.90	60.32	2.11	1.65	3.05	2.77	5.49	3.91	7.62	5.54	88.90
3	2 1/2	88.90	73.02	2.11	2.11	3.05	3.05	5.49	5.16	7.62	7.01	88.90
4	1 1/2	114.30	48.26	2.11	1.65	3.05	2.77	6.02	3.68	8.56	5.08	101.60
4	2	114.30	60.32	2.11	1.65	3.05	2.77	6.02	3.91	8.56	5.54	101.60
4	2 1/2	114.30	73.02	2.11	2.11	3.05	3.05	6.02	5.16	8.56	7.01	101.60
4	3	114.30	88.90	2.11	2.11	3.05	3.05	6.02	5.49	8.56	7.62	101.60
5	3	141.30	88.90	2.77	2.11	3.40	3.05	6.55	5.49	9.53	7.62	127.00
5	4	141.30	114.30	2.77	2.11	3.40	3.05	6.55	6.02	9.53	8.56	127.00
6	2 1/2	168.27	73.02	2.77	2.11	3.40	3.05	7.11	5.16	10.97	7.01	139.70
6	3	168.27	88.90	2.77	2.11	3.40	3.05	7.11	5.49	10.97	7.62	139.70
6	4	168.27	114.30	2.77	2.11	3.40	3.05	7.11	6.02	10.97	8.56	139.70
6	5	168.27	141.30	2.77	2.77	3.40	3.40	7.11	6.55	10.97	9.53	139.70
8	4	219.08	114.30	2.77	2.11	3.76	3.05	8.18	6.02	12.70	8.56	152.40
8	5	219.08	141.30	2.77	2.77	3.76	3.40	8.18	6.55	12.70	9.53	152.40
8	6	219.08	168.27	2.77	2.77	3.76	3.40	8.18	7.11	12.70	10.97	152.40
10	5	273.05	141.30	3.40	2.77	4.19	3.40	9.27	6.55	12.70	9.53	177.80
10	6	273.05	168.27	3.40	2.77	4.19	3.40	9.27	7.11	12.70	10.97	177.80
10	8	273.05	219.08	3.40	2.77	4.19	3.76	9.27	8.18	12.70	12.70	177.80
12	6	323.85	168.27	3.96	2.77	4.57	3.40	9.53	7.11	12.70	10.97	203.20
12	8	323.85	219.08	3.96	2.77	4.57	3.76	9.53	8.18	12.70	12.70	203.20
12	10	323.85	273.05	3.96	3.40	4.57	4.19	9.53	9.27	12.70	12.70	203.20

Nominal Pipe Sizes in inches		Weight (unit: Kg)			
		Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
3/4	1/2	0.054	0.01	0.14	0.18
1	1/2	0.09	0.12	0.15	0.22
1	3/4	0.09	0.14	0.16	0.22
1 1/4	1	0.12	0.18	0.22	0.31
1 1/2	1/2	0.11	0.19	0.22	0.32
1 1/2	3/4	0.12	0.21	0.26	0.35
1 1/2	1	0.14	0.23	0.26	0.39
1 1/2	1 1/4	0.16	0.21	0.28	0.44
2	3/4	0.15	0.25	0.37	0.458
2	1	0.16	0.27	0.40	0.50
2	1 1/4	0.17	0.30	0.44	0.54
2	1 1/2	0.19	0.32	0.45	0.58
2 1/2	1	0.26	0.37	0.37	0.78
2 1/2	1 1/4	0.26	0.37	0.670	0.78
2 1/2	1 1/2	0.281	0.41	0.77	0.86
2 1/2	2	0.31	0.44	0.80	0.92
3	1	0.30	0.43	0.85	0.99
3	1 1/4	0.31	0.45	0.75	1.01
3	1 1/2	0.32	0.47	0.97	1.07
3	2	0.34	0.50	1	1.14
3	2 1/2	0.376	0.56	1.08	1.26
4	1 1/2	0.51	0.73	1.31	1.86
4	2	0.53	0.76	1.36	1.93
4	2 1/2	0.58	0.83	1.48	2.10
4	3	0.60	0.86	1.54	2.19
5	3	1.18	1.43	2.5	3.63
5	4	1.28	1.55	2.72	3.94
6	2 1/2	1.41	1.74	3.29	5.07
6	3	1.56	1.92	3.63	5.59
6	4	1.61	1.99	3.75	5.78
6	5	1.66	2.05	3.86	5.94
8	4	1.85	2.54	4.99	7.73
8	5	2.02	2.78	5.43	8.45
8	6	2.23	3.07	6.02	9.33
10	5	3.81	4.77	9.53	13.1
10	6	3.90	4.88	9.76	13.4
10	8	4	5	9.99	13.7
12	6	6.49	7.47	14.1	18.8
12	8	6.67	7.69	14.5	19.3
12	10	7.08	8.16	15.4	20.5

(continued) see next page for 14" and larger

Stock availability and service varies from branch to branch. Information provided as a guide only and is subject to our normal disclaimer on our website

CONCENTRIC & ECCENTRIC REDUCERS
BUTT WELD (continued 2 of 3)





ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9
ASME/ASTM SA/A403 WPW
(Welded) ASME B16-9
ASME/ASTM SA/A403 WPWX
(Welded, 100% X-Ray) ASME B16-9

(continued from previous page)

Nominal Pipe Sizes Run		Outside Ø OD_1	Outside Ø OD_2	Wall Thickness (T) in mm								Length H
				Sch. 5S		Sch. 10S		STD Sch. 40S		XS Sch. 80S		
				T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	
14	12	355.60	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	330.20
14	10	355.60	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	330.20
14	8	355.60	219.08	4.78	3.76	7.92	6.35	9.53	8.18	12.70	12.70	330.20
14	6	355.60	168.27	4.78	3.40	7.92	-	9.53	7.11	12.70	10.97	330.20
16	14	406.40	355.60	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	355.60
16	12	406.40	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	355.60
16	10	406.40	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	355.60
16	8	406.40	219.08	4.78	3.76	7.92	6.35	9.53	8.18	12.70	12.70	355.60
18	16	457.20	406.40	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	381.00
18	14	457.20	355.60	4.78	4.78	7.92	7.92	9.53	9.53	12.70	12.70	381.00
18	12	457.20	323.85	4.78	4.57	7.92	6.35	9.53	9.53	12.70	12.70	381.00
18	10	457.20	273.05	4.78	4.19	7.92	6.35	9.53	9.27	12.70	12.70	381.00
20	18	508.00	457.20	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
20	16	508.00	406.40	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
20	14	508.00	355.60	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
20	12	508.00	323.85	5.54	4.57	9.53	6.35	9.53	9.53	12.70	12.70	508.00
22	20	558.80	508.00	5.54	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00
22	18	558.80	457.20	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
22	16	558.80	406.40	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
22	14	558.80	355.60	5.54	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
24	22	609.60	558.80	6.35	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00
24	20	609.60	508.00	6.35	5.54	9.53	9.53	9.53	9.53	12.70	12.70	508.00
24	18	609.60	457.20	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
24	16	609.60	406.40	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
24	14	609.60	355.60	6.35	4.78	9.53	7.92	9.53	9.53	12.70	12.70	508.00
26	24	660.40	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60
26	20	660.40	508.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60
26	18	660.40	457.20			12.70	7.92	9.53	9.53	12.70	12.70	609.60
26	16	660.40	406.40			12.70	7.92	9.53	9.53	12.70	12.70	609.60
28	26	711.20	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60
28	24	711.20	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60
28	20	711.20	508.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60
28	18	711.20	457.20			12.70	7.92	9.53	9.53	12.70	12.70	609.60
30	28	762.00	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60
30	26	762.00	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60
30	24	762.00	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60
30	22	762.00	558.00			12.70	9.53	9.53	9.53	12.70	12.70	609.60
32	30	812.80	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60
32	28	812.80	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60

Nominal Pipe Sizes in inches		Weight (unit: Kg)			
		Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
14	12	15.0	24.8	27.2	36.2
14	10	14.8	24.5	26.9	35.8
14	8	14.6	24.2	26.6	35.4
14	6	14.5	23.9	26.3	35.0
16	14	17.7	29.3	32.2	42.8
16	12	17.5	28.9	31.8	42.3
16	10	17.4	28.8	31.6	42
16	8	17.1	28.3	31.1	41.4
18	16	21.2	35.1	38.6	51.3
18	14	21.0	34.7	38.1	50.7
18	12	20.7	34.02	37.87	50.1
18	10	20.5	33.9	37.2	49.5
20	18	36.4	56.8	56.8	75.5
20	16	36.01	56.3	56.3	74.9
20	14	35.5	55.4	55.4	73.7
20	12	34.9	54.5	54.5	72.5
22	20	41.3	64.5	64.5	85.8
22	18	40.01	62.7	62.7	83.4
22	16	38.01	59.5	59.5	79.1
22	14	35.7	55.8	55.8	74.2
24	22	51.1	70.0	70.0	93.1
24	20	49.7	68.1	68.1	90.6
24	18	49.1	67.2	67.2	89.4
24	16	48.0	65.8	65.8	87.5
24	14	46.5	63.7	63.7	84.7
26	24		125	94	125
26	20		115	86.3	115
26	18		110	82.6	110
26	16		104	78.0	104.0
28	26		136	102	136
28	24		130	98.1	130
28	20		120	90.3	120
28	18		114	86.0	114
30	28		145	109	145
30	26		140	105	140
30	24		136	102	136
30	22		133	100	133
32	30		156	117.	156
32	28		150	113	150

(continued) see next page for 32" and larger

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CONCENTRIC & ECCENTRIC REDUCERS
BUTT WELD (3 of 3)

ASME/ASTM SA/A403 WPS

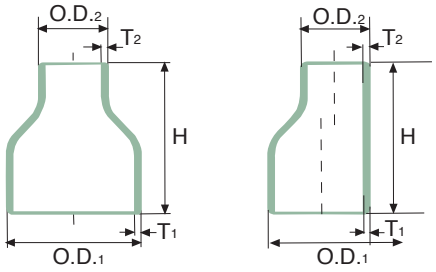
(Seamless) ASME B16-9

ASME/ASTM SA/A403 WPW

(Welded) ASME B16-9

ASME/ASTM SA/A403 WPWX

(Welded, 100% X-Ray) ASME B16-9



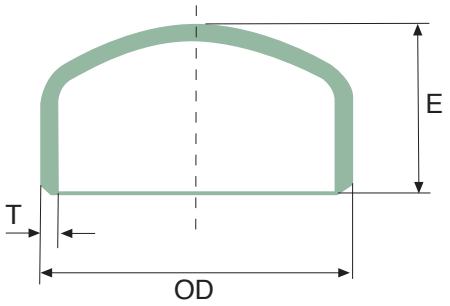
(continued from previous page)

Nominal Pipe Sizes Run		Outside Ø OD_1	Outside Ø OD_2	Wall Thickness (T) in mm								Length H
				Sch. 5S		Sch. 10S		STD Sch. 40S		XS Sch. 80S		
				T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	
32	26	812.80	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60
32	24	812.80	609.60			12.70	9.53	9.53	9.53	12.70	12.70	609.60
34	32	863.60	812.80			12.70	12.70	9.53	9.53	12.70	12.70	609.60
34	30	863.60	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60
34	28	863.60	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60
34	26	863.60	660.40			12.70	12.70	9.53	9.53	12.70	12.70	609.60
36	34	914.40	863.60			12.70	12.70	9.53	9.53	12.70	12.70	609.60
36	32	914.40	812.80			12.70	12.70	9.53	9.53	12.70	12.70	609.60
36	30	914.40	762.00			12.70	12.70	9.53	9.53	12.70	12.70	609.60
36	28	914.40	711.20			12.70	12.70	9.53	9.53	12.70	12.70	609.60
38	36	965.20	914.40					9.53	9.53	12.70	12.70	609.60
38	34	965.20	863.60					9.53	9.53	12.70	12.70	609.60
38	32	965.20	812.80					9.53	9.53	12.70	12.70	609.60
38	30	965.20	762.00					9.53	9.53	12.70	12.70	609.60
38	28	965.20	711.20					9.53	9.53	12.70	12.70	609.60
38	26	965.20	660.40					9.53	9.53	12.70	12.70	609.60
40	38	1016.00	965.20					9.53	9.53	12.70	12.70	609.60
40	36	1016.00	914.40					9.53	9.53	12.70	12.70	609.60
40	34	1016.00	863.60					9.53	9.53	12.70	12.70	609.60
40	32	1016.00	812.80					9.53	9.53	12.70	12.70	609.60
40	30	1016.00	762.00					9.53	9.53	12.70	12.70	609.60
42	40	1066.80	1016.00					9.53	9.53	12.70	12.70	609.60
42	38	1066.80	965.20					9.53	9.53	12.70	12.70	609.60
42	36	1066.80	914.40					9.53	9.53	12.70	12.70	609.60
42	34	1066.80	863.60					9.53	9.53	12.70	12.70	609.60
42	32	1066.80	812.80					9.53	9.53	12.70	12.70	609.60
42	30	1066.80	762.00					9.53	9.53	12.70	12.70	609.60
44	42	1117.60	1066.80					9.53	9.53	12.70	12.70	609.60
44	40	1117.60	1016.00					9.53	9.53	12.70	12.70	609.60
44	38	1117.60	965.20					9.53	9.53	12.70	12.70	609.60
44	36	1117.60	914.40					9.53	9.53	12.70	12.70	609.60
46	44	1168.40	1117.60					9.53	9.53	12.70	12.70	711.20
46	42	1168.40	1066.80					9.53	9.53	12.70	12.70	711.20
46	40	1168.40	1016.00					9.53	9.53	12.70	12.70	711.20
46	38	1168.40	965.20					9.53	9.53	12.70	12.70	711.20
46	36	1168.40	914.40					9.53	9.53	12.70	12.70	711.20
48	44	1219.20	1117.60					9.53	9.53	12.70	12.70	711.20
48	42	1219.20	1066.80					9.53	9.53	12.70	12.70	711.20
48	40	1219.20	1016.00					9.53	9.53	12.70	12.70	711.20

Nominal Pipe Sizes in inches		Weight (unit: Kg)			
		Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
32	26		145	109	145
32	24		142	107	142
34	32		165	124	165
34	30		161	121	161
34	28		156	117	156
34	26		150	113	150
36	34		176	132	176
36	32		170	128	170
36	30		165	124	165
36	28		161	121	161
38	36			140	186
38	34			135	180
38	32			132	176
38	30			129	172
38	28			127	169
38	26			124	165
40	38			147	196
40	36			144	192
40	34			140	186
40	32			137	182
40	30			133	177
42	40			158	210
42	38			154	205
42	36			151	201
42	34			147	196
42	32			145	193
42	30			142	189
44	42			163	217
44	40			158	210
44	38			154	205
44	36			152	202
46	44			148	263
46	42			194	258
46	40			189	251
46	38			185	246
46	36			207	275
48	44			203	270
48	42			198	263
48	40			194	258

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END CAPS



ASME/ASTM SA/A403 WPS
(Seamless) ASME B16-9

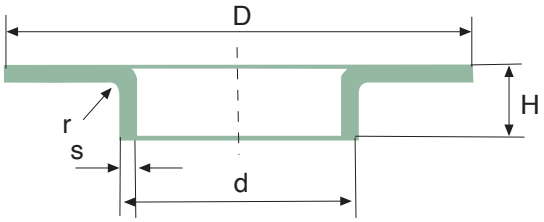
Nominal Pipe Sizes	Outside Ø OD	Wall Thickness (T) in mm				Length E
		Sch. 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S	
1/2	21.34	1.65	2.11	2.77	3.73	25.40
3/4	26.67	1.65	2.11	2.87	3.91	25.40
1	33.40	1.65	2.77	3.38	4.55	38.10
1 1/4	42.16	1.65	2.77	3.56	4.85	38.10
1 1/2	48.26	1.65	2.77	3.68	5.08	38.10
2	60.32	1.65	2.77	3.91	5.54	38.10
2 1/2	73.02	2.11	3.05	5.16	7.01	38.1
3	88.90	2.11	3.05	5.49	7.62	50.8
4	114.30	2.11	3.05	6.02	8.56	64
5	141.30	2.77	3.40	6.55	9.53	76
6	168.27	2.77	3.40	7.11	10.97	89
8	219.08	2.77	3.76	8.18	12.70	102
10	273.00	3.40	4.19	9.27	12.70	127
12	323.85	3.96	4.57	9.53	12.70	152
14	355.60	3.96	4.78	9.53	12.70	165
16	406.40	4.19	4.78	9.53	12.70	178
18	457.20	4.19	4.78	9.53	12.70	203
20	508.00	4.78	5.54	9.53	12.70	229
24	609.60	5.54	6.35	9.53	12.70	267

