A LEADING SUPPLIER OF CORROSION RESISTANT MATERIALS

COMMITTED TO

QUALITY ◦ INTEGRITY ◦ FAIR PRICING ◦ SERVICE ◦ ACCESSIBILITY

CATALOGUE

NDE, a respected player in the South African stainless steel industry and one of the largest privately-owned stockists and distributors of stainless steel products in South Africa, also offers aluminium in its extensive corrosion resistant product range.

With a proven track record of over 65 years, NDE is committed to supplying appropriate products supported by in-depth knowledge and advice.

The NDE team has many years of experience serving industries as diverse as architecture, pharmaceutical, automotive, food processing, mining and petro-chemical.

The company focuses on technical expertise and believes in working closely with clients and suppliers to ensure ongoing customer satisfaction and long-term relationships. Head office and all six branches have ISO 9001 accreditation.

This catalogue is available in print form and online on NDE's website (www.nde.co.za).

Most of the products listed here are carried in stock in branches depending on local needs, or are available on a fast turnaround of 1 – 3 days.

Specialist products not listed here can be sourced from NDE's many suppliers worldwide.

Please contact any of the branches below for details of NDE's regional-specific stock holding. All orders are promptly processed for delivery, walk-in and collection customers. Deliveries are made within a wide radius of branches as well as into Africa.

Gauteng			
Head Office	☎ 🖷 ✉	+27 (11) 791 0630 +27 (11) 792 1215 info@nde.co.za	Block F, Lifestyle Riverfront Office Park, Bosbok Road, Randpark Ridge Ext 75 PO Box 760, Fontainbleau, 2032
Johannesburg	☎ 🖷 ✉	+27 (11) 472 1659 +27 (11) 472 2530 sales@jhb.nde.co.za	23 Yaron Avenue, Lea Glen, Roodepoort PO Box 43346, Industria, 2042
Pretoria	☎ 🖷 ✉	+27 (10) 005 0012 +27 (86) 531 8585 pretoriasales@nde.co.za	120 Foundry Street, Silvertondale, Ext 2 PO Box 43346, Industria, 2042
Germiston	☎ 🖷 ✉	+27 (10) 005 0001 +27 (11) 872 1802 germistonsales@nde.co.za	Stand 120, Cocopan Crescent, Simmerfield Ext 1, Driehoek, Germiston PO Box 43346, Industria, 2042
Western Cape			
Cape Town	☎ 🖷 ✉	+27 (21) 550 6800 +27 (21) 552 3985 sales@ndecape.co.za	13 Montague Drive, Montague Gardens, Milnerton PO Box 36619, Chempet, 7442
KwaZulu-Natal			
Durban	☎ 🖷 ✉	+27 (31) 700 5444 +27 (86) 495 0164 sales@ptn.nde.co.za	Unit 2, 54 Westgate Place, Westmead, Pinetown PO Box 15278, Westmead, 3608
Eastern Cape			
Port Elizabeth	☎ 🖷 ✉	+27 (41) 453 4548 +27 (41) 453 4584 sales@pe.nde.co.za	23 Wright Street, Sidwell, Port Elizabeth PO Box 2907, North End, 6056
Mpumalanga			
Nelspruit (Agency)	☎ 🖷 ✉	+27 (13) 752 3958 +27 (13) 752 3958 nelspruit@nde.co.za	Unit 21 Riverpark, 25 Rapid Street, Riverside Industrial Park, Nelspruit

www.nde.co.za
National Dairy Equipment (Pty) Ltd
Founded in South Africa in 1945 and registered in 1952
March 2017

Contents

STAINLESS STEEL TWO METRE WIDE SHEET AND PLATE

The product is produced in continuously rolled sheet and coil in widths up to 2000 mm and thicknesses in the range 1.5 - 8.00 mm. Material is produced in standard thicknesses (1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 and 8.0 mm) and in standard grades.

Grade 316L

Generally certified to EN 10204 3.1.B and manufactured to ASTM A 240/ASME SA 240.

Sheet Size (mm)	Thickness (mm)	Finish	Product Code
6000 x 2000	3	2B	SR6L/6020/030/2B
6000 x 2000	4	No 1	SR6L/6020/040/N1
6000 x 2000	5	No 1	SR6L/6020/050/N1
6000 x 2000	6	No 1	SR6L/6020/060/N1
6000 x 2000	8	No 1	SR6L/6020/080/N1

Grade 304L

Generally certified to EN 10204 3.1.B and manufactured to ASTM A 240/ASME SA 240.

Sheet Size (mm)	Thickness (mm)	Finish	Product Code
4000 x 2000	2	2B	SR4L/6020/020/2B
4000 x 2000	2.5	2B	SR4L/6020/025/2B
4000 x 2000	3	2B	SR4L/6020/030/2B
4000 x 2000	4	2B	SR4L/6020/040/N1
6000 x 2000	3	2B	SR4L/6020/030/2B
6000 x 2000	4	No 1	SR4L/6020/040/N1
6000 x 2000	5	No 1	SR4L/6020/050/N1
6000 x 2000	6	No 1	SR4L/6020/060/N1
6000 x 2000	8	No 1	SR4L/6020/080/N1

Alloy 2205

Generally certified to EN 10204 3.1.B and manufactured to ASTM A 240/ASME SA 240.

Sheet Size (mm)	Thickness (mm)	Finish	Product Code
6000 x 2000	3	2E	SR22/6020/030/2E
6000 x 2000	4	1D	SR22/6020/040/1D
6000 x 2000	5	1D	SR22/6020/050/1D
6000 x 2000	6	1D	SR22/6020/060/1D

LDX 2101® Lean Duplex Stainless Steel

Generally certified to EN 10204 3.1.B and manufactured to ASTM A 240/ASME SA 240.

Sheet Size (mm)	Thickness (mm)	Finish	Product Code
6000 x 2000	3	2D	SR21/6020/030/2D
6000 x 2000	4	2D	SR21/6020/040/2D
6000 x 2000	5	2D	SR21/6020/050/2D
6000 x 2000	6	2D	SR21/6020/060/2D
6000 x 2000	8	N1	SR21/6020/080/N1
6000 x 2000	10	N1	SR21/6020/100/N1
6000 x 2000	12	N1	SR21/6020/120/N1

STAINLESS STEEL TWO METRE WIDE SHEET AND PLATE

Advantages of 2000 mm wide sheet:

- Better overall appearance.
- Cuts costs by reducing time spent on welds, post weld treatment, testing and handling.
- Requires less edge preparation.
- Reduces corrosion risk.
- Makes it possible for some components to be fabricated with no seams.
- Provides ease of fabrication and greater shape stability in large vessels.
- Is available in 2B finish in thicknesses up to 6.35 mm, often removing the need for polishing.

Size Tolerance	
Width tolerance	- 0 / + 2 mm
Length tolerance	- 0 / + 4 mm
Diagonal difference	max 6 mm

Thickness tolerance	
Thickness (mm)	Tolerances (mm)
1.5 - 2.4	± 0.10
2.5 - 3.4	± 0.12
3.5 - 4.4	± 0.14
4.5 - 8.0	± 0.15

Special Requirements (not stocked) :

Material can be quarter rolled to greater than 2000 mm wide in thicknesses above 6 mm and to specified lengths. It should be noted that for the above there would be minimum tonnages per thickness and size.

STAINLESS STEEL COIL

Coil Size (mm)	Grade	Finish	Product Code
1250 x 0.5	430	BA PVC One Side	SC30/1250/005/PV
1250 x 0.7	430	BA PVC One Side	SC30/1250/007/PV
925 x 0.7	430	BA	SC30/0925/007/BA
1250 x 0.7	304	2B	SC04/1250/007/2B
1250 x 0.7	430	BA	SC30/1250/007/BA
1250 x 0.9	304	2B	SC04/1250/009/2B
1250 x 0.9	430	BA	SC30/1250/009/BA
1000 x 1.2	304	N4	SC04/1000/012/N4
1250 x 1.2	304	2B	SC04/1250/012/2B
1250 x 1.2	430	BA	SC30/1250/012/BA
1250 x 1.5	430	BA	SC30/1250/015/BA
1250 x 1.5	304	2B	SC04/1250/015/2B
1250 x 2.0	304	2B	SC04/1250/020/2B
1500 x 2.0	304	2B	SC04/1500/020/2B
1250 x 3.0	304	2B	SC04/1250/030/2B
1500 x 3.0	304	2B	SC04/1500/030/2B
1500 x 3.0	316L	2B	SC16/1500/030/2B

Coil not PVC coated, normally supplied with paper interleaved.

SURFACE FINISH IDENTIFICATION

Stainless steel strip, sheet and plate according to ASTM

Code for Mill Finish	Description	Comments
HRA	Hot rolled and annealed.	Industrial heat-resisting and material handling applications, scale impairs corrosion resistance.
No 1/1D	Hot rolled, annealed and descaled.	Generally used when smoothness and uniformity of finish are not important.
2E	Cold rolled, heat treated, mechanically descaled, pickled.	For general use.
2D	Cold rolled, annealed and descaled.	A uniform, matte finish.
2B	Cold rolled, annealed, descaled and skin passed.	A smooth finish for general applications.
BA	Bright cold rolled finish. Retained by final annealing in a controlled atmosphere furnace.	Mirror finish.

Comparison of current surface finish codes

The table gives an indication of how different surface finish specifying systems define similar finishes, in relation to BS EN 10088-2.

	Description	BS1449-2	DIN	ASTM (A480)
1D	Hot rolled, heat treated, pickled	1	IIa (c2)	No 1
2B	Cold rolled, heat treated, pickled, skin passed	2B	IIIc (n)	2B
2D	Cold rolled, heat treated, pickled	2D	IIIb (h)	2D
2R	Cold rolled, bright annealed	2A	IIId (m)	BA
2G	Cold rolled, ground	3A		No 3
2J	Cold rolled, brushed or dull polished	3B (or 4)		No 4
2K	Cold rolled, satin polished	5		No 6
2P	Cold rolled, bright polished	8		No 8

STAINLESS STEEL PLATE

Plate Size (mm)	Grade and Finish		Product Code
2500 x 1250 x 3	3CR12	No 1	SP12/2512/030/N1
2500 x 1250 x 3	1.4003	No 1	SP14/2512/030/N1
3000 x 1500 x 3	1.4003	2E	SP14/3015/030/2E
3000 x 1500 x 3	3CR12	2E	SP12/3015/030/2E
3000 x 1500 x 3	1.4003	No 1	SP14/3015/030/N1
3000 x 1500 x 3	3CR12	No 1	SP12/3015/030/N1
3000 x 1500 x 4	904L	1D	SP90/3015/040/1D
3000 x 1500 x 4	LDX 2101®	1D	SPLD/3015/040/1D
2500 x 1250 x 4.5	3CR12	No 1	SP12/2512/045/N1
2500 x 1250 x 4.5	304L	No 1	SP4L/2512/045/N1
2500 x 1250 x 4.5	316L	No 1	SP6L/2512/045/N1
2500 x 1250 x 4.5	1.4003	No 1	SP14/2512/045/N1
3000 x 1500 x 4.5	3CR12	No 1	SP12/3015/045/N1
3000 x 1500 x 4.5	304L	No 1	SP4L/3015/045/N1
3000 x 1500 x 4.5	316L	No 1	SP6L/3015/045/N1
3000 x 1500 x 5	904L	1D	SP90/3015/050/1D
3000 x 1500 x 5	LDX 2101®	1D	SPLD/3015/050/1D
2500 x 1250 x 6	3CR12	No 1	SP12/2512/060/N1
2500 x 1250 x 6	1.4003	No 1	SP14/2512/060/N1
2500 x 1250 x 6	304L	No 1	SP4L/2512/060/N1
2500 x 1250 x 6	316L	No 1	SP6L/2512/060/N1
3000 x 1500 x 6	304L	No 1	SP4L/3015/060/N1
3000 x 1500 x 6	316L	No 1	SP6L/3015/060/N1
3000 x 1500 x 6	3CR12	No 1	SP12/3015/060/N1
3000 x 1500 x 6	904L	1D	SP90/3015/060/1D
3000 x 1500 x 6	LDX 2101®	1D	SPLD/3015/060/1D
3000 x 1500 x 6	1.4003	No 1	SP14/3015/060/N1
2500 x 1250 x 8	3CR12		SP12/2512/080/12
2500 x 1250 x 8	1.4003		SP14/2512/080/12
2500 x 1250 x 8	3CR12		SP12/2512/080/N1
2500 x 1250 x 8	1.4003		SP14/2512/080/N1
3000 x 1500 x 8	304L	No 1	SP4L/3015/080/N1
3000 x 1500 x 8	316L	No 1	SP6L/3015/080/N1
3000 x 1500 x 8	LDX 2101®	1D	SPLD/3015/080/1D
3000 x 1500 x 8	3CR12		SP12/3015/080/N1
3000 x 1500 x 8	1.4003		SP14/3015/080/N1
3000 x 1500 x 10	304L	No 1	SP4L/3015/100/N1
3000 x 1500 x 10	316L	No 1	SP6L/3015/100/N1

STAINLESS STEEL PLATE

Plate Size (mm)	Grade and Finish		Product Code
3000 x 1500 x 10	3CR12		SP12/3015/100/N1
3000 x 1500 x 10	1.4003		SP14/3015/100/N1
3000 x 1500 x 12	304L	No 1	SP4L/3015/120/N1
3000 x 1500 x 12	316L	No 1	SP6L/3015/120/N1
3000 x 1500 x 16	304L	No 1	SP4L/3015/160/N1
3000 x 1500 x 16	316L	No 1	SP6L/3015/160/N1
3000 x 1500 x 16	3CR12	No 1	SP12/3015/160/N1
3000 x 1500 x 16	1.4003	No 1	SP14/3015/160/N1
3000 x 1500 x 20	304L	No 1	SP4L/3015/200/N1
3000 x 1500 x 20	316L	No 1	SP6L/3015/200/N1
3000 x 1500 x 20	3CR12	No 1	SP12/3015/200/N1
3000 x 1500 x 20	1.4003	No 1	SP14/3015/200/N1
3000 x 1500 x 25	304L	No 1	SP4L/3015/250/N1
3000 x 1500 x 25	316L	No 1	SP6L/3015/250/N1
3000 x 1500 x 30	304L	No 1	SP4L/3015/300/N1
3000 x 1500 x 30	316L	No 1	SP6L/3015/300/N1

Finishes for sheet and plate

BA	Bright annealed is a bright cold rolled highly reflective finish.
No 1/1D	Hot rolled, heat treated, pickled.
2B	A bright cold rolled finish not as highly reflective as a BA finish.
2E	Cold rolled, heat treated, mechanically descaled, pickled.
No 4	Cold rolled, brushed or dull polished.

STAINLESS STEEL SHEET

Sheet Size (mm)	Grade and Finish	Product Code
2500 x 1250 x 0.5	304 2B	SH04/2512/005/2B
2500 x 1250 x 0.5	430 BA	SH30/2512/005/BA
2000 x 1000 x 0.7	304 2B	SH04/2010/007/2B
2500 x 1250 x 0.7	304 2B	SH04/2512/007/2B
2500 x 1250 x 0.7	304 No 4 PVC One Side	SH04/2512/007/N4
2500 x 1250 x 0.7	430 BA	SH30/2512/007/BA
2500 x 1250 x 0.7	430 No 4 PVC One Side	SH30/2512/007/N4
2500 x 1250 x 0.9	304 2B	SH04/2512/009/2B
2500 x 1250 x 0.9	304 No 4 PVC One Side	SH04/2512/009/N4
2500 x 1250 x 0.9	430 BA	SH30/2512/009/BA
2500 x 1250 x 0.9	430 No 4 PVC One Side	SH30/2512/009/N4
2500 x 1250 x 0.9	316 2B	SH16/2512/009/2B
2500 x 1250 x 1.0	3CR12 2B	SH12/2512/010/2B
2500 x 1250 x 1.0	1.4003 2B	SH14/2512/010/2B
2500 x 1250 x 1.0	3CR12 2B N4	SH12/2512/010/N4
2500 x 1250 x 1.0	1.4003 2B N4	SH14/2512/010/N4
2500 x 1250 x 1.2	304 2B	SH04/2512/012/2B
2500 x 1250 x 1.2	304 No 4 PVC One Side	SH04/2512/012/N4
2500 x 1250 x 1.2	430 BA	SH30/2512/012/BA
2500 x 1250 x 1.2	430 No 4 PVC One Side	SH30/2512/012/N4
2500 x 1250 x 1.2	316 2B	SH16/2512/012/2B
2500 x 1250 x 1.2	3CR12 2B	SH12/2512/012/2B
2500 x 1250 x 1.2	1.4003 2B	SH14/2512/012/2B
2500 x 1250 x 1.2	3CR12 LASER PVC	SH12/2512/012/PV
2500 x 1250 x 1.2	1.4003 LASER PVC	SH14/2512/012/PV
3000 x 1500 x 1.2	304 2B	SH04/3015/012/2B
3000 x 1500 x 1.2	304 No 4 PVC One Side	SH04/3015/012/4L
3000 x 1500 x 1.2	3CR12 2B	SH12/3015/012/2B
3000 x 1500 x 1.2	1.4003 2B	SH14/3015/012/2B
2500 x 1250 x 1.5	304 2B	SH04/2512/015/2B
2500 x 1250 x 1.5	304 No 4 PVC One Side	SH04/2512/015/N4
2500 x 1250 x 1.5	3CR12 2E	SH12/2512/015/2E
2500 x 1250 x 1.5	1.4003 2E	SH14/2512/015/2E
2500 x 1250 x 1.5	3CR12 2B	SH12/2512/015/2B
2500 x 1250 x 1.5	1.4003 2B	SH14/2512/015/2B
2500 x 1250 x 1.5	430 BA	SH30/2512/015/BA
2500 x 1250 x 1.5	430 No 4 PVC One Side	SH30/2512/015/N4
2500 x 1250 x 1.5	316 2B	SH16/2512/015/2B
2500 x 1250 x 1.5	3CR12	SH12/2512/015/2B

STAINLESS STEEL SHEET

Sheet Size (mm)	Grade and Finish	Product Code
3000 x 1500 x 1.5	304 2B	SH04/3015/015/2B
3000 x 1500 x 1.5	304 No 4 PVC One Side	SH04/3015/015/N4
3000 x 1500 x 1.5	316 2B	SH16/3015/015/2B
3000 x 1500 x 1.5	LDX 2101® 2E	SHLD/3015/015/2E
3000 x 1500 x 1.5	3CR12 2B	SH12/3015/015/2B
3000 x 1500 x 1.5	1.4003 2B	SH14/3015/015/2B
3000 x 1500 x 1.5	3CR12 2E	SH12/3015/015/2E
3000 x 1500 x 1.5	1.4003 2E	SH14/3015/015/2E
2500 x 1250 x 1.6	304 2B	SH04/2512/016/2B
2500 x 1250 x 1.6	3CR12 2B	SH12/2512/016/2B
2500 x 1250 x 2.0	304 2B	SH04/2512/020/2B
2500 x 1250 x 2.0	304 No 4 PVC One Side	SH04/2512/020/N4
2500 x 1250 x 2.0	430 BA	SH30/2512/020/BA
2500 x 1250 x 2.0	316 2B	SH16/2512/020/2B
2500 x 1250 x 2.0	3CR12 2B	SH12/2512/020/2B
2500 x 1250 x 2.0	1.4003 2B	SH14/2512/020/2B
2500 x 1250 x 2.0	3CR12 2E	SH12/2512/020/2E
2500 x 1250 x 2.0	1.4003 2E	SH14/2512/020/2E
3000 x 1500 x 2.0	304 2B	SH04/3015/020/2B
3000 x 1500 x 2.0	304 No 4 PVC One Side	SH04/3015/020/N4
3000 x 1500 x 2.0	316 2B	SH16/3015/020/2B
3000 x 1500 x 2.0	LDX 2101® 2E	SHLD/3015/020/2E
3000 x 1500 x 2.0	3CR12 2B	SH12/3015/020/2B
3000 x 1500 x 2.0	1.4003 2B	SH14/3015/020/2B
3000 x 1500 x 2.0	3CR12 2E	SH12/3015/020/2E
3000 x 1500 x 2.0	1.4003 2E	SH14/3015/020/2E
2500 x 1250 x 2.5	304 2B	SH04/2512/025/2B
2500 x 1250 x 2.5	304 No 4 PVC One Side	SH04/2512/025/N4
2500 x 1250 x 2.5	316 2B	SH16/2512/025/2B
2500 x 1250 x 2.5	3CR12 2B	SH12/2512/025/2B
2500 x 1250 x 2.5	1.4003 2B	SH14/2512/025/2B
3000 x 1500 x 2.5	304 2B	SH04/3015/025/2B
3000 x 1500 x 2.5	304 No 4 PVC One Side	SH04/3015/025/N4
3000 x 1500 x 2.5	316 2B	SH16/3015/025/2B
3000 x 1500 x 2.5	LDX 2101® 2E	SHLD/3015/025/2E
3000 x 1500 x 2.5	3CR12 2B	SH12/3015/025/2B
3000 x 1500 x 2.5	1.4003 2B	SH14/3015/025/2B
2500 x 1250 x 3.0	304 2B	SH04/2512/030/2B

STAINLESS STEEL SHEET

Sheet Size (mm)	Grade and Finish	Product Code
2500 x 1250 x 3.0	304 No 4 PVC One Side	SH04/2512/030/N4
2500 x 1250 x 3.0	316 2B	SH16/2512/030/2B
2500 x 1250 x 3.0	3CR12	SH12/2512/030/2B
3000 x 1500 x 3.0	304 2B	SH04/3015/030/2B
3000 x 1500 x 3.0	304 No 4 PVC One Side	SH04/3015/030/N4
3000 x 1500 x 3.0	316 2B	SH16/3015/030/2B
3000 x 1500 x 3.0	LDX 2101® 2E	SHLD/3015/030/2E
3000 x 1500 x 3.0	904L 2E	SH90/3015/030/2E

Finishes for sheet and plate

BA	Bright annealed is a bright cold rolled highly reflective finish.
No 1/1D	Hot rolled, heat treated, pickled.
2B	A bright cold rolled finish not as highly reflective as a BA finish.
2E	Cold rolled, heat treated, mechanically descaled, pickled.
No 4	Cold rolled, brushed or dull polished.

BILLING MASS: PLATE/SHEET

Metric Size - 304/316/3CR12 Duplex Hot Rolled Plate

Mass of sheet (kg) for sheet size (mm x mm) - use table as a guideline only

Gauge	Plate Size					
mm	1000 x 2000	1250 x 2500	1500 x 3000	1500 x 5000	1500 x 6000	Mass/m²
3.50	57.40	89.69	129.15	215.25	258.30	28.70
4.50	73.80	115.31	166.05	276.75	332.10	36.90
6.00	98.40	153.75	221.40	369.00	442.80	49.20
8.00	131.20	205.00	295.20	492.00	590.40	65.60
10.00	164.00	256.25	369.00	615.00	738.00	82.00
12.00	196.80	307.50	442.80	738.00	885.60	98.40
16.00	262.40	410.00	590.40	984.00	1180.80	131.20
20.00	328.00	512.50	738.00	1230.00	1476.00	164.00
25.00	410.00	640.63	922.50	1537.50	1845.00	205.00
30.00	492.00	768.75	1107.00	1845.00	2214.00	246.00

Metric Size - 304/316 Duplex Cold Rolled Sheet

Mass of sheet (kg) for sheet size (mm x mm) - use table as a guideline only

Gauge	Sheet Size			
mm	1000 x 2000	1250 x 2500	1500 x 3000	Mass/m²
0.50	8.07	12.61	-	4.03
0.55	8.88	13.87	-	4.44
0.70	11.30	17.65	-	5.65
0.90	14.53	22.70	-	7.26
1.00	16.14	25.22	-	8.07
1.20	19.37	30.26	43.58	9.68
1.50	24.21	37.83	54.47	12.11
1.60	25.82	40.35	58.10	12.91
2.00	32.28	50.44	72.63	16.14
2.50	40.35	63.05	90.79	20.18
3.00	48.42	75.66	108.95	24.21

Metric Size - 430/3CR12 Cold Rolled Sheet

Mass of sheet (kg) for sheet size (mm x mm) - use table as a guideline only

Gauge	Sheet Size			
mm	1000 x 2000	1250 x 2500	1500 x 3000	Mass/m²
0.5	8.00	12.50	-	4.00
0.7	11.20	17.50	-	5.60
0.9	14.40	22.50	-	7.20
1.2	19.20	30.00	-	9.60
1.5	24.00	37.50	54.00	12.00
1.6	25.60	40.00	57.60	12.80
2.0	32.00	50.00	72.00	16.00
2.5	40.00	62.50	90.00	20.00
3.0	48.00	75.00	108.00	24.00

STAINLESS STEEL ROUND BAR

Item Size Outside Diameter (OD) mm	Grade	Theoretical Mass (kg/m)	Product Code
1.60	316	0.02	BRD0/0016/000/16
2.50	304	0.04	BRD0/0025/000/04
3.00	304	0.06	BRD0/0030/000/04
3.00	316	0.06	BRD0/0030/000/16
4.00	304	0.10	BRD0/0040/000/04
4.00	316	0.10	BRD0/0040/000/16
4.50	304	0.12	BRD0/0045/000/04
4.76	304	0.14	BRD0/0047/000/04
4.76	316	0.14	BRD0/0047/000/16
5.00	304	0.15	BRD0/0050/000/04
5.00	316	0.15	BRD0/0050/000/16
5.20	304	0.17	BRD0/0052/000/04
6.00	303	0.22	BRD0/0060/000/03
6.00	304	0.22	BRD0/0060/000/04
6.00	316	0.22	BRD0/0060/000/16
6.35	303	0.25	BRD0/0063/000/03
7.10	304	0.32	BRD0/0071/000/04
8.00	303	0.39	BRD0/0080/000/03
8.00	304	0.39	BRD0/0080/000/04
8.00	316	0.39	BRD0/0080/000/16
8.90	304	0.50	BRD0/0089/000/04
10.00	303	0.62	BRD0/0100/000/03
10.00	304	0.62	BRD0/0100/000/04
10.00	316	0.62	BRD0/0100/000/16
10.68	304	0.72	BRD0/0106/000/04
12.00	303	0.89	BRD0/0120/000/03
12.00	304	0.89	BRD0/0120/000/04
12.00	316	0.89	BRD0/0120/000/16
12.70	304	0.99	BRD0/0127/000/04
14.00	303	1.21	BRD0/0140/000/03
14.00	304	1.21	BRD0/0140/000/04
14.00	316	1.21	BRD0/0140/000/16
14.50	303	1.30	BRD0/0145/000/03
14.50	304	1.30	BRD0/0145/000/04
16.00	304	1.58	BRD0/0160/000/04
16.00	316	1.58	BRD0/0160/000/16
18.20	304	2.09	BRD0/0182/000/04
19.00	304	2.22	BRD0/0190/000/04
19.00	316	2.22	BRD0/0190/000/16
20.00	304	2.46	BRD0/0200/000/04
20.00	316	2.46	BRD0/0200/000/16
21.75	304	2.97	BRD0/0217/000/04
22.00	304	2.98	BRD0/0220/000/04
22.00	316	2.98	BRD0/0220/000/16

STAINLESS STEEL ROUND BAR

Item Size Outside Diameter (OD) mm	Grade	Theoretical Mass (kg/m)	Product Code
25.00	303	3.85	BRD0/0250/000/03
25.00	304	3.85	BRD0/0250/000/04
25.00	316	3.85	BRD0/0250/000/16
30.00	304	5.54	BRD0/0300/000/04
30.00	316	5.54	BRD0/0300/000/16
32.00	304	6.31	BRD0/0320/000/04
32.00	316	6.31	BRD0/0320/000/16
35.00	304	7.55	BRD0/0350/000/04
35.00	316	7.55	BRD0/0350/000/16
36.00	316	7.98	BRD0/0360/000/16
38.00	304	8.90	BRD0/0380/000/04
40.00	304	9.86	BRD0/0400/000/04
40.00	316	9.86	BRD0/0400/000/16
45.00	304	12.47	BRD0/0450/000/04
45.00	316	12.47	BRD0/0450/000/16
50.00	304	15.40	BRD0/0500/000/04
50.00	316	15.40	BRD0/0500/000/16
50.80	303	16.28	BRD0/0508/000/03
55.00	304	18.63	BRD0/0550/000/04
55.00	316	18.63	BRD0/0550/000/16
60.00	304	22.18	BRD0/0600/000/04
60.00	316	22.18	BRD0/0600/000/16
60.00	303	22.18	BRD0/0600/000/03
65.00	304	26.03	BRD0/0650/000/04
65.00	316	26.03	BRD0/0650/000/16
70.00	304	30.18	BRD0/0700/000/04
70.00	316	30.18	BRD0/0700/000/16
75.00	304	34.65	BRD0/0750/000/04
75.00	316	34.65	BRD0/0750/000/16
80.00	304	39.42	BRD0/0800/000/04
80.00	316	39.42	BRD0/0800/000/16
85.00	304	44.51	BRD0/0850/000/04
85.00	316	44.51	BRD0/0850/000/16
90.00	304	49.90	BRD0/0900/000/04
90.00	316	49.90	BRD0/0900/000/16
100.00	304	61.60	BRD0/1000/000/04
100.00	316	61.60	BRD0/1000/000/16
105.00	316	67.91	BRD0/1050/000/16
110.00	304	74.54	BRD0/1100/000/04
110.00	316	74.54	BRD0/1100/000/16
115.00	304	81.47	BRD0/1150/000/04
115.00	316	81.47	BRD0/1150/000/16
120.00	304	88.70	BRD0/1200/000/04
120.00	316	88.70	BRD0/1200/000/16

STAINLESS STEEL ROUND BAR

Item Size Outside Diameter (OD) mm	Grade	Theoretical Mass (kg/m)	Product Code
125.00	304	96.25	BRD0/1250/000/04
125.00	316	96.25	BRD0/1250/000/16
130.00	304	104.10	BRD0/1300/000/04
130.00	316	104.10	BRD0/1300/000/16
140.00	304	120.74	BRD0/1400/000/04
140.00	316	120.74	BRD0/1400/000/16
150.00	304	138.60	BRD0/1500/000/04
150.00	316	138.60	BRD0/1500/000/16
160.00	316	157.80	BRD0/1600/000/16
165.00	316	167.71	BRD0/1650/000/16
180.00	304	204.44	BRD0/1800/000/04
180.00	316	204.44	BRD0/1800/000/16
185.00	304	215.96	BRD0/1850/000/04
185.00	316	215.96	BRD0/1850/000/16
200.00	304	252.40	BRD0/2000/000/04
200.00	316	252.40	BRD0/2000/000/16
220.00	304	305.40	BRD0/2000/000/04
220.00	316	305.40	BRD0/2000/000/16
250.00	304	394.37	BRD0/2500/000/04
250.00	316	394.37	BRD0/2500/000/16

STAINLESS STEEL ROUND BAR TOLERANCE TABLE

ISO 286 Tolerance in mm

Diameters (mm)	Tolerance in mm for given Tolerance Number							
	6	7	8	9	10	11	12	13
> 1 – 3 inc.	0.007	0.009	0.014	0.025	0.040	0.060	0.090	0.140
> 3 – 6 inc.	0.008	0.012	0.018	0.030	0.048	0.075	0.120	0.180
> 6 – 10 inc.	0.009	0.015	0.022	0.036	0.058	0.090	0.150	0.220
> 10 – 18 inc.	0.011	0.018	0.027	0.043	0.070	0.110	0.180	0.270
> 18 – 30 inc.	0.013	0.021	0.033	0.052	0.084	0.130	0.210	0.330
> 30 – 50 inc.	0.016	0.025	0.039	0.062	0.100	0.160	0.250	0.390
> 50 – 80 inc.	0.019		0.046	0.074	0.120	0.190	0.300	0.460
> 80 – 120 inc.	0.022			0.087	0.140	0.220	0.350	0.540
> 120 – 180 inc.	0.025			0.100	0.160	0.250	0.400	0.630
> 180 – 250 inc.				0.115	0.185	0.290	0.460	0.720
> 250 – 315 inc.						0.320	0.520	0.810
> 315 – 400 inc.						0.360	0.570	0.890
> 400 – 500 inc.						0.400	0.630	0.970
> 500						0.440	0.700	1.100

Examples

H = Minus tolerance eg 45 mm dia H9 = + 0 / - 0.062
J = Tolerance divided eg 45 mm dia J9 = + / - 0.031
K = Plus tolerance eg 45 mm dia K9 = + 0.062 / - 0

NDE normally stock Round Bar H9 in the size range shown above

STAINLESS STEEL FLAT BAR

Item Size (mm)	Grade	Theoretical Mass (kg/m)	Product Code
25 X 3	304	0.59	BFL0/0250/030/04
25 X 3	316	0.59	BFL0/0250/030/16
25 X 4	304	0.79	BFL0/0250/040/04
25 X 4	316	0.79	BFL0/0250/040/16
25 X 4.5	304	0.88	BFL0/0250/045/04
25 X 4.5	316	0.88	BFL0/0250/045/16
25 X 5	304	0.99	BFL0/0250/050/04
25 X 5	316	0.99	BFL0/0250/050/16
25 X 6	304	1.18	BFL0/0250/060/04
25 X 6	316	1.18	BFL0/0250/060/16
25 X 8	304	1.57	BFL0/0250/080/04
25 X 10	304	1.97	BFL0/0250/100/04
25 X 10	316	1.97	BFL0/0250/100/16
25 X 12	304	2.36	BFL0/0250/120/04
25 X 12	316	2.36	BFL0/0250/120/16
30 X 3	304	0.71	BFL0/0300/030/04
30 X 3	316	0.71	BFL0/0300/030/16
30 X 4	304	0.94	BFL0/0300/040/04
30 X 4	316	0.94	BFL0/0300/040/16
30 X 4.5	304	1.06	BFL0/0300/045/04
30 X 4.5	316	1.06	BFL0/0300/045/16
30 X 5	304	1.19	BFL0/0300/050/04
30 X 5	316	1.19	BFL0/0300/050/16
30 X 6	304	1.41	BFL0/0300/060/04
30 X 6	316	1.41	BFL0/0300/060/16
30 X 8	304	1.89	BFL0/0300/080/04
30 X 8	316	1.89	BFL0/0300/080/16
30 X 10	304	2.37	BFL0/0300/100/04
30 X 10	316	2.37	BFL0/0300/100/16
32 X 4.5	304	1.13	BFL0/0320/045/04
40 X 3	304	0.94	BFL0/0400/030/04
40 X 3	316	0.94	BFL0/0400/030/16
40 X 4	304	1.26	BFL0/0400/040/04
40 X 4	316	1.26	BFL0/0400/040/16
40 X 4.5	304	1.41	BFL0/0400/045/04
40 X 4.5	316	1.41	BFL0/0400/045/16
40 X 5	304	1.57	BFL0/0400/050/04
40 X 5	316	1.57	BFL0/0400/050/16