Nominal Pipe Sizes in inches	Approximate Weight (unit: Kg)			
	Sch 5S	Sch. 10S	STD Sch. 40S	XS Sch. 80S
1/2	0.036	0.040	0.046	0.045
3/4	0.049	0.052	0.059	0.086
1	0.081	0.090	0.109	0.13
1 1/4	0.09	0.113	0.171	0.222
1 1/2	0.099	0.14	0.234	0.344
2	0.169	0.17	0.27	0.344
2 1/2	0.227	0.242	0.420	0.512
3	0.39	0.40	0.69	0.84
4	0.566	0.68	1.22	1.61
5	0.907	1.02	1.91	2.55
6	1.11	1.42	3.23	4.24
8	1.74	2.49	5.67	7.76
10	3.26	4.9	9.7	12.3
12	5.47	6.53	13.1	16.6
14	7.19	8.16	15.9	21.11
16	10.99	14.5	22	29.48
18	13.92	18	27	35.92
20	17.19	27	34	40.21
24	27.43	34.5	44.5	61.23



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SEAMLESS AND WELDED COLLARS



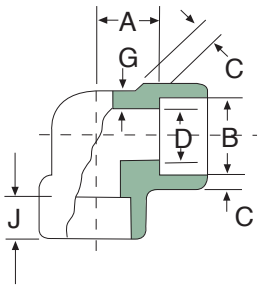
Nominal Diameter DN	Diameter in inches	d (mm)	D (mm)	r	H (mm)	s (mm)
10	3/8	17.2	40	3	9	As per ANSI B36-10/B36-19 or customer specification
15	1/2	21.3	45	3	9	
20	3/4	26.9	58	3	12	
25	1	33.7	68	4	15	
32	1 1/4	42.4	78	4	15	
40	1 1/2	48.3	88	4	17	
50	2	60.3	102	5	23	
65	2 1/2	73	122	5	23	
80	3	88.9	138	5	23	
100	4	114.3	158	5	28	
125	5	141.3	188	5	30	
150	6	168.3	212	5	30	
200	8	219.1	268	5	30	
250	10	273.2	320	5	30	
300	12	323.9	370	6	35	
350	14	355.6	430	6	-	
400	16	406.4	482	6	-	
450	18	457.2	532	6	-	
500	20	508	585	6	-	
600	24	609.6	685	7	-	
700	28	711.2	800	7	-	
800	32	812.8	905	7	-	
900	36	914.4	1005	7	-	
1000	40	1016	1110	8	-	
1200	48	1219.2	1330	8	-	

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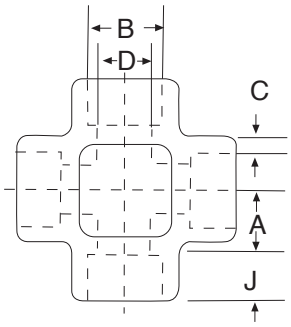
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SOCKET WELD FITTINGS

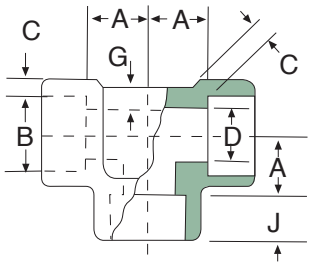
ASME B16.11



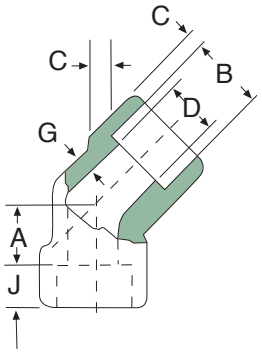
90° ELBOW



CROSS



TEE



45° ELBOW

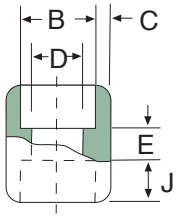
DN	Nominal Pipe Sizes	Socket Bore Ø	Bore Diameter of Fitting D			Socket Wall Thickness C						Body Wall Thickness G			Depth of Socket Min.
			Class Designation			Class Designation						Class Designation			
						3000		6000		9000		3000	6000	9000	
		B	3000	6000	9000	Ave.	Min.	Ave.	Min.	Ave.	Min.	Min.	Min.	Min.	J
6	1/8	11.2	7.6	4.8		3.18	3.18	3.96	3.43			2.41	3.15		9.5
		10.8	6.1	3.2											
8	1/4	14.6	10.0	7.1		3.78	3.30	4.60	4.01			3.02	3.68		9.5
		14.2	8.5	5.6											
10	3/8	18.0	13.3	9.9		4.01	3.50	5.03	4.37			3.20	4.01		9.5
		17.6	11.8	8.4											
15	1/2	22.2	16.6	12.5	7.2	4.67	4.09	5.97	5.18	9.35	8.18	3.73	4.78	7.47	9.5
		21.8	15.0	11.0	5.6										
20	3/4	27.6	21.7	16.3	11.8	4.90	4.27	6.96	6.04	9.78	8.56	3.91	5.56	7.82	12.5
		27.2	20.2	14.8	10.3										
25	1	34.3	27.4	21.5	16	5.69	4.98	7.92	6.93	11.38	9.96	4.55	6.35	9.09	12.5
		33.9	25.9	19.9	14.5										
32	1 1/4	43.1	35.8	30.2	23.5	6.07	5.28	7.92	6.93	12.14	10.62	4.85	6.35	9.70	12.5
		42.7	34.3	28.7	22										
40	1 1/2	49.2	41.6	34.7	28.7	6.35	5.545	8.92	7.80	12.70	11.12	5.08	7.14	10.15	12.5
		48.8	40.1	33.2	27.2										
50	2	61.7	53.3	43.6	38.9	6.93	6.04	10.92	9.50	13.84	12.12	5.54	8.74	11.07	16.0
		61.2	51.7	42.1	37.4										
65	2 1/2	74.4	64.2			8.76	7.67					7.01			16.0
		73.9	61.2												
80	3	90.3	79.4			9.52	8.30					7.62			16.0
		89.8	76.4												
100	4	115.7	103.8			10.69	9.35					8.56			19.0
		115.2	100.7												

* Dimensions in mm

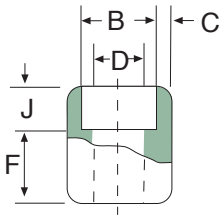
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SOCKET WELD FITTINGS

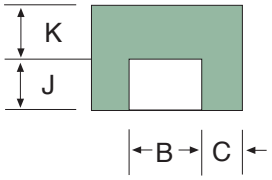
ASME B16.11



COUPLING



HALF COUPLING



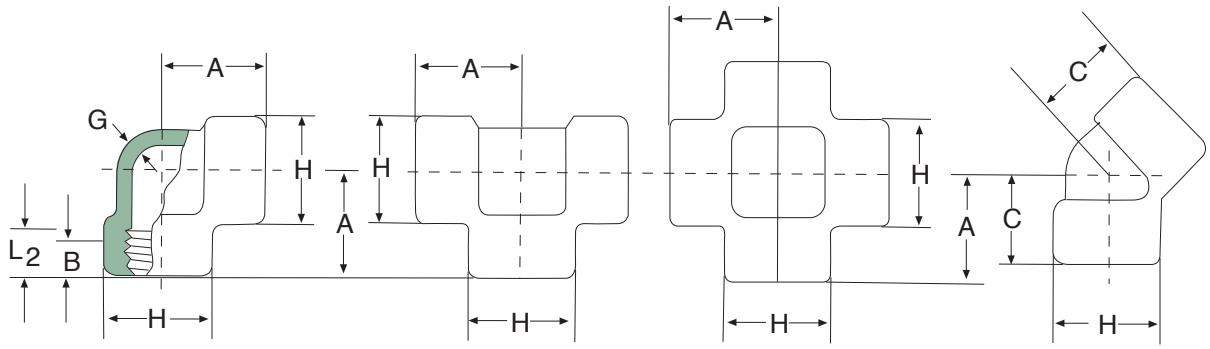
CAP

DN	Nom. Pipe Size	Centre to Bottom of Socket -A						Laying Lengths		Tolerances ±			End Wall Thickness K Min.		
		90° Elbows Tees, Crosses			45° Elbows			C-lings	Half C-lings	A	E	F			
		Class Designation			Class Designation								Class Designation		
		3000	6000	9000	3000	6000	9000	E	F				3000	6000	9000
6	1/8	11.0	11.0		8.0	8.0		6.5	16.0	1.0	1.5	1.0	4.8	6.4	
8	1/4	11.0	16.5		8.0	8.0		6.5	16.0	1.0	1.5	1.0	4.8	6.4	
10	3/8	13.5	15.5		8.0	11.0		6.5	17.5	1.5	3.0	1.5	4.8	6.4	
15	1/2	15.5	19.0	25.5	11.0	12.5	15.5	9.5	22.5	1.5	3.0	1.5	6.4	7.9	11.2
20	3/4	19.0	22.5	28.5	13.0	14.0	19.0	9.5	24	1.5	3.0	1.5	6.4	7.9	12.7
25	1	22.5	27.0	32.0	14.0	17.5	20.5	12.5	28.5	2.0	4.0	2.0	9.6	11.2	14.2
32	1 1/4	27.0	32.0	35.0	17.5	20.5	22.5	12.5	30.0	2.0	4.0	2.0	9.6	11.2	14.2
40	1 1/2	32.0	38.0	38.0	20.5	25.5	25.5	12.5	32.0	2.0	4.0	2.0	11.2	12.7	15.7
50	2	38.0	41.0	54.0	25.5	28.5	28.5	19.0	41.0	2.0	4.0	2.0	12.7	15.7	19.0
65	2 1/2	41.0			28.5			19.0	43.0	2.5	5.0	2.5	15.7	19.0	
80	3	57.0			32.0			19.0	44.5	2.5	5.0	2.5	19.0	22.4	
100	4	66.5			41.0			19.0	48.0	2.5	5.0	2.5	22.4	28.4	

* Dimensions in mm

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90° ELBOW TEE CROSS 45° ELBOW

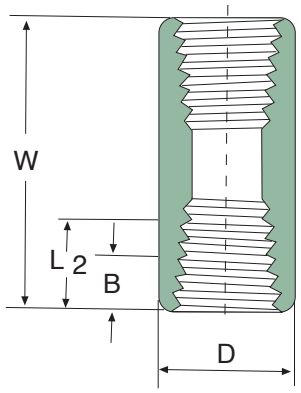
DN	Nom. Pipe Size	Centre to End Elbows, Tees, Cross A (mm)	Centre to End 45° Elbow C (mm)	Outside Diameter of Band H (mm)	Minimum Wall Thickness G (mm)	Length of Thread Min. (note 1)	
	(in)	3000	3000	3000	3000	B	L2
6	1/8	21	17	22	3.18	6.4	6.7
8	1/4	25	19	25	3.30	8.1	10.2
10	3/8	28	22	33	3.51	9.1	10.4
15	1/2	33	25	38	4.09	10.9	13.6
20	3/4	38	28	46	4.32	12.7	13.9
25	1	44	33	56	4.98	14.7	17.3
32	1 1/4	51	35	62	5.28	17.0	18.0
40	1 1/2	60	43	75	5.56	17.8	18.4
50	2	64	44	84	7.14	19.0	19.2
65	2 1/2	83	52	102	7.65	23.6	28.9
80	3	95	64	121	8.84	25.9	30.5
100	4	114	79	152	11.18	27.7	33.0

Note 1: Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for Pipe Threads (ASME B1.20.1).

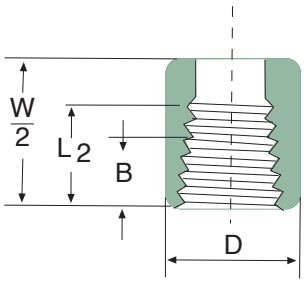
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THREADED FITTINGS (Contined)

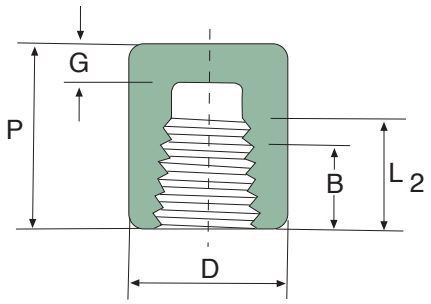
ASME B16.11



COUPLING



HALF COUPLING



CAP

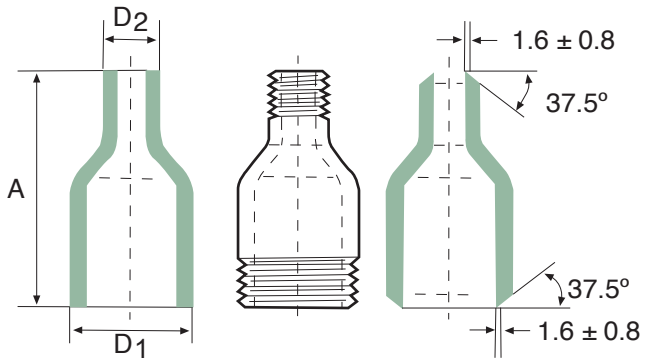
DN	Nom. Pipe Size	End to End Couplings W (mm)	End to End Couplings P (mm)	Outside Diameter D (mm)	End Wall Thickness G Min. (mm)	Length of Thread Min. (note 1)	
	(in)	3000	3000	3000	3000	B	L2
6	1/8	32	19	16	4.8	6.4	6.7
8	1/4	35	25	19	4.8	8.1	10.2
10	3/8	38	25	22	4.8	9.1	10.4
15	1/2	48	32	28	6.4	10.9	13.6
20	3/4	51	37	35	6.4	12.7	13.9
25	1	60	41	44	9.7	14.7	17.3
32	1 1/4	67	44	57	9.7	17.0	18.0
40	1 1/2	79	44	64	11.2	17.8	18.4
50	2	86	48	76	12.7	19.0	19.2
65	2 1/2	92	60	92	15.7	23.6	28.9
80	3	108	65	108	19.0	25.9	30.5
100	4	121	68	140	22.4	27.7	33.0

Note 1: Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for Pipe Threads (ASME B1.20.1).