STAINLESS STEEL FLAT BAR

Item Size (mm)	Grade	Theoretical Mass (kg/m)	Product Code
40 X 6	304	1.89	BFL0/0400/060/04
40 X 6	316	1.89	BFL0/0400/060/16
40 X 8	304	2.52	BFL0/0400/080/04
40 X 8	316	2.52	BFL0/0400/080/16
40 X 10	304	3.14	BFL0/0400/100/04
40 X 10	316	3.14	BFL0/0400/100/16
40 X 12	304	3.77	BFL0/0400/120/04
40 X 12	316	3.77	BFL0/0400/120/16
50 X 3	304	1.18	BFL0/0500/030/04
50 X 3	316	1.18	BFL0/0500/030/16
50 X 4.5	304	1.77	BFL0/0500/045/04
50 X 5	304	1.97	BFL0/0500/050/04
50 X 5	316	1.97	BFL0/0500/050/16
50 X 6	304	2.36	BFL0/0500/060/04
50 X 6	316	2.36	BFL0/0500/060/16
50 X 8	304	3.14	BFL0/0500/080/04
50 X 8	316	3.14	BFL0/0500/080/16
50 X 10	304	3.93	BFL0/0500/100/04
50 X 10	316	3.93	BFL0/0500/100/16
50 X 12	304	4.72	BFL0/0500/120/04
50 X 12	316	4.72	BFL0/0500/120/16
60 X 5	316	2.36	BFL0/0600/050/16
60 X 6	304	2.85	BFL0/0600/060/04
60 X 6	316	2.85	BFL0/0600/060/16
60 X 10	304	4.72	BFL0/0600/100/04
60 X 10	316	4.72	BFL0/0600/100/16
63 X 6	304	2.97	BFL0/0630/060/04
63.5 X 6	316	2.99	BFL0/0635/060/16
63.5 X 10	304	4.99	BFL0/0635/100/04
63.5 X 12	304	5.99	BFL0/0635/120/04
65 X 6	304	3.08	BFL0/0650/060/04
75 X 6	304	3.54	BFL0/0750/060/04
75 X 6	316	3.54	BFL0/0750/060/16
75 X 10	304	5.90	BFL0/0750/100/04
75 X 10	316	5.90	BFL0/0750/100/16
76 X 6	304	3.58	BFL0/0760/060/04
100 X 6	304	4.72	BFL0/1000/060/04
100 X 6	316	4.72	BFL0/1000/060/16
100 X 10	304	7.86	BFL0/1000/100/04
100 X 10	316	7.86	BFL0/1000/100/16

STAINLESS STEEL ANGLE BAR

Hot rolled, annealed and pickled

Item Size (mm)	Grade	Theoretical Mass (kg/m)	Product Code
25 X 25 X 3	304	1.18	BAN0/2525/030/04
25 X 25 X 3	316	1.18	BAN0/2525/030/16
25 X 25 X 4	316	1.57	BAN0/2525/040/16
25 X 25 X 5	304	1.96	BAN0/2525/050/04
25 X 25 X 5	316	1.96	BAN0/2525/050/16
25 X 25 X 6	304	2.36	BAN0/2525/060/04
25 X 25 X 6	316	2.36	BAN0/2525/060/16
30 X 30 X 3	304	1.42	BAN0/3030/030/04
30 X 30 X 3	316	1.42	BAN0/3030/030/16
30 X 30 X 4	304	1.89	BAN0/3030/040/04
30 X 30 X 4	316	1.89	BAN0/3030/040/16
30 X 30 X 5	304	2.36	BAN0/3030/050/04
30 X 30 X 5	316	2.36	BAN0/3030/050/16
30 X 30 X 6	304	2.83	BAN0/3030/060/04
30 X 30 X 6	316	2.83	BAN0/3030/060/16
40 X 40 X 3	304	1.89	BAN0/4040/030/04
40 X 40 X 3	316	1.89	BAN0/4040/030/16
40 X 40 X 4	304	2.52	BAN0/4040/040/04
40 X 40 X 4	316	2.52	BAN0/4040/040/16
40 X 40 X 5	304	3.14	BAN0/4040/050/04
40 X 40 X 5	316	3.14	BAN0/4040/050/16
40 X 40 X 6	304	3.77	BAN0/4040/060/04
40 X 40 X 6	316	3.77	BAN0/4040/060/16
50 X 50 X 3	304	2.36	BAN0/5050/030/04
50 X 50 X 3	316	2.36	BAN0/5050/030/16
50 X 50 X 4	304	3.14	BAN0/5050/040/04
50 X 50 X 4	316	3.14	BAN0/5050/040/16
50 X 50 X 5	304	3.93	BAN0/5050/050/04
50 X 50 X 5	316	3.93	BAN0/5050/050/16
50 X 50 X 6	304	4.72	BAN0/5050/060/04
50 X 50 X 6	316	4.72	BAN0/5050/060/16
65 X 65 X 6	304	6.13	BAN0/6565/060/04
75 X 75 X 6	304	7.07	BAN0/7575/060/04
75 X 75 X 6	316	7.07	BAN0/7575/060/16

STAINLESS STEEL SQUARE BAR

Hot rolled, annealed and pickled

Item Size (mm)	Grade	Theoretical Mass (kg/m)	Product Code
6 X 6	316	0.29	BSQ0/0060/060/16
8 X 8	304	0.51	BSQ0/0080/080/04
8 X 8	316	0.51	BSQ0/0080/080/16
10 X 10	304	0.80	BSQ0/0100/100/04
10 X 10	316	0.80	BSQ0/0100/100/16
12 X 12	304	1.14	BSQ0/0120/120/04
12 X 12	316	1.14	BSQ0/0120/120/16
16 X 16	316	2.04	BSQ0/0160/160/16
20 X 20	316	3.18	BSQ0/0200/200/16
22 X 22	316	3.85	BSQ0/0220/220/16
25 X 25	316	4.97	BSQ0/0250/250/16
30 X 30	316	7.16	BSQ0/0300/300/16
38 X 38	304	11.48	BSQ0/0380/380/04
38 X 38	316	11.48	BSQ0/0380/380/16
40 X 40	316	12.56	BSQ0/0400/400/16
50 X 50	316	19.88	BSQ0/0500/500/16
60 X 60	304	28.62	BSQ0/0600/600/04

STAINLESS STEEL HEAT EXCHANGER AND PROCESS TUBING

Type (AISI) 316 to ASTM A269 / ASME SA269 - seamless

Outside Diameter (OD) mm	Wall Thickness	kg/m	Grade	Product Code
6.0	1.0 mm	0.13	316	TSML/0060/010/16
8.0	1.0 mm	0.18	316	TSML/0080/010/16
10.0	1.0 mm	0.23	316	TSML/0100/010/16
12.0	1.0 mm	0.28	316	TSML/0120/010/16
15.0	1.0 mm	0.35	316	TSML/0150/010/16
6.35	0.91 mm	0.13	316	TSML/0063/010/16
9.53	20 GG	0.25	316	TSML/0095/012/16
12.7	1.2 mm	0.48	316	TSML/0127/012/16
19.05	1.65 mm	0.71	316	TSML/0190/016/16
25.4	1.65 mm	0.95	316	TSML/0254/016/16

The above are available in 6 m lengths.

Heat Exchanger/Process Tubing can be sourced in various specifications i.e.

- ASME SA249, ASTM A 249 welded austenitic stainless steel tubes
- ASME SA269, ASTM A 269 seamless and welded austenitic stainless steel tubes
- ASME SA213, ASTM A 213 seamless ferritic and austenitic stainless steel tubes
- ASME SA789, ASTM A 789 seamless and welded duplex stainless steel tubes

When requesting a quotation or ordering please supply the following information:

a) Material grade
b) ASME or ASTM specification
c) Size - length, outside diameter (OD) and wall thickness
d) Average or minimum wall
e) Seamless or welded
f) Quantity

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554 (DOM)
Unpolished Finish (1.2 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.3425	10.3	TRDO/0127/012/04
12.7	316	0.3425	10.3	TRDO/0127/012/16
15.9	304	0.4378	13.5	TRDO/0159/012/04
15.9	316	0.4378	13.5	TRDO/0159/012/16
19.05	304	0.5316	16.65	TRDO/0190/012/04
19.05	316	0.5316	16.65	TRDO/0190/012/16
22.22	304	0.626	19.82	TRDO/0222/012/04
22.22	316	0.626	19.82	TRDO/0222/012/16
25.4	304	0.7207	23	TRDO/0254/012/04
25.4	316	0.7207	23	TRDO/0254/012/16
31.75	304	0.9098	29.35	TRDO/0317/012/04
31.75	316	0.9098	29.35	TRDO/0317/012/16
34.9	304	1.0045	32.4	TRDO/0349/012/04
34.9	316	1.0045	32.4	TRDO/0349/012/16
38.1	304	1.0989	35.7	TRDO/0381/012/04
38.1	316	1.0989	35.7	TRDO/0381/012/16
41.27	304	1.1933	38.87	TRDO/0412/012/04
41.27	316	1.1933	38.87	TRDO/0412/012/16
44.45	304	1.288	42.05	TRDO/0444/012/04
44.45	316	1.288	42.05	TRDO/0444/012/16
47.6	304	1.3825	45.2	TRDO/0476/012/04
47.6	316	1.3825	45.2	TRDO/0476/012/16
50.8	304	1.4772	48.4	TRDO/0508/012/04
50.8	316	1.4772	48.4	TRDO/0508/012/16
54	304	1.5725	51.6	TRDO/0540/012/04
54	316	1.5725	51.6	TRDO/0540/012/16
57	304	1.6618	54.6	TRDO/0570/012/04
57	316	1.6618	54.6	TRDO/0570/012/16
60.3	304	1.7601	57.9	TRDO/0603/012/04
60.3	316	1.7601	57.9	TRDO/0603/012/16
63.5	304	1.8554	61.1	TRDO/0635/012/04
63.5	316	1.8554	61.1	TRDO/0635/012/16
70	304	2.049	67.6	TRDO/0700/012/04
70	316	2.049	67.6	TRDO/0700/012/16
76.2	304	2.2336	73.8	TRDO/0762/012/04
76.2	316	2.2336	73.8	TRDO/0762/012/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554 (DOM)
Unpolished Finish (1.5 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.4169	9.7	TRDO/0127/015/04
12.7	316	0.4169	9.7	TRDO/0127/015/16
15.9	304	0.5361	12.9	TRDO/0159/015/04
15.9	316	0.5361	12.9	TRDO/0159/015/16
19.05	304	0.6533	16.05	TRDO/0190/015/04
19.05	316	0.6533	16.05	TRDO/0190/015/16
22.22	304	0.7713	19.22	TRDO/0222/015/04
22.22	316	0.7713	19.22	TRDO/0222/015/16
25.4	304	0.8897	22.4	TRDO/0254/015/04
25.4	316	0.8897	22.4	TRDO/0254/015/16
31.75	304	1.1261	28.75	TRDO/0317/015/04
31.75	316	1.1261	28.75	TRDO/0317/015/16
34.9	304	1.2555	31.93	TRDO/0349/015/04
34.9	316	1.2555	31.93	TRDO/0349/015/16
38.1	304	1.3625	35.1	TRDO/0381/015/04
38.1	316	1.3625	35.1	TRDO/0381/015/16
41.27	304	1.4805	38.27	TRDO/0412/015/04
41.27	316	1.4805	38.27	TRDO/0412/015/16
44.45	304	1.5989	41.45	TRDO/0444/015/04
44.45	316	1.5989	41.45	TRDO/0444/015/16
47.6	304	1.7321	44.6	TRDO/0476/015/04
47.6	316	1.7321	44.6	TRDO/0476/015/16
50.8	304	1.8353	47.8	TRDO/0508/015/04
50.8	316	1.8353	47.8	TRDO/0508/015/16
54	304	1.9544	51	TRDO/0540/015/04
54	316	1.9544	51	TRDO/0540/015/16
57	304	2.0661	54	TRDO/0570/015/04
57	316	2.0661	54	TRDO/0570/015/16
60.3	304	2.1889	57.3	TRDO/0603/015/04
60.3	316	2.1889	57.3	TRDO/0603/015/16
63.5	304	2.3081	60.5	TRDO/0635/015/04
63.5	316	2.3081	60.5	TRDO/0635/015/16
70	304	2.55	67	TRDO/0700/015/04
70	316	2.55	67	TRDO/0700/015/16
76.2	304	2.7808	73.2	TRDO/0762/015/04
76.2	316	2.7808	73.2	TRDO/0762/015/16
88.9	304	3.22	85.9	TRDO/0889/015/04
88.9	316	3.22	85.9	TRDO/0889/015/16
89.1	304	3.23	86.1	TRDO/0891/015/04
89.1	316	3.23	86.1	TRDO/0891/015/16
101.6	304	4.016	98.6	TRDO/1016/015/04
101.6	316	4.016	98.6	TRDO/1016/015/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554 (DOM)
Unpolished Finish (2 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25.4	304	1.1615	21.4	TRDO/0254/020/04
25.4	316	1.1615	21.4	TRDO/0254/020/16
31.75	304	1.4767	27.75	TRDO/0317/020/04
31.75	316	1.4767	27.75	TRDO/0317/020/16
38.1	304	1.7918	34.1	TRDO/0381/020/04
38.1	316	1.7918	34.1	TRDO/0381/020/16
44.45	304	2.107	40.45	TRDO/0444/020/04
44.45	316	2.107	40.45	TRDO/0444/020/16
50.8	304	2.4222	46.8	TRDO/0508/020/04
50.8	316	2.4222	46.8	TRDO/0508/020/16
63.5	304	3.0526	59.5	TRDO/0635/020/04
63.5	316	3.0526	59.5	TRDO/0635/020/16
76.2	304	3.683	72.2	TRDO/0762/020/04
76.2	316	3.683	72.2	TRDO/0762/020/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 180 Grit (1.2 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.3425	10.3	TR18/0127/012/04
12.7	316	0.3425	10.3	TR18/0127/012/16
15.9	304	0.4378	13.5	TR18/0159/012/04
15.9	316	0.4378	13.5	TR18/0159/012/16
19.05	304	0.5316	16.65	TR18/0190/012/04
19.05	316	0.5316	16.65	TR18/0190/012/16
22.22	304	0.626	19.82	TR18/0222/012/04
22.22	316	0.626	19.82	TR18/0222/012/16
25.4	304	0.7207	23	TR18/0254/012/04
25.4	316	0.7207	23	TR18/0254/012/16
31.75	304	0.9098	29.35	TR18/0317/012/04
31.75	316	0.9098	29.35	TR18/0317/012/16
34.9	304	1.0045	32.4	TR18/0349/012/04
34.9	316	1.0045	32.4	TR18/0349/012/16
38.1	304	1.0989	35.7	TR18/0381/012/04
38.1	316	1.0989	35.7	TR18/0381/012/16
41.27	304	1.1933	38.87	TR18/0412/012/04
41.27	316	1.1933	38.87	TR18/0412/012/16
44.45	304	1.288	42.05	TR18/0444/012/04
44.45	316	1.288	42.05	TR18/0444/012/16
47.6	304	1.3825	45.2	TR18/0476/012/04
47.6	316	1.3825	45.2	TR18/0476/012/16
50.8	304	1.4772	48.4	TR18/0508/012/04
50.8	316	1.4772	48.4	TR18/0508/012/16
54	304	1.5725	51.6	TR18/0540/012/04
54	316	1.5725	51.6	TR18/0540/012/16
57	304	1.6618	54.6	TR18/0570/012/04
57	316	1.6618	54.6	TR18/0570/012/16
60.3	304	1.7601	57.9	TR18/0603/012/04
60.3	316	1.7601	57.9	TR18/0603/012/16
63.5	304	1.8554	61.1	TR18/0635/012/04
63.5	316	1.8554	61.1	TR18/0635/012/16
70	304	2.049	67.6	TR18/0700/012/04
70	316	2.049	67.6	TR18/0700/012/16
76.2	304	2.2336	73.8	TR18/0762/012/04
76.2	316	2.2336	73.8	TR18/0762/012/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 180 Grit (1.5 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.4169	9.7	TR18/0127/015/04
12.7	316	0.4169	9.7	TR18/0127/015/16
15.9	304	0.5361	12.9	TR18/0159/015/04
15.9	316	0.5361	12.9	TR18/0159/015/16
19.05	304	0.6533	16.05	TR18/0190/015/04
19.05	316	0.6533	16.05	TR18/0190/015/16
22.22	304	0.7713	19.22	TR18/0222/015/04
22.22	316	0.7713	19.22	TR18/0222/015/16
25.4	304	0.8897	22.4	TR18/0254/015/04
25.4	316	0.8897	22.4	TR18/0254/015/16
31.75	304	1.1261	28.75	TR18/0317/015/04
31.75	316	1.1261	28.75	TR18/0317/015/16
34.9	304	1.2555	31.93	TR18/0349/015/04
34.9	316	1.2555	31.93	TR18/0349/015/16
38.1	304	1.3625	35.1	TR18/0381/015/04
38.1	316	1.3625	35.1	TR18/0381/015/16
41.27	304	1.4805	38.27	TR18/0412/015/04
41.27	316	1.4805	38.27	TR18/0412/015/16
44.45	304	1.5989	41.45	TR18/0444/015/04
44.45	316	1.5989	41.45	TR18/0444/015/16
47.6	304	1.7321	44.6	TR18/0476/015/04
47.6	316	1.7321	44.6	TR18/0476/015/16
48.26	304	1.758	45.26	TR18/0482/015/04
50.8	304	1.8353	47.8	TR18/0508/015/04
50.8	316	1.8353	47.8	TR18/0508/015/16
54	304	1.9544	51	TR18/0540/015/04
54	316	1.9544	51	TR18/0540/015/16
57	304	2.0661	54	TR18/0570/015/04
57	316	2.0661	54	TR18/0570/015/16
60.3	304	2.1889	57.3	TR18/0603/015/04
60.3	316	2.1889	57.3	TR18/0603/015/16
63.5	304	2.3081	60.5	TR18/0635/015/04
63.5	316	2.3081	60.5	TR18/0635/015/16
70	304	2.55	67	TR18/0700/015/04
70	316	2.55	67	TR18/0700/015/16
76.2	304	2.7808	73.2	TR18/0762/015/04
76.2	316	2.7808	73.2	TR18/0762/015/16
88.9	304	3.22	85.9	TR18/0889/015/04
88.9	316	3.22	85.9	TR18/0889/015/16
89.1	304	3.23	86.1	TR18/0891/015/04
89.1	316	3.23	86.1	TR18/0891/015/16
101.6	304	4.016	98.6	TR18/1016/015/04
101.6	316	4.016	98.6	TR18/1016/015/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 180 Grit (2.0 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25.4	304	1.1615	21.4	TR18/0254/020/04
31.75	304	1.4767	27.75	TR18/0317/020/04
38.1	304	1.7918	34.1	TR18/0381/020/04
44.45	304	2.107	40.45	TR18/0444/020/04
50.8	304	2.4222	46.8	TR18/0508/020/04
63.5	304	3.0526	59.5	TR18/0635/020/04
76.2	304	3.683	72.2	TR18/0762/020/04
101.6	304	4.988	97.6	TR18/1016/020/04

Available in Grade 316 on request

Polished 240 Grit (1.2 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.3425	10.3	TR24/0127/012/04
12.7	316	0.3425	10.3	TR24/0127/012/16
15.9	304	0.4378	13.5	TR24/0159/012/04
15.9	316	0.4378	13.5	TR24/0159/012/16
19.05	304	0.5316	16.65	TR24/0190/012/04
19.05	316	0.5316	16.65	TR24/0190/012/16
22.22	304	0.626	19.82	TR24/0222/012/04
22.22	316	0.626	19.82	TR24/0222/012/16
25.4	304	0.7207	23.0	TR24/0254/012/04
25.4	316	0.7207	23.0	TR24/0254/012/16
31.75	304	0.9098	29.35	TR24/0317/012/04
31.75	316	0.9098	29.35	TR24/0317/012/16
38.1	304	1.0989	35.7	TR24/0381/012/04
38.1	316	1.0989	35.7	TR24/0381/012/16
41.27	304	1.1933	38.87	TR24/0412/012/04
41.27	316	1.1933	38.87	TR24/0412/012/16
44.45	304	1.288	42.05	TR24/0444/012/04
44.45	316	1.288	42.05	TR24/0444/012/16
50.8	304	1.4772	48.4	TR24/0508/012/04
50.8	316	1.4772	48.4	TR24/0508/012/16
60.3	304	1.775	57.9	TR24/0603/012/04
60.3	316	1.775	57.9	TR24/0603/012/16
63.5	304	1.8554	61.1	TR24/0635/012/04
63.5	316	1.8554	61.1	TR24/0635/012/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 240 Grit (1.5 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.4169	9.7	TR24/0127/015/04
12.7	316	0.4169	9.7	TR24/0127/015/16
15.9	304	0.5361	12.9	TR24/0159/015/04
15.9	316	0.5361	12.9	TR24/0159/015/16
19.05	304	0.6533	16.05	TR24/0190/015/04
19.05	316	0.6533	16.05	TR24/0190/015/16
22.22	304	0.7713	19.22	TR24/0222/015/04
22.22	316	0.7713	19.22	TR24/0222/015/16
25.4	304	0.8897	22.4	TR24/0254/015/04
25.4	316	0.8897	22.4	TR24/0254/015/16
31.75	304	1.1261	28.75	TR24/0317/015/04
31.75	316	1.1261	28.75	TR24/0317/015/16
34.9	304	1.3150	31.9	TR24/0349/015/04
34.9	316	1.3150	31.9	TR24/0349/015/16
38.1	304	1.3625	35.1	TR24/0381/015/04
38.1	316	1.3625	35.1	TR24/0381/015/16
41.27	304	1.4805	38.27	TR24/0412/015/04
41.27	316	1.4805	38.27	TR24/0412/015/16
44.45	304	1.5989	41.45	TR24/0444/015/04
44.45	316	1.5989	41.45	TR24/0444/015/16
48.3	304	1.7900	45.30	TR24/0483/015/04
48.3	316	1.7900	45.30	TR24/0483/015/16
48.6	304	1.8090	45.30	TR24/0486/015/04
48.6	316	1.8090	45.30	TR24/0486/015/16
50.8	304	1.8353	47.8	TR24/0508/015/04
50.8	316	1.8353	47.8	TR24/0508/015/16
57	304	2.1222	54.0	TR24/0570/015/04
57	316	2.1222	54.0	TR24/0570/015/16
63.5	304	2.3081	60.5	TR24/0635/015/04
63.5	316	2.3081	60.5	TR24/0635/015/16
76.2	304	2.7808	73.2	TR24/0762/015/04
76.2	316	2.7808	73.2	TR24/0762/015/16
101.6	304	4.016	98.6	TR24/1016/015/04
101.6	316	4.016	98.6	TR24/1016/015/16

Polished 240 Grit (2.0 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25	304	1.1615	21.4	TR24/0250/020/04
38.1	304	1.7918	34.1	TR24/0381/020/04
50.8	304	2.4222	46.8	TR24/0508/020/04
76.2	304	3.683	72.2	TR24/0762/020/04
101.6	304	5.00	97.6	TR24/1016/020/04

Available in Grade 316 on request

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 400 Grit (1.2 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.3425	10.3	TR40/0127/012/04
12.7	316	0.3425	10.3	TR40/0127/012/16
15.9	304	0.4378	13.5	TR40/0159/012/04
15.9	316	0.4378	13.5	TR40/0159/012/16
19.05	304	0.5316	16.65	TR40/0190/012/04
19.05	316	0.5316	16.65	TR40/0190/012/16
22.22	304	0.626	19.82	TR40/0222/012/04
22.22	316	0.626	19.82	TR40/0222/012/16
25.4	304	0.7207	23	TR40/0254/012/04
25.4	316	0.7207	23	TR40/0254/012/16
31.75	304	0.9098	29.35	TR40/0317/012/04
31.75	316	0.9098	29.35	TR40/0317/012/16
34.9	304	1.0045	32.4	TR40/0348/012/04
34.9	316	1.0045	32.4	TR40/0348/012/16
38.1	304	1.0989	35.7	TR40/0381/012/04
38.1	316	1.0989	35.7	TR40/0381/012/16
41.27	304	1.1933	38.87	TR40/0412/012/04
41.27	316	1.1933	38.87	TR40/0412/012/16
44.45	304	1.288	42.05	TR40/0444/012/04
44.45	316	1.288	42.05	TR40/0444/012/16
47.6	304	1.3825	45.2	TR40/0476/012/04
47.6	316	1.3825	45.2	TR40/0476/012/16
50.8	304	1.4772	48.4	TR40/0508/012/04
50.8	316	1.4772	48.4	TR40/0508/012/16
54	304	1.5725	51.6	TR40/0540/012/04
54	316	1.5725	51.6	TR40/0540/012/16
57	304	1.6618	54.6	TR40/0570/012/04
57	316	1.6618	54.6	TR40/0570/012/16
60.3	304	1.7601	57.9	TR40/0603/012/04
60.3	316	1.7601	57.9	TR40/0603/012/16
63.5	304	1.8554	61.1	TR40/0635/015/04
63.5	316	1.8554	61.1	TR40/0635/015/16
70	304	2.049	67.6	TR40/0700/012/04
70	316	2.049	67.6	TR40/0700/012/16
76.2	304	2.2336	73.8	TR40/0762/012/04
76.2	316	2.2336	73.8	TR40/0762/012/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 400 Grit (1.5 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
12.7	304	0.4169	9.7	TR40/0127/015/04
12.7	316	0.4169	9.7	TR40/0127/015/16
15.9	304	0.5361	12.9	TR40/0159/015/04
15.9	316	0.5361	12.9	TR40/0159/015/16
19.05	304	0.6533	16.05	TR40/0190/015/04
19.05	316	0.6533	16.05	TR40/0190/015/16
22.22	304	0.7713	19.22	TR40/0222/015/04
22.22	316	0.7713	19.22	TR40/0222/015/16
25.4	304	0.8897	22.4	TR40/0254/015/04
25.4	316	0.8897	22.4	TR40/0254/015/16
31.75	304	1.1261	28.75	TR40/0317/015/04
31.75	316	1.1261	28.75	TR40/0317/015/16
34.9	304	1.2555	31.93	TR40/0349/015/04
34.9	316	1.2555	31.93	TR40/0349/015/16
38.1	304	1.3625	35.1	TR40/0381/015/04
38.1	316	1.3625	35.1	TR40/0381/015/16
41.27	304	1.4805	38.27	TR40/0412/015/04
41.27	316	1.4805	38.27	TR40/0412/015/16
44.45	304	1.5989	41.45	TR40/0444/015/04
44.45	316	1.5989	41.45	TR40/0444/015/16
47.6	304	1.7321	44.6	TR40/0476/015/04
47.6	316	1.7321	44.6	TR40/0476/015/16
50.8	304	1.8353	47.8	TR40/0508/015/04
50.8	316	1.8353	47.8	TR40/0508/015/16
54	304	1.9544	51	TR40/0540/015/04
54	316	1.9544	51	TR40/0540/015/16
57	304	2.0661	54	TR40/0570/015/04
57	316	2.0661	54	TR40/0570/015/16
60.3	304	2.1889	57.3	TR40/0605/015/04
60.3	316	2.1889	57.3	TR40/0605/015/16
63.5	304	2.3081	60.5	TR40/0635/015/04
63.5	316	2.3081	60.5	TR40/0635/015/16
70	304	2.55	67	TR40/0700/015/04
70	316	2.55	67	TR40/0700/015/16
76.2	304	2.7808	73.2	TR40/0762/015/04
76.2	316	2.7808	73.2	TR40/0762/015/16
88.9	304	3.22	85.9	TR40/0889/015/04
88.9	316	3.22	85.9	TR40/0889/015/16
89.1	304	3.23	86.1	TR40/0891/015/04
89.1	316	3.23	86.1	TR40/0891/015/16
101.6	304	4.016	98.6	TR40/1016/015/04
101.6	304	4.016	98.6	TR40/1016/015/16

STAINLESS STEEL ROUND TUBING

DIN 2463 D3T3/ASTM A554
Polished 400 Grit (2.0 mm wall)

Outside Diameter (OD) mm	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25.4	304	1.1615	21.4	TR40/0254/020/04
31.75	304	1.4767	27.75	TR40/0317/020/04
38.1	304	1.7918	34.1	TR40/0381/020/04
44.45	304	2.107	40.45	TR40/0444/020/04
50.8	304	2.4222	46.8	TR40/0508/020/04
63.5	304	3.0526	59.5	TR40/0635/020/04
76.2	304	3.683	72.2	TR40/0762/020/04
101.6	304	4.988	97.6	TR40/1016/020/04

Available in Grade 316 on request

STAINLESS STEEL SQUARE TUBING

DIN 17455 D3T3 - 2/ASTM A554
Polished 180 Grit (1.2 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
20 x 20	304	0.7271	17.6 x 17.6	TS18/2020/012/04
25 x 25	304	0.9254	22.6 x 22.6	TS18/2525/012/04
30 x 30	304	1.1087	27.6 x 27.6	TS18/3030/012/04
40 x 40	304	1.4902	37.6 x 37.6	TS18/4040/012/04

Available in Grade 316 on request

Polished 180 Grit (1.5 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
15 x 15	304	0.661	12 x 12	TS18/1515/015/04
20 x 20	304	0.8976	17 x 17	TS18/2020/015/04
25 x 25	304	1.1455	22 x 22	TS18/2525/015/04
30 x 30	304	1.3746	27 x 27	TS18/3030/015/04
40 x 40	304	1.8515	37 x 37	TS18/4040/015/04
50 x 50	304	2.3285	47 x 47	TS18/5050/015/04
60 x 60	304	2.92	57 x 57	TS18/6060/015/04

Available in Grade 316 on request

Polished 180 Grit (2.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25 x 25	304	1.5023	21 x 21	TS18/2525/020/04
30 x 30	304	1.8077	26 x 26	TS18/3030/020/04
40 x 40	304	2.4437	36 x 36	TS18/4040/020/04
50 x 50	304	3.0796	46 x 46	TS18/5050/020/04
60 x 60	304	3.86	56 x 56	TS18/6060/020/04
80 x 80	304	5.15	76 x 76	TS18/8080/020/04
100 x 100	304	6.44	96 x 96	TS18/1000/020/04

Available in Grade 316 on request

STAINLESS STEEL SQUARE TUBING

DIN 17455 D3T3 - 2/ASTM A554
Polished 240 Grit (1.2 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
20 x 20	304	0.7271	17.6 x 17.6	TS24/2020/012/04
20 x 20	316	0.7271	17.6 x 17.6	TS24/2020/012/16
25 x 25	304	0.9254	22.6 x 22.6	TS24/2525/012/04
25 x 25	316	0.9254	22.6 x 22.6	TS24/2525/012/16
30 x 30	304	1.1087	27.6 x 27.6	TS24/3030/012/04
30 x 30	316	1.1087	27.6 x 27.6	TS24/3030/012/16
40 x 40	304	1.4902	37.6 x 37.6	TS24/4040/012/04
40 x 40	316	1.4902	37.6 x 37.6	TS24/4040/012/16

Polished 240 Grit (1.5 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
16 x 16	304	0.6948	13 x 13	TS24/1616/015/04
20 x 20	304	0.8976	17 x 17	TS24/2020/015/04
20 x 20	316	0.8976	17 x 17	TS24/2020/015/16
25 x 25	304	1.1455	22 x 22	TS24/2525/015/04
25 x 25	316	1.1455	22 x 22	TS24/2525/015/16
30 x 30	304	1.3746	27 x 27	TS24/3030/015/04
30 x 30	316	1.3746	27 x 27	TS24/3030/015/16
40 x 40	304	1.8515	37 x 37	TS24/4040/015/04
40 x 40	316	1.8515	37 x 37	TS24/4040/015/16
50 x 50	304	2.3285	47 x 47	TS24/5050/015/04
50 x 50	316	2.3285	47 x 47	TS24/5050/015/16
60 x 60	304	2.92	57 x 57	TS24/6060/015/04
60 x 60	316	2.92	57 x 57	TS24/6060/015/16

Polished 240 Grit (2.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25 x 25	304	1.5023	21 x 21	TS24/2525/020/04
25 x 25	316	1.5023	21 x 21	TS24/2525/020/16
30 x 30	304	1.8077	26 x 26	TS24/3030/020/04
30 x 30	316	1.8077	26 x 26	TS24/3030/020/16
40 x 40	304	2.4437	36 x 36	TS24/4040/020/04
40 x 40	316	2.4437	36 x 36	TS24/4040/020/16
50 x 50	304	3.0796	46 x 46	TS24/5050/020/04
50 x 50	316	3.0796	46 x 46	TS24/5050/020/16
60 x 60	304	3.86	56 x 56	TS24/6060/020/04
60 x 60	316	3.86	56 x 56	TS24/6060/020/16
80 x 80	304	5.15	76 x 76	TS24/8080/020/04
80 x 80	316	5.15	76 x 76	TS24/8080/020/16
100 x 100	304	6.44	96 x 96	TS24/1000/020/04
100 x 100	316	6.44	96 x 96	TS24/1000/020/16

STAINLESS STEEL SQUARE TUBING

DIN 17455 D3T3 - 2/ASTM A554
Polished 240 Grit (3.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
70 x 70	304	6.351	64 x 64	TS24/7070/030/04
70 x 70	316	6.351	64 x 64	TS24/7070/030/16
90 x 90	304	8.247	84 x 85	TS24/9090/030/04
90 x 90	316	8.247	84 x 85	TS24/9090/030/16

Polished 400 Grit (1.2 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
19 x 19	304	0.683	16.6 x 16.6	TS40/1919/012/04
20 x 20	304	0.7271	17.6 x 17.6	TS40/2020/012/04
20 x 20	316	0.7271	17.6 x 17.6	TS40/2020/012/16
25 x 25	304	0.9254	22.6 x 22.6	TS40/2525/012/04
25 x 25	316	0.9254	22.6 x 22.6	TS40/2525/012/16
30 x 30	304	1.1087	27.6 x 27.6	TS40/3030/012/04
30 x 30	316	1.1087	27.6 x 27.6	TS40/3030/012/16
40 x 40	304	1.4902	37.6 x 37.6	TS40/4040/012/04
40 x 40	316	1.4902	37.6 x 37.6	TS40/4040/012/16

Polished 400 Grit (1.5 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
20 x 20	304	0.8976	17 x 17	TS40/2020/015/04
20 x 20	316	0.8976	17 x 17	TS40/2020/015/16
25 x 25	304	1.1455	22 x 22	TS40/2525/015/04
25 x 25	316	1.1455	22 x 22	TS40/2525/015/16
30 x 30	304	1.3746	27 x 27	TS40/3030/015/04
30 x 30	316	1.3746	27 x 27	TS40/3030/015/16
40 x 40	304	1.8515	37 x 37	TS40/4040/015/04
40 x 40	316	1.8515	37 x 37	TS40/4040/015/16
50 x 50	304	2.3285	47 x 47	TS40/5050/015/04
50 x 50	316	2.3285	47 x 47	TS40/5050/015/16
60 x 60	304	2.92	57 x 57	TS40/6060/015/04
60 x 60	316	2.92	57 x 57	TS40/6060/015/16

STAINLESS STEEL SQUARE TUBING

DIN 17455 D3T3 - 2/ASTM A554
Polished 400 Grit (2.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
25 x 25	304	1.5023	21 x 21	TS40/2525/020/04
25 x 25	316	1.5023	21 x 21	TS40/2525/020/16
30 x 30	304	1.8077	26 x 26	TS40/3030/020/04
30 x 30	316	1.8077	26 x 26	TS40/3030/020/16
40 x 40	304	2.4437	36 x 36	TS40/4040/020/04
40 x 40	316	2.4437	36 x 36	TS40/4040/020/16
50 x 50	304	3.0796	46 x 46	TS40/5050/020/04
50 x 50	316	3.0796	46 x 46	TS40/5050/020/16
60 x 60	304	3.86	56 x 56	TS40/6060/020/04
60 x 60	316	3.86	56 x 56	TS40/6060/020/16
80 x 80	304	5.15	76 x 76	TS40/8080/020/04
80 x 80	316	5.15	76 x 76	TS40/8080/020/16
100 x 100	304	6.44	96 x 96	TS40/1000/020/04
100 x 100	316	6.44	96 x 96	TS40/1000/020/16

STAINLESS STEEL RECTANGULAR TUBING

DIN 2395/ASTM A554

Polished 180 Grit (1.2 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
30 x 20	304	0.9179	27.6 x 17.6	TC18/3020/012/04
40 x 20	304	1.1087	37.6 x 17.6	TC18/4020/012/04
50 x 30	304	1.4902	47.6 x 27.6	TC18/5030/012/04

Available in Grade 316 on request

Polished 180 Grit (1.5 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
30 x 20	304	1.1361	27 x 17	TC18/3020/015/04
30 x 20	316	1.1361	27 x 17	TC18/3020/015/16
40 x 20	304	1.3746	37 x 17	TC18/4020/015/04
40 x 20	316	1.3746	37 x 17	TC18/4020/015/16
50 x 25	304	1.7064	47 x 22	TC18/5025/015/04
50 x 25	316	1.7064	47 x 22	TC18/5025/015/16
50 x 30	304	1.8515	47 x 27	TC18/5030/015/04
50 x 30	316	1.8515	47 x 27	TC18/5030/015/16
60 x 40	304	2.3193	57 x 37	TC18/6040/015/04
60 x 40	316	2.3193	57 x 37	TC18/6040/015/16
80 x 40	304	2.7729	77 x 37	TC18/8040/015/04
80 x 40	316	2.7729	77 x 37	TC18/8040/015/16

Polished 180 Grit (2.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
60 x 40	304	3.0796	56 x 36	TC18/6040/020/04
80 x 40	304	3.86	76 x 36	TC18/8040/020/04
100 x 50	304	4.842	96 x 46	TC18/1005/020/04

Polished 240 Grit (1.5 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
30 x 20	304	1.1361	27 x 17	TC24/3020/015/04
30 x 20	316	1.1361	27 x 17	TC24/3020/015/16
40 x 20	304	1.3746	37 x 17	TC24/4020/015/04
40 x 20	316	1.3746	37 x 17	TC24/4020/015/16
50 x 25	304	1.7064	47 x 22	TC24/5025/015/04
50 x 25	316	1.7064	47 x 22	TC24/5025/015/16
50 x 30	304	1.8515	47 x 27	TC24/5030/015/04
50 x 30	316	1.8515	47 x 27	TC24/5030/015/16
60 x 40	304	2.3193	57 x 37	TC24/6040/015/04
60 x 40	316	2.3193	57 x 37	TC24/6040/015/16
80 x 40	304	2.7729	77 x 37	TC24/8040/015/04
80 x 40	316	2.7729	77 x 37	TC24/8040/015/16

Polished 240 Grit (2.0 mm wall)

Size (mm)	Grade	kg/m	Inside Diameter (ID) mm	Product Code
60 x 40	304	3.0796	56 x 36	TC24/6040/020/04
80 x 40	304	3.86	76 x 36	TC24/8040/020/04
100 x 50	304	4.842	96 x 46	TC24/1005/020/04

A 400 grit is available on request

STAINLESS STEEL PROCESS LIGHT WALL PIPES

NDE stocks and distributes process pipes and fittings in southern Africa. These products are world leaders for the process industry (pulp and paper, chemical, power etc.). NDE stocks the two systems used in the process industry: Metric ID (also known as Trubore) and ISO standard from 25 mm to 400 mm in RSA with availability up to 1 200 mm ex mill.

ISO Process Pipes
EN ISO 1127 Wall thickness 1.6 - 4 mm

DN	Outside Diameter (OD) mm	Wall thickness T (mm)								
		1.6	2	2.3	2.6	2.9	3	3.2	3.6	4
		Weight kg/m / Design pressure bar								
10	17.2	0.63/239								
15	21.3	0.79/193	0.97/242	1.09/278	1.22/314					
20	26.9	1.01/153	1.25/191	1.42/220	1.58/249	1.74/277				
25	33.7	1.28/122	1.59/153	1.81/176	2.02/199	2.23/222	2.3	2.44/244		
32	42.4	1.63/97	2.02/121	2.31/140	2.59/158	2.87/176	2.96	3.14/194	3.49/219	
40	48.3	1.87/85	2.32/107	2.65/123	2.97/139	3.29/155	3.4	3.61/171	4.03/192	
50	60.3	2.35/68	2.92/85	3.34/98	3.75/111	4.16/124	4.3	4.5/137	5.11/154	5.63/171
65	76.1	2.98/54	3.71/68	4.25/78	4.79/88	5.31/98	5.49	5.84/108	6.53/122	7.21/135
80	88.9	3.50/46	4.35/58	4.98/67	5.61/75	6.24/84	6.45	6.86/93	7.68/104	8.49/116
100	114.3	4.51/36	5.62/45	6.44/52	7.26/59	8.09/65	8.36	8.89/72	9.97/81	11.0/90
125	139.7	5.53/29	6.89/37	7.90/42	8.91/48	9.92/53	10.3	10.9/59	12.3/66	13.6/74
150	168.3	6.67/24	8.32/31	9.55/35	10.8/40	12.0/44	12.4	13.2/49	14.8/55	16.4/61
200	219.1		10.9/23	12.5/27	14.1/31	15.7/34	16.2	17.3/38	19.4/42	21.5/47
250	273		13.6/19	15.6/22	17.6/25	19.6/27	20.3	21.6/30	24.3/34	26.9/38
300	323.9		16.1/16	18.5/18	20.9/21	23.3/23	24.1	25.7/25	28.8/29	32.0/32
350	355.6				22.9/19	25.6/21	26.5	28.2/23	31.7/26	35.2/29
400	406.4				26.3/16	29.3/18	30.3	32.3/20	36.3/23	40.3/25
450	457					32.9/11*	34.1	36.3/13*	40.8/14*	45.3/16*
500	508					36.6/15	37.9	40.4/16	45.4/18	50.4/20
600	610					44.0/9*	45.6	48.6/9*	54.6/11*	60.6/12*
700	711									70.7/10*
800	813									81.0/9*
900	914									91.0/8*
1000	1016									101.0/6*
1100	1118									111.0/6*
1200	1219									122.0/6*

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
DN 15 - DN 500 in accordance with EN 10217-7. Max. wall thickness T = 6 mm. DN 125 - DN1200 in accordance with EN 10296-2 produced from plate.
Note: The pressure calculations in this table have been done according to 13480-3 and EN 10217-7 for DN 15 - DN 500, T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

* Pressures marked with * are calculated according to 13480-3 and EN 10296-2 for DN 450, DN 600 - DN 1200, the steel grade is EN 1.4307, room temperature 20°C.

STAINLESS STEEL PROCESS LIGHT WALL PIPES

ISO Process Pipes
EN ISO 1127 Wall thickness 4.5 - 14 mm

DN	Outside Diameter (OD) mm	Wall thickness T (mm)									
		4.5	5	6	7.1	8	8.8	10	11	12	14
		Weight kg/m / Design pressure bar									
80	88.9	9.50/130									
100	114.3	12.4/101	13.7/113								
125	139.7	15.2/83	16.8/92	20.1/110	23.5	26.4	28.8	32.4			
150	168.3	18.4/69	20.4/76	24.4/91	28.6/76*	32.1/86*	35.1/94*	39.6/107*	43.3		
200	219.1	24.2/53	26.8/59	32.0/70	37.7/58*	42.2/66*	46.3/72*	52.3/82*	57.3/90*	64.6/98*	
250	273	30.2/42	33.5/47	40.1/56	47.2/47*	53.0/53*	58.2/58*	65.8/66*	72.1/73*	81.4/78*	91.9/92*
300	323.9	36.0/36	39.9/40	47.7/47	56.3/39*	63.2/45*	69.4/49*	78.5/56*	86.1/61*	97.3/67*	110/77*
350	355.6	39.5/33	43.8/36	52.5/43	61.9/36*	69.6/41*	76.3/45*	86.5/51*	94.8/56*	108/60*	121/70*
400	406.4	45.2/29	50.2/32	60.1/38	70.9/31*	79.7/35*	87.5/39*	99.1/44*	109/49*	123/52*	139/60*
450	457	50.9/18*	56.5/20*	67.7/23*	79.9/28*	89.8/32*	98.7/35*	112/39*	123/43*	139/47*	157/55*
500	508	56.7/23	62.9/25	75.3/30	89.0/25*	100/28*	110/31*	125/35*	137/39*	155/42*	175/49*
600	610	68.2/13*	75.7/15*	90.6/18*	107/21*	121/24*	132/26*	150/30*	165/32*	187/35*	212/41*
700	711	79.5/11*	88.4/13*	106/15*	125/18*	141/20*	155/22*	175/25*	193/28*	218/30*	247/35*
800	813	91.0/10*	101/11*	121/12*	143/16*	161/18*	177/20*	201/22*	221/24*	250/26*	284/30*
900	914	102/9*	114/10*	136/11*	161/14*	181/16*	199/17*	226/20*	248/22*	282/24*	320/27*
1000	1016	114/8*	126/9*	152/10*	179/13*	202/14*	222/16*	252/18*	277/20*	314/21*	
1100	1118	125/7*	139/8*	167/9*	197/11*	222/13*	244/14*	277/16*	305/18*	346/19*	
1200	1219	137/7*	152/7*	182/8*	215/10*	242/12*	266/13*	302/15*	332/16*		

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
DN 15 - DN 500 in accordance with EN 10217-7. Max. wall thickness T = 6 mm. DN 125 - DN1200 in accordance with EN 10296-2 produced from plate.
Note: The pressure calculations in this table have been done according to 13480-3 and EN 10217-7 for DN 15 - DN 500, T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

* Pressures marked with * are calculated according to 13480-3 and EN 10296-2 for DN 450, DN 600 - DN 1200, the steel grade is EN 1.4307, room temperature 20°C.

STAINLESS STEEL PROCESS LIGHT WALL PIPES

Metric Process Pipes

DN	Outside Diameter (OD) mm	Wall thickness T (mm)									
		1.5	2	2.5	3	4	5	6	8	10	12
		Weight kg/m / Design pressure bar									
15	18	0.62/215	0.80/286								
	20	0.70/193	0.90/257	1.10/321							
20	22	0.77/176	1.00/234	1.22/292							
	23	0.81/168	1.05/224	1.28/280							
	25	0.88/154	1.15/206	1.41/257							
25	28	1.00/138	1.30/184	1.60/230							
	30	1.07/129	1.40/172	1.72/215	2.03/258						
	32	1.15/121	1.50/161	1.85/201	2.18/241						
	33	1.18/117	1.55/156	1.91/195	2.25/234						
32	35	1.26/110	1.65/147	2.03/184	2.40/220						
	38	1.37/102	1.80/135	2.22/169	2.63/202						
	40	1.45/97	1.90/129	2.35/161	2.78/193						
40	43	1.56/90									
	44.5	1.62/87	2.13/116	2.63/145	3.12/174						
	50	1.82/76	2.40/101	2.97/126	3.53/151						
50	51	1.86/76	2.45/101	3.04/126	3.61/151						
	53	1.93/73									
	54	1.97/72	2.60/95								
	57	2.08/68	2.75/90	3.41/113	4.06/135	5.31/181					
65	63.5	2.33/61	3.08/81	3.82/101	4.55/122	5.96/162					
	68	2.50/57	3.31/76								
	69		3.36/75								
	70	2.57/55	3.41/74	4.23/92	5.03/110	6.61/147					

Selected metric dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
The pressure calculations in this table have been done according to 13480-3 and EN 10217-7 for DN 15 - DN 500, T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

* Pressures marked with * are calculated according to 13480-3 and EN 10296-2 for DN 450, DN 600 - DN 1200, the steel grade is EN 1.4307, room temperature 20°C.

STAINLESS STEEL PROCESS LIGHT WALL PIPES

Metric Process Pipes

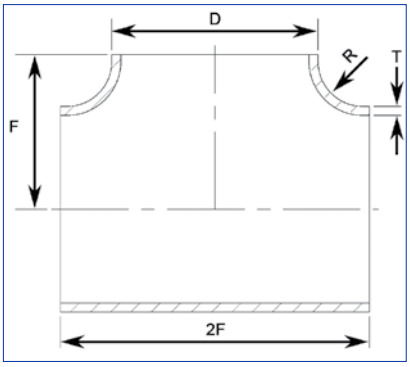
DN	Inside Diameter (ID) mm	Wall thickness T (mm)									
		1.5	2	2.5	3	4	5	6	8	10	12
		Weight kg/m / Design pressure bar									
80	80	3.06/48	4.11/64	5.16/80	6.24/97						
100	100	3.81/39	5.11/51	6.42/64	7.74/77	10.4/103					
125	125	4.75/31	6.36/41	7.97/51	9.62/62	12.9/82					
150	150	5.69/26	7.61/34	9.55/43	11.5/51	15.4/69	19.4/86	23.4	31.6	40	48.6
200	200	7.57/19	10.1/26	12.7/32	15.3/39	20.4/51	25.7/64	31	41.6	52.5	63.6
250	250	9.45/15	12.6/21	15.8/26	19.0/31	25.4/41	31.9/51	38.4	51.6	65	78.7
300	300	11.3/13	15.1/17	18.9/21	22.8/26	30.5/34	38.2/43	45.9	61.6	77.6	93.7
350	350	13.2/11	17.6/15	22.1/18	26.5/22	35.5/29	44.4/37	53.4	71.6	90.1	109
400	400				30.3/19	40.5/26	50.7/32	60.9	81.7	103	124
450	450				34.0/12*	45.5/16*	57.0/20*	68.4/24*	91.7/32*	115/40*	139
500	500				37.8/15	50.5/21	63.2/26	76.0/31	102/29*	128/36*	154
600	600				45.3/9*	60.5/12*	75.8/15*	91.1/18*	122/24*	153/30*	184
700	700				52.8/8*	70.5/10*	88.3/13*	106/15*	142/21*	178/26*	214
800	800				60.3/7*	80.5/9*	101/11*	121/14*	162/18*	203/23*	244
900	900				67.8/6*	90.6/8*	113/10*	136/12*	182/16*	228/20*	274
1000	1000				75.4/5*	101/7*	126/9*	151/11*	202/14*	253/18*	304
1100	1100				82.9/5*	111/7*	138/8*	166/10*	222/13*	278/16*	334
1200	1200				90.4/5*	121/6*	151/8*	181/9*	242/12*	303/15*	364
1300	1300				97.9	131/6*	163/7*	196/8*	262/11*	328/14*	
1400	1400				105	141/5*	176/6*	211/8*	282/10*	353/13*	
1500	1500				113	151/5*	188/6*	226/7*	302/10*		
1600	1600				120	161/5*	201/6*	241/7*	322/9*		

OD = ID + Wall Thickness (T) x 2. For example, 100 + (2mm x 2 = 4) = 104
Selected metric dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
The pressure calculations in this table have been done according to 13480-3 and EN 10217-7 for DN 15 - DN 500, T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

* Pressures marked with * are calculated according to 13480-3 and EN 10296-2 for DN 450, DN 600 - DN 1200, the steel grade is EN 1.4307, room temperature 20°C.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees equal pressed



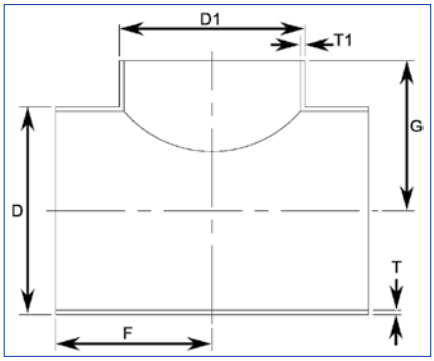
DN	D	F	2F	R	Wall thickness T (mm)						
					1.6	2	2.6	3	4	5	Max T mm
					Weight kg/m / Design pressure bar						
10	17.2	25	50	14.0	0.04/91						
15	21.3	27.5	55	14.5		0.07/100					
20	26.9	28.5	57	12.5		0.09/85	0.10/120*	0.14/144*			
25	33.7	38	76	16.0		0.15/63	0.20/89*	0.23/107*			
32	42.4	47.5	95	21.5		0.24/45	0.31/64*	0.36/78*			
40	48.3	57	114	26.0		0.34/37	0.44/53*	0.51/64*	0.68/94*		
50	60.3	64	128	27.0		0.50/29	0.65/42*	0.75/51*	1.00/74*		
65*	76.1	76	152	27.0		0.70/23*	0.91/33*	1.05/40*	1.40/58*		
80*	88.9	86	172	30.0		0.90/19*	1.17/27*	1.35/33*	1.35/48*		
100*	114.3	105	210	35.0		1.40/14*	1.70/19*	2.10/24*	2.80/32*		
125*	139.7	124	248	40.0		2.30/10*	3.00/15*		4.60/24*		
150*	168.3	143	286	32.0			4.10/12*	4.80/15*	6.30/20*		
200*	219.1	178	356	50.0			6.60/8*	7.60/10*	10.2/13*		
250	273	216	432	60.0				10.0/8	14.0/11		13
300	323.9	254	508	70.0				15.0/6	19.0/9		13
350	355.6	279	558	72.0				18.0/5	23.0/8		13
400	406.4	305	610	90.0				28.0/4	28.0/6		13
450	457	343	686	100.0					36.0/5	45.0/8	19
500	508	381	762	105.0					44.0/5	55.0/7	19
600	610	432	864	110.0						72.0/5	19

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

* The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-4 Type A.
Unmarked pressure ratings are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees reducing fabricated (ISO 5251)



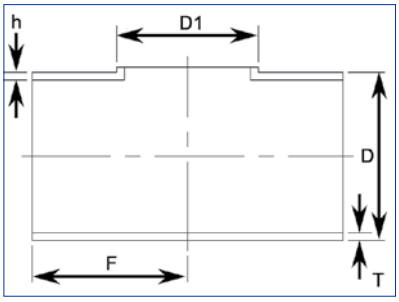
DN	D	D1	T=T1	F	G	Weight/pressure kg/pce / bar
100	114.3	76.1	3	105	95	1.90/36
		88.9	3	105	98	2.00/33
125	139.7	88.9	3	124	111	2.80/29
		114.3	3	124	117	2.90/25
150	168.3	114.3	3	148	130	3.90/22
		139.7	3	148	137	4.00/19
200	219.1	139.7	3	178	162	6.20/16
		168.3	3	178	168	6.40/14
250	273	168.3	3	216	194	9.30/12
		219.1	3	216	203	9.70/10
300	323.9	219.1	3	254	229	13.1/9
		273	3	254	241	13.6/8
350	355.6	273	3	279	257	16.1/7
		323.9	3	279	270	16.8/6
400	406.4	323.9	3	305	295	20.3/6
		355.6	3	305	305	20.8/6
450	457	406.4	3	343	330	26.0/5
		355.6	3	343	330	25.6/5
500	508	406.4	3	381	356	31.4/4
		457	3	381	368	32.3/4
600	610	457	3	432	419	42.4/3.6
		508	3	432	432	43.3/3

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
T_{max} = 6 mm, the steel grade is EN 1.4307, room temperature 20°C.

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees reducing and equal drawn



DN	D	D1	F	h	Wall thickness T mm					
					2	2.6	3	4	5	6
					Weight kg/pce / Design pressure bar*					
50	60.3	33.7	50	2	0.29					
		42.4			0.28					
		48.3		3	0.28					
		60.3			0.27					
65	76.1	42.4	65	2	0.47	0.59				
		48.3		3	0.47	0.59				
		60.3			0.46	0.58				
		76.1		4	0.45	0.56				
80	88.9	48.3	80	3	0.68	0.85				
		60.3			0.68	0.84				
		76.1		4	0.67	0.83				
		88.9		5	0.65	0.81				
100	114.3	60.3	100	3	1.1	1.37	1.64			
		76.1		4	1.09	1.36	1.63			
		88.9		5	1.08	1.35	1.61			
		114.3		7	1.05	1.31	1.57			
125	139.7	76.1	125	4	1.69	2.1	2.52			
		88.9		5	1.68	2.09	2.5			
		114.3		7	1.66	2.07	2.47			
		139.7		8	1.61	2.01	2.41			
150	168.3	88.9	150	5	2.45	3.05	3.65			
		114.3		7	2.43	3.03	3.62			
		139.7		8	2.39	2.99	3.58			
		168.3		10	2.33	2.91	3.49			
200	219.1	114.3	200	7		5.32	6.38	8.47	10.5	
		139.7		8		5.28	6.32	8.4	10.5	
		168.3		10		5.23	6.27	8.33	10.4	
		219.1		12		5.05	6.06	8.07	10.1	

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
Pressure ratings can be done if tube dimension connected to the branch is known.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

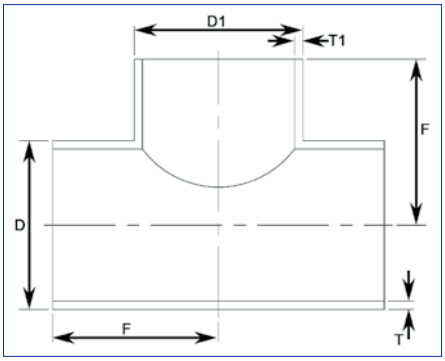
ISO
Tees reducing and equal drawn *cont'd...*

DN	D	D1	F	h	Wall thickness T mm					
					2	2.6	3	4	5	6
					Weight kg/pce / Design pressure bar*					
250	273	139.7	250	8			9.96	13.2	16.5	
		168.3		10			9.89	13.2	16.4	
		219.1		12			9.74	13	16.1	
		273		13			9.41	12.5	15.6	
300	323.9	168.3	300	10			14.2	18.9	23.5	28.2
		219.1		12			14	18.7	23.3	27.9
		273		13			13.8	18.4	22.9	27.4
		323.9		15			13.4	17.9	22.3	26.7
350	355.6	219.1	350	12			18.2	24.2	30.1	
		273		13			17.9	23.8	29.6	
		323.9		15			17.6	23.4	29.2	
		355.6		17			17.3	23	28.7	
400	406.4	273	400	13			25.3	31.2		
		323.9		13			23.2	30.9		
		355.6		15			23.1	30.7		
		406.4		20			22.6	30.1		

Selected ISO dimensions are available in the following grades: EN 1.4307, 1.4404, 1.4432, 1.4541 and 1.4571.
Pressure ratings can be done if tube dimension connected to the branch is known.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees reducing and equal fabricated (SFS 4164)
Wall thickness 2 - 6 mm



DN	D	D1	F	Wall thickness T = T1 mm					
				2	2.6	3	4	5	6
				Weight kg/pce / Design pressure bar					
50	60.3	33.7	125	0.87/53	1.04/72	1.28/89			
		42.4		0.91/47	1.08/63	1.34/80			
		48.3		0.93/44	1.10/58	1.38/74			
		60.3		0.98/38	1.21/50	1.45/64			
65	76.1	42.4	140	1.23/41	1.48/53	1.72/67			
		48.3		1.26/38	1.50/50	1.86/63			
		60.3		1.31/33	1.55/44	1.94/55			
		76.1		1.37/28	1.70/38	2.03/47			
80	88.9	48.3	150	1.53/33	1.84/44	2.15/56			
		60.3		1.58/30	1.89/39	2.35/50			
		76.1		1.65/25	1.95/34	2.45/42			
		88.9		1.70/23	2.06/31	2.53/39			
100	114.3	60.3	160	2.07/25	2.50/33	3.07/41	3.91/60	4.74/80	
		76.1		2.13/22	2.56/28	3.17/36	4.19/52	5.00/70	
		88.9		2.18/19	2.60/27	3.25/33	4.29/49	5.09/64	
		114.3		2.27/16	2.83/22	3.83/28	4.47/41	5.55/55	
125	139.7	76.1	180	2.84/19	3.43/25	4.23/31	5.39/45	6.54/61	
		88.9		2.89/17	3.48/22	4.31/28	5.70/42	6.84/55	
		114.3		3.00/14	3.56/19	4.46/23	5.91/36	7.01/49	
		139.7		3.07/12	3.83/17	4.59/22	6.08/31	7.56/42	
150	168.3	88.9	200	3.76/14	4.56/23	5.61/25	7.18/36	8.73/49	10.4/61
		114.3		3.87/12	4.65/20	5.77/22	7.65/31	9.17/42	10.7/53
		139.7		3.97/11	4.95/17	5.92/19	7.86/28	9.32/38	11.2/47
		168.3		4.05/9	5.05/16	6.05/17	8.03/25	9.99/33	11.9/42

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees reducing and equal fabricated (SFS 4164)
Wall thickness 2 - 6 mm *cont'd...*

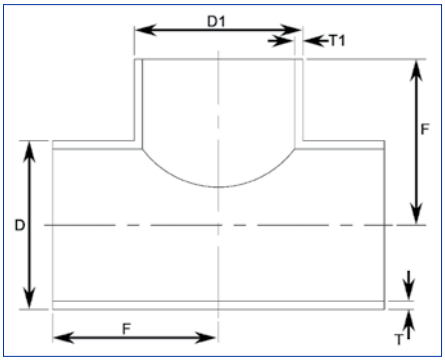
DN	D	D1	F	Wall thickness T = T1 mm					
				2	2.6	3	4	5	6
				Weight kg/pce / Design pressure bar					
200	219.1	114.3	250		7.4/14	9.1/17	11.7/27	14.2/34	17.2/44
		139.7			7.8/12	9.3/16	12.4/23	14.9/31	17.4/39
		168.3			7.9/11	9.5/14	12.6/20	15.1/28	18.1/34
		219.1			8.2/9	9.8/11	13.0/17	16.2/23	19.4/30
250	273	139.7	300		11.3/11	13.6/12	17.5/20	21.3/52	25.7/33
		168.3			11.5/9	13.8/11	18.4/17	22.2/47	25.9/30
		219.1			11.9/8	14.2/9	18.9/14	22.6/39	27.2/25
		273			12.1/6	14.5/8	19.3/12	24.0/34	28.8/22
300	323.9	168.3	330		14.3/8	17.6/11	22.7/16	27.7/14	33.4/27
		219.1			14.5/6	18.0/9	24.0/12	28.8/17	33.0/22
		273			14.7/6	18.4/8	24.5/11	30.5/16	35.2/20
		323.9			15.5/5	18.5/6	26.7/9	30.8/14	36.9/17
350	355.6	219.1	360			21.4/8	27.4/12	34.4/16	40.3/22
		273				21.8/6	29.0/11	34.8/14	41.9/19
		323.9				22.2/6	29.5/9	36.8/12	44.0/17
		355.6				22.2/6	29.5/9	36.9/12	44.2/16
400	406.4	273	400			27.3/6	34.8/9	43.7/12	51.2/17
		323.9				27.7/5	36.8/8	44.0/12	53.1/16
		355.6				27.9/5	37.1/8	46.3/11	55.4/14
		406.4				27.9/5	37.2/8	46.5/9	55.7/12

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Tees reducing and equal fabricated (SFS 4164)
Wall thickness 3 - 8 mm



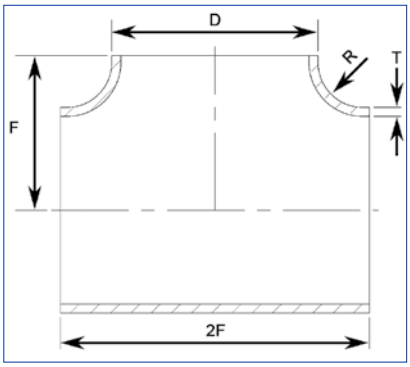
DN	D	D1	F	Wall thickness T = T1 mm				
				3	4	5	6	8
				Weight kg/pce / Design pressure bar				
450	457	323.9	450	34.7/5	46.1/8	57.6/11		
		355.6		35.0/5	46.5/8	58.1/9		
		406.4		35.4/5	47.1/6	58.7/9		
		457		35.4/3	47.1/6	58.8/8		
500	508	355.6	500	42.8/5	56.9/6	68.6/9		
		406.4		43.5/5	57.6/6	71.9/8		
		457		43.7/3	58.2/6	72.6/8		
		508		43.6/3	58.2/5	72.7/8		
600	610	406.4	600		81.8/5	98.7/9	119/9	
		457			82.6/5	103/9	124/9	
		508			83.4/5	104/8	125/8	
		610			83.8/5	105/8	126/8	
700	711	457	700		111/5	134/6	162/12	
		508			112/5	135/6	163/12	
		610			113/3	136/5	170/11	
		711			114/3	134/5	171/9	
800	813	508	800		145/3	175/5	206/6	272/11
		610			147/3	177/5	213/6	293/9
		711			149/3	186/5	223/5	297/8
		813			149/3	186/3	223/5	298/8
900	914	610	900		184/3	230/5	276/6	367/8
		711			187/3	233/3	280/5	372/8
		813			189/1.5	236/3	283/5	377/6
		914			188/1.5	236/3	283/5	377/6
1000	1016	711	1000		229/3	286/3	342/5	456/6
		813			231/1.5	289/3	346/5	461/6
		914			234/1.5	292/3	350/3	466/6
		1016			233/1.5	291/3	349/3	465/5

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Tees equal pressed



DN	D	F	2F	R	Wall thickness T mm					
					2	2.5	3	4	5	Max T mm
					Weight kg/pce / Design pressure bar					
15	20	23	46	10.5	0.06/121					
20	25	33	66	15.5	0.11/85					
25	30	38	76	18	0.14/67					
32	38	50	100	24		0.30/64				
40	44.5*	60	120	28	0.35/39					
50	54	73	146	30	0.51/31					
50	57*	76	152	23			0.85/38			
65	69	80	160	27.5	0.70/25					
65*	76	80	160	30.5			1.10/36			
65*	79	80	160	32	0.75/19					
80*	84	80	160	30	0.80/20**	1.00/27**	1.20/35**			
100*	104	90	180	25	1.30/17**					
	105/106					1.80/23**	2.16/28**			
125*	129	115	230	40	2.10/12**					
	130/131					2.80/16**	3.36/20**			
150*	154	135	270	40	3.10/9**					
	155/156					4.00/13**	4.80/16**			
200*	205	175	350	57		6.10/8**				
	206						8.20/11**			
250	256	216	432	75			10.0/8			8
	258							13.0/12		

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* ISO dimensions OT 300.
** The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-4 Type A.
Unmarked pressure ratings are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Tees equal pressed *cont'd...*

DN	D	F	2F	R	Wall thickness T mm					
					2	2.5	3	4	5	Max T mm
					Weight kg/pce / Design pressure bar					
300	306	254	508	80			13.0/6			13
	308							19.0/9		
356	356	279	558	72			18.0/5			20
	358							23.0/8		
400	406	305	610	90			28.0/11			19
	408							28.0/6		
	410								36.0/9	
450	456	343	686	100			36.0/3			19
	458							36.0/6		
	460								45.0/7	
500	506	381	762	105			44.0/3			19
	508							44.0/5		
	510								55.0/6	
600	606	432	864	110			72.0/3			19
	508							72.0/3		
	610								72.0/5	

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* ISO dimensions OT 300.