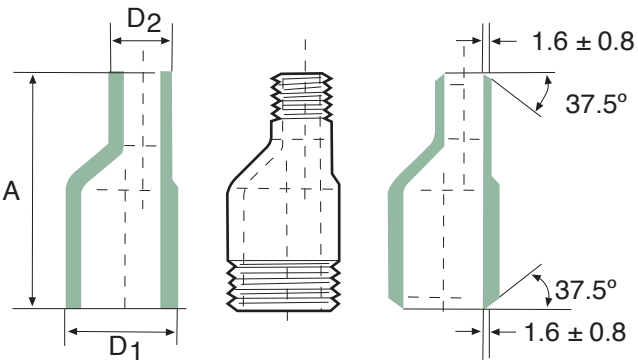
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SWAGED NIPPLES

MSS SP-95



PBE TBE BBE



PBE TBE BBE

CONCENTRIC

Nominal Pipe Size (NPS)	Outside Diameter		End to End "A"
	Large End D1 (mm)	Small End D2 (mm)	(mm)
1/4X1/8	13.7	10.3	57
3/8X1/8	17.1	10.3	64
3/8X1/4	17.1	13.7	64
1/2X1/8	21.3	10.3	70
1/2X1/4	21.3	13.7	70
1/2X3/8	21.3	17.1	70
3/4X1/8	26.7	10.3	76
3/4X1/4	26.7	13.7	76
3/4X3/8	26.7	17.1	76
3/4X1/2	26.7	21.3	76
1X1/8	33.4	10.3	89
1X1/4	33.4	13.7	89
1X3/8	33.4	17.1	89
1X1/2	33.4	21.3	89
1X3/4	33.4	26.7	89
1 1/4X1/8	42.2	10.3	102
1 1/4X1/4	42.2	13.7	102
1 1/4X3/8	42.2	17.1	102
1 1/4X1/2	42.2	21.3	102
1 1/4X3/4	42.2	26.7	102
1 1/4X1	42.2	33.4	102
1 1/2X1/8	48.3	10.3	114
1 1/2X1/4	48.3	13.7	114
1 1/2X3/8	48.3	17.1	114
1 1/2X1/2	48.3	21.3	114
1 1/2X3/4	48.3	26.7	114
1 1/2X1	48.3	33.4	114
1 1/2X1 1/4	48.3	42.2	114
3 1/2X1/4	101.6	13.7	203
3 1/2X3/8	101.6	17.1	203
3 1/2X1/2	101.6	21.3	203
3 1/3X3/4	101.6	26.7	203
3 1/2X1	101.6	33.4	203
3 1/2X1 1/4	101.6	42.2	203
3 1/2X1 1/2	101.6	48.3	203
3 1/2X1	101.6	60.3	203
3 1/2X2 1/2	101.6	73.0	203
3 1/2X3	101.6	88.9	203
4X1/4	114.3	13.7	229

ECCENTRIC

Nominal Pipe Size (NPS)	Outside Diameter		End to End "A"
	Large End D1 (mm)	Small End D2 (mm)	(mm)
2X1/8	60.3	10.3	165
2X1/4	60.3	13.7	165
2X3/8	60.3	17.1	165
2X1/2	60.3	21.3	165
2X3/4	60.3	26.7	165
2X1	60.3	33.4	165
2X1 1/4	60.3	42.2	165
2X1 1/2	60.3	48.3	165
2 1/2X1/8	73.0	10.3	178
2 1/2X1/4	73.0	13.7	178
2 1/2X3/8	73.0	17.1	178
2 1/2X1/2	73.0	21.3	178
2 1/2X3/4	73.0	26.7	178
2 1/2X1	73.0	33.4	178
2 1/2X1 1/4	73.0	42.2	178
2 1/2X1 1/2	73.0	48.3	178
2 1/2X2	73.0	60.3	178
3X1/8	88.9	10.3	203
3X1/4	88.9	13.7	203
3X3/8	88.9	17.1	203
3X1/2	88.9	21.3	203
3X3/4	88.9	26.7	203
3X1	88.9	33.4	203
3X1 1/4	88.9	42.2	203
3X1 1/2	88.9	48.3	203
3X2	88.9	60.3	203
3X2 1/2	88.9	73.0	203
3 1/2X1/8	101.6	10.3	203
4X3/8	114.3	17.1	229
4X1/2	114.3	21.3	229
4X3/4	114.3	26.7	229
4X1	114.3	33.4	229
4X1 1/4	114.3	42.2	229
4X1 1/2	114.3	48.3	229
4X2	114.3	60.3	229
4X2 1/2	114.3	73.0	229
4X3	114.3	88.9	229
4X3 1/2	114.3	101.6	229

PBE: PLAIN BOTH ENDS
PSE: PLAIN SMALL ENDS
PLE: PLAIN LARGE ENDS

BBE: BEVEL BOTH ENDS
BSE: BEVEL SMALL ENDS
BLE: BEVEL LARGE ENDS

TBE: THREAD BOTH ENDS
TSE: THREAD SMALL ENDS
TLE: THREAD LARGE ENDS

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BSP FITTINGS

ASME B16.3

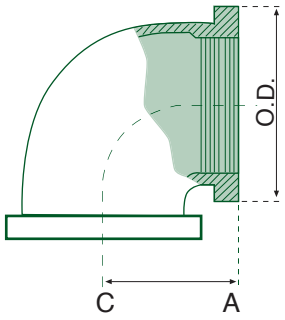
90 º Elbows BSP

Screwed Female Parallel Thread

ASA 150 lb (68kg) rating

Available in grade 316/ 316L





Nominal Bore		Centre (C) to End (A) mm	Outside Diameter (OD) mm
(mm)	(inches)		
-	1/8	14	13.5
-	1/4	18.5	17
10	3/8	20.8	21.4
15	1/2	25	25.5
20	3/4	27.5	31.3
25	1	33	38.7
32	1 1/4	40	48
40	1 1/2	43	53.7
50	2	52	66.7
65	2 1/2	61	84
80	3	70.5	98
100	4	89	124

* Note: 1/8” and 1/4” are sometimes referred to as 3NB & 6NB respectively.

Reducing Sockets

ASME 150lb (68kg) rating

Available in grade 316/ 316L



Nominal Bore		Centre (C) to End (A) mm	Outside Diameter (OD) mm
(mm)	(inches)		
-	1/8	18	14
-	1/4	19	17
10	3/8	23	21
15	1/2	27	26
20	3/4	31	32
25	1	37	40
32	1 1/4	44	49
40	1 1/2	47	55
50	2	56	68
65	2 1/2	68	85
80	3	77	99
100	4	99	125

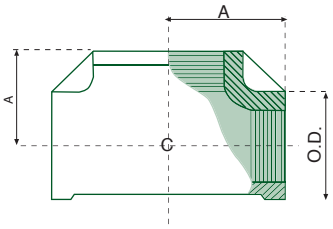
* Note: 1/8” and 1/4” are sometimes referred to as 3NB & 6NB respectively.

Equal Tees

Screwed Female Parallel Thread

ASA 150 lb (68kg) rating

Available in grade 316/ 316L





Inch	Size	Inch
1/4	x	1/8
3/8	x	1/8
3/8	x	1/4
1/2	x	1/4
1/2	x	3/8
3/4	x	1/4
3/4	x	3/8
3/4	x	1/2
1	x	1/2
1	x	3/4
1 1/4	x	1
1 1/2	x	3/4
1 1/2	x	1 1/4
2	x	1
2	x	1 1/4
2	x	1 1/2

* Note: 1/8” and 1/4” are sometimes referred to as 3NB & 6NB respectively.

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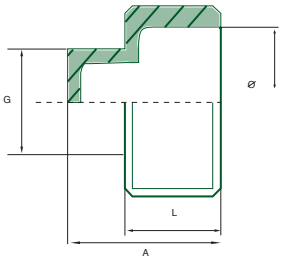
Nominal Bore (mm)	Nominal Bore (inches)	Outside Diameter (OD)	A	L	G
-	1/8		15.5	8.2	
-	1/4		19	10	9
10	3/8	12.5	15	9	8
15	1/2	16	18.5	11.3	10
20	3/4	21	21	13	14
25	1	26.8	24	15	17
32	1 1/4	35.3	28	18	20
40	1 1/2	41.1	28	18	23
50	2	52.5	31	22	28
65	2 1/2	67.5	38.5	23.5	36
80	3	79.5	41.5	26.5	40
100	4	103.5	51.5	32.5	52

Hex and Square Head Plug BSP

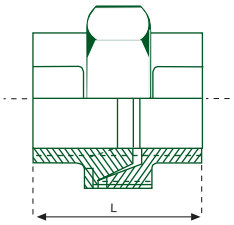
Screwed Male Taper Thread

ASA 150 lb (68kg) rating

Available in grade AISI 316/ 316L







Unions

Female Thread with Conical Seat

BSP Screwed Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



Nominal Bore (mm)	Nominal Bore (inches)	Length (L) (mm)	Width Across Flats
3	1/8	25	23.2
6	1/4	34	29
10	3/8	35	34
15	1/2	38	37.5
20	3/4	40	44.5
25	1	50	53.5
32	1 1/4	51	64
40	1 1/2	57	71.5
50	2	63	85.5
65	2 1/2	67	101
80	3	71	117
100	4	77	147

Nominal Bore (mm)	Nominal Bore (inches)	Length (L) (mm)	(OD)
3	1/8	17	13
6	1/4	24	16.5
10	3/8	25	20
15	1/2	27	24
20	3/4	31	30
25	1	34	37
32	1 1/4	38	45.5
40	1 1/2	38	52
50	2	46	64
65	2 1/2	58	81.5
80	3	61	93.5
100	4	71	120

Sockets BSP

Screwed Female Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



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BSP FITTINGS

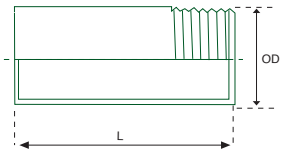
ASME B16.3

Toe Nipples (Thread One End)

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L





Nominal Bore		
(mm)	(inches)	(OD)
3	1/8	10.2
6	1/4	13.5
10	3/8	17.2
15	1/2	21.3
20	3/4	26.9
25	1	33.7
32	1 1/4	42.4
40	1 1/2	48.3
50	2	60.3
65	2 1/2	76.1
80	3	88.9
100	4	114.3

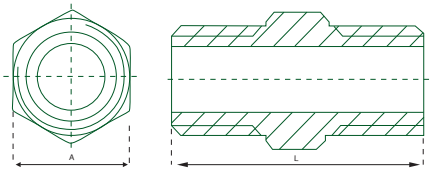
Hex Nipples

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L





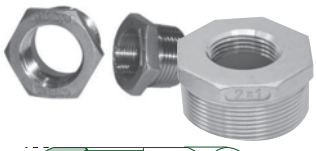
Nominal Bore			
(mm)	(inches)	Length (L) (mm)	(A)
3	1/8	20	12
6	1/4	25	15
10	3/8	27	19
15	1/2	34	23
20	3/4	36.5	29
25	1	42	36
32	1 1/4	47.5	45
40	1 1/2	47.5	51
50	2	57	63
65	2 1/2	62	80
80	3	67.5	95
100	4	80	120

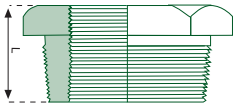
Reducing Bushes BSP

Screwed Female Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L





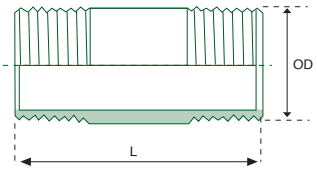
Size (inches)	Length (L) (mm)	Width Across Flats (mm)
1/4 x 1/8	14.5	14.5
3/8 x 1/8	16	18
3/8 x 1/4	16	18
1/2 x 1/8	19.5	21.4
1/2 x 1/4	19.5	21.4
1/2 x 3/8	19.5	21.4
3/4 x 1/4	21	27
3/4 x 3/8	21	27
3/4 x 1/2	21	27
1 x 1/2	24	33.9
1 x 3/4	24	33.9
1 1/4 x 1	27	42.7
1 1/2 x 3/4	27	48.6
1 1/2 x 1	27	48.6
1 1/2 x 1 1/4	27	48.6
2 x 1	31	60.5
2 x 1 1/4	31	60.5
2 x 1 1/2	31	60.5
3 x 2	37.5	91

Barrel Nipples

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L





Nominal Bore			
(mm)	(inches)	Length (L) (mm)	(OD)
3	1/8	40	10.2
6	1/4	40	13.5
10	3/8	40	17.2
15	1/2	60	21.3
20	3/4	60	26.9
25	1	60	33.7
32	1 1/4	80	42.4
40	1 1/2	80	48.3
50	2	100	60.3
65	2 1/2	100	76.1
80	3	120	88.9
100	4	120	114.3

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Size (inches)	Ød	L	E	H	C
1/4	5	40	76	31	10
3/8	7	45	82	36	10.5
1/2	9	57	95	43	13.5
3/4	12.5	60	100	50	14
1	16	72	111	54	16.5
1 1/4	20	78	111	59	19
1 1/2	25	83	139	65	19
2	32	99	152	70	21.5
2 1/2	38	128	200	84	31.5
3	50	150	220	108	32
4	65	192	300	117.5	44

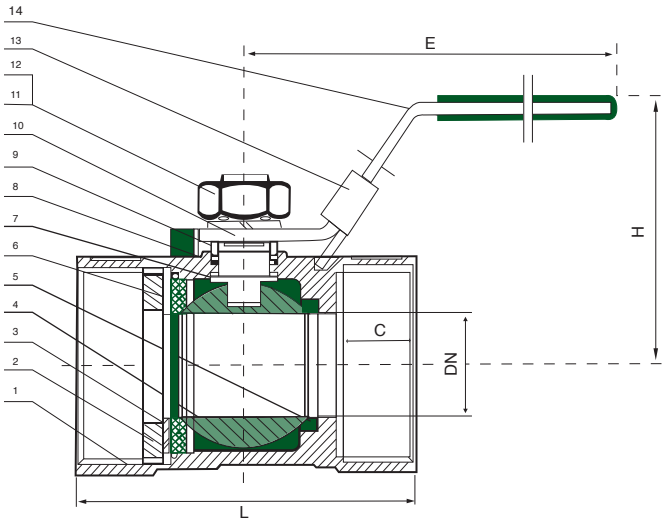
1 Piece Ball Valve

BSP Stainless Steel 316L

ASME B16.34



Main Technical Parameter			
Normal Pressure		1000	PSi
Test Pressure	Shell Test Pressure	10.5	MPa
	Tightness Test	7.7	
	Gas-Tightness Test	0.6	
Max Working Temperature		-20~150	°C
Applicable Medium: Water, Gas, Oil, Acid			



No	Parts Name	Material
1	Body	ASTM A351 CF8M
2	Gland	ASTM A276 304
3	Washer	ASTM A276 304
4	Ball	ASTM A276 316
5	Seat	PTFE
6	Seat	PTFE
7	Stem	ASTM A276 304

No	Parts Name	Material
8	Gasket/ Packing	PTFE
9	Packing Gland	ASTM A276 304
10	Handle	ASTM A276 201
11	Stem nut	ASTM A276 304
12	Washer	ASTM A276 304
13	Handle Locking	ASTM A276 201
14	Handle Sleeve	PVC

* above sizes are an indication and can vary from supplier to supplier.

BSP FITTINGS

ASME B16.3

3 Piece Ball Valves

BSP Stainless Steel 316L

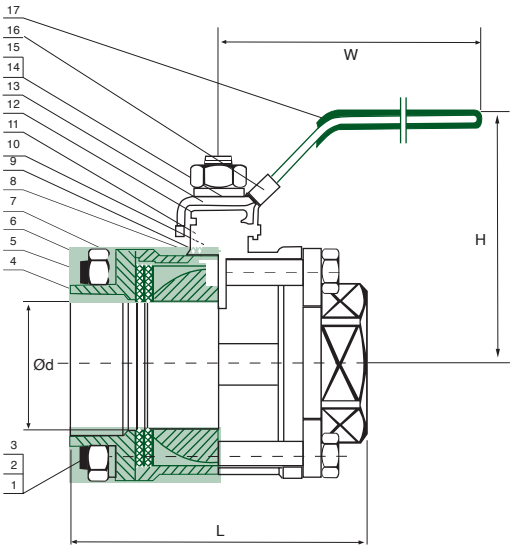
Design and manufacture to

ASME B16.34



Size (inches)	Ød	L	H	W
1/4	10.5	55	42	102
3/8	10.5	55	42	102
1/2	15	65	58	101
3/4	20	46.5	63	101
1	24	86	76	137
1 1/4	32	98	80	150
1 1/2	38	114	93	175
2	48	132	110	175
2 1/2	64	164	127	215
3	78	182	151	236
4	98	235	167	313

Main Technical Parameter			
Normal Pressure		1000	PSi
Test Pressure	Shell Test Pressure	10.5	MPa
	Tightness Test	7.7	
	Gas-Tightness Test	0.6	
Max Working Temperature		-20~150	°C
Applicable Medium: Water, Gas, Oil, Acid			

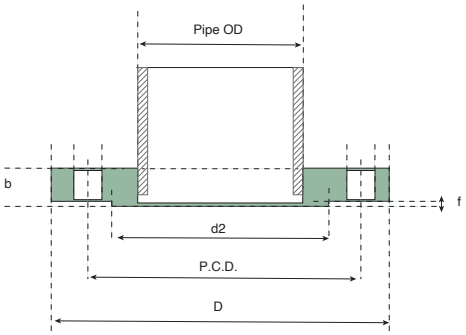


No	Parts Name	Material
1	Bolt	ASTM A276 304
2	Spring Washer	ASTM A276 304
3	Nut	ASTM A276 304
4	End Cap	ASTM A3510CF8M
5	Seat	PTFE
6	Ball	ASTM A276 316
7	Gasket	PTFE
8	Thrust Washer	PTFE
9	Body	ASTM A351 CF8M

No	Parts Name	Material
10	Stem	ASTM A276 304
11	Stem Gasket	PTFE
12	Packing Gland	ASTM A276 304
13	Handle	ASTM A276 201
14	Handle Washer	ASTM A276 304
15	Handle Nut	ASTM A276 201
16	Handle Lock	ASTM A276 304
17	Handle Cover	PVC

* above sizes are an indication and can vary from supplier to supplier.