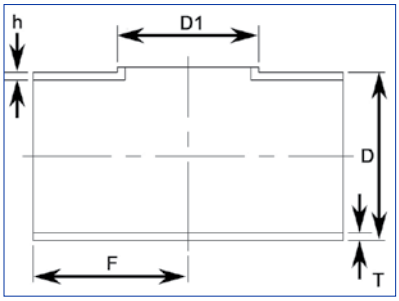
** The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-4 Type A.

Unmarked pressure ratings are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.

All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Tees reducing and equal drawn



DN	D	D1	F	h	Wall thickness T mm					
					2	2.5	3	4	5	6
					Weight kg/pce / Design pressure bar*					
50	50	25	50	2	0.26					
		32			0.25					
		40		3	0.25					
		50			0.25					
65	65	32	65	2	0.43	0.54				
		40		3	0.43	0.54				
		50			0.42	0.53				
		65		4	0.41	0.52				
80	80	40	80	3	0.65	0.81				
		50			0.64	0.81				
		65		4	0.63	0.80				
		80		5	0.62	0.78				
100	100	50	100	3	1.0	1.26	1.52			
		65		4	1.0	1.25	1.51			
		80		5	0.99	1.24	1.49			
		100		7	0.97	1.22	1.47			
125	125	65	125	4	1.56	1.96	2.36			
		80		5	1.55	1.95	2.35			
		100		7	1.54	1.93	2.33			
		125		8	1.5	1.88	2.27			
150	150	80	150	5	2.24	2.81	3.38			
		100		7	2.23	2.79	3.36			
		125		8	2.2	2.76	3.32			
		150		10	2.15	2.70	3.26			
200	200	100	200	7		4.99	6.0	8.04	10.1	
		125		8		4.95	5.96	7.98	10.0	
		150		10		4.92	5.91	7.93	10.0	
		200		12		4.76	5.73	7.69	9.68	

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

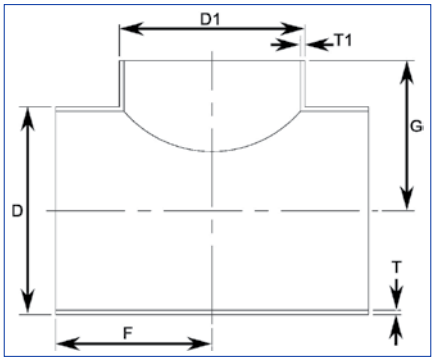
Metric
Tees reducing and equal drawn *cont'd...*

DN	D	D1	F	h	Wall thickness T mm					
					2	2.5	3	4	5	6
					Weight kg/pce / Design pressure bar*					
250	250	125	250	8			9.35	12.5	15.7	
		150		10			9.3	12.5	15.6	
		200		12			9.16	12.3	15.4	
		250		13			8.88	11.9	15	
300	300	150	300	10			13.4	18	22.5	27.1
		200		12			13.3	17.8	22.3	26.8
		250		13			13.1	17.5	22	26.5
		300		15			12.7	17.1	21.4	25.8
350	350	200	350	12			18.2	24.3	30.5	
		250		13			18	24	30.1	
		300		15			17.8	23.7	29.8	
		350		17			17.3	23.1	29	
400	400	250	400	13			23.6	31.5		
		300		15			23.4	31.2		
		350		17			23.1	30.9		

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Tees reducing fabricated



DN	D	D1	T=T1	F	G	Weight kg/pce / Design pressure bar
100	104	54	2	50	75	0.60/28
		84		80	90	1.00/22
125	129	84		80	102	1.20/19
		104		100	112	1.50/16
150	154	84		80	115	1.40/14
		104		100	125	1.80/9
200	204	104		100	150	2.30/11
		129		125	162	2.00/11
		154		150	175	3.60/9
	206	106	3	100	150	3.40/12
		131		125	162	4.40/11
		156		150	175	5.40/11
250	254	104	2	100	175	2.80/8
		154		150	200	4.40/8
		204		200	225	6.10/5
	256	106	3	100	175	4.20/17
		156		150	200	6.60/14
		206		200	225	9.10/11
300	304	154	2	150	225	5.10/6
		204		200	250	7.10/5
		254		250	275	9.10/5
	306	156	3	150	225	7.70/12
		206		200	250	10.6/9
		256		250	275	13.7/8

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Tees reducing fabricated *cont'd...*

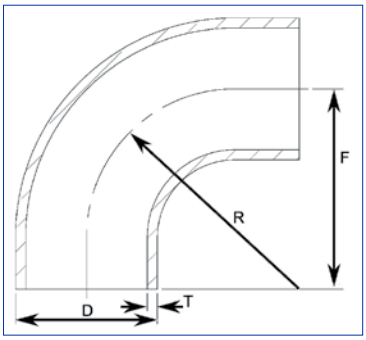
DN	D	D1	T=T1	F	G	Weight kg/pce / Design pressure bar
350	356	206		200	275	12.1/9
		256		250	300	15.6/8
		306		300	325	19.3/6
	358	208	4	200	275	16.2/12
		258		250	300	20.9/11
		308		300	325	25.8/9
400	406	256	3	250	325	17.5/6
		306		300	350	21.6/6
		356		350	375	25.8/5
	408	308	4	300	350	28.8/9
		258		250	325	23.4/11
		358		350	375	34.5/8
500	506	306	3	300	400	24.7/5
		356		350	425	30.6/5
		406		400	450	47.7/5
	508	308	4	300	400	34.8/8
		358		350	425	41.5/6
		408		400	450	48.5/6
600	606	506	3	500	550	53.8/3
	608	508	4	500	550	73.2/5
	610	510	5	500	550	91.5/6

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Elbows 3 ID (R ~ 1.5 X D)



DN	D	R=F	Wall thickness T mm											
			1.6	2	2.3	2.5	2.6	2.9	3	3.2	4	5	6	Max T mm
			Weight kg/pce / Design pressure bar											
10	17.2	28.0	0.02/212*	0.03/273*										
15	21.3	27.5	0.03/157*	0.04/201*			0.05/271*							
20	26.9	28.5	0.04/112*	0.06/143*			0.07/192*							
25	33.7	38.0	0.08/95*	0.10/120*			0.12/153*							
32	42.4	47.5	0.12/71*	0.15/90*			0.19/119*							
40	48.3	57.0	0.16/63*	0.21/80*			0.26/105*							
50	60.3	76.0	0.27/51*	0.35/65*			0.44/85*	0.52/96*						
65	76.1	95.0		0.55/35**			0.73/47**	0.81/52**						
80	88.9	114.0		0.78/30**	0.90/35	0.98/39	1.01/40**	1.13/45**	1.17/47	1.24/50	1.51/63**	1.89/80		
100	101.6	152.0		1.20/28										
100	114.3	152.0		1.30/24**		1.75/30	1.94/32**	2.00/35**		3.29/39	4.11/49**			
125	139.7	190.0		2.10/20**		2.70/25	3.08/26**	3.10/29**			4.08/40			
150	168.3	229.0		3.00/16**		3.90/20	4.30/21**	4.50/24**			5.90/33**	7.40/42	8.80/50	14
200	219.1	305.0		5.20/12**		6.80/16**	7.50/16**	7.80/18			10.3/26**	12.8/32		17
250	273.0	381.0		8.00/14*			10.5/19*	12.1/21*			16.1/29*	20.1/26	24.0/31	25
300	323.9	457.0		11.60/11*			15/15*	17.3/17*			23.0/24*	28.7/22	34.3/26	23
350	355.6	533.0						22.2/15*			29.5/21*	36.8/19**	44.1/24	10
400	406.4	610.0						29.3/14*			38.6/20*	48.2/25*	57.6/21	20
450	457.0	686.0						36.8/9			48.9/12	61.0/15		13
500	508.0	762.0						45.4/8			60.4/11	75.4/14	90.3/17	25
600	610.0	914.0						65.4/6			87.1/9	109/11	130/14	25
700	711.0	1067.0									119/8	148/10	178/13	13
800	813.0	1219.0									156/7	195/9	232/11	20
900	914.0	1372.0									206/6	246/8	294/10	22
1000	1016.0	1524.0									243/6	304/7	365/9	22
1100	1118.0	1667.0									368/5	441/6		25
1200	1219.0	1800.0										438/6	526/7	19

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* Are calculated for grade EN 1.4307 at 20°C according to EN 10253-4 Type A.

** Steel grades EN 1,4541 and EN 1.4571 are available according to EN 10253-4, pressure figures have to be multiplied by 1.43 (1.4541).

Unmarked pressure ratings are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.

All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

Metric
Elbows 3 ID (R ~ 1.5 x D)

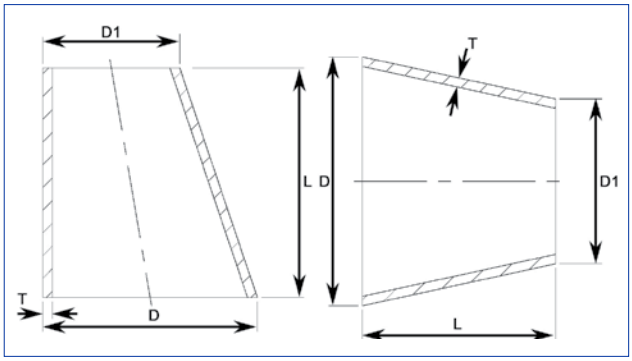
DN	D	R=F	Wall thickness T mm								
			1.5	2	2.5	3	4	5	6	8	Max T mm
			Weight kg/pce / Design pressure bar								
15*	18	30	0.02/189								
	20	23		0.04/207							
20*	23	35	0.04/141								
	25	33		0.05/169							
25*	28	32.5	0.04/104								
	30	38		0.08/137							
32*	35	45	0.08/86	0.11/116							
	38	50	0.11/79	0.15/107							
40*	43	47.5	0.15/65								
	44.5***	60		0.19/92							
50*	53	73	0.16/57								
	54	73		0.21/75							
	57***	78				0.53/109					
65*	69	95		0.47/58							
80	79	113		0.80/36							
	84.0/86.0	123		0.90/34**		1.40/50					
100	104/106	150		1.20/27**		1.80/40**					
125	129/131	188		2.00/22**		3.00/32					
150	154/156	225		2.60/18**		3.90/27**					
200	204/205/206	300		4.80/14**	6.00/17**	7.30/20**					9
250	254/255/256	375		7.40/11*	9.20/14*	11.0/16*					6
300	304/306/308	450		10.7/9*		16.5/14*	22.0/18				7
350	356/358/360	525				22.5/12*	30.0/16	37.0/19			9
400	406/408/410	600				29.0/10*	38.0/14*	48.0/17			11
450	456/458/460	675				37.0/9	49.0/12	61.0/15			13
500	506/508/510	750				45.0/8	60.0/11	75.0/14			25
600	606/608/610	900				66.0/7	88.0/9	110/11			25
700	708/710/712	1050					117/8	147/10	177/13		13
800	808/810/812	1200					152/7	190/9	228/11		11
900	910/912	1350						238/8	286/10		22
1000	1010/1012	1500						298/7	357/9		22
1100	1110/1112/1116	1650						360/6	432/8	577/11	25

Selected metric dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* Are calculated for grade EN 1.4307 at 20°C according to EN 10253-4 Type A.
** Steel grades EN 1,4541 and EN 1.4571 are available according to EN 10253-4, pressure figures have to be multiplied by 1.43 (1.4541).
*** ISO dimensions OT 200.
Unmarked pressure ratings are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric
CC, EC 3 x (D - D1) (EN10253-3)



DN	D	D1	L	Wall thickness T mm							
				2	2.5	3	4	5	6	8	10
				Weight kg/pce / Design pressure bar for CC*							
15	21.3	13.7	23	0.02/176							
		17.2	12	0.01/176							
20	26.9	13.7	40	0.04/137							
		17.2	29	0.03/137							
		21.3	17	0.02/137							
25	33.7	17.2	50	0.06/108							
		21.3	37	0.05/108							
		26.9	20	0.03/108							
32	42.4	21.3	63	0.10/85							
		26.9	46	0.08/85							
		33.7	26	0.05/85							
40	48.3	21.3	81	0.14/74							
		26.9	63	0.11/74							
		33.7	43	0.09/74							
		42.4	17	0.04/74							
50	60.3	21.3	117	0.24/59							
		26.9	99	0.21/59	0.26/74						
		33.7	79	0.18/59	0.22/74						
		42.4	53	0.13/59	0.16/74						
		48.3	36	0.10/59	0.12/74	0.14/90					
65	76.1	26.9	148	0.38/47							
		33.7	126	0.34/47	0.42/59	0.50/90					
		42.4	100	0.29/47	0.36/59	0.43/90					
		48.3	82	0.25/47	0.31/59	0.37/90					
		60.3	47	0.16/47	0.20/59	0.23/90					

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric
CC, EC 3 x (D - D1) (EN10253-3) *cont'd...*

DN	D	D1	L	Wall thickness T mm							
				2	2.5	3	4	5	6	8	10
				Weight kg/pce / Design pressure bar for CC*							
80	88.9	33.7	165	0.51/40							
		42.4	138	0.45/40	0.55/50	0.66/60					
		48.3	120	0.41/40	0.50/50	0.60/60					
		60.3	85	0.31/40	0.39/50	0.46/60					
		76.1	38	0.16/40	0.19/50	0.23/60					
100	114.3	42.4	216	0.85/31							
		48.3	195	0.78/31	0.97/39	1.16/46	1.53/62				
		60.3	160	0.69/31	0.86/39	1.03/46	1.35/62				
		76.1	113	0.53/31	0.66/39	0.79/46	1.05/62				
		88.9	75	0.38/31	0.47/39	0.56/46	0.74/62				
125	139.7	60.3	235	1.17/25	1.45/32	1.74/38	2.29/51				
		76.1	188	1.01/25	1.26/32	1.50/38	1.98/51				
		88.9	151	0.86/25	1.07/32	1.28/38	1.69/51				
		114.3	75	0.46/25	0.59/32	0.71/38	0.94/51				
150	168.3	76.1	273	1.67/21	2.07/26	2.48/32	3.23/42				
		88.9	235	1.51/21	1.88/26	2.25/32	2.97/42				
		114.3	160	1.13/21	0.82/26	0.98/32	1.29/42				
		139.7	85	0.66/21	0.82/26	0.98/32	1.29/42				
200	219.1	88.9	385	2.97/16	3.70/20	4.43/24	5.86/32	7.28/40			
		114.3	310	2.59/16	3.23/20	3.86/24	5.12/32	6.36/40			
		139.7	235	2.12/16	2.64/20	3.16/24	4.18/32	5.20/40			
		168.3	150	1.46/16	1.82/20	2.18/24	2.89/32	3.59/40			
250	273	114.3	470	4.57/13	5.70/16	6.82/19	9.05/25	11.3/32	13.4/39		
		139.7	395	4.10/13	5.11/16	6.12/19	8.11/25	10.1/32	12.1/39		
		168.3	310	3.44/13	4.29/16	5.14/19	6.82/25	8.48/32	10.1/39		
		219.1	160	1.98/13	2.47/16	2.96/19	3.93/25	4.89/32	5.85/39		

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric
CC, EC 3 x (D - D1) (EN10253-3) *cont'd...*

DN	D	D1	L	Wall thickness T mm							
				2	2.5	3	4	5	6	8	10
				Weight kg/pce / Design pressure bar for CC*							
300	323.9	139.7	545	6.36/11	7.93/13	9.49/16	12.6/21	15.67/27	18.7/33		
		168.3	461	5.71/11	7.13/13	8.53/16	11.3/21	14.1/27	16.9/33		
		219.1	310	4.24/11	5.29/13	6.34/16	8.42/21	10.5/27	12.5/33		
		273	151	2.27/11	2.84/13	3.40/16	4.51/21	5.62/27	6.72/33		
350	355.6	168.3	554	7.31/10	9.12/12	10.9/15	14.5/19	18.1/15	21.6/29		
		219.1	404	5.85/10	7.30/12	8.75/15	11.6/19	14.5/15	17.3/29		
		273	244	3.87/10	4.83/12	5.78/15	7.69/19	9.58/15	11.5/29		
		323.9	94	1.61/10	2.01/12	2.41/15	3.20/19	3.99/15	4.78/29		
400	406.4	219.1	554		10.9/11	13.1/13	17.4/17	21.6/21	25.9/26	34.3/35	
		273	395		8.45/11	10.1/13	13.5/17	16.8/21	20.1/26	26.6/35	
		323.9	244		5.61/11	6.73/13	8.59/17	11.2/21	13.3/26	17.7/35	
		355.6	150		3.60/11	4.20/13	5.74/17	7.16/21	8.57/26	11.4/35	
450	457	273	545			15.0/11	20.0/15	25.0/19	29.8/23	39.5/31	
		323.9	395			11.7/11	15.5/15	19.3/19	23.1/23	24.4/31	
		355.6	301			9.30/11	12.3/15	15.3/19	18.4/23	24.4/31	
		406.4	150			4.90/11	6.51/15	8.12/19	9.73/23	12.9/31	
500	508	323.9	545			17.1/10	22.8/14	28.4/17	34.0/21	45.1/27	
		355.6	451			14.7/10	19.6/14	24.4/17	29.2/21	38.1/27	
		406.4	301			10.4/10	13.9/14	17.3/17	20.7/21	25.5/27	
		457.2	150			5.48/10	7.29/14	9.09/17	10.9/21	14.5/27	
600	610	355.6	752			27.5/9	36.5/11	45.6/14	54.6/17	74.5/23	
		406.4	601			23.1/9	30.8/11	38.4/14	45.9/17	61.0/23	
		457	451			18.2/9	24.2/11	30.2/14	36.2/17	48.1/23	
		508	301			12.7/9	17.0/11	21.2/14	25.3/17	33.7/23	

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric
CC, EC 3 x (D - D1) (EN10253-3) *cont'd...*

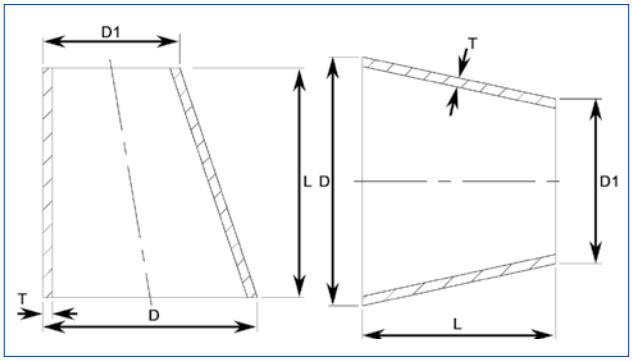
DN	D	D1	L	Wall thickness T mm							
				2	2.5	3	4	5	6	8	10
				Weight kg/pce / Design pressure bar for CC*							
700	711	406.4	902			38.2/7	50.8/10	63.4/13	75.9/16	101/21	126/27
		457	752			33.3/7	44.3/10	55.3/13	66.2/16	88.0/21	110/27
		508	601			27.8/7	37.0/10	46.1/13	55.2/16	73.4/21	91.5/27
		610	301			15.1/7	20.1/10	25.0/13	30.0/16	40.0/21	50.0/27
800	813	457	1053			50.7/7	67.5/9	84.2/11	101/14	134/19	167/24
		508	902			45.2/7	60.1/9	75.0/11	90.0/14	120/19	149/24
		610	601			32.4/7	43.2/9	53.9/11	64.5/14	85.8/19	107/24
		711	301			17.4/7	23.2/9	28.9/11	34.7/14	46.1/19	57.5/24
900	914	508	1203			64.9/6	86.4/8	108/10	129/12	172/17	214/15
		610	902			52.1/6	69.4/8	86.7/10	104/12	138/17	172/15
		711	601			37.1/6	49.4/8	61.6/10	73.8/12	98.2/17	122/15
		813	301			19.7/6	26.3/8	32.8/10	39.3/12	52.3/17	65.2/15
1000	1016	610	1203			74.2/5	98.8/7	123/9	148/11	197/15	245/19
		711	902			59.1/5	78.7/7	98.3/9	118/11	157/15	195/19
		813	601			41.7/5	55.6/7	69.4/9	83.1/11	111/15	138/19
		914	301			22.1/5	29.4/7	36.7/9	44.0/11	58.5/15	73.0/19
1100	1118	711	1203			84.1/5	112/7	140/8	168/10	223/13	278/17
		813	909			66.7/5	88.8/7	111/8	133/10	177/13	221/17
		914	609			47.0/5	62.7/7	78.2/8	93.8/10	125/13	156/17
		1016	308			25.0/5	33.3/7	41.6/8	49.8/10	66.3/13	82.7/17
1200	1219	813	1205			93.0/4	124/6	155/7	185/9	247/13	308/16
		914	905			73.3/4	97.7/6	122/7	146/9	195/13	243/16
		1016	604			51.3/4	68.3/6	85.3/7	102/9	136/13	170/16
		1118	296			26.3/4	35.0/6	43.8/7	54.3/9	69.8/13	87.2/16

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric (ISO 5251)



DN	D	D1	L	Wall thickness T mm		
				2	3	4
				Weight kg/pce / Design pressure bar for CC*		
20	26.9	21.3	38	0.10/139		
25	33.7	21.3	51	0.10/109		
		26.9	51	0.10/109		
32	42.4	33.7		0.10/86		
40	48.3	33.7	64	0.10/75		
		42.4		0.10/75		
50	60.3	33.7	76	0.20/59		
		48.3		0.20/59		
65	76.1	48.3	90	0.30/46		
		60.3		0.30/47		
80	88.9	60.3	90	0.30/39		
		76.1		0.30/40		
100	114.3	76.1	102	0.50/30		
		88.9		0.50/31		
125	139.7	88.9	127	1.10/25		
		114.3		1.10/25		
150	168.3	88.9	140	1.00/20		
		114.3		1.00/21		
		139.7		1.10/21		
200	219.1	139.7	152	1.30/15		
		139.7			2.00/23	
		168.3		1.50/15		
		168.3			2.20/23	

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensions can, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

STAINLESS STEEL PROCESS LIGHT WALL FITTINGS

ISO
Reducers type Concentric/Eccentric
(ISO 5251) *cont'd...*

DN	D	D1	L	Wall thickness T mm		
				2	3	4
				Weight kg/pce / Design pressure bar for CC*		
250	273	168.3	178	2.00/12		
		168.3			3.00/18	
		219.1		2.20/13		
		219.1			3.30/19	
300	323.9	168.3	203		3.70/16	
		219.1			4.20/16	
		273			4.60/16	
350	355.6	219.1	330		7.00/15	
		273			7.70/15	
		323.3			8.40/15	
400	406.4	273	356		9.00/13	
		323.9			9.70/13	
		355.6			10.2/13	
450	457	323.9	381		11.2/11	
		355.6			11.5/11	
		406.4			12.4/11	
500	508	355.6	508		16.4/11	
		406.4			17.4/11	
		457			18.3/11	
600	610	406.4	508			25.7/10
		457				27.0/10
		508				28.3/10

Selected ISO dimensions are available in the following grades: EN1.4307, 1.4404, 1.4432, 1.4541 and 1.4571

Other fittings available in both ISO and Metric ID standard:

Full range of Collars, Weldring Necks, End Caps, Flanges

* For EC reducers the pressure is approximately 10% lower.
The pressures are calculated for grade EN 1.4307 at 20°C according to EN 10253-3 Type A.
All dimensio, with additional testing, be delivered to meet EN 10253-4 Type A. This has to be confirmed when ordering.

QUICK GUIDE TO METRIC DIMENSIONS AND WEIGHTS OF NOMINAL BORE STAINLESS STEEL PIPE

ANSI B36.10 - ANSI B36.19

UPPER FIGURES: wall thickness in mm
LOWER FIGURES: weight per metre in kg

Pipe Size		OD	5S	10S	10	20	30	40	STD	60	80	EH	100	120	140	160	DBLE
(mm)	(inches)	(mm)							40S			80S					EH
6	1/8	10.29		1.25 0.28	1.25 0.28			1.73 0.37	1.73 0.37		2.41 0.48	2.41 0.48					
8	1/4	13.72		1.65 0.48	1.65 0.48			2.24 0.64	2.24 0.64		3.02 0.81	3.02 0.81					
10	3/8	17.15		1.65 0.64	1.65 0.64			2.31 0.86	2.31 0.86		3.20 1.12	3.20 1.12					
15	1/2	21.34	1.65 0.81	2.11 1.01	2.11 1.01			2.77 1.29	2.77 1.29		3.73 1.64	3.73 1.64				4.78 1.98	7.47 2.65
20	3/4	26.67	1.65 1.03	2.11 1.30	2.11 1.30			2.87 1.71	2.87 1.71		3.91 2.23	3.91 2.23				5.56 2.94	7.82 3.69
25	1	33.40	1.65 1.31	2.77 2.12	2.77 2.12			3.38 2.54	3.38 2.54		4.55 3.28	4.55 3.28				6.35 4.30	9.09 5.75
32	1 1/4	42.16	1.65 1.67	2.77 2.73	2.77 2.73			3.56 3.43	3.56 3.43		4.85 4.53	4.85 4.53				6.35 5.69	9.70 7.88
40	1 1/2	48.26	1.65 1.93	2.77 3.15	2.77 3.15			3.68 4.11	3.68 4.11		5.08 5.49	5.08 5.49				7.14 7.34	10.16 9.69
50	2	60.33	1.65 2.42	2.77 3.98	2.77 3.98			3.91 5.52	3.91 5.52		5.54 7.59	5.54 7.59				8.74 11.28	11.07 13.65
65	2 1/2	73.03	2.11 3.74	3.05 5.34	3.05 5.34			5.16 8.76	5.16 8.76		7.01 11.58	7.01 11.58				9.53 15.14	14.02 20.70
80	3	88.90	2.11 4.58	3.05 6.54	3.05 6.54			5.49 11.45	5.49 11.45		7.62 15.50	7.62 15.50				11.13 21.65	15.24 28.09
90	3 1/2	101.60	2.11 5.25	3.05 7.52	3.05 7.52			5.74 13.77	5.74 13.77		8.08 18.90	8.08 18.90					
100	4	114.30	2.11 5.92	3.05 8.48	3.05 8.48			6.02 16.31	6.02 16.31		8.56 22.65	8.56 22.65		11.13 28.32		13.49 34.02	17.12 41.63
125	5	141.30	2.77 9.50	3.40 11.74	3.40 11.74			6.55 22.10	6.55 22.10		9.52 31.41	9.52 31.41		12.70 40.28		15.88 49.83	19.05 58.28
150	6	168.28	2.77 11.47	3.40 14.04	3.40 14.04			7.11 28.68	7.11 28.68		10.97 43.19	10.97 43.19		14.27 54.20		18.26 68.56	21.95 80.36
200	8	219.08	2.77 14.99	3.76 20.25	3.76 20.25	6.35 33.31	7.04 36.81	8.18 43.16	8.18 43.16	10.31 53.08	12.70 65.59	12.70 65.59	15.09 75.92	18.26 90.44	20.62 100.92	23.01 112.90	22.23 109.48
250	10	273.05	3.40 22.97	4.19 28.20	4.19 28.20	6.35 41.77	7.78 51.03	9.27 61.20	9.27 61.20	12.70 81.55	15.09 97.40	12.70 81.55	18.26 114.75	21.44 133.06	25.40 155.15	28.58 174.82	25.40 157.41
300	12	323.85	3.96 31.72	4.57 36.53	4.57 36.53	6.35 49.73	8.38 65.20	10.31 80.91	9.53 74.92	14.28 108.96	17.48 133.98	12.70 97.46	21.44 159.91	25.40 186.97	28.58 208.14	33.32 242.28	25.40 189.70
350	14	355.60	3.96 34.87	4.78 41.92	6.35 55.56	7.93 67.90	9.53 81.33	11.09 95.90	9.53 81.33	15.09 126.71	19.05 160.44	12.70 107.39	23.83 194.96	27.79 224.65	31.75 253.56	35.71 285.88	
400	16	406.40	4.19 42.18	4.78 47.99	6.35 63.57	7.93 77.83	9.53 93.27	12.70 125.12	9.53 93.27	16.66 160.12	21.44 206.52	12.70 123.30	26.19 245.56	30.96 286.64	36.53 333.19	40.49 370.73	
450	18	457.20	4.19 47.15	4.78 54.06	6.35 71.64	7.93 87.71	11.13 122.38	14.28 158.22	9.53 105.16	19.05 205.74	23.83 258.38	12.70 139.15	29.36 309.62	34.93 363.56	39.67 408.26	45.24 466.35	
500	20	508.00	4.77 60.13	5.53 69.62	6.35 79.71	9.53 117.15	12.70 155.12	15.09 186.10	9.53 117.15	20.63 247.83	26.19 315.74	12.70 155.12	32.54 381.53	38.10 441.49	44.45 508.11	50.01 573.18	
550	22	558.80	4.77 66.20	5.53 76.66	6.35 87.79	9.53 129.13	12.70 171.09	15.88 316.04	9.53 129.13	22.23 294.25	28.58 379.14	12.70 171.09	34.93 451.42	41.28 527.02	47.63 600.63	53.98 681.82	
600	24	609.60	5.53 83.70	6.35 95.86	6.35 95.86	9.53 141.12	14.28 209.64	17.48 258.94	9.53 141.12	24.61 355.26	30.96 448.34	12.70 187.06	38.89 547.71	46.02 640.03	52.37 720.15	59.54 819.55	

STAINLESS STEEL NOMINAL BORE PIPES

Type: (AISI) 304/304L and 316/316L welded to ASTM A312 / ASME SA 312

Nominal Bore mm	Sch	Outside Diameter (OD)	Inside Diameter (ID)	Wall Thickness	kg/m	Product Code	
						304/304L	316/316L
8	10S	13.72	10.42	1.65	0.49	PWN1/0137/016/04	PWN1/0137/016/16
	40S	13.72	9.25	2.24	0.64	PWN4/0137/022/04	PWN4/0137/022/16
10	10S	17.15	13.84	1.65	0.64	PWN1/0171/016/04	PWN1/0171/016/16
	40S	17.15	12.52	2.31	0.85	PWN4/0171/023/04	PWN4/0171/023/16
15	10S	21.34	17.12	2.11	1.01	PWN1/0213/021/04	PWN1/0213/021/16
	40S	21.34	15.80	2.77	1.27	PWN4/0213/027/04	PWN4/0213/027/16
20	10S	26.67	22.45	2.11	1.29	PWN1/0266/021/04	PWN1/0266/021/16
	40S	26.67	20.93	2.87	1.71	PWN4/0266/028/04	PWN4/0266/028/16
25	10S	33.40	27.86	2.77	2.12	PWN1/0334/027/04	PWN1/0334/027/16
	40S	33.40	26.64	3.38	2.54	PWN4/0334/033/04	PWN4/0334/033/16
32	10S	42.16	36.62	2.77	2.76	PWN1/0421/027/04	PWN1/0421/027/16
	40S	42.16	35.04	3.56	3.45	PWN4/0421/035/04	PWN4/0421/035/16
40	10S	48.24	42.72	2.77	3.15	PWN1/0482/027/04	PWN1/0482/027/16
	40S	48.24	40.90	3.68	4.11	PWN4/0482/036/04	PWN4/0482/036/16
50	10S	60.33	54.79	2.77	3.99	PWN1/0603/027/04	PWN1/0603/027/16
	40S	60.33	52.51	3.91	5.29	PWN4/0603/039/04	PWN4/0603/039/16
65	10S	73.03	66.93	3.05	5.35	PWN1/0730/030/04	PWN1/0730/030/16
	40S	73.03	62.71	5.16	8.80	PWN4/0730/051/04	PWN4/0730/051/16
80	10S	88.90	82.80	3.05	6.56	PWN1/0889/030/04	PWN1/0889/030/16
	40S	88.90	77.92	5.49	11.48	PWN4/0889/054/04	PWN4/0889/054/16
100	10S	114.30	108.20	3.05	8.50	PWN1/1143/030/04	PWN1/1143/030/16
	40S	114.30	102.26	6.02	16.34	PWN4/1143/060/04	PWN4/1143/060/16

STAINLESS STEEL NOMINAL BORE PIPES

Type: (AISI) 304/304L and 316/316L welded to ASTM A312 / ASME SA 312 *cont'd...*

Nominal Bore mm	Sch	Outside Diameter (OD)	Inside Diameter (ID)	Wall Thickness	kg/m	Product Code	
						304/304L	316/316L
125	10S	141.30	134.50	3.40	11.75	PWN1/1413/034/04	PWN1/1413/034/16
	40S	141.30	128.20	6.55	22.12	PWN4/1413/065/04	PWN4/1413/065/16
150	10S	168.28	161.48	3.40	14.05	PWN1/1682/034/04	PWN1/1682/034/16
	40S	168.28	154.06	7.11	28.72	PWN4/1682/071/04	PWN4/1682/071/16
200	10S	219.08	211.56	3.76	20.30	PWN1/2190/037/04	PWN1/2190/037/16
	40S	219.08	202.72	8.18	43.27	PWN4/2190/081/04	PWN4/2190/081/16
250	10S	273.05	264.67	4.19	28.24	PWN1/2730/041/04	PWN1/2730/041/16
	40S	273.05	254.51	9.27	61.30	PWN4/2730/092/04	PWN4/2730/092/16
300	10S	323.85	314.71	4.57	36.58	PWN1/3238/045/04	PWN1/3238/045/16
	40S	323.85	304.81	9.52	75.09	PWN4/3238/095/04	PWN4/3238/095/16
350	10S	355.60	346.04	4.78	41.99	PWN1/3556/047/04	PWN1/3556/047/16
	40S	355.60	336.54	9.53	82.58	PWN4/3556/095/04	PWN4/3556/095/16
400	10S	406.40	396.84	4.78	48.07	PWN1/4064/047/04	PWN1/4064/047/16
	40S	406.40	387.34	9.53	94.70		
450	10S	457.20	447.64	4.78	54.15		
	40S	457.20	438.14	9.53	106.83		
500	10S	508.00	496.92	5.54	69.70		
	40S	508.00	488.94	9.53	118.93		
550	10S	558.80	547.72	5.54	76.75		
	40S	558.80	539.74	9.53	131.07		
600	10S	609.60	596.90	6.35	95.92		
	40S	609.60	590.54	9.53	143.20		

STAINLESS STEEL NOMINAL BORE PIPES

Type: (AISI) 304/304L and 316/316L seamless to ASTM A312 / ASME SA 312

Nominal Bore mm	Sch	Outside Diameter (OD)	Inside Diameter (ID)	Wall Thickness	kg/m	Product Code	
						304/304L	316/316L
8	10S	13.72	10.42	1.65	0.49	PSM1/0137/016/04	PSM1/0137/016/16
	40S	13.72	9.25	2.24	0.64	PSM4/0137/022/04	PSM4/0137/022/16
	80S	13.72	7.67	3.02	0.80		
10	10S	17.15	13.84	1.65	0.64	PSM1/0171/016/04	PSM1/0171/016/16
	40S	17.15	12.52	2.31	0.85	PSM4/0171/023/04	PSM4/0171/023/16
	80S	17.15	10.74	3.20	1.10		
15	10S	21.34	17.12	2.11	1.01	PSM1/0213/021/04	PSM1/0213/021/16
	40S	21.34	15.80	2.77	1.27	PSM4/0213/027/04	PSM4/0213/027/16
	80S	21.34	13.88	3.73	1.64		
20	10S	26.67	22.45	2.11	1.29	PSM1/0266/021/04	PSM1/0266/021/16
	40S	26.67	20.93	2.87	1.71	PSM4/0266/028/04	PSM4/0266/028/16
	80S	26.67	18.85	3.91	2.19		
25	10S	33.40	27.86	2.77	2.12	PSM1/0334/027/04	PSM1/0334/027/16
	40S	33.40	26.64	3.38	2.54	PSM4/0334/033/04	PSM4/0334/033/16
	80S	33.40	24.30	4.55	3.23		
32	10S	42.16	36.62	2.77	2.76	PSM1/0421/027/04	PSM1/0421/027/16
	40S	42.16	35.04	3.56	3.45	PSM4/0421/035/04	PSM4/0421/035/16
	80S	42.16	32.46	4.85	4.47		
40	10S	48.24	42.72	2.77	3.15	PSM1/0482/027/04	PSM1/0482/027/16
	40S	48.24	40.90	3.68	4.11	PSM4/0482/036/04	PSM4/0482/036/16
	80S	48.24	38.10	5.08	5.40		
50	10S	60.33	54.79	2.77	3.99	PSM1/0603/027/04	PSM1/0603/027/16
	40S	60.33	52.51	3.91	5.29	PSM4/0603/039/04	PSM4/0603/039/16
	80S	60.33	49.25	5.54	7.47		
65	10S	73.03	66.93	3.05	5.35	PSM1/0730/030/04	PSM1/0730/030/16
	40S	73.03	62.71	5.16	8.80	PSM4/0730/051/04	PSM4/0730/051/16
	80S	73.03	59.01	7.01	11.40		
80	10S	88.90	82.80	3.05	6.56	PSM1/0889/030/04	PSM1/0889/030/16
	40S	88.90	77.92	5.49	11.48	PSM4/0889/054/04	PSM4/0889/054/16
	80S	88.90	73.66	7.62	15.25		
100	10S	114.30	108.20	3.05	8.50	PSM1/1143/030/04	PSM1/1143/030/16
	40S	114.30	102.26	6.02	16.34	PSM4/1143/060/04	PSM4/1143/060/16
	80S	114.30	97.18	8.56	22.29		

STAINLESS STEEL NOMINAL BORE PIPES

Type: (AISI) 304/304L and 316/316L seamless to ASTM A312 / ASME SA 312 *cont'd...*

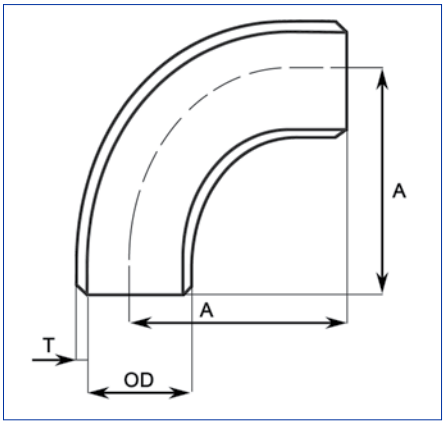
Nominal Bore mm	Sch	Outside Diameter (OD)	Inside Diameter (ID)	Wall Thickness	kg/m	Product Code	
						304/304L	316/316L
125	10S	141.30	134.50	3.40	11.75	PSM1/1413/034/04	PSM1/1413/034/16
	40S	141.30	128.20	6.55	22.12	PSM4/1413/065/04	PSM4/1413/065/16
	80S	141.30	122.26	9.52	30.92		
150	10S	168.28	161.48	3.40	14.05	PSM1/1682/034/04	PSM1/1682/034/16
	40S	168.28	154.06	7.11	28.72	PSM4/1682/071/04	PSM4/1682/071/16
	80S	168.28	146.34	10.97	42.52		
200	10S	219.08	211.56	3.76	20.30	PSM1/2190/037/04	PSM1/2190/037/16
	40S	219.08	202.72	8.18	43.27	PSM4/2190/081/04	PSM4/2190/081/16
	80S	219.08	193.68	12.70	64.57		
250	10S	273.05	264.67	4.19	28.24	PSM1/2730/041/04	PSM1/2730/041/16
	40S	273.05	254.51	9.27	61.30	PSM4/2730/092/04	PSM4/2730/092/16
	80S	273.05	247.65	12.70	81.46		
300	10S	323.85	314.71	4.57	36.58	PSM1/3238/045/04	PSM1/3238/045/16
	40S	323.85	304.81	9.52	75.09	PSM4/3238/095/04	PSM4/3238/095/16
	80S	323.85	298.45	12.70	97.36		
350	10S	355.60	346.04	4.78	41.99		
	40S	355.60	336.54	9.53	82.58		
	80S	355.60	330.20	12.70	109.04		
400	10S	406.40	396.84	4.78	48.07		
	40S	406.40	387.34	9.53	94.70		
	80S	406.40	381.00	12.70	125.20		
450	10S	457.20	447.64	4.78	54.15		
	40S	457.20	438.14	9.53	106.83		
	80S	457.20	431.80	12.70	141.35		
500	10S	508.00	496.92	5.54	69.70		
	40S	508.00	488.94	9.53	118.93		
	80S	508.00	482.60	12.70	157.51		
550	10S	558.80	547.72	5.54	76.75		
	40S	558.80	539.74	9.53	131.07		
	80S	558.80	533.40	12.70	173.66		
600	10S	609.60	596.90	6.35	95.92		
	40S	609.60	590.54	9.53	143.20		
	80S	609.60	584.20	12.70	189.82		

STAINLESS STEEL BUTTWELD FITTINGS

90° L.R. Elbows (Welded)

ASTM A 403 WPW 304/304L/316/316L
ASME SA 403 WPW

SCH 10S Wall thickness



Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)	Centre to End (A)	Weight	Product Code	
mm	inches					304/304L	316/316L
15	½	21.34	2.11	38.40	0.060	FBE1/0213/021/04	FBE1/0213/021/16
20	¾	26.67	2.11	28.50	0.057	FBE1/0266/021/04	FBE1/0266/021/16
25	1	33.40	2.77	38.10	0.140	FBE1/0334/027/04	FBE1/0334/027/16
32	1 ¼	42.16	2.77	47.62	0.201	FBE1/0421/027/04	FBE1/0421/027/16
40	1 ½	48.26	2.77	57.15	0.279	FBE1/0482/027/04	FBE1/0482/027/16
50	2	60.32	2.77	76.20	0.470	FBE1/0603/027/04	FBE1/0603/027/16
65	2 ½	73.02	3.05	95.25	0.786	FBE1/0730/030/04	FBE1/0730/030/16
80	3	88.90	3.05	114.30	1.16	FBE1/0889/030/04	FBE1/0889/030/16
100	4	114.30	3.05	152.40	2.00	FBE1/1143/030/04	FBE1/1143/030/16
125	5	141.30	3.40	190.50	3.46	FBE1/1413/034/04	FBE1/1413/034/16
150	6	168.27	3.40	228.60	4.96	FBE1/1682/034/04	FBE1/1682/034/16
200	8	219.07	3.76	304.80	9.55	FBE1/2190/037/04	FBE1/2190/037/16
250	10	273.05	4.19	381.00	16.6	FBE1/2730/041/04	FBE1/2730/041/16
300	12	323.85	4.57	457.20	25.8	FBE1/3238/045/04	FBE1/3238/045/16
350	14	355.60	4.78	533.40	34.6	FBE1/3556/047/04	FBE1/3556/047/16
400	16	406.40	4.78	609.60	45.2		
450	18	457.20	4.78	685.80	57.3		
500	20	508.00	5.54	762.00	82.0		
550	22	558.80	5.54	838.20	99.4		
600	24	609.80	6.55	914.40	136.0		

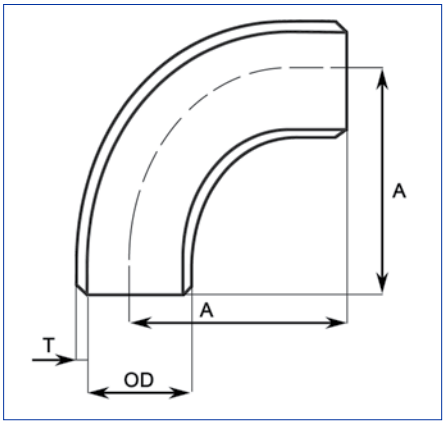
Seamless 90° L.R. Elbows are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

90° L.R. Elbows (Welded)

ASTM A 403 WPW 304/304L/316/316L
ASME SA 403 WPW

SCH 40S Wall thickness



Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)	Centre to End (A)	Weight	Product Code	
mm	inches					304/304L	316/316L
15	½	21.34	2.77	38.10	0.076	FBE4/0213/027/04	FBE4/0213/027/16
20	¾	26.67	2.87	28.50	0.076	FBE4/0266/028/04	FBE4/0266/028/16
25	1	33.40	3.38	38.10	0.150	FBE4/0334/033/04	FBE4/0334/033/16
32	1 ¼	42.16	3.56	47.62	0.253	FBE4/0421/035/04	FBE4/0421/035/16
40	1 ½	48.26	3.68	57.15	0.363	FBE4/0482/036/04	FBE4/0482/036/16
50	2	60.32	3.91	76.20	0.651	FBE4/0603/039/04	FBE4/0603/039/16
65	2 ½	73.02	5.16	95.25	1.29	FBE4/0730/051/04	FBE4/0730/051/16
80	3	88.90	5.49	114.30	2.02	FBE4/0889/054/04	FBE4/0889/054/16
100	4	114.30	6.02	152.40	3.84	FBE4/1143/060/04	FBE4/1143/060/16
125	5	141.30	6.55	190.50	6.51	FBE4/1413/065/04	FBE4/1413/065/16
150	6	168.27	7.11	228.60	10.1	FBE4/1682/071/04	FBE4/1682/071/16
200	8	219.07	8.18	304.80	20.3	FBE4/2190/081/04	FBE4/2190/081/16
250	10	273.05	9.27	381.00	36.0	FBE4/2730/093/04	FBE4/2730/093/16
300	12	323.85	9.52	457.20	53.0	FBE4/3238/095/04	FBE4/3238/095/16
350	14	355.60	9.52	533.40	68.0		
400	16	406.40	9.52	609.60	89.2		
450	18	457.20	9.52	685.80	113		
500	20	508.00	9.52	762.00	140		
550	22	558.80	9.52	838.20	170		
600	24	609.60	9.52	914.40	202		

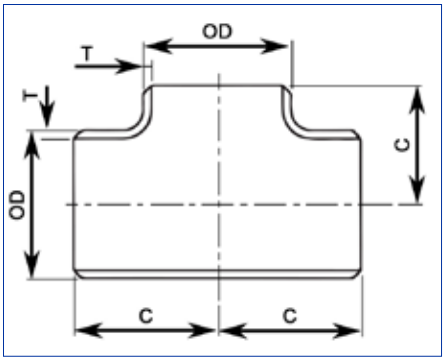
Seamless 90° L.R. Elbows are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Equal Tees (Welded)

ASTM A 403 WPW 304/304L/316/316L
ASME SA 403 WPW

SCH 10S Wall thickness



Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)	Centre to End (C)	Weight	Product Code	
mm	inches					304/304L	316/316L
15	½	21.34	2.11	25.4	0.09	FBT1/0213/021/04	FBT1/0213/021/16
20	¾	26.67	2.11	28.57	0.11	FBT1/0266/021/04	FBT1/0266/021/16
25	1	33.40	2.77	38.10	0.27	FBT1/0334/027/04	FBT1/0334/027/16
32	1 ¼	42.16	2.77	47.62	0.45	FBT1/0421/027/04	FBT1/0421/027/16
40	1 ½	48.26	2.77	57.15	0.65	FBT1/0482/027/04	FBT1/0482/027/16
50	2	60.32	2.77	63.50	1.70	FBT1/0603/027/04	FBT1/0603/027/16
65	2 ½	73.02	3.05	76.20	2.18	FBT1/0730/030/04	FBT1/0730/030/16
80	3	88.90	3.05	85.72	3.30	FBT1/0889/030/04	FBT1/0889/030/16
100	4	114.30	3.05	104.77	4.40	FBT1/1143/030/04	FBT1/1143/030/16
125	5	141.30	3.40	123.82	7.42	FBT1/1413/034/04	FBT1/1413/034/16
150	6	168.27	3.40	142.87	12.35	FBT1/1682/034/04	FBT1/1682/034/16
200	8	219.07	3.76	177.80	20.00	FBT1/2190/037/04	FBT1/2190/037/16
250	10	273.05	4.19	215.90	28.15	FBT1/2730/041/04	FBT1/2730/041/16
300	12	323.85	4.57	254.00	47.45	FBT1/3238/045/04	FBT1/3238/045/16
350	14	355.60	4.78	279.40	69.90	FBT1/3556/047/04	FBT1/3556/047/16
400	16	406.40	4.78	304.80	72.65		
450	18	457.20	4.78	342.90	101.70		
500	20	508.00	5.54	381.00	169.90		
600	24	609.60	6.35	431.80	306.50		

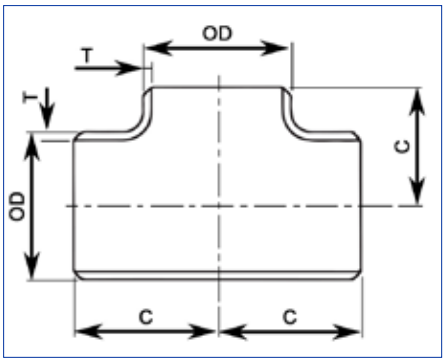
Seamless Equal Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Equal Tees (Welded)

ASTM A 403 WPW 304/304L/316/316L
ASME SA 403 WPW

SCH 40S Wall thickness



Nominal Pipe Size		Outside Diameter (OD)	Wall Thickness (T)	Centre to End (C)	Weight	Product Code	
mm	inches					304/304L	316/316L
15	½	21.34	2.77	25.40	0.15	FBT4/0213/027/04	FBT4/0213/027/16
20	¾	26.67	2.87	28.57	0.20	FBT4/0266/028/04	FBT4/0266/028/16
25	1	33.40	3.38	38.10	0.40	FBT4/0334/033/04	FBT4/0334/033/16
32	1 ¼	42.16	3.56	47.62	0.77	FBT4/0421/035/04	FBT4/0421/035/16
40	1 ½	48.26	3.68	57.15	1.08	FBT4/0482/036/04	FBT4/0482/036/16
50	2	60.32	3.91	63.50	1.47	FBT4/0603/039/04	FBT4/0603/039/16
65	2 ½	73.02	5.16	76.20	2.45	FBT4/0730/051/04	FBT4/0730/051/16
80	3	88.90	5.49	85.72	3.80	FBT4/0889/054/04	FBT4/0889/054/16
100	4	114.30	6.02	104.77	5.90	FBT4/1143/060/04	FBT4/1143/060/16
125	5	141.30	6.55	123.82	9.50	FBT4/1413/065/04	FBT4/1413/065/16
150	6	168.27	7.11	142.87	14.90	FBT4/1682/071/04	FBT4/1682/071/16
200	8	219.07	8.18	177.80	27.18	FBT4/2190/081/04	FBT4/2190/081/16
250	10	273.05	9.27	215.90	41.30	FBT4/2730/093/04	FBT4/2730/093/16
300	12	323.85	9.52	254.00	56.60	FBT4/3238/095/04	FBT4/3238/095/16
350	14	355.60	9.52	279.40	81.54		
400	16	406.40	9.52	304.80	99.66		
450	18	457.20	9.52	342.90	126.80		
500	20	508.00	9.52	381.00	168.00		
600	24	609.60	9.52	431.80	347.00		

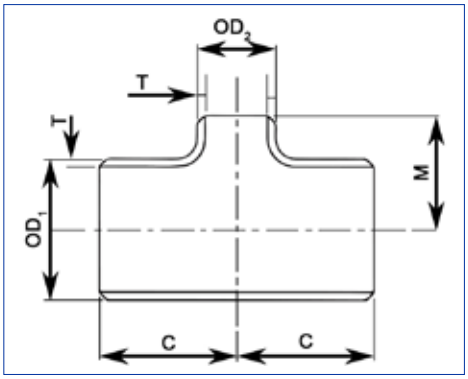
Seamless Equal Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Reducing Tees (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10 Wall thickness



Nominal Pipe Size (inches)			Outside Diameter (OD_1)	Outside Diameter (OD_2)	Centre to End (C)	Centre to End (M)	Weight
¾	X	½	26.67	21.34	28.57	28.57	0.08
1	X	½	33.40	21.34	38.10	38.10	0.19
1	X	¾	33.40	26.67	38.10	38.10	0.19
1¼	X	¾	42.16	26.67	47.62	47.62	0.29
1¼	X	1	42.16	33.40	47.62	47.62	0.31
1½	X	½	48.26	21.34	57.15	57.15	0.36
1½	X	¾	48.26	26.67	57.15	57.15	0.39
1½	X	1	48.26	33.40	57.15	57.15	0.42
1½	X	1¼	48.26	42.16	57.15	57.15	0.44
2	X	¾	60.32	26.67	63.50	44.45	0.52
2	X	1	60.32	33.40	63.50	50.80	0.54
2	X	1¼	60.32	42.16	63.50	57.15	0.57
2	X	1½	60.32	48.26	63.50	60.32	0.59
2½	X	1¼	73.02	42.16	76.20	63.50	0.87
2½	X	1½	73.02	48.26	76.20	66.67	0.90
2½	X	2	73.02	60.32	76.20	69.85	0.94
3	X	1½	88.90	48.26	85.72	73.02	1.19
3	X	2	88.90	60.32	85.72	76.20	1.23
3	X	2½	88.90	73.02	85.72	82.55	1.31
4	X	2	114.30	60.32	104.77	88.90	1.88
4	X	2½	114.30	73.02	104.77	95.25	1.95
4	X	3	114.30	88.90	104.77	98.42	2.02
5	X	4	141.30	114.30	123.82	117.47	1.33
6	X	3	168.27	88.90	142.87	123.82	1.53
6	X	4	168.27	114.30	142.87	130.17	4.34
6	X	5	168.27	141.30	142.87	136.52	4.56

Seamless Reducing Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Reducing Tees (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10 Wall thickness *cont'd...*

Nominal Pipe Size (inches)			Outside Diameter (OD_1)	Outside Diameter (OD_2)	Centre to End (C)	Centre to End (M)	Weight
8	X	4	219.07	114.30	177.80	155.57	7.46
8	X	5	219.07	141.30	177.80	161.92	7.70
8	X	6	219.07	168.27	17.80	168.27	7.91
10	X	6	273.05	168.27	215.90	193.67	12.80
10	X	8	273.05	219.07	215.90	203.20	13.30
12	X	8	323.85	219.07	254.00	228.60	19.60
12	X	10	323.85	273.05	254.00	241.30	20.50
14	X	10	355.60	273.05	279.40	257.17	25.60
14	X	12	355.60	323.85	279.40	257.17	26.40
16	X	10	406.40	273.05	304.80	282.57	31.00
16	X	12	406.40	323.85	304.80	295.27	32.10
16	X	14	406.40	355.60	304.80	304.80	33.00
18	X	10	457.20	273.05	342.90	307.97	39.95
18	X	12	457.20	323.85	342.90	320.67	40.60
18	X	14	457.20	355.60	342.90	330.20	41.20
18	X	16	457.20	406.40	342.90	330.20	41.90
20	X	10	508.00	273.05	381.00	333.37	56.00
20	X	12	508.00	323.85	381.00	346.07	56.75
20	X	14	508.00	355.60	381.00	355.60	57.50
20	X	16	508.00	406.40	381.00	355.60	58.30
20	X	18	508.00	457.20	381.00	368.30	59.00
22	X	14	558.80	355.60	419.10	381.00	68.40
22	X	16	558.80	406.40	419.10	381.00	69.90
22	X	18	558.80	457.20	419.10	393.70	70.70
22	X	20	558.80	508.00	419.10	406.40	72.90
24	X	16	609.60	406.40	431.80	406.40	86.90
24	X	18	609.60	457.20	431.80	419.10	88.30
24	X	20	609.60	508.00	431.80	431.80	90.30
24	X	22	609.60	558.80	431.80	431.80	91.1

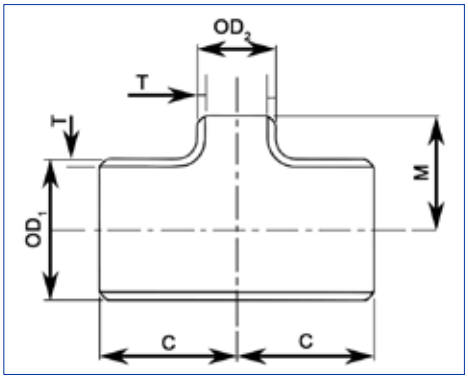
Seamless Reducing Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Reducing Tees (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40 Wall thickness



Nominal Pipe Size (inches)			Outside Diameter (OD_1)	Outside Diameter (OD_2)	Centre to End (C)	Centre to End (M)	Weight
¾	X	½	26.67	21.34	28.57	28.57	0.22
1	X	½	33.40	21.34	38.10	38.10	0.45
1	X	¾	33.40	26.67	38.10	38.10	0.45
1¼	X	¾	42.16	26.67	47.62	47.62	0.68
1¼	X	1	42.16	33.40	47.62	47.62	0.70
1½	X	½	48.26	21.34	57.15	57.15	0.86
1½	X	¾	48.26	26.67	57.15	57.15	0.91
1½	X	½	48.26	33.40	57.15	57.15	0.95
1½	X	1¼	48.26	42.16	57.15	57.15	0.99
2	X	¾	60.32	26.67	63.50	44.45	1.13
2	X	1	60.32	33.40	63.50	50.80	1.17
2	X	1¼	60.32	42.16	63.50	57.15	1.26
2	X	1½	60.32	48.26	63.50	60.32	1.35
2½	X	1¼	73.02	42.16	76.20	63.50	2.12
2½	X	1½	73.02	48.26	76.20	66.67	2.25
2½	X	2	73.02	60.32	76.20	69.85	2.35
3	X	1½	88.90	48.26	85.72	73.02	2.98
3	X	2	88.90	60.32	85.72	76.20	3.01
3	X	2½	88.90	73.02	85.72	82.55	3.17
4	X	2	114.30	60.32	104.77	88.90	4.57
4	X	2½	114.30	73.02	104.77	95.25	4.80
4	X	3	114.30	88.90	104.77	98.42	4.98
5	X	4	141.30	114.30	123.82	117.47	8.15
6	X	3	168.27	88.90	142.87	123.82	12.45
6	X	4	168.27	114.30	142.87	130.17	12.91
6	X	5	168.27	141.30	142.87	136.52	13.13

Seamless Reducing Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Reducing Tees (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40 Wall thickness *cont'd...*

Nominal Pipe Size (inches)			Outside Diameter (OD_1)	Outside Diameter (OD_2)	Centre to End (C)	Centre to End (M)	Weight
8	X	4	219.07	114.30	177.80	155.57	22.42
8	X	5	219.07	141.30	177.80	161.92	23.10
8	X	6	219.07	168.27	17.80	168.27	23.80
10	X	6	273.05	168.27	215.90	193.67	34.65
10	X	8	273.05	219.07	215.90	203.20	35.33
12	X	8	323.85	219.07	254.00	228.60	48.92
12	X	10	323.85	273.05	254.00	241.30	50.14
14	X	10	355.60	273.05	279.40	257.17	75.88
14	X	12	355.60	323.85	279.40	269.87	77.01
16	X	10	406.40	273.05	304.80	282.57	90.60
16	X	12	406.40	323.85	304.80	295.27	92.86
16	X	14	406.40	355.60	304.80	304.80	95.13
18	X	10	457.20	273.05	342.90	307.97	115.50
18	X	12	457.20	323.85	342.90	320.67	120.95
18	X	14	457.20	355.60	342.90	330.20	124.12
18	X	16	457.20	406.40	342.90	330.20	126.84
20	X	10	508.00	273.05	381.00	333.37	163.50
20	X	12	508.00	323.85	381.00	346.07	163.50
20	X	14	508.00	355.60	381.00	355.60	163.50
20	X	16	508.00	406.40	381.00	355.60	168.00
20	X	18	508.00	457.20	381.00	368.30	168.00
22	X	14	558.80	355.60	419.10	381.00	172.50
22	X	16	558.80	406.40	419.10	381.00	209.00
22	X	18	558.80	457.20	419.10	393.70	209.00
22	X	20	558.80	508.00	419.10	406.40	220.00
24	X	16	609.60	406.40	431.80	406.40	222.00
24	X	18	609.60	457.20	431.80	419.10	227.00
24	X	20	609.60	508.00	431.80	431.80	227.00
24	X	22	609.60	558.80	431.80	431.80	237.00

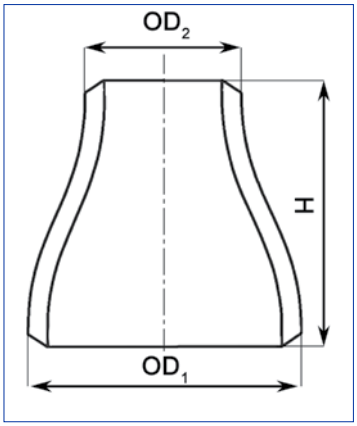
Seamless Reducing Tees are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Concentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10S Wall thickness



Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
¾ X ½	26.67	21.34	38.10	0.04	FBR1/0266/213/04	FBR1/0266/213/16
1 X ½	33.40	21.34	50.80	0.09	FBR1/0334/213/04	FBR1/0334/213/16
1 X ¾	33.40	26.67	50.80	0.10	FBR1/0334/266/04	FBR1/0334/266/16
1¼ X ¾	42.16	26.67	50.80	0.11	FBR1/0421/266/04	FBR1/0421/266/16
1¼ X 1	42.16	33.40	50.80	0.12	FBR1/0421/334/04	FBR1/0421/334/16
1½ X ½	48.26	21.34	63.50	0.14	FBR1/0482/213/04	FBR1/0482/213/16
1½ X ¾	48.26	26.67	63.50	0.15	FBR1/0482/266/04	FBR1/0482/266/16
1½ X 1	48.26	33.40	63.50	0.17	FBR1/0482/334/04	FBR1/0482/334/16
1½ X 1¼	48.26	42.16	63.50	0.18	FBR1/0482/421/04	FBR1/0482/421/16
2 X ¾	60.32	26.67	76.20	0.22	FBR1/0603/266/04	FBR1/0603/266/16
2 X 1	60.32	33.40	76.20	0.23	FBR1/0603/334/04	FBR1/0603/334/16
2 X 1¼	60.32	42.16	76.20	0.25	FBR1/0603/421/04	FBR1/0603/421/16
2 X 1½	60.32	48.26	76.20	0.27	FBR1/0603/482/04	FBR1/0603/482/16
2½ X 1¼	73.02	42.16	88.90	0.37	FBR1/0730/421/04	FBR1/0730/421/16
2½ X 1½	73.02	48.26	88.90	0.39	FBR1/0730/482/04	FBR1/0730/482/16
2½ X 2	73.02	60.32	88.90	0.43	FBR1/0730/603/04	FBR1/0730/603/16
3 X 1½	88.90	48.26	88.90	0.45	FBR1/0889/482/04	FBR1/0889/482/16
3 X 2	88.90	60.32	88.90	0.48	FBR1/0889/603/04	FBR1/0889/603/16
3 X 2½	88.90	73.02	88.90	0.52	FBR1/0889/730/04	FBR1/0889/730/16
4 X 2	114.30	60.32	101.60	0.67	FBR1/1143/603/04	FBR1/1143/603/16
4 X 2½	114.30	73.02	101.60	0.71	FBR1/1143/730/04	FBR1/1143/730/16
4 X 3	114.30	88.90	101.60	0.76	FBR1/1143/889/04	FBR1/1143/889/16
5 X 4	141.30	114.30	127.00	1.33	FBR1/1413/114/04	FBR1/1413/114/16
6 X 3	168.27	88.90	139.70	1.53	FBR1/1682/889/04	FBR1/1682/889/16
6 X 4	168.27	114.30	139.70	1.65	FBR1/1682/114/04	FBR1/1682/114/16
6 X 5	168.27	141.30	139.70	1.78	FBR1/1682/141/04	FBR1/1682/141/16

Seamless Concentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Concentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10S Wall thickness *cont'd...*

Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
8 X 4	219.07	114.30	152.40	2.43	FBR1/2191/114/04	FBR1/2191/114/16
8 X 5	219.07	141.30	152.40	2.57	FBR1/2191/141/04	FBR1/2191/141/16
8 X 6	219.07	168.27	152.40	2.72	FBR1/2191/168/04	FBR1/2191/168/16
10 X 6	273.05	168.27	177.80	4.14	FBR1/2730/168/04	FBR1/2730/168/16
10 X 8	273.05	219.07	177.80	4.49	FBR1/2730/219/04	FBR1/2730/219/16
12 X 8	323.85	219.07	203.50	6.31	FBR1/3238/219/04	FBR1/3238/219/16
12 X 10	323.85	273.05	203.20	6.78	FBR1/3238/273/04	FBR1/3238/273/16
14 X 12	355.60	273.05	330.20	12.10		
16 X 10	406.40	273.05	355.60	14.40		
16 X 12	406.40	323.85	355.60	15.20		
16 X 14	406.40	355.60	355.60	15.80		
18 X 10	457.20	273.05	381.00	16.80		
18 X 12	457.20	323.85	381.00	17.60		
18 X 14	457.20	355.60	381.00	18.20		
18 X 16	457.20	406.40	381.00	19.20		
20 X 10	508.00	273.05	508.00	26.70		
20 X 12	508.00	323.85	508.00	28.30		
20 X 14	508.00	355.60	508.00	29.90		
20 X 16	508.00	406.40	508.00	31.70		
20 X 18	508.00	457.20	508.00	33.10		
22 X 14	558.80	355.60	508.00	31.80		
22 X 16	558.80	406.40	508.00	33.40		
22 X 18	558.80	457.20	508.00	35.10		
22 X 20	558.80	508.00	508.00	36.60		
24 X 16	609.60	406.40	508.00	40.60		
24 X 18	609.60	457.20	508.00	42.40		
24 X 20	609.60	508.00	508.00	44.10		
24 X 22	609.60	558.80	508.00	46.00		

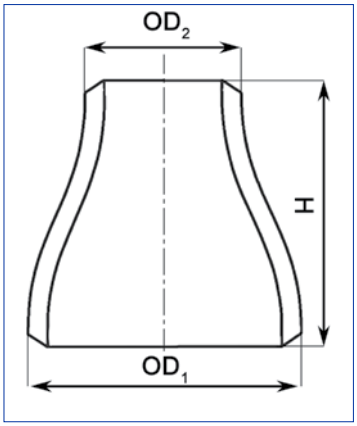
Seamless Concentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Concentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40S Wall thickness



Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
¾ X ½	26.67	21.34	38. 10	0.07	FBR4/0266/213/04	FBR4/0266/213/16
1 X ½	33.40	21.34	50.80	1.10	FBR4/0334/213/04	FBR4/0334/213/16
1 X ¾	33.40	26.67	50.80	0.10	FBR4/0334/266/04	FBR4/0334/266/16
1¼ X ¾	42.16	26.67	50.80	0.15	FBR4/0421/266/04	FBR4/0421/266/16
1¼ X 1	42.16	33.40	50.80	0.15	FBR4/0421/334/04	FBR4/0421/334/16
1½ X ½	48.26	21.34	63.50	0.25	FBR4/0482/213/04	FBR4/0482/213/16
1½ X ¾	48.26	26.67	63.50	0.27	FBR4/0482/266/04	FBR4/0482/266/16
1½ X 1	48.26	33.40	63.50	0.27	FBR4/0482/334/04	FBR4/0482/334/16
1½ X 1¼	48.26	42.16	63.50	0.29	FBR4/0482/421/04	FBR4/0482/421/16
2 X ¾	60.32	26.67	76.20	0.40	FBR4/0603/266/04	FBR4/0603/266/16
2 X 1	60.32	33.40	76.20	0.40	FBR4/0603/334/04	FBR4/0603/334/16
2 X 1¼	60.32	42.16	76.20	0.43	FBR4/0603/421/04	FBR4/0603/421/16
2 X 1½	60.32	48.26	76.20	0.45	FBR4/0603/482/04	FBR4/0603/482/16
2½ X 1¼	73.02	42.16	88.90	0.68	FBR4/0730/421/04	FBR4/0730/421/16
2½ X 1½	73.02	48.26	88.90	0.72	FBR4/0730/482/04	FBR4/0730/482/16
2½ X 2	73.02	60.32	88.90	0.77	FBR4/0730/603/04	FBR4/0730/603/16
3 X 1	88.90	33.40	88.90	0.82	FBR4/0889/334/04	FBR4/0889/334/16
3 X 1½	88.90	48.26	88.90	0.90	FBR4/0889/482/04	FBR4/0889/482/16
3 X 2	88.90	60.32	88.90	0.96	FBR4/0889/603/04	FBR4/0889/603/16
3 X 2½	88.90	73.02	88.90	1.04	FBR4/0889/730/04	FBR4/0889/730/16
4 X 2	114.30	60.32	101.60	1.63	FBR4/1143/603/04	FBR4/1143/603/16
4 X 2½	114.30	73.02	101.60	1.72	FBR4/1143/730/04	FBR4/1143/730/16
4 X 3	114.30	88.90	101.60	1.77	FBR4/1143/889/04	FBR4/1143/889/16
5 X 4	141.30	114.30	127.00	2.81	FBR4/1413/114/04	FBR4/1413/114/16
6 X 3	168.27	88.90	139.70	3.80	FBR4/1682/889/04	FBR4/1682/889/16
6 X 4	168.27	114.30	139.70	3.94	FBR4/1682/114/04	FBR4/1682/114/16
6 X 5	168.27	141.30	139.70	4.03	FBR4/1682/141/04	FBR4/1682/141/16

Seamless Concentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Concentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40S Wall thickness *cont'd...*

Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
8 X 4	219.07	114.30	152.40	5.62	FBR4/2191/114/04	FBR4/2191/114/16
8 X 5	219.07	141.30	152.40	5.84	FBR4/2191/141/04	FBR4/2191/141/16
8 X 6	219.07	168.27	152.40	6.34	FBR4/2191/168/04	FBR4/2191/168/16
10 X 6	273.05	168.27	177.80	10.42	FRB4/2730/168/04	FRB4/2730/168/16
10 X 8	273.05	219.07	177.80	10.69	FBR4/2730/219/04	FBR4/2730/219/16
12 X 8	323.85	219.07	203.50	14.95	FBR4/3238/219/04	FBR4/3238/219/16
12 X 10	323.85	273.05	203.20	15.40	FBR4/3238/273/04	FBR4/3238/273/16
14 X 12	355.60	273.05	330.20	26.59		
16 X 10	406.40	273.05	355.60	26.82		
16 X 12	406.40	323.85	355.60	32.84		
16 X 14	406.40	355.60	355.60	33.43		
18 X 10	457.20	273.05	381.00	33.98		
18 X 12	457.20	323.85	381.00	38.50		
18 X 14	457.20	355.60	381.00	39.41		
18 X 16	457.20	406.40	381.00	39.86		
20 X 10	508.00	273.05	508.00	57.00		
20 X 12	508.00	323.85	508.00	57.08		
20 X 14	508.00	355.60	508.00	57.98		
20 X 16	508.00	406.40	508.00	58.44		
20 X 18	508.00	457.20	508.00	58.89		
22 X 14	558.80	355.60	508.00	57.99		
22 X 16	558.80	406.40	508.00	61.15		
22 X 18	558.80	457.20	508.00	62.97		
22 X 20	558.80	508.00	508.00	64.33		
24 X 16	609.60	406.40	508.00	72.00		
24 X 18	609.60	457.20	508.00	72.00		
24 X 20	609.60	508.00	508.00	72.00		
24 X 22	609.60	558.80	508.00	72.00		

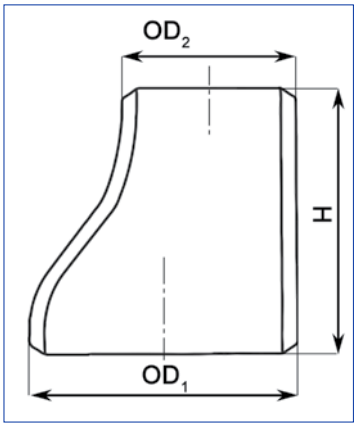
Seamless Concentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Eccentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10S Wall thickness



Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
¾ X ½	26.67	21.34	38.10	0.04	FBX1/0266/213/04	FBX1/0266/213/16
1 X ½	33.40	21.34	50.80	0.09	FBX1/0334/213/04	FBX1/0334/213/16
1 X ¾	33.40	26.67	50.80	0.10	FBX1/0334/266/04	FBX1/0334/266/16
1¼ X ¾	42.16	26.67	50.80	0.11	FBX1/0421/266/04	FBX1/0421/266/16
1¼ X 1	42.16	33.40	50.80	0.12	FBX1/0421/334/04	FBX1/0421/334/16
1½ X ½	48.26	21.34	63.50	0.14	FBX1/0482/213/04	FBX1/0482/213/16
1½ X ¾	48.26	26.67	63.50	0.15	FBX1/0482/266/04	FBX1/0482/266/16
1½ X 1	48.26	33.40	63.50	0.17	FBX1/0482/334/04	FBX1/0482/334/16
1½ X 1¼	48.26	42.16	63.50	0.18	FBX1/0482/421/04	FBX1/0482/421/16
2 X ¾	60.32	26.67	76.20	0.22	FBX1/0603/266/04	FBX1/0603/266/16
2 X 1	60.32	33.40	76.20	0.23	FBX1/0603/334/04	FBX1/0603/334/16
2 X 1¼	60.32	42.16	76.20	0.25	FBX1/0603/421/04	FBX1/0603/421/16
2 X 1½	60.32	48.26	76.20	0.27	FBX1/0603/482/04	FBX1/0603/482/16
2½ X 1¼	73.02	42.16	88.90	0.37	FBX1/0730/421/04	FBX1/0730/421/16
2½ X 1½	73.02	48.26	88.90	0.39	FBX1/0730/482/04	FBX1/0730/482/16
2½ X 2	73.02	60.32	88.90	0.43	FBX1/0730/603/04	FBX1/0730/603/16
3 X 1½	88.90	48.26	88.90	0.45	FBX1/0889/482/04	FBX1/0889/482/16
3 X 2	88.90	60.32	88.90	0.48	FBX1/0889/603/04	FBX1/0889/603/16
3 X 2½	88.90	73.02	88.90	0.52	FBX1/0889/730/04	FBX1/0889/730/16
4 X 2	114.30	60.32	101.60	0.67	FBX1/1143/603/04	FBX1/1143/603/16
4 X 2½	114.30	73.02	101.60	0.71	FBX1/1143/730/04	FBX1/1143/730/16
4 X 3	114.30	88.90	101.60	0.76	FBX1/1143/889/04	FBX1/1143/889/16
5 X 4	141.30	114.30	127.00	1.33	FBX1/1413/114/04	FBX1/1413/114/16
6 X 3	168.27	88.90	139.70	1.53	FBX1/1682/889/04	FBX1/1682/889/16
6 X 4	168.27	114.30	139.70	1.65	FBX1/1682/114/04	FBX1/1682/114/16
6 X 5	168.27	141.30	139.70	1.78	FBX1/1682/141/04	FBX1/1682/141/16

Seamless Eccentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Eccentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 10S Wall thickness *cont'd...*

Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
8 X 4	219.07	114.30	152.40	2.43	FBX1/2191/114/04	FBX1/2191/114/16
8 X 5	219.07	141.30	152.40	2.57	FBX1/2191/141/04	FBX1/2191/141/16
8 X 6	219.07	168.27	152.40	2.72	FBX1/2191/168/04	FBX1/2191/168/16
10 X 6	273.05	168.27	177.80	4.14	FBX1/2730/168/04	FBX1/2730/168/16
10 X 8	273.05	219.07	177.80	4.49	FBX1/2730/219/04	FBX1/2730/219/16
12 X 8	323.85	219.07	203.50	6.31	FBX1/3238/219/04	FBX1/3238/219/16
12 X 10	323.85	273.05	203.20	6.78	FBX1/3238/273/04	FBX1/3238/273/16
14 X 12	355.60	273.05	330.20	12.10		
16 X 10	406.40	273.05	355.60	14.40		
16 X 12	406.40	323.85	355.60	15.20		
16 X 14	406.40	355.60	355.60	15.80		
18 X 10	457.20	273.05	381.00	16.80		
18 X 12	457.20	323.85	381.00	17.60		
18 X 14	457.20	355.60	381.00	18.20		
18 X 16	457.20	406.40	381.00	19.20		
20 X 10	508.00	273.05	508.00	26.70		
20 X 12	508.00	323.85	508.00	28.30		
20 X 14	508.00	355.60	508.00	29.90		
20 X 16	508.00	406.40	508.00	31.70		
20 X 18	508.00	457.20	508.00	33.10		
22 X 14	558.80	355.60	508.00	31.80		
22 X 16	558.80	406.40	508.00	33.40		
22 X 18	558.80	457.20	508.00	35.10		
22 X 20	558.80	508.00	508.00	36.60		
24 X 16	609.60	406.40	508.00	40.60		
24 X 18	609.60	457.20	508.00	42.40		
24 X 20	609.60	508.00	508.00	44.10		
24 X 22	609.60	558.80	508.00	46.00		

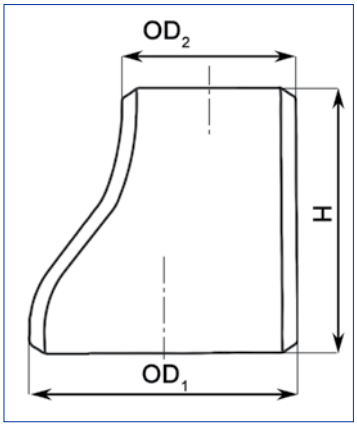
Seamless Eccentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Eccentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40S Wall thickness



Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
¾ X ½	26.67	21.34	38.10	0.07	FBX4/0266/213/04	FBX4/0266/213/16
1 X ½	33.40	21.34	50.80	1.10	FBX4/0334/213/04	FBX4/0334/213/16
1 X ¾	33.40	26.67	50.80	0.10	FBX4/0334/266/04	FBX4/0334/266/16
1¼ X ¾	42.16	26.67	50.80	0.15	FBX4/0421/266/04	FBX4/0421/266/16
1¼ X 1	42.16	33.40	50.80	0.15	FBX4/0421/334/04	FBX4/0421/334/16
1½ X ½	48.26	21.34	63.50	0.25	FBX4/0482/213/04	FBX4/0482/213/16
1½ X ¾	48.26	26.67	63.50	0.27	FBX4/0482/266/04	FBX4/0482/266/16
1½ X 1	48.26	33.40	63.50	0.27	FBX4/0482/334/04	FBX4/0482/334/16
1½ X 1¼	48.26	42.16	63.50	0.29	FBX4/0482/421/04	FBX4/0482/421/16
2 X ¾	60.32	26.67	76.20	0.40	FBX4/0603/266/04	FBX4/0603/266/16
2 X 1	60.32	33.40	76.20	0.40	FBX4/0603/334/04	FBX4/0603/334/16
2 X 1¼	60.32	42.16	76.20	0.43	FBX4/0603/421/04	FBX4/0603/421/16
2 X 1½	60.32	48.26	76.20	0.45	FBX4/0603/482/04	FBX4/0603/482/16
2½ X 1¼	73.02	42.16	88.90	0.68	FBX4/0730/421/04	FBX4/0730/421/16
2½ X 1½	73.02	48.26	88.90	0.72	FBX4/0730/482/04	FBX4/0730/482/16
2½ X 2	73.02	60.32	88.90	0.77	FBX4/0730/603/04	FBX4/0730/603/16
3 X 1	88.90	33.40	88.90	0.82	FBX4/0889/334/04	FBX4/0889/334/16
3 X 1½	88.90	48.26	88.90	0.90	FBX4/0889/482/04	FBX4/0889/482/16
3 X 2	88.90	60.32	88.90	0.96	FBX4/0889/603/04	FBX4/0889/603/16
3 X 2½	88.90	73.02	88.90	1.04	FBX4/0889/730/04	FBX4/0889/730/16
4 X 2	114.30	60.32	101.60	1.63	FBX4/1143/603/04	FBX4/1143/603/16
4 X 2½	114.30	73.02	101.60	1.72	FBX4/1143/730/04	FBX4/1143/730/16
4 X 3	114.30	88.90	101.60	1.77	FBX4/1143/889/04	FBX4/1143/889/16
5 X 4	141.30	114.30	127.00	2.81	FBX4/1413/114/04	FBX4/1413/114/16
6 X 3	168.27	88.90	139.70	3.80	FBX4/1682/889/04	FBX4/1682/889/16
6 X 4	168.27	114.30	139.70	3.94	FBX4/1682/114/04	FBX4/1682/114/16
6 X 5	168.27	141.30	139.70	4.03	FBX4/1682/141/04	FBX4/1682/141/16

Seamless Eccentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

Eccentric Reducers (Welded)

ASTM A 403 WPW 304/304L and 316/316L
ASME SA 403 WPW

SCH 40S Wall thickness *cont'd...*

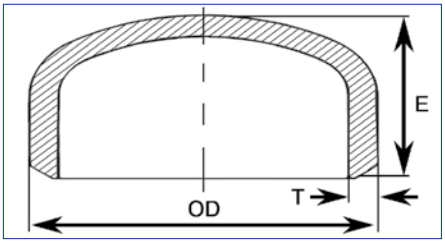
Nominal Pipe Size (inches)	Outside Diameter (OD1)	Outside Diameter (OD2)	Length (H)	Weight	Product Code	
					304/304L	316/316L
8 X 4	219.07	114.30	152.40	5.62	FBX4/2191/114/04	FBX4/2191/114/16
8 X 5	219.07	141.30	152.40	5.84	FBX4/2191/141/04	FBX4/2191/141/16
8 X 6	219.07	168.27	152.40	6.34	FBX4/2191/168/04	FBX4/2191/168/16
10 X 6	273.05	168.27	177.80	10.42	FRB4/2730/168/04	FRB4/2730/168/16
10 X 8	273.05	219.07	177.80	10.69	FBX4/2730/219/04	FBX4/2730/219/16
12 X 8	323.85	219.07	203.50	14.95	FBX4/3238/219/04	FBX4/3238/219/16
12 X 10	323.85	273.05	203.20	15.40	FBX4/3238/273/04	FBX4/3238/273/16
14 X 12	355.60	273.05	330.20	26.59		
16 X 10	406.40	273.05	355.60	26.82		
16 X 12	406.40	323.85	355.60	32.84		
16 X 14	406.40	355.60	355.60	33.43		
18 X 10	457.20	273.05	381.00	33.98		
18 X 12	457.20	323.85	381.00	38.50		
18 X 14	457.20	355.60	381.00	39.41		
18 X 16	457.20	406.40	381.00	39.86		
20 X 10	508.00	273.05	508.00	57.00		
20 X 12	508.00	323.85	508.00	57.08		
20 X 14	508.00	355.60	508.00	57.98		
20 X 16	508.00	406.40	508.00	58.44		
20 X 18	508.00	457.20	508.00	58.89		
22 X 14	558.80	355.60	508.00	57.99		
22 X 16	558.80	406.40	508.00	61.15		
22 X 18	558.80	457.20	508.00	62.97		
22 X 20	558.80	508.00	508.00	64.33		
24 X 16	609.60	406.40	508.00	72.00		
24 X 18	609.60	457.20	508.00	72.00		
24 X 20	609.60	508.00	508.00	72.00		
24 X 22	609.60	558.80	508.00	72.00		

Seamless Eccentric Reducers are also available. Please contact your local NDE branch for details.

STAINLESS STEEL BUTTWELD FITTINGS

End Caps

ASTM A 403 WP-S 304/304L and 316/316L
ASME SA 403 WP-S



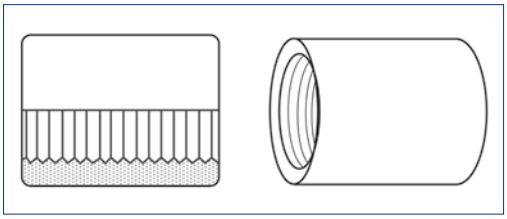
SCH 10S Wall thickness

Nominal Pipe Size		Outside Diameter (OD)	SCH 10 Wall Thickness (T)	Length (E)	Weight	Product Code	
(mm)	(inches)					304/304L	316/316L
15	½	21.34	2.11	25.40	0.028	FBC1/0213/021/04	FBC1/0213/021/16
20	¾	26.67	2.11	25.40	0.035	FBC1/0266/021/04	FBC1/0266/021/16
25	1	33.40	2.77	38.10	0.087	FBC1/0334/027/04	FBC1/0334/027/16
32	1 ¼	42.16	2.77	38.10	0.110	FBC1/0421/027/04	FBC1/0421/027/16
40	1 ½	48.26	2.77	38.10	0.127	FBC1/0482/027/04	FBC1/0482/027/16
50	2	60.32	2.77	38.10	0.165	FBC1/0603/027/04	FBC1/0603/027/16
65	2 ½	73.02	3.05	38.10	0.232	FBC1/0730/030/04	FBC1/0730/030/16
80	3	88.90	3.05	50.80	0.367	FBC1/0889/030/04	FBC1/0889/030/16
100	4	114.30	3.05	63.50	0.594	FBC1/1143/030/04	FBC1/1143/030/16
125	5	141.30	3.40	76.20	0.993	FBC1/1413/034/04	FBC1/1413/034/16
150	6	168.27	3.40	88.90	1.39	FBC1/1683/034/04	FBC1/1683/034/16
200	8	219.07	3.76	101.60	2.38	FBC1/2190/037/04	FBC1/2190/037/16
250	10	273.05	4.19	127.00	4.14	FBC1/2730/041/04	FBC1/2730/041/16
300	12	323.85	4.57	152.40	6.39	FBC1/3238/045/04	FBC1/3238/045/16

SCH 40S Wall thickness

Nominal Pipe Size		Outside Diameter (OD)	SCH 40 Wall Thickness (T)	Length (E)	Weight	Product Code	
(mm)	(inches)					304/304L	316/316L
15	½	21.34	2.77	25.40	0.037	FBC4/0213/027/04	FBC4/0213/027/16
20	¾	26.67	2.87	25.40	0.048	FBC4/0266/028/04	FBC4/0266/028/16
25	1	33.40	3.38	38.10	0.106	FBC4/0334/033/04	FBC4/0334/033/16
32	1 ¼	42.16	3.56	38.10	0.141	FBC4/0421/035/04	FBC4/0421/035/16
40	1 ½	48.26	3.68	38.10	0.169	FBC4/0482/036/04	FBC4/0482/036/16
50	2	60.32	3.91	38.10	0.234	FBC4/0603/039/04	FBC4/0603/039/16
65	2 ½	73.02	5.16	38.10	0.393	FBC4/0730/051/04	FBC4/0730/051/16
80	3	88.90	5.39	50.80	0.660	FBC4/0889/054/04	FBC4/0889/054/16
100	4	114.30	6.02	63.50	1.17	FBC4/1143/060/04	FBC4/1143/060/16
125	5	141.30	6.55	76.20	1.91	FBC4/1413/065/04	FBC4/1413/065/16
150	6	168.27	7.11	88.90	2.90	FBC4/1682/071/04	FBC4/1682/071/16
200	8	219.07	8.18	101.60	5.19	FBC4/2190/081/04	FBC4/2190/081/16
250	10	273.05	9.27	127.00	9.15	FBC4/2730/092/04	FBC4/2730/092/16
300	12	323.85	9.52	152.40	13.30	FBC4/3238/095/04	FBC4/3238/095/16

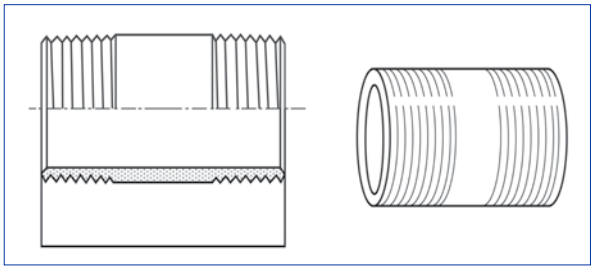
STAINLESS STEEL BSP FITTINGS



Sockets BSP screwed female parallel thread ASA150 lb (68 kg) rating

Available in type AISI 316

Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.02	FSSO/0120/000/16
8	¼	0.04	FSSO/0137/000/16
10	⅜	0.05	FSSO/0171/000/16
15	½	0.09	FSSO/0213/000/16
20	¾	0.13	FSSO/0266/000/16
25	1	0.20	FSSO/0334/000/16
32	1¼	0.29	FSSO/0421/000/16
40	1½	0.34	FSSO/0482/000/16
50	2	0.52	FSSO/0603/000/16
65	2½	0.78	FSSO/0730/000/16
80	3	1.05	FSSO/0889/000/16
100	4	1.90	FSSO/1143/000/16



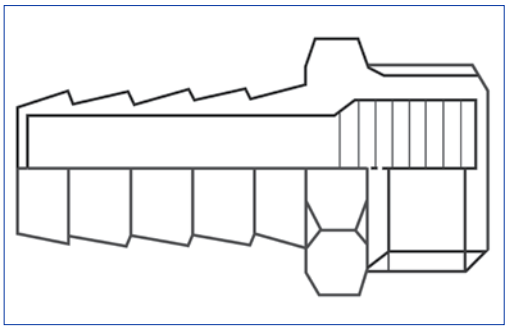
Barrel Nipples screwed male thread ASA 150 lb (68 kg) rating +A55

Available in type AISI 316

Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	00.2	FSBN/0102/000/16
8	¼	00.3	FSBN/0137/000/16
10	⅜	00.4	FSBN/0171/000/16
15	½	0.08	FSBN/0213/000/16
20	¾	0.11	FSBN/0266/000/16
25	1	0.16	FSBN/0334/000/16
32	1¼	0.29	FSBN/0421/000/16
40	1½	0.35	FSBN/0482/000/16
50	2	0.58	FSBN/0603/000/16
65	2½	0.92	FSBN/0730/000/16
80	3	1.45	FSBN/0889/000/16
100	4	2.07	FSBN/1143/000/16

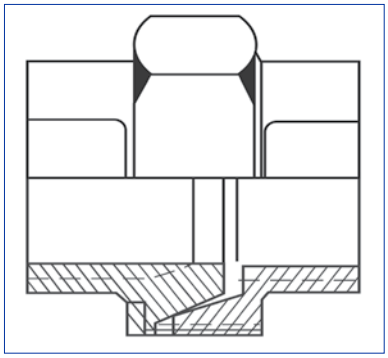
STAINLESS STEEL BSP FITTINGS

Swage / Hose Nipples
ASA 150 lb (68 kg) rating
Available in type AISI 316



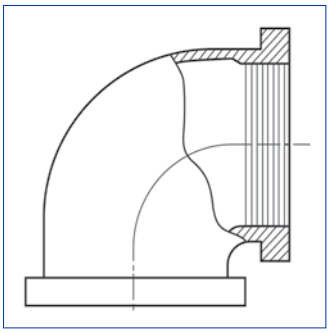
Size (inches)	Weight (kgs)	Product Code
¼	0.031	FSSN/0137/000/16
⅜	0.048	FSSN/0171/000/16
½	0.077	FSSN/0213/000/16
¾	0.137	FSSN/0266/000/16
1	0.211	FSSN/0334/000/16
1¼	0.274	FSSN/0421/000/16
1½	0.367	FSSN/0482/000/16
2	0.606	FSSN/0603/000/16

Union female thread with conical seat
BSP screwed parallel
ASA 150 lb (68 kg) rating
Available in type AISI 316



Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.13	FSUN/0102/000/16
8	¼	0.11	FSUN/0137/000/16
10	⅜	0.18	FSUN/0171/000/16
15	½	0.22	FSUN/0213/000/16
20	¾	0.33	FSUN/0266/000/16
25	1	0.50	FSUN/0334/000/16
32	1¼	0.70	FSUN/0421/000/16
40	1½	0.87	FSUN/0482/000/16
50	2	1.39	FSUN/0603/000/16
65	2½	2.07	FSUN/0730/000/16
80	3	2.98	FSUN/0889/000/16
100	4	4.82	FSUN/1143/000/16

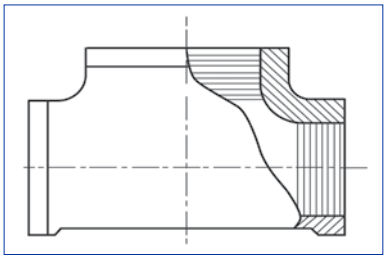
STAINLESS STEEL BSP FITTINGS



90° Elbows BSP screwed female parallel thread ASA 150 lb (68 kg) rating

Available in type AISI 316

Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.03	FSEL/0102/000/16
8	¼	0.04	FSEL/0137/000/16
10	⅜	0.06	FSEL/0171/000/16
15	½	0.10	FSEL/0213/000/16
20	¾	0.14	FSEL/0266/000/16
25	1	0.27	FSEL/0334/000/16
32	1¼	0.38	FSEL/0421/000/16
40	1½	0.51	FSEL/0482/000/16
50	2	0.75	FSEL/0603/000/16
65	2½	1.69	FSEL/0730/000/16
80	3	2.33	FSEL/0889/000/16
100	4	3.43	FSEL/1143/000/16



Equal tees BSP screwed female parallel thread ASA 150 lb (68 kg) rating

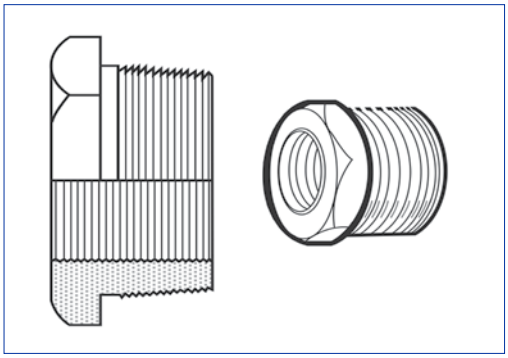
Available in type AISI 316

Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.05	FSTE/0102/000/16
8	¼	0.05	FSTE/0137/000/16
10	⅜	0.09	FSTE/0171/000/16
15	½	0.14	FSTE/0213/000/16
20	¾	0.21	FSTE/0266/000/16
25	1	0.36	FSTE/0334/000/16
32	1¼	0.50	FSTE/0421/000/16
40	1½	0.70	FSTE/0482/000/16
50	2	1.01	FSTE/0603/000/16
65	2½	2.41	FSTE/0740/000/16
80	3	3.32	FSTE/0889/000/16
100	4	4.81	FSTE/1143/000/16

STAINLESS STEEL BSP FITTINGS

Reducing Bushes
ASA 150 lb (68 kg) rating

Available in type AISI 316

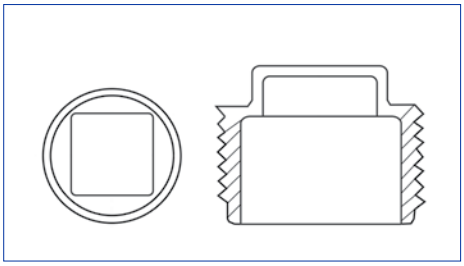


Size (inches)			Weight (kgs)	Product Code
¼	X	⅛	0.01	FSRB/0137/102/16
⅜	X	⅛	0.03	FSRB/0171/102/16
⅜	X	¼	0.02	FSRB/0171/137/16
½	X	⅛	0.05	FSRB/0213/102/16
½	X	¼	0.04	FSRB/0213/137/16
½	X	⅜	0.04	FSRB/0213/171/16
¾	X	¼	0.07	FSRB/0266/137/16
¾	X	⅜	0.07	FSRB/0266/171/16
¾	X	½	0.06	FSRB/0266/213/16
1	X	⅜	0.10	FSRB/0334/171/16
1	X	½	0.12	FSRB/0334/213/16
1	X	¾	0.10	FSRB/0334/266/16
1¼	X	¾	0.21	FSRB/0421/266/16
1¼	X	1	0.15	FSRB/0421/334/16
1½	X	¾	0.23	FSRB/0482/266/16
1½	X	1	0.27	FSRB/0482/334/16
1½	X	1¼	0.19	FSRB/0482/421/16
2	X	1	0.37	FSRB/0603/334/16
2	X	1¼	0.42	FSRB/0603/421/16
2	X	1½	0.32	FSRB/0603/482/16
2½	X	2	0.54	FSRB/0730/603/16
3	X	2	1.18	FSRB/0889/603/16

STAINLESS STEEL BSP FITTINGS

Square head plug BSP screwed male taper thread ASA 150 lb (68 kg) rating

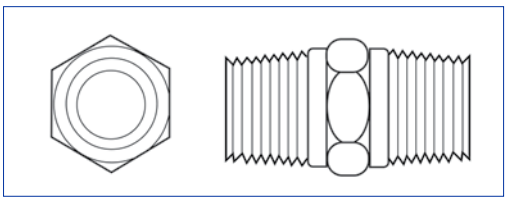
Available in type AISI 316



Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.01	FSPS/0102/000/16
8	¼	0.02	FSPS/0137/000/16
10	⅜	0.03	FSPS/0171/000/16
15	½	0.03	FSPS/0213/000/16
20	¾	0.07	FSPS/0266/000/16
25	1	0.10	FSPS/0334/000/16
32	1¼	0.15	FSPS/0421/000/16
40	1½	0.21	FSPS/0482/000/16
50	2	0.31	FSPS/0603/000/16
65	2½	0.59	FSPS/0730/000/16
80	3	0.71	FSPS/0889/000/16
100	4	1.10	FSPS/1143/000/16

Hexagon Nipple screwed male thread ASA 150 lb (68 kg) rating BS1740

Available in type AISI 316

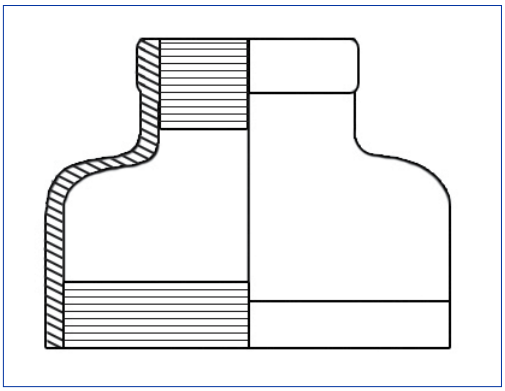


Nominal Bore (NB)		Weight (kgs)	Product Code
(mm)	(inches)		
6	⅛	0.02	FSHN/0102/000/16
8	¼	0.03	FSHN/0137/000/16
10	⅜	0.05	FSHN/0171/000/16
15	½	0.08	FSHN/0213/000/16
20	¾	0.11	FSHN/0266/000/16
25	1	0.17	FSHN/0334/000/16
32	1¼	0.25	FSHN/0421/000/16
40	1½	0.37	FSHN/0482/000/16
50	2	0.53	FSHN/0603/000/16
80	3	1.37	FSHN/0889/000/16

STAINLESS STEEL BSP FITTINGS

Reducing Sockets
ASA 150 lb (68 kg) rating

Available in type AISI 316



Size (inches)			Weight (kgs)	Code
¼	x	⅛		FSRS/0137/102/16
⅜	x	⅛		FSRS/0171/102/16
⅜	x	¼	0.05	FSRS/0171/137/16
½	x	¼	0.08	FSRS/0213/137/16
½	x	⅜	0.07	FSRS/0213/171/16
¾	x	¼	0.11	FSRS/0266/137/16
¾	x	⅜	0.11	FSRS/0266/171/16
¾	x	½	0.13	FSRS/0266/213/16
1	x	¼	0.17	FSRS/0334/137/16
1	x	⅜	0.18	FSRS/0334/171/16
1	x	½	0.17	FSRS/0334/213/16
1	x	¾	0.18	FSRS/0334/266/16
1¼	x	1	0.28	FSRS/0421/334/16
1½	x	¾	0.33	FSRS/0482/266/16
1½	x	1¼	0.38	FSRS/0482/421/16
2	x	1	0.52	FSRS/0603/334/16
2	x	1¼	0.52	FSRS/0603/421/16
2	x	1½	0.57	FSRS/0603/482/16
3	x	2	1.65	FSRS/0889/603/16

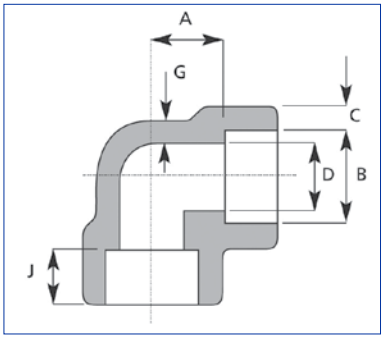
STAINLESS STEEL HIGH PRESSURE FITTINGS

ANSI B16.11
The range includes 3 000lb Socket Weld Fittings and 3 000lb NPT Threaded Fittings, both in grades 304L and 316L