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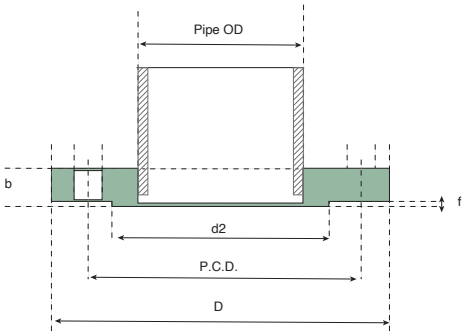
NOMINAL BORE 15 mm

PIPE OD 21,3mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	80,0	12,0	40,0	2,0	4	11,0	M10	55,0	0,40
	PN 10	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,67
	PN 16	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,67
	PN 25	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,67
	PN 40	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,67
SANS1123	600/3	80,0	10,0	40,0	2,0	4	11,0	M10	55,0	0,33
	1000/3	95,0	10,0	45,0	2,0	4	14,0	M12	65,0	0,48
	1600/3	95,0	10,0	45,0	2,0	4	14,0	M12	65,0	0,48
	2500/3	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,76
	4000/3	95,0	14,0	45,0	2,0	4	14,0	M12	65,0	0,76
BS 10	T/D	95,3	4,8	-	-	4	14,3	M12	66,7	0,42
	T/E	95,3	6,3	-	-	4	14,3	M12	66,7	0,42
ASME B16.5	CL 150	88,9	11,1	34,9	1,6	4	15,9	M12	60,3	0,45
	CL 300	95,2	14,3	34,9	1,6	4	15,9	M12	66,7	0,91

NOMINAL BORE 20 mm

PIPE OD 26,7mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	90,0	14,0	50,0	2,0	4	11,0	M10	65,0	0,58
	PN 10	105,0	16,0	58,0	2,0	4	14,0	M12	75,0	0,93
	PN 16	105,0	16,0	58,0	2,0	4	14,0	M12	75,0	0,93
	PN 25	105,0	16,0	58,0	2,0	4	14,0	M12	75,0	0,93
	PN 40	105,0	16,0	58,0	2,0	4	14,0	M12	75,0	0,93
SANS1123	600/3	90,0	10,0	50,0	2,0	4	11,0	M10	65,0	0,42
	1000/3	105,0	10,0	58,0	2,0	4	14,0	M12	75,0	0,58
	1600/3	105,0	10,0	58,0	2,0	4	14,0	M12	75,0	0,58
	2500/3	105,0	14,0	58,0	2,0	4	14,0	M12	75,0	1,04
	4000/3	105,0	14,0	58,0	2,0	4	14,0	M12	75,0	1,04
BS 10	T/D	101,6	9,5	-	-	4	14,2	M12	73,0	0,53
	T/E	101,6	9,5	-	-	4	14,2	M12	73,0	0,53
ASME B16.5	CL 150	98,4	12,7	42,9	1,6	4	16	M12	69,8	0,68
	CL 300	117,5	15,9	42,9	1,6	4	19	M16	82,5	1,25

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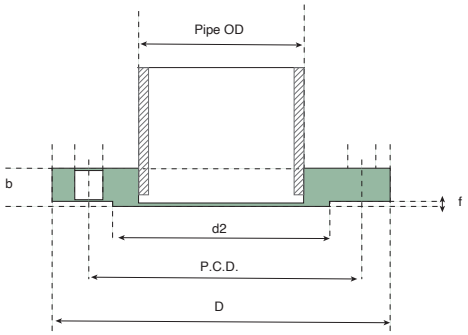
NOMINAL BORE 25 mm

PIPE OD 33,4mm		Flange		Raised Face		Holes		Bolt	PCD	Mass
		D	b	d2	f	No.	d1	size		kg
BS EN1092-1	PN 6	100,0	14,0	60,0	2,0	4	11,0	M10	75,0	0,69
	PN 10	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,11
	PN 16	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,11
	PN 25	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,11
	PN 40	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,11
SANS1123	600/3	100,0	10,0	60,0	2,0	4	11,0	M10	75,0	0,49
	1000/3	115,0	10,0	68,0	2,0	4	14,0	M12	85,0	0,69
	1600/3	115,0	10,0	68,0	2,0	4	14,0	M12	85,0	0,69
	2500/3	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,24
	4000/3	115,0	16,0	68,0	2,0	4	14,0	M12	85,0	1,24
BS 10	T/D	114,3	4,8	-	-	4	14,3	M12	82,6	0,7
	T/E	114,3	7,1	-	-	4	14,3	M12	82,6	0,7
ASME B16.5	CL 150	107,9	14,3	50,8	1,6	4	16	M12	79,4	0,95
	CL 300	123,8	17,5	50,8	1,6	4	19	M16	66,7	1,36

NOMINAL BORE 32 mm

PIPE OD 42,2mm		Flange		Raised Face		Holes		Bolt	PCD	Mass
		D	b	d2	f	No.	d1	size		kg
BS EN1092-1	PN 6	120,0	16,0	70,0	2,0	4	14,0	M10	90,0	1,14
	PN 10	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
	PN 16	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
	PN 25	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
	PN 40	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
SANS1123	600/3	120,0	10,0	70,0	2,0	4	14,0	M10	90,0	0,71
	1000/3	140,0	10,0	78,0	2,0	4	18,0	M12	100,0	1,01
	1600/3	140,0	10,0	78,0	2,0	4	18,0	M12	100,0	1,01
	2500/3	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
	4000/3	140,0	18,0	78,0	2,0	4	18,0	M12	100,0	1,80
BS 10	T/D	120,7	6,3	-	-	4	14,2	M12	87,3	0,8
	T/E	120,7	7,9	-	-	4	14,2	M12	87,3	0,8
ASME B16.5	CL 150	117,5	15,9	73,9	1,6	4	15,9	M12	88,9	1,11
	CL 300	133,3	19	63,5	1,6	4	19	M16	98,4	2,04

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NOMINAL BORE 40 mm

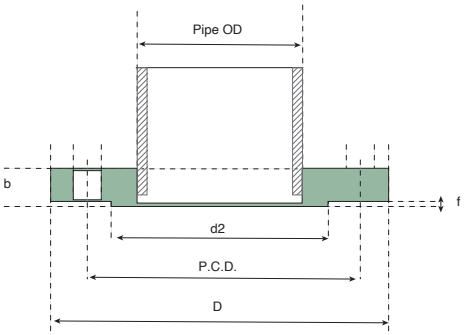
Pipe OD 48,3mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	130,0	16,0	80,0	3,0	4	14,0	M12	100,0	1,34
	PN 10	150,0	18,0	88,0	3,0	4	18,0	M16	110,0	2,10
	PN 16	150,0	18,0	88,0	3,0	4	18,0	M16	110,0	2,10
	PN 25	150,0	18,0	88,0	3,0	4	18,0	M16	110,0	2,10
	PN 40	150,0	18,0	88,0	3,0	4	18,0	M16	110,0	2,10
SANS1123	600/3	130,0	10,0	80,0	3,0	4	14,0	M12	100,0	0,84
	1000/3	150,0	10,0	88,0	3,0	4	18,0	M16	110,0	1,15
	1600/3	150,0	10,0	88,0	3,0	4	18,0	M16	110,0	1,15
	2500/3	150,0	20,0	88,0	3,0	4	18,0	M16	110,0	2,30
	4000/3	150,0	20,0	88,0	3,0	4	18,0	M16	110,0	2,30
BS 10	T/D	133,4	6,3	-	-	4	14,2	M12	98,4	1,00
	T/E	133,4	8,7	-	-	4	18,0	M12	98,4	1,00
ASME B16.5	CL 150	127,0	17,5	73,0	1,6	4	16	M12	98,4	1,4
	CL 300	155,6	20,6	73,0	1,6	4	18	M16	114,3	2,81

NOMINAL BORE 50 mm

Pipe OD 60,3mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092	PN 6	140,0	16,0	90,0	3,0	4	14,0	M12	110,0	1,48
	PN 10	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
	PN 16	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
	PN 25	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
	PN 40	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
SANS1123	600/3	140,0	10,0	90,0	3,0	4	14,0	M12	110,0	0,92
	1000/3	165,0	10,0	102,0	3,0	4	18,0	M16	125,0	1,36
	1600/3	165,0	12,0	102,0	3,0	4	18,0	M16	125,0	1,63
	2500/3	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
	4000/3	165,0	20,0	102,0	3,0	4	18,0	M16	125,0	2,72
BS 10	T/D	152,4	7,9	-	-	4	17,5	M16	114,3	0,88
	T/E	152,4	9,5	-	-	4	17,5	M16	114,3	1,06
ANSI B16.5	150lb	152,4	19,0	92,0	1,6	4	19,0	M16	120,6	2,3
	300lb	165,1	22,2	92,1	1,6	8	19	M16	127,0	3,13

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FLANGES



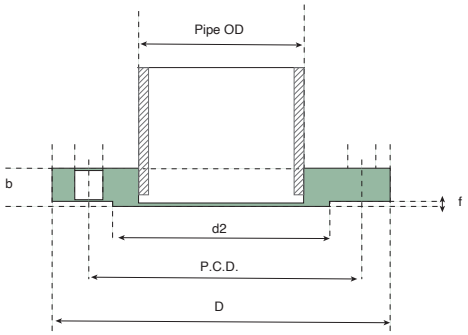
NOMINAL BORE 65 mm

PIPE OD 73mm		Flange D	b	Raised Face d2	f	Holes No.	d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	160,0	16,0	110,0	3,0	4	14,0	M12	130,0	1,85
	PN 10	185,0	20,0	122,0	3,0	4	18,0	M16	145,0	3,64
	PN 16	185,0	20,0	122,0	3,0	8	18,0	M16	145,0	3,64
	PN 25	185,0	22,0	122,0	3,0	8	18,0	M16	145,0	3,64
	PN 40	185,0	22,0	122,0	3,0	8	18,0	M16	145,0	3,64
SANS1123	600/3	160,0	10,0	110,0	3,0	4	14,0	M12	130,0	1,15
	1000/3	185,0	12,0	122,0	3,0	4	18,0	M16	145,0	1,98
	1600/3	185,0	12,0	122,0	3,0	4	18,0	M16	145,0	1,98
	2500/3	185,0	22,0	122,0	3,0	8	18,0	M16	145,0	3,64
	4000/3	185,0	22,0	122,0	3,0	8	18,0	M16	145,0	3,64
BS 10	T/D	165,1	7,9	-	-	4	17,5	M16	127,0	1,3
	T/E	165,1	10,3	-	-	4	17,5	M16	127,0	1,6
ASME B16.5	150lb	177,8	22,2	104,8	1,6	4	19,0	M16	139,7	3,82
	300lb	190,5	25,4	104,8	1,6	8	22	M20	149,2	4,54

NOMINAL BORE 80 mm

PIPE OD 88,9mm		Flange D	b	Raised Face d2	f	Holes No.	d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	190,0	18,0	128,0	3,0	4	18,0	M16	150,0	2,95
	PN 10	200,0	20,0	138,0	3,0	8	18,0	M16	160,0	3,61
	PN 16	200,0	20,0	138,0	3,0	8	18,0	M16	160,0	3,61
	PN 25	200,0	24,0	138,0	3,0	8	18,0	M16	160,0	4,33
	PN 40	200,0	24,0	138,0	3,0	8	18,0	M16	160,0	4,33
SANS1123	600/3	190,0	10,0	128,0	3,0	4	18,0	M16	150,0	1,64
	1000/3	200,0	12,0	138,0	3,0	8	18,0	M16	160,0	2,17
	1600/3	200,0	14,0	138,0	3,0	8	18,0	M16	160,0	2,64
	2500/3	200,0	22,0	138,0	3,0	8	18,0	M16	160,0	3,95
	4000/3	200,0	22,0	138,0	3,0	8	18,0	M16	160,0	3,95
BS 10	T/D	184,1	9,5	-	-	4	17,5	M16	146,0	1,43
	T/E	184,1	11,1	-	-	4	17,5	M16	146,0	1,80
ASME B16.5	150lb	190,5	23,8	127,0	1,6	4	19,0	M16	152,4	4,08
	300lb	209,5	28,6	127,0	1,6	8	22	M20	168,3	6,12

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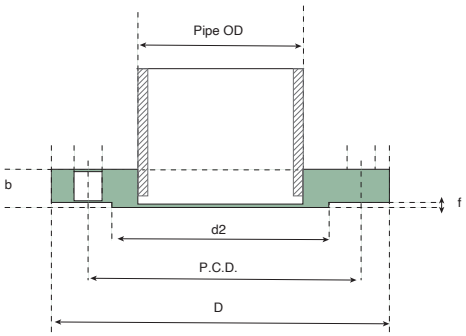
NOMINAL BORE 100 mm

Pipe OD 114,3mm		Flange D	b	Raised Face d2	f	Holes No.	d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	210.0	18.0	148.0	3,0	4	18,0	M16	170.0	3.25
	PN 10	220.0	22.0	158.0	3,0	8	18,0	M16	180.0	4.80
	PN 16	220.0	22.0	158.0	3,0	8	18,0	M16	180.0	4.80
	PN 25	235.0	26.0	162.0	3,0	8	22.0	M20	190.0	6.04
	PN 40	235.0	26.0	162.0	3,0	8	22.0	M20	190.0	6.04
SANS1123	600/3	210.0	10.0	148.0	3,0	4	18,0	M16	170.0	1.81
	1000/3	220.0	12.0	158.0	3,0	8	18,0	M16	180.0	2.39
	1600/3	220.0	14.0	158.0	3,0	8	18,0	M16	180.0	2.90
	2500/3	235.0	25.0	162.0	3,0	8	22.0	M20	190.0	6.04
	4000/3	235.0	25.0	162.0	3,0	8	22.0	M20	190.0	6.04
BS 10	T/D	215.9	9.5	-	-	4	17.5	M16	177.8	2.00
	T/E	215.9	13.7	-	-	8	17.5	M16	177.8	2.00
ASME B16.5	150lb	228.6	23.8	157.2	1,6	8	19.0	M16	190.5	5.94
	300lb	254.0	31.7	157.2	1,6	8	22	M20	200.0	9.53

NOMINAL BORE 125 mm

Pipe OD 141,3mm		Flange D	b	Raised Face d2	f	Holes No.	d1	Bolt size	PCD	Mass kg
BS EN1092	PN 6	240.0	20.0	178.0	3,0	8	18,0	M16	200.0	4.33
	PN 10	250.0	22.0	188.0	3,0	8	18,0	M16	210.0	5.42
	PN 16	250.0	22.0	188.0	3,0	8	18,0	M16	210.0	5.42
	PN 25	270.0	28.0	188.0	3,0	8	26.0	M24	220.0	8.21
	PN 40	270.0	28.0	188.0	3,0	8	26.0	M24	220.0	8.21
SANS1123	600/3	240.0	12.0	178.0	3,0	8	18,0	M16	200.0	2.60
	1000/3	250.0	14.0	188.0	3,0	8	18,0	M16	210.0	3.45
	1600/3	250.0	16.0	188.0	3,0	8	18,0	M16	210.0	4.07
	2500/3	270.0	28.0	188.0	3,0	8	26.0	M24	220.0	8.21
	4000/3	270.0	28.0	188.0	3,0	8	26.0	M24	220.0	8.21
BS 10	T/D	254.0	12.7	-	-	8	17,5	M16	209.6	3.48
	T/E	254.0	14.3	-	-	8	17,5	M20	209.6	3.48
ANSI B16.5	150lb	254.0	23.8	185.7	1,6	8	22	M20	215.9	6.25
	300lb	279.4	34.9	185.7	1,6	8	22	M20	234.9	12.70

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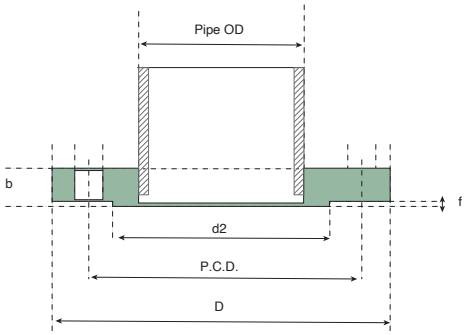
NOMINAL BORE 150 mm

PIPE OD 168,3mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092	PN 6	265.0	20.0	202.0	3,0	8	18,0	M16	225.0	4.86
	PN 10	285.0	24.0	212.0	3,0	8	22,0	M20	240.0	7.50
	PN 16	285.0	24.0	212.0	3,0	8	22,0	M20	240.0	7.50
	PN 25	300.0	30.0	218.0	3,0	8	26,0	M24	250.0	10.42
	PN 40	300.0	30.0	218.0	3,0	8	26,0	M24	250.0	10.42
SANS1123	600/3	265.0	12.0	202.0	3,0	8	18,0	M16	225.0	2.91
	1000/3	285.0	16.0	212.0	3,0	8	22.0	M20	240.0	4.81
	1600/3	285.0	18.0	212.0	3,0	8	22.0	M20	240.0	5.41
	2500/3	300.0	30.0	218.0	3,0	8	26,0	M24	250.0	10.42
	4000/3	300.0	30.0	218.0	3,0	8	26,0	M24	250.0	10.42
BS 10	T/D	279.4	12.7	-	-	8	17,5	M16	235.0	3.88
	T/E	279.4	17.5	-	-	8	22.2	M20	235.0	5.36
ANSI B 16,5	150lb	279.4	25.4	215.9	1,6	8	22.2	M20	241.3	8.16
	300lb	317.5	36.5	215.9	1,6	12	22.2	M20	269.9	16.33

NOMINAL BORE 200 mm

PIPE OD 219,1mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092	PN 6	320.0	22.0	258.0	3,0	8	18,0	M16	280.0	6.91
	PN 10	340.0	24.0	268.0	3,0	8	22.0	M20	295.0	9.30
	PN 16	340.0	26.0	268.0	3,0	12	22.0	M20	295.0	10.3
	PN 25	360.0	32.0	278.0	3,0	12	26.0	M24	310.0	14.4
	PN 40	375.0	36.0	285.0	3,0	12	30.0	M27	320.0	18.30
SANS1123	600/3	320.0	14.0	258.0	3,0	8	18,0	M16	280.0	4.4
	1000/3	340.0	18.0	268.0	3,0	8	22.0	M20	295.0	6.97
	1600/3	340.0	22.0	268.0	3,0	12	22.0	M20	295.0	7.51
	2500/3	360.0	28.0	278.0	3,0	12	26.0	M24	310.0	12.59
	4000/3	375.0	32.0	285.0	3,0	12	26.0	M24	320.0	16.96
BS 10	T/D	336.6	12.7	-	-	8	17,5	M16	292.1	4.91
	T/E	336.6	19.0	-	-	8	22.2	M20	292.1	7.59
ANSI B 16,5	150lb	342.9	28.6	269.9	1.6	8	22.2	M20	298.4	12.7
	300lb	381.0	41.3	269.9	1.6	12	22.2	M20	330.2	25.4

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NOMINAL BORE 250 mm

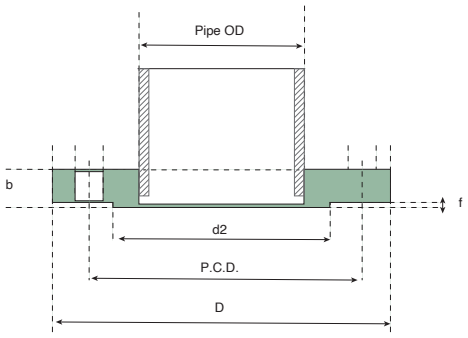
Pipe OD 273,1mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	375.0	24.0	312.0	3,0	12	18,0	M16	335.0	9.03
	PN 10	395.0	26.0	320.0	3,0	12	22,0	M20	350.0	11.95
	PN 16	405.0	29.0	320.0	3,0	12	26.0	M24	355.0	14.79
	PN 25	425.0	35.0	335.0	3,0	12	30.0	M27	370.0	20.43
	PN 40	450.0	42.0	345.0	3,0	12	33.0	M30	384.0	29.44
SANS1123	600/3	375.0	16.0	312.0	3,0	12	18,0	M16	335.0	6.02
	1000/3	395.0	20.0	320.0	3,0	12	22.0	M20	350.0	9.14
	1600/3	405.0	25.0	320.0	3,0	12	26.0	M24	355.0	12.36
	2500/3	425.0	30.0	335.0	3,0	12	26.0	M24	370.0	17.90
	4000/3	450.0	38.0	345.0	3,0	12	33.0	M30	385.0	29.44
BS 10	T/D	406.4	15.9	-	-	8	22.2	M20	355.6	8.70
	T/E	406.4	22.2	-	-	12	22.2	M20	355.6	12.05
ANSI B 16,5	150lb	406.4	30.2	323.8	1,6	12	25.4	M24	361.9	17.24
	300lb	444.5	47.6	323.8	1,6	16	31.7	M30	387.3	35.38

NOMINAL BORE 300 mm

Pipe OD 323,9mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092	PN 6	440.0	24.0	365.0	4.0	12	22.0	M20	395.0	11.95
	PN 10	445.0	26.0	370.0	4.0	12	22.0	M20	400.0	13.66
	PN 16	460.0	32.0	378.0	4.0	12	26.0	M24	410.0	19.2
	PN 25	485.0	38.0	395.0	4.0	16	30.0	M27	430.0	26.66
	PN 40	515.0	52.0	410.0	4.0	16	33.0	M30	450.0	45.56
SANS1123	600/3	440.0	20.0	365.0	4.0	12	22.0	M20	395.0	9.96
	1000/3	445.0	22.0	370.0	4.0	12	22.0	M20	400.0	11.65
	1600/3	460.0	28.0	378.0	4.0	12	26.0	M24	410.0	16.65
	2500/3	485.0	32.0	395.0	4.0	16	26.0	M24	430.0	23.16
	4000/3	515.0	40.0	410.0	4.0	16	33.0	M30	450.0	43.39
BS 10	T/D	457.2	19.0	-	-	12	22.2	M20	406.4	12.05
	T/E	457.2	25.4	-	-	12	25.4	M24	406.4	16.07
ANSI B 16,5	150lb	482.6	31.7	381.0	1,6	12	25.4	M20	431.8	27.22
	300lb	520.7	50.8	381.0	1,6	16	31.7	M30	450.8	50.8

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FLANGES



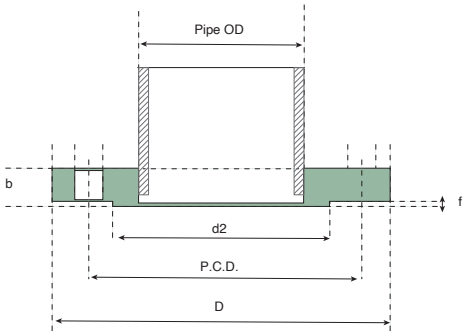
NOMINAL BORE 350 mm

Pipe OD 355,6mm		Flange D	Flange b	Raised Face d2	Raised Face f	Holes No.	Holes d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	490.0	26.0	415.0	4.0	12	22.0	M20	445.0	16.88
	PN 10	505.0	30.0	430.0	4.0	16	22.0	M20	460.0	23.48
	PN 16	520.0	35.0	438.0	4.0	16	26.0	M24	470.0	28.34
	PN 25	555.0	42.0	450.0	4.0	16	33.0	M30	490.0	41.84
	PN 40	580.0	58.0	465.0	4.0	16	36.0	M33	510.0	67.65
SANS1123	600/3	490.0	22.0	415.0	4.0	12	22.0	M20	445.0	14.29
	1000/3	505.0	25.0	430.0	4.0	16	22.0	M20	460.0	18.23
	1600/3	520.0	30.0	438.0	4.0	16	26.0	M24	470.0	24.15
	2500/3	555.0	35.0	450.0	4.0	16	33.0	M30	490.0	34.87
	4000/3	580.0	45.0	465.0	4.0	16	33.0	M30	510.0	56.50
BS 10	T/D	527.1	22.2	-	-	12	25.4	M20	469.9	19.58
	T/E	527.1	28.6	-	-	12	25.4	M24	469.9	25.89
ANSI B 16,5	150lb	533.4	34.9	412.8	1,6	12	28.6	M24	476.2	35.71
	300lb	584.2	54.0	412.8	1,6	20	31.7	M30	514.0	75.0

NOMINAL BORE 400 mm

Pipe OD 406,4mm		Flange D	Flange b	Raised Face d2	Raised Face f	Holes No.	Holes d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	540.0	28.0	465.0	4.0	16	22.0	M20	495.0	19.97
	PN 10	565.0	32.0	482.0	4.0	16	26.0	M24	515.0	27.65
	PN 16	580.0	38.0	490.0	4.0	16	30.0	M27	525.0	36.40
	PN 25	620.0	48.0	505.0	4.0	16	36.0	M33	550.0	58.60
	PN 40	660.0	65.0	535.0	4.0	16	39.0	M36	585.0	98.00
SANS1123	600/3	540.0	22.0	465.0	4.0	16	22.0	M20	495.0	15.69
	1000/3	565.0	25.0	482.0	4.0	16	26.0	M24	515.0	21.88
	1600/3	580.0	35.0	490.0	4.0	16	26.0	M24	525.0	34.13
	2500/3	620.0	40.0	505.0	4.0	16	33.0	M30	550.0	49.00
	4000/3	660.0	50.0	535.0	4.0	16	39.0	M36	585.0	74.58
BS 10	T/D	577.9	22.2	-	-	12	25.4	M20	520.7	22.32
	T/E	577.9	31.8	-	-	12	25.4	M24	520.7	32.59
ANSI B 16,5	150lb	596.9	36.5	470.0	1.6	16	28.6	M24	539.7	45.09
	300lb	647.7	57.1	470.0	1.6	20	34.9	M30	571.5	101.6

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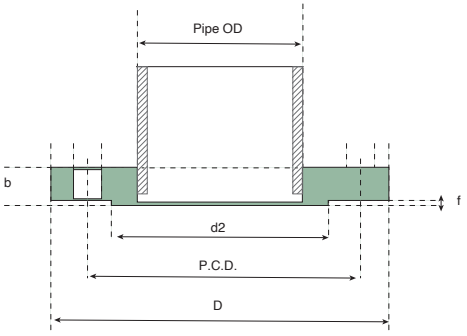
NOMINAL BORE 450 mm

Pipe OD 457mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	595.0	30.0	520.0	4.0	16	22.0	M20	550.0	25.28
	PN 10	615.0	36.0	532.0	4.0	20	26.0	M24	565.0	34.16
	PN 16	640.0	42.0	550.0	4.0	20	30.0	M27	585.0	46.80
	PN 25	670.0	54.0	555.0	4.0	20	36.0	M33	600.0	70.80
	PN 40	685.0	68.0	560.0	4.0	20	39.0	M36	610.0	95.55
SANS1123	600/3	595.0	25.0	520.0	4.0	16	22.0	M20	550.0	21.07
	1000/3	615.0	30.0	532.0	4.0	20	26.0	M24	565.0	28.29
	1600/3	640.0	40.0	550.0	4.0	20	26.0	M24	585.0	45.68
	2500/3	670.0	45.0	555.0	4.0	20	33.0	M30	600.0	60.00
	4000/3	685.0	60.0	560.0	4.0	20	39.0	M36	610.0	85.00
BS 10	T/D	641.4	25.4	-	-	12	25.4	M20	584.2	30.8
	T/E	641.4	34.9	-	-	16	25.4	M20	584.2	42.86
ANSI B 16,5	150lb	635.0	39.7	533.4	1,6	16	31.7	M30	577.8	52.62
	300lb	711.2	60.3	533.4	1,6	24	34.9	M30	628.65	126.10

NOMINAL BORE 500 mm

Pipe OD 508mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	645.0	30.0	570.0	4.0	20	22.0	M20	600.0	27.03
	PN 10	670.0	38.0	585.0	4.0	20	26.0	M24	620.0	41.03
	PN 16	715.0	46.0	610.0	4.0	20	33.0	M30	650.0	65.30
	PN 25	730.0	58.0	615.0	4.0	20	36.0	M33	660.0	88.20
	PN 40	755.0	72.0	615.0	4.0	20	42.0	M39	670.0	121.80
SANS1123	600/3	645.0	25.0	570.0	4.0	20	22.0	M20	600.0	22.52
	1000/3	670.0	32.0	585.0	4.0	20	26.0	M24	620.0	34.65
	1600/3	715.0	40.0	610.0	4.0	20	33.0	M30	650.0	56.51
	2500/3	730.0	50.0	615.0	4.0	20	33.0	M30	660.0	77.31
	4000/3	755.0	70.0	615.0	4.0	20	39.0	M36	670.0	121.50
BS 10	T/D	704.0	28.6	-	-	16	25.4	M20	641.4	41.07
	T/E	704.9	38.1	-	-	16	25.4	M20	641.1	55.80
ANSI B 16,5	150lb	698.5	42.9	584.2	1,6	20	31.7	M30	635.0	65.32
	300lb	774.7	63.5	584.2	1,6	24	34.9	M30	685.8	150.0

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NOMINAL BORE 600 mm

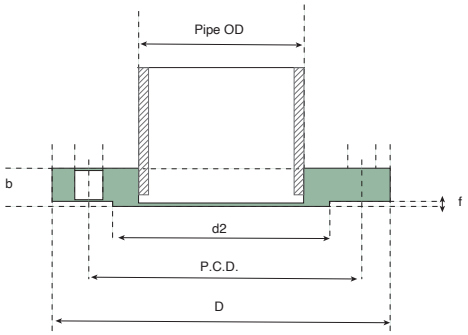
Pipe OD 610mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	755.0	32.0	670.0	5.0	20	26.0	M24	705.0	35.87
	PN 10	780.0	42.0	685.0	5.0	20	30.0	M27	725.0	55.85
	PN 16	840.0	55.0	725.0	5.0	20	36.0	M33	770.0	104.00
	PN 25	845.0	68.0	720.0	5.0	20	39.0	M36	770.0	129.50
	PN 40	890.0	90.0	735.0	5.0	20	48.0	M45	795.0	207.00
SANS1123	600/3	755.0	30.0	670.0	5.0	20	26.0	M24	705.0	33.63
	1000/3	780.0	38.0	685.0	5.0	20	26.0	M24	725.0	51.58
	1600/3	840.0	50.0	725.0	5.0	20	33.0	M30	770.0	95.26
	2500/3	845.0	60.0	720.0	5.0	20	39.0	M36	770.0	114.86
	4000/3	890.0	84.0	735.0	5.0	20	48.0	M45	795.0	192.21
BS 10	T/D	825.5	31.8	-	-	16	28.6	M24	755.7	60.27
	T/E	825.5	47.6	-	-	16	31.8	M30	755.7	89.29
ANSI B 16,5	150lb	812.8	47.6	692.1	1,6	20	34.9	M30	749.3	91.63
	300lb	914.4	69.8	692.1	1,6	24	38.1	M36	812.8	222.26