Socket Weld Fittings

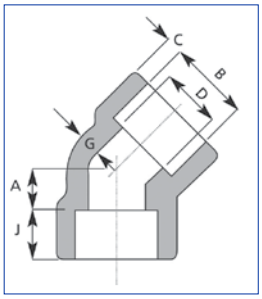
90° Elbow

DN	Nominal Pipe Size	B	C		D	A	G (min)	J (min)	Weight Kgs
			(Avg)	(Min)					
15	½	21.8	4.67	4.09	15.8	15.5	3.73	9.5	0.25
20	¾	27.2	4.90	4.27	21.0	19.0	3.91	12.5	0.32
25	1	33.9	5.69	4.98	26.7	22.5	4.55	12.5	0.52
32	1¼	42.7	6.07	5.28	35.1	27.0	4.85	12.5	0.86
40	1½	48.8	6.35	5.54	40.9	32.0	5.08	12.5	1.12
50	2	61.2	6.93	6.04	52.5	38.0	5.54	16.0	1.80



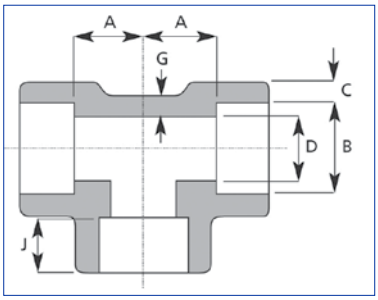
45° Elbow

DN	Nominal Pipe Size	B	C		D	A	G (min)	J (min)	Weight Kgs
			(Avg)	(Min)					
15	½	21.8	4.67	4.09	15.8	11.0	3.73	9.5	0.18
20	¾	27.2	4.90	4.27	21.0	13.0	3.91	12.5	0.30
25	1	33.9	5.69	4.98	26.7	14.0	4.55	12.5	0.45
40	1½	48.8	6.35	5.54	40.9	20.5	5.08	12.5	0.90
50	2	61.2	6.93	6.04	52.5	25.5	5.54	16.0	1.30



Equal Tee

DN	Nominal Pipe Size	B	C		D	A	G (min)	J (min)	Weight Kgs
			(Avg)	(Min)					
15	½	21.8	4.67	4.09	15.8	15.5	3.73	9.5	0.34
20	¾	27.2	4.90	4.27	21.0	19.0	3.91	12.5	0.41
25	1	33.9	5.69	4.98	26.7	22.5	4.55	12.5	0.65
40	1½	48.8	6.35	5.54	40.9	32.0	5.08	12.5	1.33
50	2	61.2	6.93	6.04	52.5	38.0	5.54	16.0	2.20



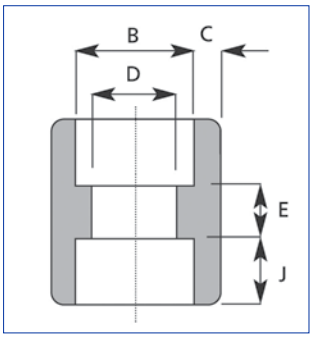
Dimensions in millimetres

STAINLESS STEEL HIGH PRESSURE FITTINGS

Socket Weld Fittings *cont'd...*

Full Coupling

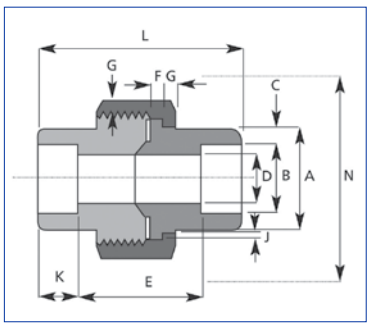
DN	Nominal Pipe Size	B	C		D	E	J (min)	Weight Kgs
			(Avg)	(Min)				
15	½	21.8	4.67	4.09	15.8	9.5	9.5	0.14
20	¾	27.2	4.90	4.27	21.0	9.5	12.5	0.20
25	1	33.9	5.69	4.98	26.7	12.5	12.5	0.30
32	1¼	42.7	6.07	5.28	35.1	12.5	12.5	0.45
40	1½	48.8	6.35	5.54	40.9	12.5	12.5	0.60
50	2	61.2	6.93	6.04	52.5	19.0	16.0	0.95



Union

Nominal Pipe Size	Pipe End (min) A	Socket Bore (min) B	Socket Wall (min) C	Water Way Bore D	Laying Length E	Male Flange (min) F	Nut (min) G	Thrds/ 25.4mm	Bearing (min) J	Socket Depth K	Length A.sem. Nom. L	Clear Assem Nut N	Weight Kgs
½	31.2	22.23 21.72	4.09	16.56 15.04	26.9 20.6	3.68	3.68	14	1.50	9.7	49.0	58.4	0.40
¾	37.1	27.56 27.05	4.27	21.69 20.17	31.8 25.4	4.06	4.06	11	1.68	12.7	56.9	66.0	0.45
1	45.5	34.29 33.78	4.98	27.41 25.88	34.3 26.2	4.57	4.45	11	1.85	12.7	62.0	78.7	1.00
1½	61.5	49.15 48.64	5.54	41.66 40.13	42.2 34.0	5.84	5.59	10	2.31	12.7	76.5	111.8	1.70
2	75.2	61.62 61.11	6.05	53.26 51.74	45.6 37.3	6.60	6.35	10	2.69	15.7	86.1	132.1	3.00

Threads
Minimum 4 full threads
Engagement Class 2A/2B fit ANSI B1:1



Dimensions in millimetres

STAINLESS STEEL HIGH PRESSURE FITTINGS

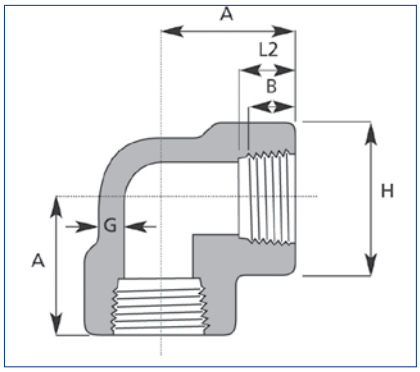
ANSI B16:11

The range includes 3 000lb Socket Weld Fittings and 3 000lb NPT Threaded Fittings, both in grades 304L and 316L

Threaded Fittings

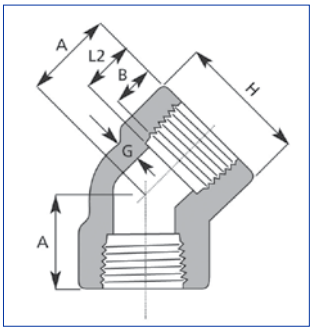
90° Elbow

DN	Nominal Pipe Size	Length of Thread (min)		A	G (min)	H	Weight Kgs
		B	L2				
15	½	10.9	13.6	25	4.09	38	0.40
20	¾	12.7	13.9	28	4.32	46	0.63
25	1	14.7	17.3	33	4.98	56	1.10
32	1¼	17.0	18.0	51	5.28	62	1.22
40	1½	17.8	18.4	60	5.56	75	2.35
50	2	19.0	19.2	64	7.14	84	3.30



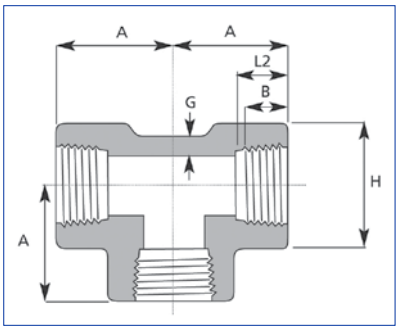
45° Elbow

DN	Nominal Pipe Size	Length of Thread (min)		A	G (min)	H	Weight Kgs
		B	L2				
15	½	10.9	13.6	25	4.09	38	0.32
20	¾	12.7	13.9	28	4.32	46	0.51
25	1	14.7	17.3	33	4.98	56	0.85
40	1½	17.8	18.4	43	5.56	75	1.85
50	2	19.0	19.2	44	7.14	84	3.00



Equal Tee

DN	Nominal Pipe Size	Length of Thread (min)		A	G (min)	H	Weight Kgs
		B	L2				
15	½	10.9	13.6	33	4.09	38	0.52
20	¾	12.7	13.9	38	4.32	46	0.83
25	1	14.7	17.3	44	4.98	56	1.38
40	1½	17.8	18.4	60	5.56	75	3.12
50	2	19.0	19.2	64	7.14	84	4.00



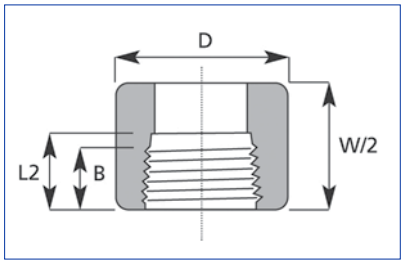
Dimensions in millimetres

STAINLESS STEEL HIGH PRESSURE FITTINGS

Threaded Fittings *cont'd...*

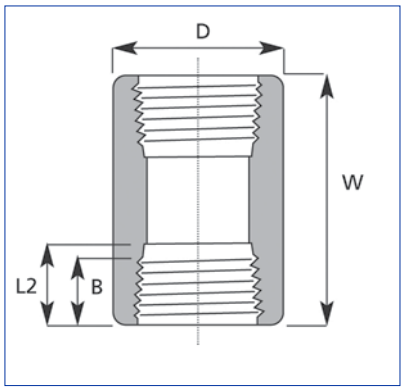
Half Coupling

DN	Nominal Pipe Size	Length of Thread (min)		W	D	Weight Kgs
		B	L2			
6	⅛	6.4	6.7	32	16	0.03
10	⅜	9.1	10.4	38	22	0.05
15	½	10.9	13.6	48	28	0.07
20	¾	12.7	13.9	51	35	0.10
25	1	14.7	17.3	60	44	0.20
40	1½	17.8	18.4	79	64	0.50



Full Coupling

DN	Nominal Pipe Size	Length of Thread (min)		W	D	Weight Kgs
		B	L2			
6	⅛	6.4	6.7	32	16	
8	¼	8.1	10.2	35	19	0.05
10	⅜	9.1	10.4	38	22	0.06
15	½	10.9	13.6	48	28	0.14
20	¾	12.7	13.9	51	35	0.20
25	1	14.7	17.3	60	44	0.40
32	1¼	17.0	18.0	67	57	0.70
40	1½	17.8	18.4	79	64	1.00
50	2	19.0	19.2	86	76	1.90



Dimensions in millimetres

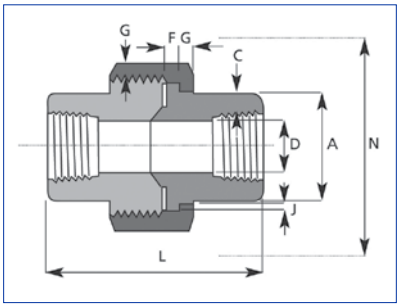
STAINLESS STEEL HIGH PRESSURE FITTINGS

Threaded Fittings *cont'd...*

Union

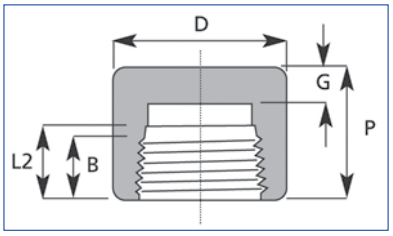
Nominal Pipe Size	Pipe End (min) A	Wall (min) C	Water Way Bore D	Male Flange (min) F	Nut (min) G	Thrds/ 25.4mm	Bearing (min) J	Length A.sem. Nom. L	Clear Assem Nut N	Weight Kgs
½	27.7	3.73	17.86 17.07	3.68	3.68	14	1.50	49	58.4	0.40
¾	33.5	3.91	23.01 21.39	4.06	4.06	11	1.68	56.9	66.0	0.50
1	41.4	4.55	28.98 27.74	4.57	4.45	11	1.85	62.0	78.7	1.00
1¼	50.5	4.85	37.69 35.36	5.33	5.21	10	2.13	71.1	94.0	1.45
1½	57.2	5.08	43.54 41.20	5.84	5.59	10	2.31	76.5	111.8	1.60
2	70.1	5.54	55.58 52.12	6.60	6.35	10	2.69	86.1	132.1	2.50

Threads
Minimum 4 full threads
Engagement Class 2A/2B fit ANSI B1:1



Cap

DN	Nominal Pipe Size	Length of Thread (min)		P	D	G (min)	Weight Kgs
		B	L2				
15	½	10.9	13.6	32	28	6.4	0.12
20	¾	12.7	13.9	37	35	6.4	0.19
50	2	19.0	19.2	48	76	12.7	1.45



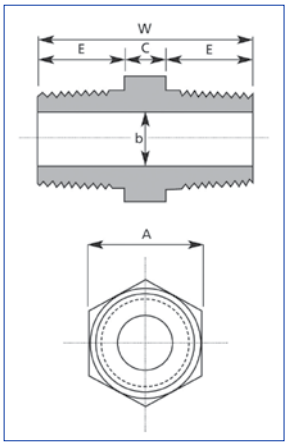
Dimensions in millimetres

STAINLESS STEEL HIGH PRESSURE FITTINGS

Threaded Fittings *cont'd...*

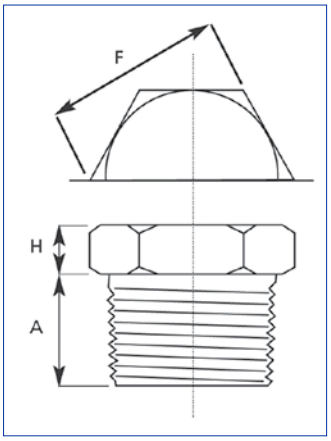
Hexagonal Nipple

DN	Nominal Pipe Size	A (Min)	W (Min)	E (Min)	b	C (Min)	Weight Kgs
6	⅛	11	26	10	5	6	0.02
8	¼	15	36	15	8	6	0.03
10	⅜	18	40	16	11	8	0.06
15	½	22	48	20	14	8	0.09
20	¾	27	52	21	19	10	0.12
25	1	35	60	25	24	10	0.17
40	1½	50	68	26	38	16	0.34
50	2	62	71	27	49	17	0.55



Hexagon Plug

DN	Nominal Pipe Size	A (Min)	F (Nom)	H (Min)	Weight Kgs
6	⅛	10	11	6	
8	¼	11	16	6	0.03
10	⅜	13	18	8	0.05
15	½	14	22	8	0.08
20	¾	16	27	10	0.15
25	1	19	36	10	0.25
40	1½	21	50	16	0.65
50	2	22	65	18	1.10



Dimensions in millimetres

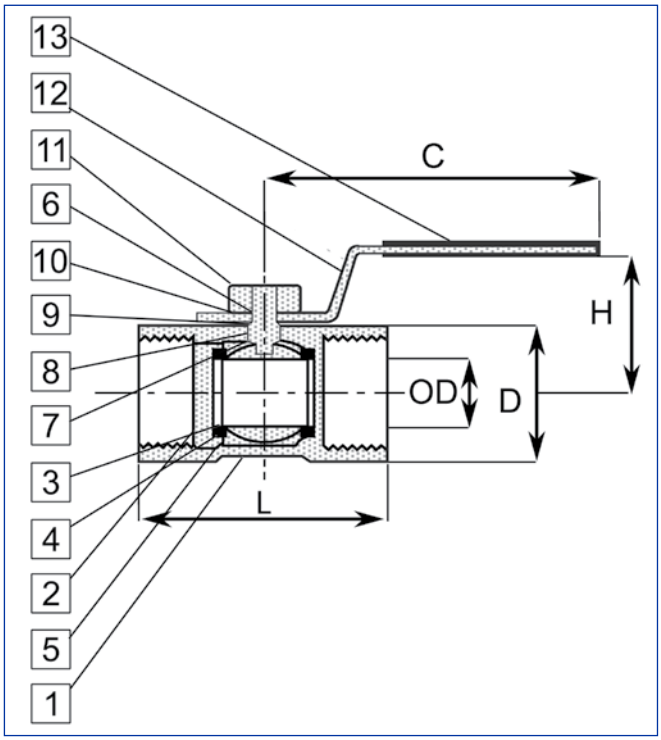
STAINLESS STEEL BALL VALVES

BSP stainless steel T316 ball valve
Reduced port – Threaded end
One-piece economy type

Size		OD	D	L	C	H	Wt(kg)	Product Code
mm	inches							
6	¼	5	17	39	72	25	0.07	VBS1/0137/000/16
10	⅜	7	21	44	81.5	30	0.11	VBS1/0171/000/16
15	½	9.2	25	56.5	100	45	0.17	VBS1/0213/000/16
20	¾	12.5	32	59	100	49	0.25	VBS1/0266/000/16
25	1	15	38	71	105	50	0.40	VBS1/0334/000/16
32	1¼	20	48	78	105	53	0.67	VBS1/0421/000/16
40	1½	25	53	82	135	64	0.82	VBS1/0482/000/16
50	2	32	64	100	135	70	1.35	VBS1/0603/000/16

Materials list

No	Part	Material		Qty
1	Body	WCB	CF8M	1
2	Seat Retainer	WCB	CF8M	1
3	Ball	304	316	1
4	Seat	Rein Teflon	15% GFT	2
5	Body Seal	Teflon	1	
6	Stem	AISI316	1	
7	Thrust Washer	Teflon	1	
8	Stem Packing	Teflon	1	
9	Gland	AISI304	1	
10	Stem Washer	AISI304	1	
11	Stem Nut	AISI304	1	
12	Handle	AISI304	1	
13	Plastic Cover	Plastic	1	



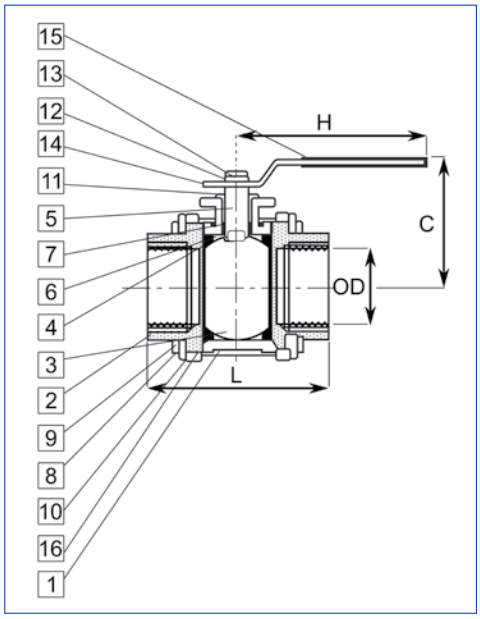
STAINLESS STEEL BALL VALVES

BSP stainless steel T316 ball valves
Full port – Compact design
Three-piece bolted/in-line maintenance type

Size		OD	L	C	H	ISO5211		Wt(kg)	Product Code
mm	inches					P	Q		
6	¼	11.6	63	52	102	F04		0.45	VBS3/0137/000/16
						42	M5		
10	⅜	12.7	63	52	102	F04		0.40	VBS3/0171/000/16
						42	M5		
15	½	15	68	55	116	F04		0.65	VBS3/0213/000/16
						42	M5		
20	¾	20	83.5	60.5	116	F04		0.85	VBS3/0266/000/16
						42	M5		
25	1	25	93	74.5	150	F04		1.20	VBS3/0334/000/16
						42	M5		
32	1¼	32	111.2	79	150	F04		2.00	VBS3/0421/000/16
						42	M5		
40	1½	38	131.5	96	187	F04		2.70	VBS3/0482/000/16
						42	M5		
50	2	50.8	152	102	187	F04		3.45	VBS3/0603/000/16
						42	M5		
65	2½	65	185	150	250	F04		7.60	VBS3/0730/000/16
						42	M5		
80	3	80	205	154.7	250	F04		12.60	VBS3/0889/000/16
						42	M5		
100	4	100	240	190	285	F04		20.60	VBS3/0989/000/16
						42	M5		

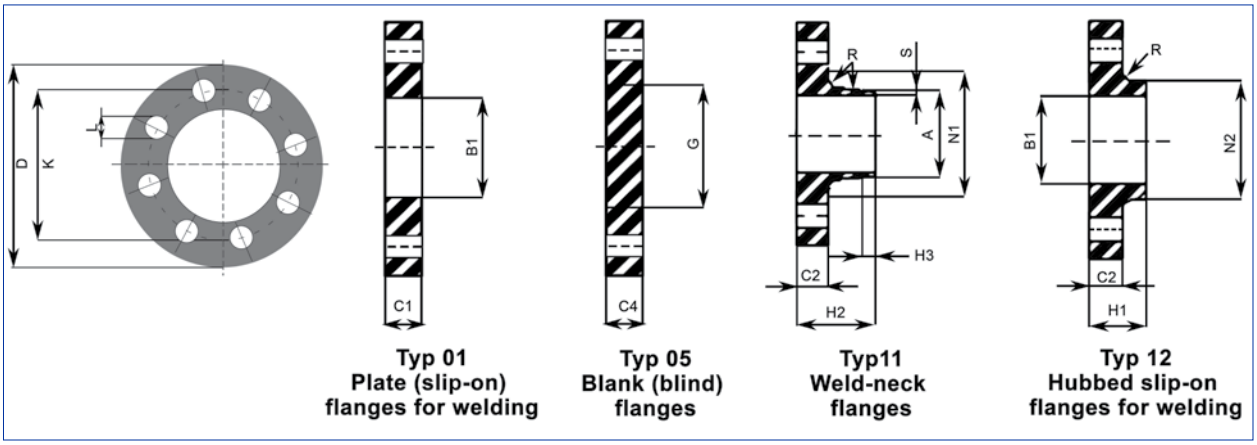
Materials list

No	Part	Material		Qty
1	Body	WCB	CF8M	1
2	Cap	WCB	CF8M	2
3	Ball	304	316	1
4	Seat	Rein Teflon	15% GFT	2
5	Stem	AISI316	1	
6	Thrust Washer	Rein Teflon	15% GFT	1
7	Stem Packing	Teflon	2	
8	Bolt	AISI304	4	
9	Hex Nut	AISI304	4	
10	Bolt Washer	AISI304	4	
11	Gland Nut	AISI304	1	
12	Stem Washer	AISI304	1	
13	Stem Nut	AISI304	1	
14	Handle	AISI304	1	
15	Handle Cover	Plastic	1	
16	Body Seal	Teflon	2	



STAINLESS STEEL FLANGES

EN 1092-1 PN6 Flanges



Typ 01 Plate (slip-on) flanges for welding

Typ 05 Blank (blind) flanges

Typ11 Weld-neck flanges

Typ 12 Hubbed slip-on flanges for welding

Nominal diameter (DN)	Mating dimensions					Outside diameter of neck	Bore diameters	Flange thickness			Diameter of shoulder	Length			Neck diameters		Corner radius	Neck thickness (preferred value)
	Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts														
	D	K	L	No	Size	A	B1	C1	C2	C4	G max	H1	H2	H3	N1	N2	R	S
	Flange types																	
	01, 05, 11, 12					11	01 12	01 02 04	11 12	05	05	12	11	11	11	12	11 12	11
10	75	50	11	4	M10	17.2	18.0	12	12	12	-	20	28	6	26	25	4	1.8
15	80	55	11	4	M10	21.3	22.0	12	12	12	-	20	30	6	30	30	4	2.0
20	90	65	11	4	M10	26.9	27.5	14	14	14	-	24	32	6	38	40	4	2.3
25	100	75	11	4	M10	33.7	34.5	14	14	14	-	24	35	6	42	50	4	2.6
32	120	90	14	4	M12	42.4	43.5	16	14	14	-	26	35	6	55	60	6	2.6
40	130	100	14	4	M12	48.3	49.5	16	14	14	-	26	38	7	62	70	6	2.6
50	140	110	14	4	M12	60.3	61.5	16	14	14	-	28	38	8	74	80	6	2.9
65	160	130	14	4	M12	76.1	77.5	16	14	14	55	32	38	9	88	100	6	2.9
80	190	150	18	4	M16	88.9	90.5	18	16	16	70	34	42	10	102	110	8	3.2
100	210	170	18	4	M16	114.3	116.0	18	16	16	90	40	45	10	130	130	8	3.6
125	240	200	18	8	M16	139.7	141.5	20	18	18	115	44	48	10	155	160	8	4.0
150	265	225	18	8	M16	168.3	170.5	20	18	18	140	44	48	12	184	185	10	4.5
200	320	280	18	8	M16	219.1	221.5	22	20	20	190	44	55	15	236	240	10	5.9
250	375	335	18	12	M16	273.0	276.5	24	22	22	235	44	60	15	290	295	12	6.3
300	440	395	22	12	M20	323.9	327.5	24	22	22	285	44	62	15	342	355	12	7.1
350	490	445	22	12	M20	355.6	359.5	26	22	22	330	-	62	15	385	-	12	7.1
400	540	495	22	16	M20	406.4	411.0	28	22	22	380	-	65	15	438	-	12	7.1
450	595	550	22	16	M20	457.0	462.0	30	22	24	425	-	65	15	492	-	12	7.1
500	645	600	22	20	M20	508.0	513.5	30	24	24	475	-	68	15	538	-	12	7.1
600	755	705	26	20	M24	610.0	616.5	32	30	30	575	-	70	16	640	-	12	7.1

Note: Dimensions N1 and N2 are measured at the intersection of the hub draft angle and the back face of the flange.

EN 1092-1 PN10 Flanges

Nominal diameter (DN)	Mating dimensions					Outside diameter of neck	Bore diameters	Flange thickness			Diameter of shoulder	Length			Neck diameters		Corner radius	Neck thickness (preferred value)
	Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts														
	D	K	L	No	Size	A	B1	C1	C2	C4	G max	H1	H2	H3	N1	N2	R	S
	Flange types																	
	01, 05, 11, 12					11	01 12	01	11 12	05	05	12	11	11	11	12	11 12	11
10	90	60	14	4	M12	17.2	18.0	14	16	16	-	22	35	6	28	30	4	1.8
15	95	65	14	4	M12	21.3	22.0	14	16	16	-	22	38	6	32	35	4	2.0
20	105	75	14	4	M12	26.9	27.5	16	18	18	-	26	40	6	40	45	4	2.3
25	115	85	14	4	M12	33.7	34.5	16	18	18	-	28	40	6	46	52	4	2.6
32	140	100	18	4	M16	42.4	43.5	18	18	18	-	30	42	6	56	60	6	2.6
40	150	110	18	4	M16	48.3	49.5	18	18	18	-	32	45	7	64	70	6	2.6
50	165	125	18	4	M16	60.3	61.5	19	18	18	-	28	45	8	74	84	5	2.9
65	185	145	18	8	M16	76.1	77.5	20	18	18	55	32	45	10	92	104	6	2.9
80	200	160	18	8	M16	88.9	90.5	20	20	20	70	34	50	10	105	118	6	3.2
100	220	180	18	8	M16	114.3	116.0	22	20	20	90	40	52	12	131	140	8	3.6
125	250	210	18	8	M16	139.7	141.5	22	22	22	115	44	55	12	156	168	8	4.0
150	285	240	22	8	M20	168.3	170.5	24	22	22	140	44	55	12	184	195	10	4.5
200	340	295	22	8	M20	219.1	221.5	24	24	24	190	44	62	16	234	246	10	5.9
250	395	350	22	12	M20	273.0	276.5	26	26	26	235	46	68	16	292	298	12	6.3
300	445	400	22	12	M20	323.9	327.5	26	26	26	285	46	68	16	342	350	12	7.1
350	505	460	22	16	M20	335.6	359.5	28	26	26	330	53	68	16	385	400	12	7.1
400	565	515	26	16	M24	406.4	411.0	32	26	26	380	57	72	16	440	456	12	7.1
450	615	565	26	20	M24	457.0	462.0	36	28	28	425	63	72	16	488	502	12	7.1
500	670	620	26	20	M24	508.0	513.5	38	28	28	475	67	75	16	542	559	12	7.1
600	780	725	30	20	M27	610.0	616.5	42	34	34	575	75	80	18	642	658	12	7.1

Note: Dimension N1 is measured at the intersection of the hub draft angle and the back face of the flange.

EN 1092-1 PN16 Flanges

Nominal diameter (DN)	Mating dimensions					Outside diameter of neck	Bore diameters	Flange thickness			Diameter of shoulder	Length			Neck diameters		Corner radius	Neck thickness (preferred value)
	Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts														
	D	K	L	No	Size	A	B1	C1	C2	C4	G max	H1	H2	H3	N1	N2	R	S
	Flange types																	
	01, 05, 11, 12					11	01 12	01	11 12	05	05	12	11	11	11	12	11 12	11
10	90	60	14	4	M12	17.2	18.0	14	16	16	-	22	35	6	28	30	4	1.8
15	95	65	14	4	M12	21.3	22.0	14	16	16	-	22	38	6	32	35	4	2.0
20	105	75	14	4	M12	26.9	27.5	16	18	18	-	26	40	6	40	45	4	2.3
25	115	85	14	4	M12	33.7	34.5	16	18	18	-	28	40	6	46	52	4	2.6
32	140	100	18	4	M16	42.4	43.5	18	18	18	-	30	42	6	56	60	6	2.6
40	150	110	18	4	M16	48.3	49.5	18	18	18	-	32	45	7	64	70	6	2.6
50	165	125	18	4	M16	60.3	61.5	19	18	18	-	28	45	8	74	84	5	2.9
65	185	145	18	8	M16	76.1	77.5	20	18	18	55	32	45	10	92	104	6	2.9
80	200	160	18	8	M16	88.9	90.5	20	20	20	70	34	50	10	105	118	6	3.2
100	220	180	18	8	M16	114.3	116.0	22	20	20	90	40	52	12	131	140	8	3.6
125	250	210	18	8	M16	139.7	141.5	22	22	22	115	44	55	12	156	168	8	4.0
150	285	240	22	8	M20	168.3	170.5	24	22	22	140	44	55	12	184	195	10	4.5
200	340	295	22	12	M20	219.1	221.5	26	24	24	190	44	62	16	235	246	10	5.9
250	405	355	26	12	M24	273.0	276.5	29	26	26	235	46	70	16	292	298	12	6.3
300	460	410	26	12	M24	323.9	327.5	32	28	28	285	46	78	16	344	350	12	7.1
350	520	470	26	16	M24	355.6	359.0	35	30	30	330	57	82	16	390	400	12	8.0
400	580	525	30	16	M27	406.4	411.0	38	32	32	380	63	85	16	445	456	12	8.0
450	640	585	30	20	M27	457.0	462.0	42	40	40	425	68	87	16	490	502	12	8.0
500	715	650	33	20	M30	508.0	513.5	46	44	44	475	73	90	16	548	559	12	8.0
600	840	770	36	20	M33	610.0	616.5	52	54	54	575	83	95	18	652	658	12	8.8

Note: Dimension N1 is measured at the intersection of the hub draft angle and the back face of the flange.

EN 1092-1 PN25 Flanges

Nominal diameter (DN)	Mating dimensions					Outside diameter of neck	Bore diameters	Flange thickness			Diameter of shoulder	Length			Neck diameters		Corner radius	Neck thickness (preferred value)
	Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts														
	D	K	L	No	Size	A	B1	C1	C2	C4	G max	H1	H2	H3	N1	N2	R	S
	Flange types																	
	01, 05, 11, 12					11	01 12	01	11 12	05	05	12	11	11	11	12	11 12	11
10	90	60	14	4	M12	17.2	18.0	14	16	16	-	22	35	6	28	30	4	1.8
15	95	65	14	4	M12	21.3	22.0	14	16	16	-	22	38	6	32	35	4	2.0
20	105	75	14	4	M12	26.9	27.5	16	18	18	-	26	40	6	40	45	4	2.3
25	115	85	14	4	M12	33.7	34.5	16	18	18	-	28	40	6	46	52	4	2.6
32	140	100	18	4	M16	42.4	43.5	18	18	18	-	30	42	6	56	60	6	2.6
40	150	110	18	4	M16	48.3	49.5	18	18	18	-	32	45	7	64	70	6	2.6
50	165	125	18	4	M16	60.3	61.5	20	20	20	-	34	48	8	75	84	6	2.9
65	185	145	18	8	M16	76.1	77.5	22	22	22	55	38	52	10	90	104	6	2.9
80	200	160	18	8	M16	88.9	90.5	24	24	24	70	40	58	12	105	118	8	3.2
100	235	190	22	8	M20	114.3	116.0	26	24	24	90	44	65	12	134	145	8	3.6
125	270	220	26	8	M24	139.7	141.5	28	26	26	115	48	68	12	162	170	8	4.0
150	300	250	26	8	M24	168.3	170.5	30	28	28	140	52	75	12	192	200	10	4.5
200	360	310	26	12	M24	219.1	221.5	32	30	30	190	52	80	16	244	256	10	6.3
250	425	370	30	12	M27	273.5	276.5	35	32	32	235	60	88	18	298	310	12	7.1
300	485	430	30	16	M27	323.9	327.5	38	34	34	285	67	92	18	352	364	12	8.0
350	555	490	33	16	M30	355.6	359.5	42	38	38	332	72	100	20	398	418	12	8.0
400	620	550	36	16	M33	406.4	411.0	46	40	40	380	78	110	20	452	472	12	8.8
450	670	600	36	20	M33	457.0	462.0	50	46	46	425	84	110	20	500	520	12	8.8
500	730	660	36	20	M33	508.0	513.5	56	48	48	475	90	125	20	558	580	12	10.0
600	845	770	39	20	M36	610.0	616.5	68	58	58	575	100	125	20	660	684	12	11.0

Note: Dimensions N1 and N2 are measured at the intersection of the hub draft angle and the back face of the flange.