*E&OE

NOMINAL BORE 700 mm

Pipe OD 711,2mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	860.0	40.0	775.0	5.0	24	26.0	M24	810.0	53.10
	PN 10	895.0	50.0	800.0	5.0	24	30.0	M27	840.0	84.00
	PN 16	910.0	63.0	795.0	5.0	24	36.0	M33	840.0	113.00
	PN 25	960.0	85.0	820.0	5.0	24	42.0	M39	875.0	195.00
	PN 40	995.0	96.0	840.0	5.0	24	48.0	M45	900.0	251.28
SANS1123	600/3	860.0	35.0	775.0	5.0	24	26.0	M24	810.0	46.05
	1000/3	895.0	45.0	800.0	5.0	24	26.0	M24	840.0	76.23
	1600/3	910.0	55.0	795.0	5.0	24	33.0	M30	840.0	98.50
	2500/3	960.0	74.0	820.0	5.0	24	42.0	M39	875.0	164.40
	4000/3	995.0	96.0	840.0	5.0	24	48.0	M45	900.0	253.87
BS 10	T/D	908.1	34.9	-	-	20	28.6	M24	844.6	64.17
	T/E	908.1	50.8	-	-	20	31.8	M30	844.6	92.19
ANSI B 16,5	150lb	-	-	-	-	-	-	-	-	-
	300lb	-	-	-	-	-	-	-	-	-

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NOMINAL BORE 800 mm

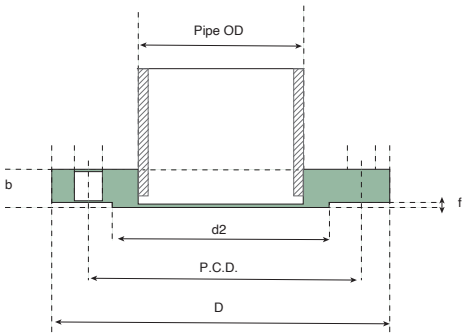
Pipe OD 812,8mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	975.0	44.0	880.0	5.0	24	30.0	M27	920.0	72.00
	PN 10	1015.0	56.0	905.0	5.0	24	33.0	M30	950.0	118.00
	PN 16	1025.0	74.0	900.0	5.0	24	39.0	M36	950.0	161.00
	PN 25	1085.0	95.0	930.0	5.0	24	48.0	M45	990.0	270.00
	PN 40	1140.0	108.0	960.0	5.0	24	56.0	M52	1030.0	372.62
SANS1123	600/3	975.0	38.0	880.0	5.0	24	26.0	M24	920.0	63.24
	1000/3	1015.0	50.0	905.0	5.0	24	33.0	M30	950.0	104.68
	1600/3	1025.0	65.0	900.0	5.0	24	39.0	M36	950.0	140.10
	2500/3	1085.0	82.0	928.0	5.0	24	48.0	M45	990.0	224.07
	4000/3	1140.0	108.0	960.0	5.0	24	56.0	M52	1030.0	375.34
BS 10	T/D	-	-	-	-	-	-	-	-	-
	T/E	-	-	-	-	-	-	-	-	-
ANSI B 16,5	150lb	-	-	-	-	-	-	-	-	-
	300lb	-	-	-	-	-	-	-	-	-

NOMINAL BORE 900 mm

Pipe OD 914,4mm		Flange		Raised Face		Holes		Bolt size	PCD	Mass kg
		D	b	d2	f	No.	d1			
BS EN1092-1	PN 6	1075.0	48.0	980.0	5.0	24	30.0	M27	1020.0	87.10
	PN 10	1115.0	62.0	1005.0	5.0	28	33.0	M30	1050.0	136.77
	PN 16	1125.0	82.0	1000.0	5.0	28	39.0	M36	1050.0	187.42
	PN 25	1185.0	90.0	1030.0	5.0	28	48.0	M45	1090.0	268.55
	PN 40	1250.0	120.0	1070.0	5.0	28	56.0	M52	1140.0	469.85
SANS1123	600/3	1075.0	40.0	980.0	5.0	24	26.0	M24	1020.0	74.00
		1115.0	55.0	1005.0	5.0	28	33.0	M30	1050.0	125.98
		1125.0	70.0	1000.0	5.0	28	39.0	M36	1050.0	164.78
		1185.0	90.0	1028.0	5.0	28	48.0	M45	1090.0	268.54
		1250.0	120.0	1070.0	5.0	28	56.0	M52	1140.0	451.53
BS 10	T/D	1174.7	47.6	-	-	24	35.0	M30	1092.2	156.25
	T/E	1174.7	63.5	-	-	24	35.0	M30	1092.2	203.13
ANSI B 16,5	150lb	-	-	-	-	-	-	-	-	-
	300lb	-	-	-	-	-	-	-	-	-

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FLANGES



NOMINAL BORE 1000 mm

Pipe OD 1016mm		Flange D	Flange b	Raised Face d2	Raised Face f	Holes No.	Holes d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	1175.0	52.0	1080.0	5.0	28	30.0	M27	1120.0	102.00
	PN 10	1230.0	70.0	1110.0	5.0	28	36.0	M33	1160.0	190.00
	PN 16	1255.0	90.0	1115.0	5.0	28	42.0	M39	1170.0	271.00
	PN 25	1320.0	98.0	1140.0	5.0	28	56.0	M52	1210.0	376.20
	PN 40	1360.0	132.0	1080.0	5.0	28	56.0	M52	1250.0	593.72
SANS1123	600/3	1175.0	45.0	1080.0	5.0	28	26.0	M24	1020.0	89.63
	1000/3	1230.0	60.0	1110.0	5.0	28	33.0	M30	1160.0	164.87
	1600/3	1255.0	75.0	1115.0	5.0	28	39.	M36	1170.0	228.26
	2500/3	1320.0	98.0	1140.0	5.0	28	56.0	M52	1210.0	357.89
	4000/3	1360.0	132.0	1180.0	5.0	28	56.0	M52	1250.0	569.30
BS 10	T/D	1257.3	50.8	-	-	24	35.0	M30	1174.7	167.00
	T/E	1257.3	60.7	-	-	24	38.1	M36	1174.7	214.00
ANSI B 16,5	150lb	-	-	-	-	-	-	-	-	-
	300lb	-	-	-	-	-	-	-	-	-

*E&OE

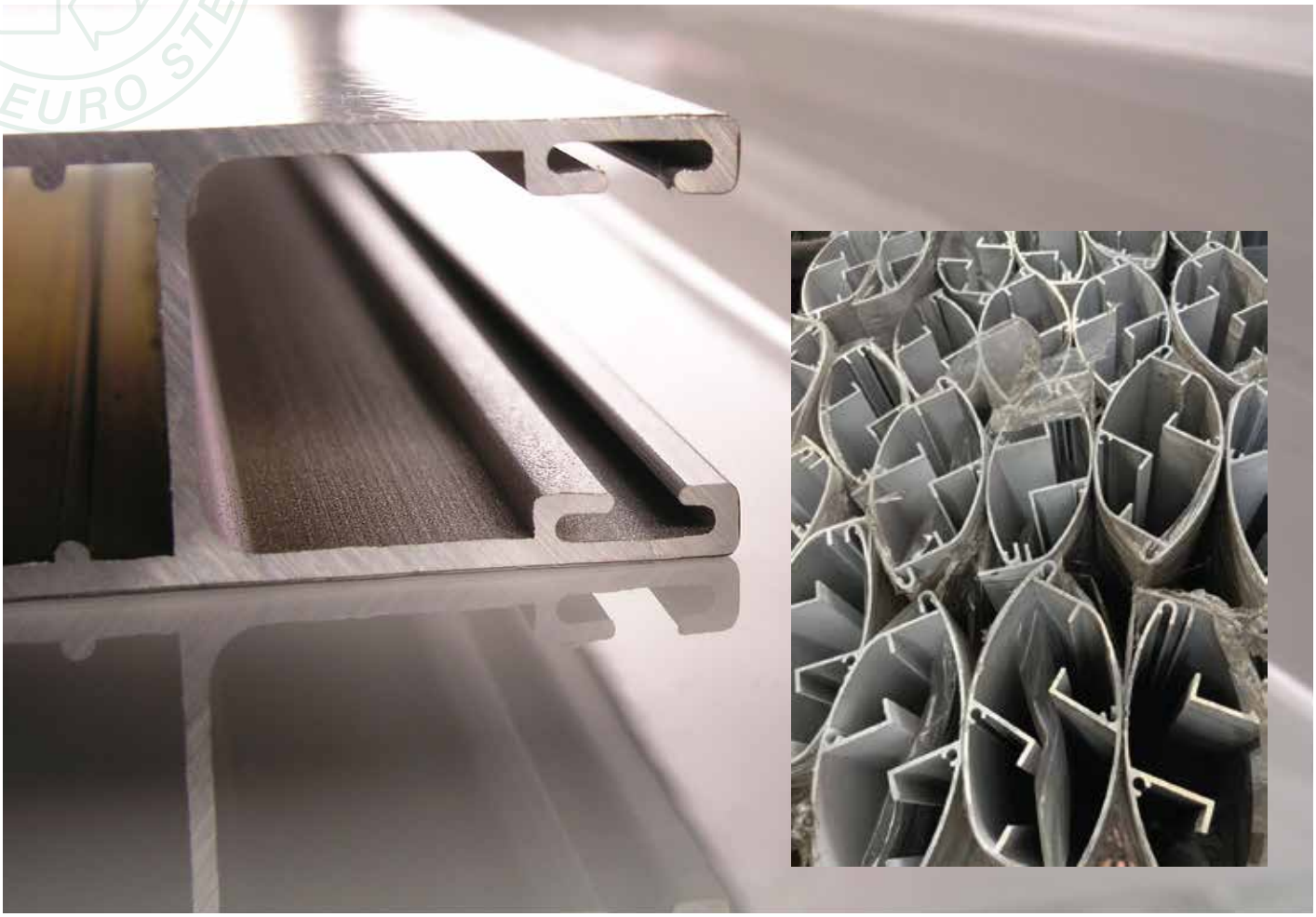
NOMINAL BORE 1200 mm

Pipe OD 1220mm		Flange D	Flange b	Raised Face d2	Raised Face f	Holes No.	Holes d1	Bolt size	PCD	Mass kg
BS EN1092-1	PN 6	1405.0	60.0	1295.0	5.0	32	33.0	M30	1340.0	164.00
	PN 10	1455.0	83.0	1330.0	5.0	32	39.0	M36	1380.0	294.00
	PN 16	1485.0	94.0	1390.0	5.0	32	48.0	M45	1390.0	368.13
	PN 25	1530.0	116.0	1350.0	5.0	32	56.0	M52	1420.0	531.21
	PN 40	1575.0	154.0	1380.0	5.0	32	62.0	M56	1460.0	817.61
SANS1123	600/3	1405.0	55.0	1295.0	5.0	32	33.0	M30	1340.0	150.24
	1000/3	1455.0	70.0	1328.0	5.0	32	39.0	M36	1380.0	246.91
	1600/3	1485.0	85.0	1238.0	5.0	32	45.0	M42	1390.0	337.56
	2500/3	1530.0	116.0	1350.0	5.0	32	56.0	M52	1420.0	357.89
	4000/3	1575.0	154.0	1380.0	5.0	32	62.0	M56	1450.0	813.69
BS 10	T/D	1492.2	60.3	-	-	32	35.0	M30	1409.7	258.94
	T/E	1492.2	79.4	-	-	32	38.1	M36	1409.7	334.78
ANSI B 16,5	150lb	-	-	-	-	-	-	-	-	-
	300lb	-	-	-	-	-	-	-	-	-

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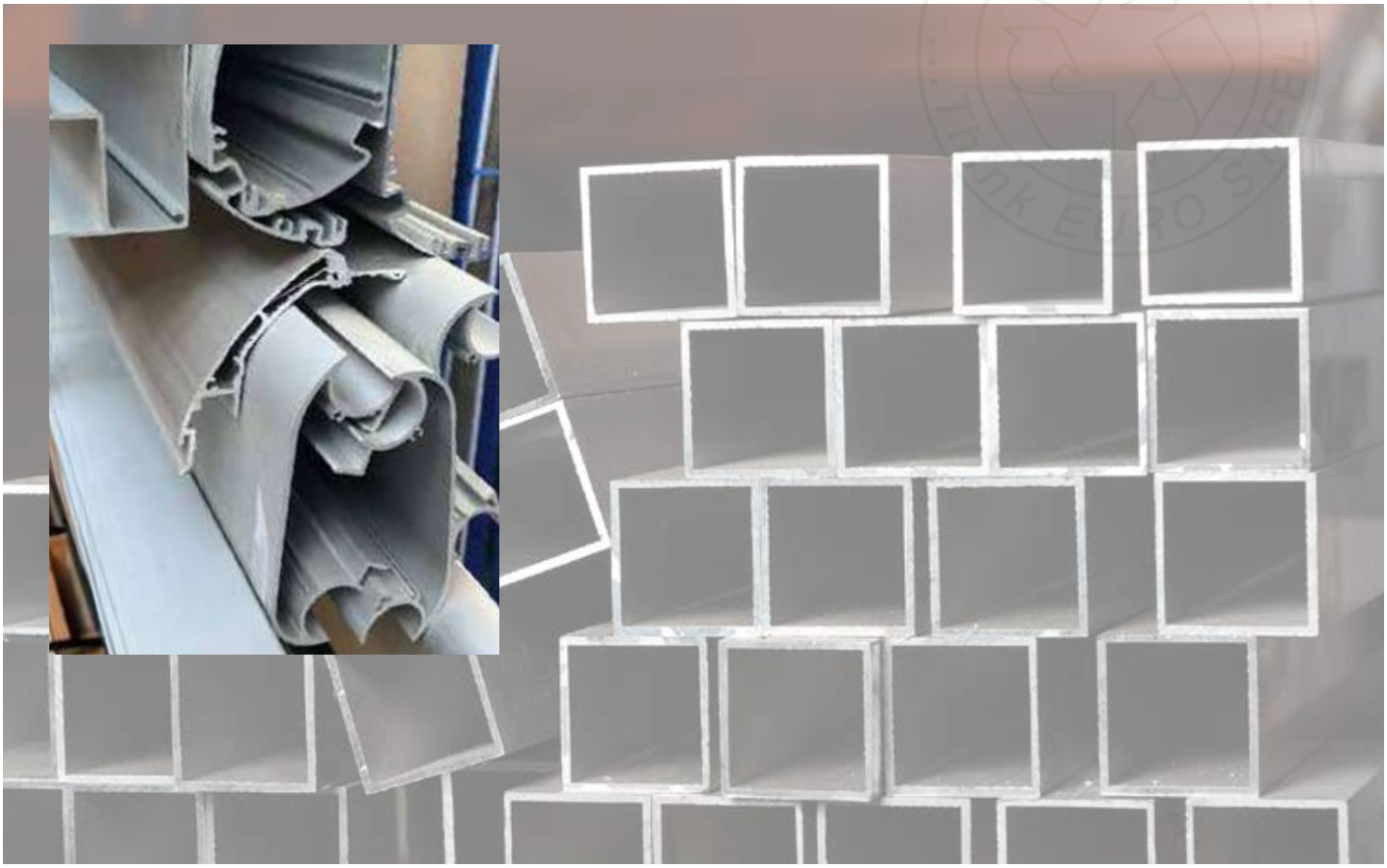
ALUMINIUM - INTERNATIONAL ALLOY COMPARISONS

AA INTERNATIONAL DESIGNATION	CANADA	FRANCE	GERMANY	SWITZERLAND	UNITED KINGDOM PRIOR 1983	FORMERLY USED IN S. A.
Unalloyed 1XXX SERIES ALUMINIUM 99% MINIMUM & GREATER						
1050A	-	A5	Al99.5	Al99.5	1B	1S
1070A	-	A7	Al99.7	Al99.7	-	HP
1100	1100	A45	-	-	-	D25
1145	-	-	-	-	-	E1S
1200	1200	A4	Al99	Al99	1C	2S
1350	1350	A 5/ L	EAl 99.5	-	1E	C1S
ALUMINIUM - COPPER ALLOYS 2XXX series						
2011	2011	A-U5PbBi	AlCuBiPb	AlCu6BiPb	FC1	28S
2014A	-	-	-	-	-	B26S
2017A	-	A-U4G	AlCuMg1	-	-	17S
2024	2024	A-U4G1	AlCuMg2	AlCu4Mg1.5	2L97 L98	24S
2030	-	A-U4Pb	-	-	-	T1701
ALUMINIUM - MANGANESE ALLOYS 3XXX series						
3003	3003	A-M1	AlMnCu	AlMn	-	D3S
3004	-	A-M1G	AlMn1Mg1	-	-	D4S
3005	-	A-MG5	AlMn1Mg0.5	-	-	D4S
3103	-	-	AlMn	-	N3	3S
3105	-	-	AlMn0.5Mg0.5	-	N31	E4S
ALUMINIUM - SILICON 4XXX series						



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AA INTERNATIONAL DESIGNATION	CANADA	FRANCE	GERMANY	SWITZERLAND	UNITED KINGDOM PRIOR 1983	FORMERLY USED IN S. A.
ALUMINIUM - MAGNESIUM ALLOYS 5XXX series						
5052	5052	A-G2.5C	AlMg2.5	-	-	A57S
5083	5083	A-G4.5MC	AlMg4.5Mn	AlMg4.5Mn	N8	D54S
5154A	-	-	-	-	N5	54S
5182	-	-	-	-	-	F54S
5251	-	A-G2M	AlMg2Mn0.3	AlMg2.5	N4	M57S
5454	5454	A-G2.5MC	AlMg2.7Mn	AlMg2.7Mn	N51	B53S
5754	-	A-G3	AlMg3	AlMg3	-	53S
ALUMINIUM - MAGNESIUM & SILICON ALLOYS 6XXX series						
6005	-	-	-	-	-	C51S
6063	6063	A-GS	AlMgSi0.5	-	H9	50S
6070	-	-	-	-	-	6070
6082	-	A-SGM0.7	AlMgSi1	AlMgSi1Mn	H30	B51S
6101A	-	A-GSL	-	AlMgSi	91E	D50S
6261/6061	6261	-	-	-	H20	D65S
6463	-	-	-	-	E6	C50S
ALUMINIUM - ZINC & MAGNESIUM & OR COPPER 7XXX series						
7020	-	A-Z5G	-	AlZn4.5Mg1	H17	D74S
7075	7075	A-Z5Gu	AlZnMgCu1.5	AlZn6MgCu1.5	2L88	T7502
ALUMINIUM - OTHER ELEMENT ALLOYS 8XXX series						
8011	-	A-FeS	AlFeSi	-	-	98S
8006	-	-	-	-	-	8006



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ALUMINIUM - ALLOYS & TEMPERS



ALLOY NOMENCLATURE	
Alloy Series	Main Alloy Constituent
1xxx	Aluminium, 99% minimum and greater
2xxx	Copper
3xxx	Manganese
4xxx	Silicon
5xxx	Magnesium
6xxx	Magnesium and Silicon
7xxx	Zinc, Magnesium and/ or Copper

The four digit system of alloy nomenclature in common with the Aluminium Association uses a block number to indicate the main alloying constituents.

ALLOY DESIGNATIONS		
Alloy	EN Equivalent	Previous German Equivalent
1070A	Al 99.7	Al 99.7
6063	Al Mg 0.7Si	Al MgSi0.5 F22
6063A	Al Mg 0.7Si(A)	Al MgSi0.5 F25
6061	Al MgSiCu	-
6082	Al Si1MgMn	Al MgSi1
6005A	Al SiMg(A)	Al MgSi0.7

ALLOY TEMPERS		
Temper	Description	Applications
F	As Fabricated	Forging Stock: Maximum Formability
O	Annealed	Forging Stock: Maximum Formability
T4	Solution heat-treated and naturally aged	Formability with higher properties than F or O conditions
T5	Cooled from an elevated shaping process & artificially aged	Where highest mechanical properties are not required by end use(i.e. non-structural)
T6	Solution heat-treated and artificially aged	Where highest mechanical properties are required

Extruded products are normally available in the tempers listed above.
Tempers other than those listed may be available upon request.

PHYSICAL PROPERTIES	
Based on 99.95% minimum purity	
Physical Properties	
Density	2700kg/m
Melting Range	645 - 660˚C
Boiling Point @ 760mm mercury	2 327˚C
Thermal Conductivity @ 250˚C	2.1 - 2.3 W/cm K
Mean Specific Heat (0 C to 100 C)	942 J/kg K
Coefficient of Linear Thermal Expansion (20˚C to 100˚C)	2.4 X 10 C
Latent Heat of Fusion	389.4 X 10 J/kg
Crystal Structure	Face-centered cubic
Modulus of Elasticity (Young's)	69 x 10 J/kg
Modulus of Rigidity (Shear)	26.14 x 10 J/kg
Poisson's Ratio	0.33
Electrical Conductivity @ 200 C	3.6 x 10^7 S/m



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ALUMINIUM - GUIDE TO COMMON SA ALLOYS

ALLOY	Chemical Composition (mass%)									TYPICAL TEMPER	2% Proof Stress (MPa)	STOCK RANGE *Special on request only	TYPICAL APPLICATION / USAGE
	Al	Fe	Si	Cu	Mn	Mg	Zn	Ti	Cr				
1050A	99.5	0.4	0.25	0.05	0.05	0.5	0.7	0.05	-	O / Hx4	35 / 105	Sheet, coil, foil, (0.2-6.35mm) Extrusions. *	General sheet work where moderate strength is adequate, packaging for food and chemicals, radiator tubes, insulation foils, automotive trim, light reflectors, architecture.
1200	99.0	Fe & Si = 1.0		0.05	0.05	-	0.1	0.05	-	O / Hx4	40 / 150	Sheet, coil, circles, plate, thread, sheet / plate	General sheet work where moderate strength is adequate, packaging for food and chemicals, architectural flashings, hollow ware, automotive trim.
1350	99.5	0.4	0.10	0.05	0.01	0.03	0.05	-	0.01	O / Hx4	75 / 110 (UTS)	Extrusions, sheet & plate *	Electrical conductors, busbars, transformer coils
2024 AlCu4Mg1	Bal.	0.5	0.5	3.8- 4.9	0.3- 0.9	1.2-1.8	0.25	0.15	0.1	T3, T8	340 / 450	Bar, sheet Imported *	High strength fabricated or machined items. Mechanical joining.
3003 Special	Bal.	0.15	0.5	0.10- 0.5	1.70- 2.4	-	-	-	-	Mill temper only	On request	Tread Bright, 1 - 5 bar sheet & coil	Decorative & architectural, non-slip flooring for boats, vehicles, lifts, offices, factories.
3004 AlMnMg	Bal.	0.7	0.3	0.25	1.0-1.5	0.8-1.3	0.25	-	-	O / Hx4 / Hx8	75 / 200 / 250	Sheet, plate (0.2 - 6.35mm)	General purpose sheet of high strength used for roofing, cladding, gutters, packaging, containers, transport, architectural, cans.
4017	Bal.	0.7	0.6 - 1.6	0.1- 0.5	0.6-1.2	0.1- 0.5	0.2	-	-	H14 / H22	On request	Tread Plate	General sheet metal work where strength & formability is required. Building products, roofing similar to 3000 series.
4043 AlSi5	Bal.	0.8	4.5 - 6.0	0.3	0.05	0.05	0.1	0.2	-	-	n / a	Wire & rods *	Welding filler, commonly used for castings and for welding 1xxx to 5xxx and 6xxx, and 6xxx to 6xxx.
5083 AlMg4.5Mn0.7	Bal.	0.4	0.4	0.1	0.4-1.0	4.0-4.9	0.25	0.15	0.05- 0.25	O / Hx2 / Hx4	145 / 240 / 275	Sheet, plate (0.25 - 6.35 - 150mm)	Commercial transport, marine plate, structural plate for mining, pressure vessels, storage tanks, tooling plate, railway wagons, general sheet metal.
5251 AlMg2Mn	Bal.	0.5	0.4	0.15	0.1- 0.5	1.7- 2.4	0.15	0.15	0.15	O / Hx2 / Hx4	80 / 165 / 190	Sheet, plate, coil, tread sheet *	As for 5083, but a medium to high strength alloy.
5454 AlMg3Mn	Bal.	0.4	0.25	0.1	0.5-1.0	2.4-3.0	0.25	0.2	0.05- 0.2	O / Hx2 / Hx4	110 / 205 / 235	Sheet, plate Wire & rods *	As for 5083, but good strength in temperature range 65 - 160 C°.
5356 AlMg5	Bal.	0.4	0.25	0.1	0.05-0.2	4.5-5.5	0.1	0.06-0.2	0.05- 0.2	-	n / a	Extrusion, bar, plate, sheet	Welding filler commonly used for welding 5xxx series to 5xxx and 6xxx series alloys.
6061 AlMgSiCu	Bal.	0.7	0.4 - 0.8	0.15-0.4	0.15	0.8-1.2	0.25	0.15	0.04- 0.35	O / T4 / T6 / Sheet T651	55 / 140 / 270	Extrusions - all shapes	Heavy duty structural sections, road, rail, marine, bridges, pylons, rivets, hydraulic components.
6063 AlMg0.7Si	Bal.	0.35	0.2 - 0.6	0.1	0.1	0.45-0.9	0.1	0.1	0.1	O / T4 / T6	50 / 90 / 210	Extrusions, sheet, plate	Structural, transport, architectural, agricultural, general engineering, tubing, intricate profiles.
6082 AlSiMnMg	Bal.	0.5	0.7 - 1.3	0.1	0.4-1.0	0.6-1.2	0.2	0.1	0.25	O / T4 / T6 / Sheet T651	60 / 170 / 310	Extrusions Bar, plate. Imported *	Stressed and heavy duty structural applications, machinery, towers, roof trusses, cranes, bridle plates.
6463 AlSiMg	Bal.	0.15	0.2 - 0.6	0.2	0.05	0.45-0.9	0.05	-	-	T4 / T6	75 / 160	Castings - sand, chill & die *	Especially good for bright anodising of architectural sections and trim.
7075 AlZnMgCu	Bal.	0.5	0.4	1.2-2.0	0.3	2.1-2.9	5.1-6.1	0.2	0.18- 0.28	T6 Sheet & T6 Plate	480 & 460	High pressure die castings *	Very high strength for structural components, machine parts & tools. (Mechanical joining)
44100 AlSi12	Bal.	0.65	10. -13.5	0.15	0.55	0.1	0.15	0.2	-	Sand / Chill / Die Casts	65 / 75 / 120	*	Marine 'on deck', manifolds, thin section & intricate castings, large castings & castings to be welded.
46500 AlSi9Cu3	Bal.	1.3	8-11	2-4	0.55	0.05-0.55	3.0	0.25	-	Hig Press. Die Cast, 'F'	140		Automotive and electrical components, household appliances.

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ALUMINIUM SHEET, PLATE, COIL & TREADPLATES

AFSA ALUMINIUM FEDERATION SOUTH AFRICA

ALUMINIUM COIL

SIZES (mm)	THEORETICAL MASS Kg per running m
1000 x 0.5	1.36
1250 x 0.5	1.69
1000 x 0.7	1.90
1250 x 0.7	2.37
1000 x 0.9	2.44
1250 x 0.9	3.05
1000 x 1.2	3.25
1250 x 1.2	4.017

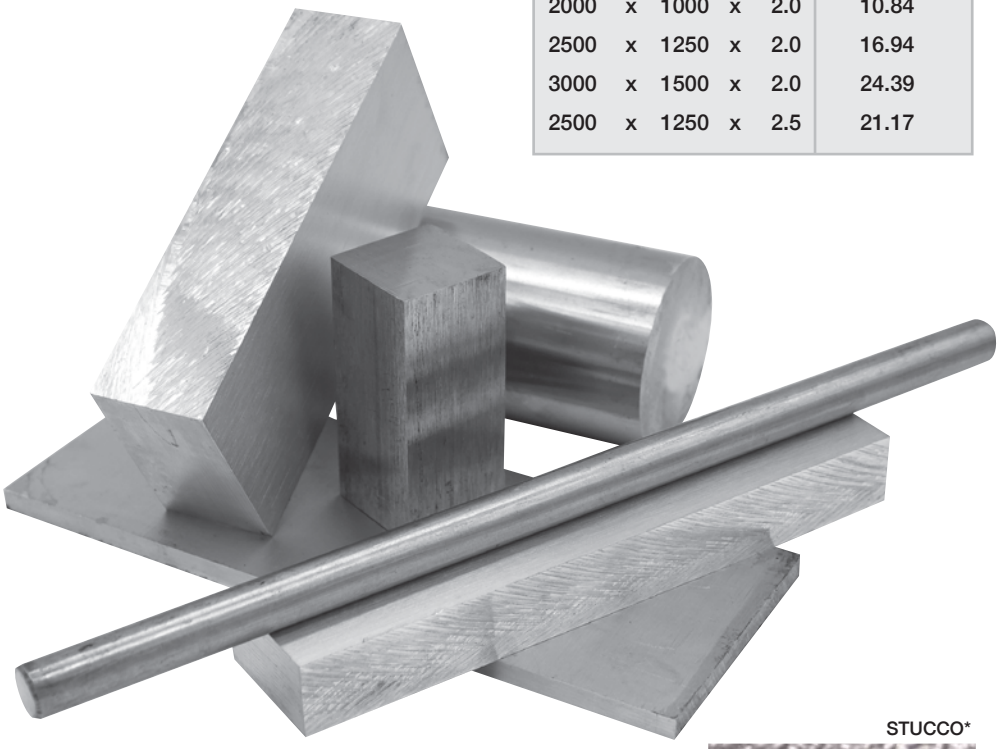
ALUMINIUM SHEET
1050 / 9017 / 5052

SIZES (mm)	THEORETICAL MASS Kg/running m
2000 x 1000 x 0.5	2.71
2500 x 1250 x 0.5	4.23
2000 x 1000 x 0.7	3.79
2500 x 1250 x 0.7	5.93
2000 x 1000 x 0.9	4.88
2500 x 1250 x 0.9	7.62
2000 x 1000 x 1.2	6.50
2500 x 1250 x 1.2	10.16
3000 x 1500 x 1.2	14.63
2000 x 1000 x 1.6	8.67
2500 x 1250 x 1.6	13.55
3000 x 1500 x 1.6	19.51
2000 x 1000 x 2.0	10.84
2500 x 1250 x 2.0	16.94
3000 x 1500 x 2.0	24.39
2500 x 1250 x 2.5	21.17

ALUMINIUM PLATE
1050 / 6082 / 5083

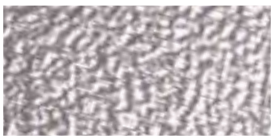
SIZES (mm)	THEORETICAL MASS Kg/running m
2000 x 1000 x 3	16.20
2500 x 1250 x 3	25.41
3000 x 1500 x 3	36.59
2500 x 1250 x 4.5	38.11
3000 x 1500 x 4.5	54.88
2000 x 1000 x 6	32.52
2500 x 1250 x 6	50.81
3000 x 1500 x 6	73.17
2500 x 1250 x 8	67.75
2500 x 1250 x 9.5	80.45
3000 x 1500 x 9.5	115.85
2500 x 1250 x 10	84.69
2500 x 1250 x 12	101.63
2500 x 1250 x 16	135.50
2500 x 1250 x 20	169.35
2500 x 1250 x 25	211.72
2500 x 1250 x 30	254.06
2500 x 1250 x 40	338.75
2500 x 1250 x 50	423.44
2500 x 1250 x 60	508.13
2500 x 1250 x 75	635.16
2500 x 1250 x 90	762.19
2500 x 1250 x 100	846.88

ALUMINIUM TOOLING PLATE



Cut to Size Alloy 1050, 5083, 6082 & 7075
6, 8, 10, 12, 16, 20, 25, 30, 40, 50, 60, 75, 80, 90 & 100mm
(Special Alloys & Tempers available on request)

STUCCO*



Other Aluminium Products available on request

- Roof Sheeting
- Gutter Coil
- Stucco* Sheet & Coil
- Aluminium Painted Sheet & Coil

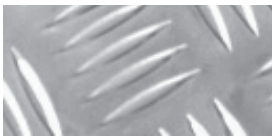
ALUMINIUM TREAD PLATE
(VASTRAP) ALLOY 1050 & 4017

SIZES (mm)	THEORETICAL MASS Kg / Sheet
2500 x 1250 x 1.5 (Base)	15.20
2500 x 1250 x 2.0 (Base)	19.44
2500 x 1250 x 3.0 (Base)	27.91
2500 x 1250 x 4.5 (Base)	40.61
2500 x 1250 x 6.0 (Base)	53.31
3000 x 1500 x 1.5 (Base)	21.89
3000 x 1500 x 2.0 (Base)	27.99
3000 x 1500 x 3.0 (Base)	40.19

ALUMINIUM TREAD BRIGHT PLATE
ALLOY 4017

SIZES (mm)	THEORETICAL MASS Kg / Sheet
2438 x 1219 x 1.14	9.84
2438 x 1219 x 1.47	12.49
2438 x 1219 x 1.82	15.31
2438 x 1219 x 2.03	17.00
2438 x 1219 x 3.17	26.18

'VASTRAP' TREAD



TREAD BRIGHT



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ROUND TUBING

OD x WT		
9.52	x	1.22
10	x	1.20
10	x	1.50
12.70	x	1.22
12.70	x	1.62
15.88	x	1.22
15.88	x	1.62
15.88	x	3.18
19.06	x	1.22
19.06	x	1.62
19.06	x	3.18
22.22	x	1.22
22.22	x	1.62
25.40	x	1.22
25.40	x	1.62
25.40	x	2
25.40	x	3.18
31.75	x	1.62
31.75	x	3.18
31.75	x	6.35
38.10	x	1.22
38.10	x	1.62
38.10	x	3.18
50.80	x	1.62
50.80	x	2
50.80	x	3.18
63.50	x	1.62
63.50	x	3.18
76.20	x	1.62
76.20	x	3.18
101.60	x	3.18
101.60	x	6.36

ROUND BAR

SIZES (mm)	Kg / m
6	0.077
8	0.136
10	0.213
12	0.307
16	0.546
20	0.853
22	1.032
25	1.333
28.17	1.692
30	1.919
31.75	2.149
40	3.411
45	4.317
50	5.330
60	7.675
65	9.008
70	10.447
76.20	12.379
82.55	14.529
85	15.404
90	17.269
95	19.241
100	21.320
101.60	22.008
114.30	27.853
120	30.701
130	36.031
140	41.787
150	47.970
160	54.579
165	58.044
170	61.615
180	69.077
200	85.280
203	87.858
220	103.189
230	112.783
254	137.548
280	167.149
285	173.170

ANGLE

SIZES (mm)				
12.70	x	12.70	x	1.62
12.7	x	12.70	x	3.18
15	x	15	x	1.60
19.05	x	19.05	x	1.62
19.05	x	19.05	x	3.18
25.40	x	25.40	x	1.62
25.40	x	25.40	x	3.18
25.40	x	25.40	x	6.36
31.75	x	31.75	x	1.60
31.75	x	31.75	x	2
31.75	x	31.75	x	3.1
38.10	x	38.10	x	1.63
38.10	x	38.10	x	2
38.10	x	8.10	x	3.18
38.10	x	38.10	x	6.36
50.80	x	50.80	x	1.63
50	x	50	x	2
50.80	x	50.80	x	3.18
50.80	x	50.80	x	6.36
65	x	65	x	6
76.20	x	76.20	x	3.18
76.20	x	76.20	x	6.368

SQUARE TUBING

SIZES (mm)				
12	x	12	x	1.20
12	x	12	x	1.60
15.88	x	15.88	x	1.57
20	x	20	x	1.20
20	x	20	x	1.50
20	x	20	x	2
25	x	25	x	1.60
25	x	25	x	2
25	x	25	x	3
25.4	x	25.4	x	2
25	x	25	x	3.18
31.75	x	31.75	x	1.63
31.75	x	31.75	x	3.18
38.10	x	38.10	x	1.63
38.10	x	38.10	x	2.03
38.10	x	38.10	x	3.18
50.80	x	50.8	x	1.63
50.80	x	50.80	x	2
50.80	x	50.80	x	3.18
76	x	76	x	2
100	x	100	x	2

FLAT BAR

W x T (mm)		
12.70	x	3.18
12.70	x	4.76
15.88	x	3.18
19.05	x	3.18
19.05	x	4.78
25.40	x	3.18
25.40	x	4.78
25.40	x	6.36
31.75	x	3.18
31.75	x	4.78
31.76	x	6.36
38.10	x	3.18
38.10	x	4.77
38.10	x	6.36
50.80	x	3.18
50.80	x	6.36
76.20	x	3.18
76.20	x	6.36
76.20	x	9.52
101.6	x	6.36

RECTANGULAR TUBING

SIZES (mm)				
20	x	15	x	2
24	x	18	x	1.2
38	x	15	x	1.5
40	x	20	x	1
40	x	20	x	2
50	x	25	x	1.5
50	x	25	x	2
50	x	25	x	3
76.2	x	25.4	x	3.1
76.2	x	38.1	x	3.18
76.2	x	50.8	x	3
76	x	38	x	2
100	x	50	x	2
100	x	50	x	3
150	x	38	x	2
150	x	100	x	3
150	x	50	x	38



CHANNEL

SIZES (mm)				
12.7	x	9.52	x	1.2
19	x	19	x	1.2
21	x	21	x	1.2
25	x	25	x	2
76	x	38	x	3

SQUARE BAR

SIZES (mm) across the flat		
12	x	12
19	x	19
20	x	20
25	x	25
31.76	x	31.76
38.10	x	38.10
50.80	x	50.80

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We assist customers to design their own unique dies for custom extrusions.

Contact us to speak to one of our aluminium extrusion specialists.

Special Alloys & Tempers Available on Request





Think Green... Think EURO STEEL

SPECIAL STEELS & ALLOYS (Available on Request)

Aluminium Sections are available in one or more of the following Alloys: 6061, 6063 & 6082. All sections are usually in a T6 Temper.

Spun cast pipe in all Alloys

Nickel Copper Alloys
Alloy 400 & K-500

Pure Nickel Alloys
Alloy 200 & 201

Copper-Nickel 90/10

Admiralty Brass

Aluminium Brass

Titanium grades
(2/11/12 Plate & Tubing)

SPECIAL CARBON STEELS

13CrMo44 (Chrome/Moly)
10CrMo910 (Chrome/Moly)
16Mo3 (Carbon/Moly Boiler Plate & Tubes)
A 516/70 (Pressure Vessel Plate)
A 387 grade 11 Class 2 (Chrome/Moly Plate)

CARBON STEELS & ALLOY ROUND BAR

EN3A (070M20)
EN8 (080M40)
EN9 (070M55)
EN19 (709M40

PRECIPITATION HARDENING STEELS

17-4PH & 15-5PH

NICKEL ALLOYS

C-22, C276, C-4 and B-2
800/800HT/801/825
600/601/625

SPECIAL STAINLESS STEELS

Alloy 904L • 254SLX • 1926hMo • 254SMo
Alloy 2205 • 253MA • 317L
316Ti • 316H • 304H • 321/321H • 347/347H
Alloy 20 • 440A, B & C • 446

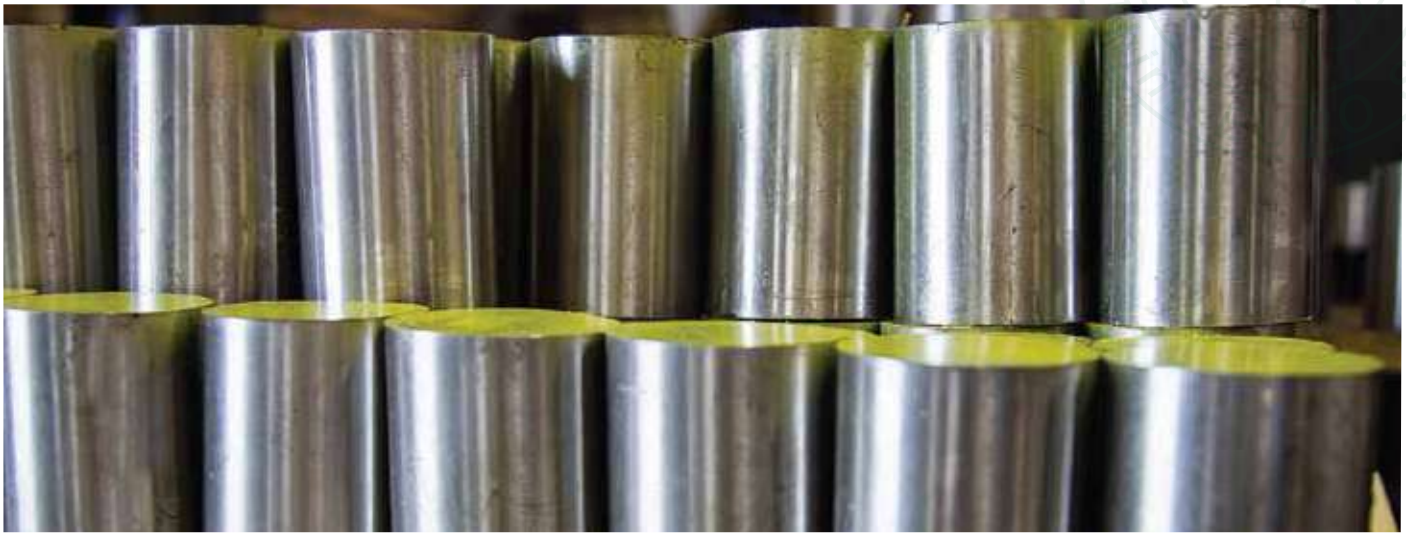
HEAT EXCHANGER TUBES & COMPONENTS

A 105 (Carbon Steel Forgings)
A 106 (Carbon Steel Pipe)
A 179 (Carbon Steel Seamless Heat Exchanger Tubes)
A 182 F1 & F11 & all Stainless Grades
A 182 F 51 (Duplex Forgings)
A 213 (Stainless Steel and Alloy seamless heat exchanger tubes)
A 268 (Seamless & Welded Ferritic Stainless Steel Tubes)
A 269 (Seamless & Welded Austenitic Stainless Steel Tubes)
A 334 Grade 1& 6 Tubes (Low Temp. Steels)
A 334 Grade 1 & 6 (Low Temp. Tubes)
A335 (Stainless Steel & Alloy Forgings)
A 789 (Duplex Stainless Steel heat exchanger tubes)

CLAD PLATE & EXPLOSIVE CLAD PLATE

GERMAN ENGINEERED BANDSAW BLADES
(M-42 Bi Metal Bandsaw Blades)

The above list is a guideline of special steels we import. For further information on these and other special steels please contact us to speak to one of our metallurgists.





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ZINC SHEETS COMMERCIAL QUALITY CQ COATING 25 x 25	
sizes (mm)	kg per sheet
2450 x 1225 x 0.7	16.89
2450 x 1225 x 0.9	21.71
2450 x 1225 x 1.2	28.95
2450 x 1225 x 1.6	38.60
2450 x 1225 x 2.0	48.25

Other specifications available on request



ZINC COIL COATING 25 x 25
sizes (mm)
1225 / 1219 x 0.7
1225 / 1219 x 0.9
1225 / 1219 x 1.2
1225 / 1219 x 1.6
1225/ 1219 x 2

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EURO STEEL
BRANCHES

CAPE TOWN
Building 9H,
Consani Business Park,
8th Avenue, Elsies River, 7490
Tel: +27 (0)21 590 5300

JOHANNESBURG
10 Commercial Road, Wadeville,
Germiston, Johannesburg, 1422
Tel: +27 (0)11 383 0300 or
+27 (0)87 310 0500

DURBAN
5 Surprise Road,
Westmead, Durban, 3608
Tel: +27 (0)31 702 9200/1

GQEBERHA
92 Burman Road, Deal Party,
Port Elizabeth, 6210
Tel: +27 (0)41 486 1098

EAST LONDON
29 Frame Park,
Phillip Frame Road, Chislehurst
East London, 5247
Tel: +27 (0)43 726 0131

NAMIBIA
Tel: 002 6464 203 009
Cell: 002 6481 128 6266

ZAMBIA
Plot 5041, Mutentemuko Road,
Heavy Industrial Area,
Kitwe, Zambia
Cell: +26 (0)966 847 070

Go to https://www.eurosteel.co.za/contact/ for comprehensive contacts and location

AFSA ALUMINIUM FABRICATORS FEDERATION AFRICA
Aluminium – light, strong and beautiful

AFMETCO
AFRICAN METALS CORPORATION

A Member of SASSDA

GROUP COMPANIES

EURO STEEL PIPE

JOHANNESBURG
10 Commercial Road,
Wadeville, Germiston
Johannesburg
1422
Tel: +27 (0)87 310 0575
Email: pipeco@eurosteel.co.za

DURBAN
5 Surprise Road,
Westmead, Durban, 3608
Tel: +27 (0)31 492 3210
Email: pipecokzn@eurosteel.co.za

AMS
ALTERNATIVE METALLURGICAL SOLUTIONS (Pty) Ltd

PROJECTS - POWER, TRANSPORTATION & MINING
10 Commercial Road
Wadeville, Johannesburg, 1428
Tel: +27 (0)87 310 0500

EURO STEEL TRADING
Exporters of Mild Steel, Coated Steel, Wire Products, Stainless Steel and Aluminium

GAUTENG
MRobb@eurosteel.co.za
Tel: +27 78 407 1638

KZN
PArnott@eurosteel.co.za
Tel: +27 83 680 0057

EURO STEEL SERVICES

MINING
Tel: +27 (0)87 310 0500

EXPORTS
Tel: +27 (0)31 716 1189

ARCHITECTURAL SYSTEMS

Alsysco
www.alsysco.co.za Email: info@alsysco.co.za

JOHANNESBURG & GAUTENG REGION
Corner of Dame Street
and Black Reef Road,
Wadeville, Johannesburg, 1428
Tel: +27 (0)10 493 3631/2

DURBAN - KZN
Unit 6
Gillitts Industrial Park 31
Gillitts Road,
Westmead,
Durban, 3608
Tel: +27 (0)31 701 1725

PORT ELIZABETH & EASTERN CAPE
92 Burman Road,
Deal Party,
Port Elizabeth, 6001
Tel: +27 (0)41 486 1098

CAPE TOWN & WESTERN CAPE
Consani Business Park,
21st Street, off Epping Avenue,
Elsies River Industrial,
Goodwood, Cape Town, 7490
Tel: +27 (0)21 931 6202

Plasma Cut

SERVICE CENTRE
Plasma Cut (Pty) Ltd
331 Dame Street,
Extension 3, Wadeville,
Germiston, Gauteng,
South Africa, 1422
Tel: +27 (0)11 902 5550
Tel: +27 (0)87 310 0500
Email: sales@plasmacut.co.za
www.plasmacut.co.za

ECM

MANUFACTURERS OF STAINLESS STEEL PRESSINGS FOR CATALYTIC CONVERTERS
20 Bennet Street Neave,
Port Elizabeth, 6001
Tel: +27 (0)41 451 1129

Specstrip (Pty) Ltd

DECOILING & RESLITTING
6 New Castle Road,
Apex Industrial Sites
Benoni
Tel: +27 (0)11 421 8315
www.specstrip.co.za

March 2025 blinkdesign 082 873 3709