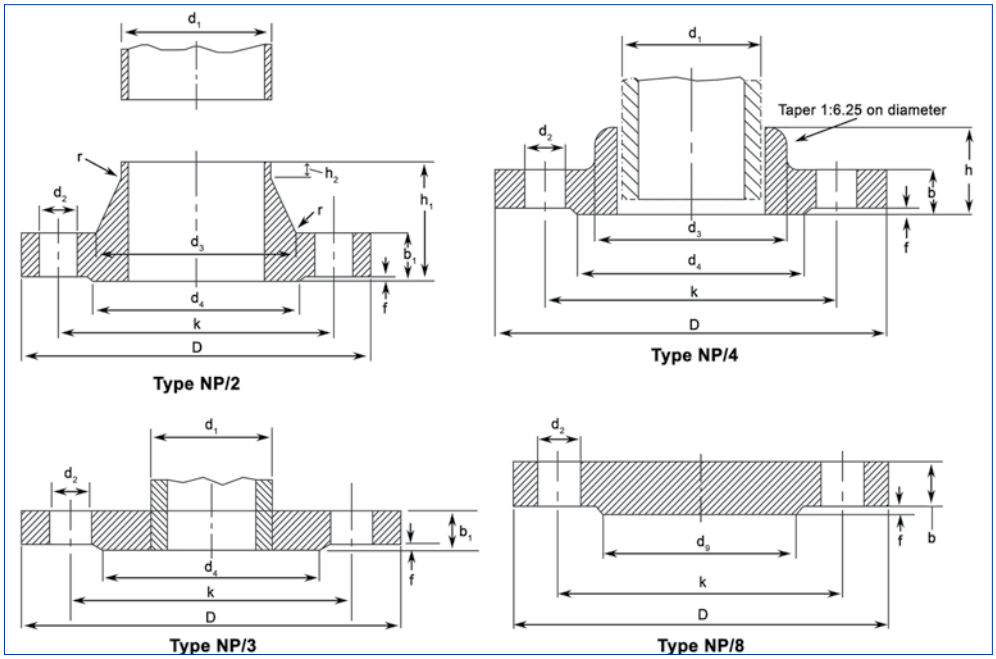
EN 1092-1 PN40 Flanges

Nominal diameter (DN)	Mating dimensions					Outside diameter of neck	Bore diameters	Flange thickness			Diameter of shoulder	Length			Neck diameters		Corner radius	Neck thickness (preferred value)
	Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts														
	D	K	L	No	Size	A	B1	C1	C2	C4	G max	H1	H2	H3	N1	N2	R	S
	Flange types																	
	01, 05, 11, 12					11	01 12	01	11 12	05	05	12	11	11	11	12	11 12	11
10	90	60	14	4	M12	17.2	18.0	14	16	16	-	22	35	6	28	30	4	1.8
15	95	65	14	4	M12	21.3	22.0	14	16	16	-	22	38	6	32	35	4	2.0
20	105	75	14	4	M12	26.9	27.5	16	18	18	-	26	40	6	40	45	4	2.3
25	115	85	14	4	M12	33.7	34.5	16	18	18	-	28	40	6	46	52	4	2.6
32	140	100	18	4	M16	42.4	43.5	18	18	18	-	30	42	6	56	60	6	2.6
40	150	110	18	4	M16	48.3	49.5	18	18	18	-	32	45	7	64	70	6	2.6
50	165	125	18	4	M16	60.3	61.5	20	20	20	-	34	48	8	75	84	6	2.9
65	185	145	18	8	M16	76.1	77.5	22	22	22	55	38	52	10	90	104	6	2.9
80	200	160	18	8	M16	88.9	90.5	24	24	24	70	40	58	12	105	118	8	3.2
100	235	190	22	8	M20	114.3	116.0	26	24	24	90	44	65	12	134	145	8	3.6
125	270	220	26	8	M24	139.7	141.5	28	26	26	115	48	68	12	162	170	8	4.0
150	300	250	26	8	M24	168.3	170.5	30	28	28	140	52	75	12	192	200	10	4.5
200	375	320	30	12	M27	219.1	221.5	36	34	36	190	52	88	16	244	260	10	6.3
250	450	385	33	12	M30	273.0	276.5	42	38	38	235	60	105	18	306	312	12	7.1
300	515	450	33	16	M30	323.9	327.5	48	42	42	285	67	115	18	362	380	12	8.0
350	580	510	36	16	M33	355.6	359.5	54	46	46	330	72	125	20	408	424	12	8.8
400	660	585	39	16	M36	406.4	411.0	60	50	50	380	78	135	20	462	478	12	11.0
450	685	610	39	20	M36	457.0	462.0	66	57	57	425	84	135	20	500	522	12	12.5
500	755	670	42	20	M39	508.0	513.5	72	57	57	475	90	140	20	562	576	12	14.2
600	890	795	48	20	M45	610.0	616.5	84	72	72	575	100	150	20	666	686	12	16.0

Note: Dimensions N1 and N2 are measured at the intersection of the hub draft angle and the back face of the flange.

STAINLESS STEEL FLANGES

BS 4504 Flanges



NP = Nominal Pressure 6, 10, 16, 25, 40

Nominal pressure 6 bar (1 bar = 10^5 N/m^2)																Description	
Nom. Size	Pipe OD	Flange					Raised face		Bolting	Drilling			Neck			Spigot	Boss
	d_1	D	b	b_1	h	h_1	d_4	f		No.	d_2	k	d_3	h_2 ≈	r	d_9	d_3
10	17.2	75	12	12	20	28	35	2	M10	4	11	50	26	6	4	-	25
15	21.3	80	12	12	20	30	40	2	M10	4	11	55	30	6	4	-	30
20	26.9	90	14	14	24	32	50	2	M10	4	11	65	38	6	4	-	40
25	33.7	100	14	14	24	35	60	2	M10	4	11	75	42	6	4	-	50
32	42.4	120	14	16	26	35	70	2	M12	4	14	90	55	6	6	-	60
40	48.3	130	14	16	26	38	80	3	M12	4	14	100	62	7	6	-	70
50	60.3	140	14	16	28	38	90	3	M12	4	14	110	74	8	6	-	80
65	73.0	160	14	16	32	38	110	3	M12	4	14	130	88	9	6	55	100
80	88.9	190	16	18	34	42	128	3	M16	4	18	150	102	10	8	70	110
100	114.3	210	16	18	40	45	148	3	M16	4	18	170	130	10	8	90	130
125	141.3	240	18	20	44	48	178	3	M16	8	18	200	155	10	8	115	160
150	168.3	265	18	20	44	48	202	3	M16	8	18	225	184	12	10	140	185
200	219.1	320	20	22	44	55	258	3	M16	8	18	280	236	15	10	190	-
250	273.0	375	22	24	44	60	312	3	M16	12	18	335	290	15	12	237	-
300	323.9	440	22	24	44	62	365	4	M20	12	22	395	342	15	12	285	-
350	355.6	490	22	26	-	62	415	4	M20	12	22	445	385	15	12	332	-
400	406.4	540	22	28	-	65	465	4	M20	16	22	495	438	15	12	380	-
450	457.2	595	24	30	-	65	520	4	M20	16	22	550	492	15	12	428	-
500	508.0	645	24	30	-	68	570	4	M20	20	22	600	538	15	12	475	-
600	609.6	755	24	32	-	70	670	5	M24	20	26	705	640	16	12	-	-

BS 4504 Flanges *cont'd...*

Nominal pressure 10 bar (1 bar = 10^5 N/m^2) Note: For nominal sizes 10 to 175 use Table 16																Description	
Nom. Size	Pipe OD	Flange					Raised face		Bolting	Drilling			Neck			Spigot	Boss
	d_1	D	b	b_1	h	h_1	d_4	f		No.	d_2	k	d_3	h_2 ≈	r	d_9	d_3
200	219.1	340	24	24	44	62	268	3	M20	8	22	295	235	16	10	190	-
250	273.0	395	26	26	46	68	320	3	M20	12	22	350	292	16	12	237	-
300	323.9	445	26	26	46	68	370	4	M20	12	22	400	344	16	12	285	-
350	355.6	505	26	28	-	68	430	4	M20	16	22	460	385	16	12	332	-
400	406.4	565	26	32	-	72	482	4	M24	16	26	515	440	16	12	380	-
450	457.2	615	28	36	-	72	532	4	M24	20	26	565	492	16	12	428	-
500	508.0	670	28	38	-	75	585	4	M24	20	26	620	542	16	12	-	-
600	609.6	780	28	42	-	80	685	5	M27	20	30	725	642	18	12	-	-

Nominal pressure 16 bar (1 bar = 10^5 N/m^2)																Description	
Nom. Size	Pipe OD	Flange					Raised face		Bolting	Drilling			Neck			Spigot	Boss
	d_1	D	b	b_1	h	h_1	d_4	f		No.	d_2	k	d_3	h_2 ≈	r	d_9	d_3
10	17.2	90	14	14	20	35	40	2	M12	4	14	60	28	6	4	-	30
15	21.3	95	14	14	20	35	45	2	M12	4	14	65	32	6	4	-	35
20	26.9	105	16	16	24	38	58	2	M12	4	14	75	40	6	4	-	45
25	33.7	115	16	16	24	38	68	2	M12	4	14	85	46	6	4	-	52
32	42.4	140	16	16	26	40	78	2	M16	4	18	100	56	6	6	-	60
40	48.3	150	16	16	26	42	88	3	M16	4	18	110	64	7	6	-	70
50	60.3	165	18	18	28	45	102	3	M16	4	18	125	75	8	6	-	85
65	73.0	185	18	18	32	45	122	3	M16	4	18	145	90	10	6	55	105
80	88.9	200	20	20	34	50	138	3	M16	8	18	160	105	10	8	70	118
100	114.3	220	20	20	40	52	158	3	M16	8	18	180	131	12	8	90	140
125	141.3	250	22	22	44	55	188	3	M16	8	18	210	156	12	8	115	168
150	168.3	285	22	22	44	55	212	3	M20	8	22	240	184	12	10	140	195
175	193.7	315	24	24	-	60	242	3	M20	8	22	270	210	12	10	165	-
200	219.1	340	24	24	44	62	268	3	M20	12	22	295	235	16	10	190	-
250	273.0	405	26	26	46	70	320	3	M24	12	26	355	292	16	12	237	-
300	323.9	460	28	28	46	78	378	4	M24	12	26	410	344	16	12	285	-
350	355.6	520	30	32	-	82	438	4	M24	16	26	470	390	16	12	332	-
400	406.4	580	32	36	-	85	490	4	M27	16	30	525	445	16	12	380	-
450	457.2	640	34	40	-	87	550	4	M27	20	30	585	496	16	12	428	-
500	508.0	715	34	44	-	90	610	4	M30	20	33	650	548	16	12	475	-
600	609.6	840	36	52	-	95	725	5	M33	20	36	770	652	18	12	-	-

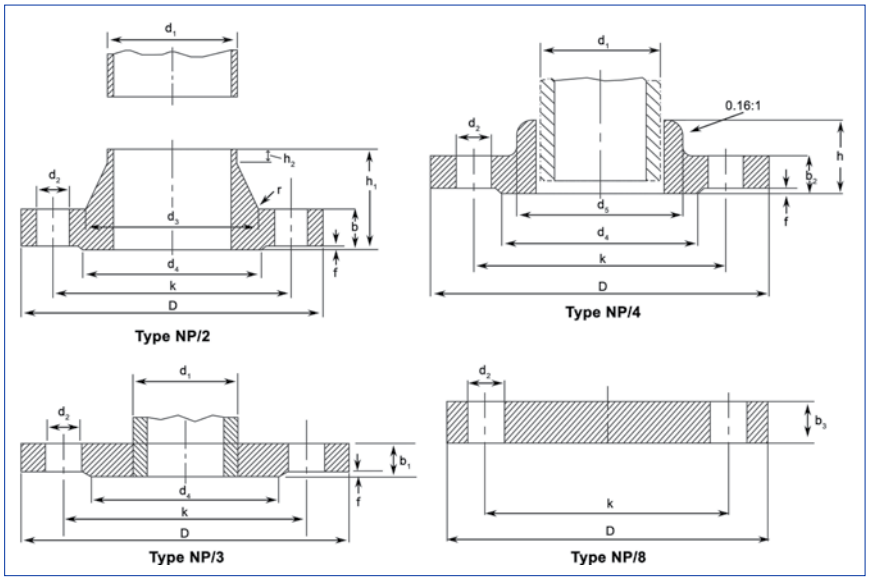
BS 4504 Flanges *cont'd...*

Nominal pressure 25 bar (1 bar = 10^5 N/m^2) Note: For nominal sizes 10 mm to 150 mm use Table 40																Description	
Nom. Size	Pipe OD	Flange					Raised face		Bolting	Drilling			Neck			Spigot	Boss
	d_1	D	b	b_1	h	h_1	d_4	f		No.	d_2	k	d_3	h_2 ≈	r	d_9	d_3
175	193.7	330	28	26	-	75	248	3	M24	12	26	280	218	15	10	165	-
200	219.1	360	30	28	52	80	278	3	M24	12	26	310	244	16	10	190	-
250	273.0	425	32	32	60	88	335	3	M27	12	30	370	298	18	12	237	-
300	323.9	485	34	38	67	92	395	4	M27	16	30	430	352	18	12	285	-
350	355.6	555	38	42	-	100	450	4	M30	16	33	490	398	20	12	332	-
400	406.4	620	40	46	-	110	505	4	M33	16	36	550	452	20	12	380	-
450	457.2	670	42	52	-	110	555	4	M33	20	36	600	505	20	12	425	-
500	508.0	730	44	58	-	125	615	4	M33	20	36	660	558	20	12	475	-
600	609.6	845	46	66	-	125	720	5	M36	20	39	770	660	20	12	-	-

Nominal pressure 40 bar (1 bar = 10^5 N/m^2)																Description	
Nom. Size	Pipe OD	Flange					Raised face		Bolting	Drilling			Neck			Spigot	Boss
	d_1	D	b	b_1	h	h_1	d_4	f		No.	d_2	k	d_3	h_2 ≈	r	d_9	d_3
10	17.2	90	16	16	22	35	40	2	M12	4	14	60	28	6	4	-	30
15	21.3	95	16	16	22	38	45	2	M12	4	14	65	32	6	4	-	35
20	26.9	105	18	18	26	40	58	2	M12	4	14	75	40	6	4	-	45
25	33.7	115	18	18	28	40	68	2	M12	4	14	85	46	6	4	-	52
32	42.4	140	18	18	30	42	78	2	M16	4	18	100	55	6	6	-	60
40	48.3	150	18	20	32	45	88	3	M16	4	18	110	64	7	6	-	70
50	60.3	165	20	20	34	48	102	3	M16	4	18	125	75	8	6	-	85
65	73.0	185	22	22	38	52	122	3	M16	8	18	145	90	10	6	55	105
80	88.9	200	24	24	40	58	138	3	M16	8	18	160	105	12	8	70	118
100	114.3	235	24	26	44	65	162	3	M20	8	22	190	134	12	8	90	145
125	141.3	270	26	28	48	68	188	3	M24	8	26	220	162	12	8	115	170
150	168.3	300	28	30	52	75	218	3	M24	8	26	250	192	12	10	140	200
175	193.7	350	32	32	-	82	260	3	M27	12	30	295	218	15	10	165	-
200	219.1	375	34	34	52	88	285	3	M27	12	30	320	244	16	10	190	-
250	273.0	450	38	42	60	105	345	3	M30	12	33	385	306	18	12	237	-
300	323.9	515	42	50	67	115	410	4	M30	16	33	450	362	18	12	285	-
350	355.6	580	46	56	-	125	465	4	M33	16	36	510	408	20	12	332	-
400	406.4	660	50	64	-	135	535	4	M36	16	39	585	462	20	12	380	-
500	508.0	755	52	72	-	140	615	4	M39	20	42	670	562	20	12	475	-

STAINLESS STEEL FLANGES

SABS 1123/SANS 1123 Flanges



NP = Nominal Pressure 600kPa, 1000kPa, 1600kPa, 2500kPa, 4000kPa

Nominal pressure 600 kPa												600/2 = Table 4 600/3 = Table 5				600/4 = Table 6 600/8 = Table 8			
Nom. Size	Pipe OD	Flange							Raised face		Bolting	Drilling			Neck			Boss
	d_1	D	b	b_1	b_2	b_3	h	h_1	d_4	f		No.	d_2	k	d_3	h_2	r	d_5
10	17.2	75	8	10	8	10	16	28	35	2	M10	4	11	50	26	6	4	25
15	21.3	80	8	10	8	10	16	30	40	2	M10	4	11	55	30	6	4	30
20	26.9	90	8	10	8	10	18	32	50	2	M10	4	11	65	38	6	4	40
25	33.7	100	8	10	8	10	18	35	60	2	M10	4	11	75	42	6	4	50
32	42.4	120	8	10	8	10	20	35	70	2	M12	4	14	90	55	6	6	60
40	48.3	130	8	10	8	10	20	38	80	3	M12	4	14	100	62	7	6	70
50	60.3	140	8	10	8	10	22	38	90	3	M12	4	14	110	74	8	6	80
65	73.0	160	8	10	8	10	26	38	110	3	M12	4	14	130	88	9	6	100
80	88.9	190	10	10	10	10	28	42	128	3	M16	4	18	150	102	10	8	110
100	114.3	210	10	10	10	10	34	45	148	3	M16	4	18	170	130	10	8	130
*125	141.3	240	13	12	13	12	39	48	178	3	M16	8	18	200	155	10	8	160
150	168.3	265	13	12	13	12	39	48	202	3	M16	8	18	225	184	12	10	185
*175	193.7	295	13	14	-	14	-	52	230	3	M16	8	18	255	210	12	10	-
200	219.1	320	13	14	-	14	-	55	258	3	M16	8	18	280	236	15	10	-
*225	244.5	345	16	16	-	16	-	58	285	3	M16	8	18	305	264	15	12	-
250	273.0	375	16	16	-	16	-	60	312	3	M16	12	18	335	290	15	12	-
300	323.9	440	20	20	-	20	-	62	365	4	M20	12	22	395	342	15	12	-
350	355.6	490	22	22	-	22	-	62	415	4	M20	12	22	445	385	15	12	-
400	406.4	540	22	22	-	22	-	65	465	4	M20	16	22	495	438	15	12	-
450	457.2	595	24	25	-	25	-	65	520	4	M20	16	22	550	492	15	12	-
500	508.0	645	24	25	-	25	-	68	570	4	M20	20	22	600	538	15	12	-
550	559.0	705	24	28	-	28	-	68	620	5	M24	20	26	655	590	16	12	-
600	609.6	755	24	30	-	30	-	70	670	5	M24	20	26	705	640	16	12	-

* Non-preferred size

SABS 1123/SANS 1123 Flanges *cont'd...*

Nominal pressure 1000 kPa											1000/2 = Table 9 1000/3 = Table 10				1000/4 = Table 11 1000/8 = Table 12			
Nom. Size	Pipe OD	Flange							Raised face		Bolting	Drilling			Neck			Boss
	d_1	D	b	b_1	b_2	b_3	h	h_1	d_4	f		No.	d_2	k	d_3	h_2	r	d_5
10	17.2	90	8	10	8	10	14	35	40	2	M12	4	14	60	28	6	4	30
15	21.3	95	8	10	8	10	14	35	45	2	M12	4	14	65	32	6	4	35
20	26.9	105	8	10	8	10	16	38	58	2	M12	4	14	75	40	6	4	45
25	33.7	115	8	10	8	10	16	38	68	2	M12	4	14	85	46	6	4	52
32	42.4	140	10	10	10	10	20	40	78	2	M16	4	18	100	56	6	6	60
40	48.3	150	10	10	10	10	20	42	88	3	M16	4	18	110	64	7	6	70
50	60.3	165	12	10	10	12	20	45	102	3	M16	4	18	125	75	8	6	85
65	73.0	185	12	12	12	12	26	45	122	3	M16	4	18	145	90	10	6	105
80	88.9	200	14	12	12	14	26	50	138	3	M16	8	18	160	105	10	8	118
100	114.3	220	14	12	12	14	32	52	158	3	M16	8	18	180	131	12	8	140
*125	141.3	250	16	14	14	16	36	55	188	3	M16	8	18	210	156	12	8	168
150	168.3	285	18	16	16	18	38	55	212	3	M20	8	22	240	184	12	10	195
*175	193.7	315	18	16	-	18	-	60	242	3	M20	8	22	270	210	12	10	-
200	219.1	340	18	18	-	18	-	62	268	3	M20	8	22	295	235	16	10	-
*225	244.5	370	18	18	-	18	-	62	290	3	M20	8	22	325	265	16	10	-
250	273.0	395	20	20	-	20	-	68	320	3	M20	12	22	350	292	16	12	-
300	323.9	445	22	22	-	22	-	68	370	4	M20	12	22	400	344	16	12	-
350	355.6	505	26	25	-	25	-	68	430	4	M20	16	22	460	385	16	12	-
400	406.4	565	26	25	-	25	-	72	482	4	M24	16	26	515	400	16	12	-
450	457.2	615	28	30	-	30	-	72	532	4	M24	20	26	565	492	16	12	-
500	508.0	670	28	32	-	32	-	75	585	4	M24	20	26	620	542	16	12	-
550	559.0	730	28	35	-	35	-	80	635	5	M24	20	26	675	592	18	12	-
600	609.6	780	28	38	-	38	-	80	685	5	M24	20	26	725	642	18	12	-

* Non-preferred size

SABS 1123/SANS 1123 Flanges *cont'd...*

Nominal pressure 1600 kPa												1600/2 = Table 14 1600/3 = Table 15				1600/4 = Table 16 1600/8 = Table 18			
Nom. Size	Pipe OD	Flange							Raised face		Bolting	Drilling			Neck			Boss
	d_1	D	b	b_1	b_2	b_3	h	h_1	d_4	f		No.	d_2	k	d_3	h_2	r	d_5
10	17.2	90	8	10	8	10	14	35	40	2	M12	4	14	60	28	6	4	30
15	21.3	95	8	10	8	10	14	35	45	2	M12	4	14	65	32	6	4	35
20	26.9	105	8	10	8	10	16	38	58	2	M12	4	14	75	40	6	4	45
25	33.7	115	8	10	8	10	16	38	68	2	M12	4	14	85	46	6	4	52
32	42.4	140	10	10	10	10	20	40	78	2	M16	4	18	100	56	6	6	60
40	48.3	150	10	10	10	10	20	42	88	3	M16	4	18	110	64	7	6	70
50	60.3	165	12	12	12	12	22	45	102	3	M16	4	18	125	75	8	6	85
65	73.0	185	12	12	12	12	26	45	122	3	M16	4	18	145	90	10	6	105
80	88.9	200	14	14	14	14	28	50	138	3	M16	8	18	160	105	10	8	118
100	114.3	220	14	14	14	14	34	52	158	3	M16	8	18	180	131	12	8	140
*125	141.3	250	16	16	16	16	38	55	188	3	M16	8	18	210	156	12	8	168
150	168.3	285	18	18	18	18	40	55	212	3	M20	8	22	240	184	12	10	195
*175	193.7	315	20	20	-	20	-	60	242	3	M20	8	22	270	210	12	10	-
200	219.1	340	22	22	-	22	-	62	268	3	M20	12	22	295	235	16	10	-
*225	244.5	370	24	22	-	22	-	66	294	3	M20	12	22	325	265	16	10	-
250	273.0	405	24	25	-	25	-	70	320	3	M24	12	26	355	292	16	12	-
300	323.9	460	28	28	-	28	-	78	378	4	M24	12	26	410	344	16	12	-
350	355.6	520	30	30	-	30	-	82	438	4	M24	16	26	470	390	16	12	-
400	406.4	580	32	35	-	35	-	85	490	4	M24	16	26	525	445	16	12	-
450	457.2	640	34	40	-	40	-	87	550	4	M24	20	26	585	496	16	12	-
500	508.0	715	34	40	-	40	-	90	610	4	M30	20	33	650	548	16	12	-
550	559.0	775	36	-	-	-	-	95	670	5	M30	20	33	710	600	18	12	-
600	609.6	840	36	50	-	-	-	95	725	5	M30	20	33	770	652	18	12	-

* Non-preferred size

SABS 1123/SANS 1123 Flanges *cont'd...*

Nominal pressure 2500 kPa												2500/2 = Table 19 2500/3 = Table 20				2500/4 = Table 21 2500/8 = Table 23			
Nom. Size	Pipe OD	Flange							Raised face		Bolting	Drilling			Neck			Boss
	d_1	D	b	b_1	b_2	b_3	h	h_1	d_4	f		No.	d_2	k	d_3	h_2	r	d_5
10	17.2	90	12	12	10	12	16	35	40	2	M12	4	14	60	28	6	4	30
15	21.3	95	14	14	11	14	17	38	45	2	M12	4	14	65	32	6	4	35
20	26.9	105	14	14	11	14	19	40	58	2	M12	4	14	75	40	6	4	45
25	33.7	115	16	16	12	16	22	40	68	2	M12	4	14	85	46	6	4	52
32	42.4	140	18	18	14	18	26	42	78	2	M16	4	18	100	55	6	6	60
40	48.3	150	18	20	14	20	28	45	88	3	M16	4	18	110	64	7	6	70
50	60.3	165	20	20	17	20	31	48	102	3	M16	4	18	125	75	8	6	85
65	73.0	185	22	22	17	22	33	52	122	3	M16	8	18	145	90	10	6	105
80	88.9	200	24	22	18	22	34	58	138	3	M16	8	18	160	105	12	8	118
100	114.3	235	24	25	21	25	41	65	162	3	M20	8	22	190	134	12	8	145
*125	141.3	270	26	28	24	28	46	68	188	3	M24	8	26	220	162	12	8	170
150	168.3	300	28	30	24	30	48	75	218	3	M24	8	26	250	192	12	10	200
*175	193.7	330	30	30	-	25	-	75	248	3	M24	12	26	280	218	15	10	-
200	219.1	360	30	30	-	30	-	80	278	3	M24	12	26	310	244	16	10	-
*225	244.5	395	30	30	-	30	-	84	306	3	M24	12	26	340	270	16	10	-
250	273.0	425	30	30	-	30	-	88	335	3	M24	12	26	370	298	18	12	-
300	323.9	485	34	32	-	32	-	92	395	4	M24	16	26	430	352	18	12	-
350	355.6	555	38	35	-	35	-	100	450	4	M30	16	33	490	398	20	12	-
400	406.5	620	40	40	-	40	-	110	505	4	M30	16	33	550	452	20	12	-
450	457.2	670	42	45	-	45	-	110	555	4	M30	20	33	600	505	20	12	-
500	508.0	730	44	50	-	50	-	125	615	4	M30	20	33	660	558	20	12	-
550	559.0	785	-	55	-	-	-	-	670	5	M36	20	39	710	-	-	-	-
600	609.6	845	46	60	-	-	-	125	720	5	M36	20	39	770	660	20	12	-

* Non-preferred size

SABS 1123/SANS 1123 Flanges *cont'd...*

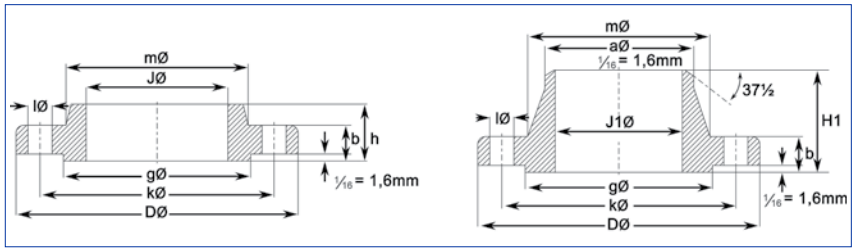
Nominal pressure 4000 kPa												4000/2 = Table 24 4000/3 = Table 25				4000/4 = Table 26 4000/8 = Table 28			
Nom. Size	Pipe OD	Flange							Raised face		Bolting	Drilling			Neck			Boss
	d_1	D	b	b_1	b_2	b_3	h	h_1	d_4	f		No.	d_2	k	d_3	h_2	r	d_5
10	17.2	90	12	12	12	12	18	35	40	2	M12	4	14	60	28	6	4	30
15	21.3	95	14	14	14	14	20	38	45	2	M12	4	14	65	32	6	4	35
20	26.9	105	14	14	14	14	22	40	58	2	M12	4	14	75	40	6	4	45
25	33.7	115	16	16	16	16	26	40	68	2	M12	4	14	85	46	6	4	52
32	42.4	140	18	18	18	18	30	42	78	2	M16	4	18	100	55	6	6	60
40	48.3	150	18	20	18	20	32	45	88	3	M16	4	18	110	64	7	6	70
50	60.3	165	20	20	20	20	34	48	102	3	M16	4	18	125	75	8	6	85
65	73.0	185	22	22	22	22	38	52	122	3	M16	8	18	145	90	10	6	105
80	88.9	200	24	22	24	22	40	58	138	3	M16	8	18	160	105	12	8	118
100	114.3	235	24	25	24	25	44	65	162	3	M20	8	22	190	134	12	8	145
*125	141.3	270	26	28	26	28	48	68	188	3	M24	8	26	220	162	12	8	170
150	168.3	300	28	30	28	30	52	75	218	3	M24	8	26	250	192	12	10	200
*175	193.7	350	32	32	-	32	-	82	260	3	M24	12	26	295	218	15	10	-
200	219.1	375	34	32	-	32	-	88	285	3	M24	12	26	320	244	16	10	-
*225	244.5	420	36	35	-	35	-	100	315	3	M30	12	33	355	275	18	12	-
250	273.0	450	38	38	-	38	-	105	345	3	M30	12	33	385	306	18	12	-
300	323.9	515	42	40	-	40	-	115	410	4	M30	16	33	450	362	18	12	-
350	355.6	580	46	45	-	45	-	125	465	4	M30	16	33	510	408	20	12	-
400	406.4	660	50	50	-	50	-	135	535	4	M36	16	39	585	462	20	12	-
450	457.2	685	52	60	-	60	-	140	575	4	M36	20	39	610	510	20	12	-
500	508.0	755	52	70	-	70	-	140	615	4	M36	20	39	670	562	20	12	-
550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Non-preferred size

STAINLESS STEEL FLANGES

ASA Specification - ANSI (ASA) B 16.5

150 lbs slip-on flanges and welding neck flanges

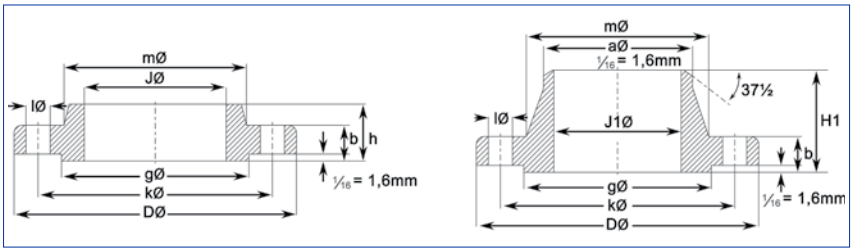


Pipe		Flange						Hub			Drilling Template			Approx. Weight ≈ Pounds	
Nom. Size NW	OD in. mm	D in. mm	J in. mm	J_1 in. mm	b in. mm	h in. mm	H_1 in. mm	m in. mm	a in. mm	g in. mm	No.	I in. mm	k in. mm	S/O kilo	W/N
½"	0.84 21.3	3 ½ 88.9	0.88 22.3	0.62 15.7	7/16 11.1	5/8 15.9	1 7/8 47.6	1 3/16 30.2	0.84 21.3	1 3/8 34.9	4	5/8 15.9	2 3/8 60.3	1 0.5	2 0.9
¾"	1.05 26.7	3 7/8 98.4	1.09 27.7	0.82 20.8	½ 12.7	5/8 15.9	2 1/16 52.4	1 ½ 38.1	1.05 26.7	1 11/16 42.9	4	5/8 15.9	2 ¾ 69.8	2 0.9	2 0.9
1"	1.315 33.4	4 ¼ 107.9	1.36 34.5	1.05 26.7	9/16 14.3	11/16 17.5	2 3/16 55.6	1 15/16 49.2	1.32 33.5	2 50.8	4	5/8 15.9	3 1/8 79.4	2 0.9	3 1.4
1 ¼"	1.66 42.2	4 5/8 117.5	1.70 43.2	1.38 35.1	5/8 15.9	13/16 20.6	2 ¼ 57.1	2 5/16 58.7	1.66 42.2	2 ½ 63.5	4	5/8 15.9	3 ½ 88.9	3 1.4	3 1.4
1 ½"	1.90 48.3	5 127	1.95 49.5	1.61 40.9	11/16 17.5	7/8 22.2	2 7/16 61.9	2 9/16 65.1	1.90 48.3	2 7/8 73.0	4	5/8 15.9	3 7/8 98.4	3 1.4	4 1.8
2"	2.375 60.3	6 152.4	2.44 62.0	2.07 52.6	¾ 19.0	1 25.4	2 ½ 63.5	3 1/16 77.8	2.38 60.4	3 5/8 92.1	4	¾ 19.0	4 ¾ 120.6	5 2.3	6 2.7
2 ½"	2.875 73.0	7 177.8	2.94 74.7	2.47 62.7	7/8 22.2	1 1/8 28.6	2 ¾ 69.8	3 9/16 90.5	2.88 73.1	4 1/8 104.8	4	¾ 19.0	5 ½ 139.7	7 3.2	8 3.6
3"	3.50 88.9	7 ½ 190.5	3.57 90.7	3.07 78.0	15/16 23.8	1 3/16 30.2	2 ¾ 69.8	4 ¼ 107.9	3.50 88.9	5 127	4	¾ 19.0	6 152.4	8 3.6	10 4.5
3 ½"	4.00 101.6	8 ½ 215.9	4.07 103.4	3.55 90.2	15/16 23.8	1 ¼ 31.7	2 13/16 71.4	4 13/16 122.2	4.00 101.6	5 ½ 139.7	8	¾ 19.0	7 177.8	11 5.0	12 5.4
4"	4.50 114.3	9 228.6	4.57 116.1	4.03 102.4	15/16 23.8	1 5/16 33.3	3 76.2	5 5/16 134.9	4.50 114.3	6 3/16 157.2	8	¾ 19.0	7 ½ 190.5	13 5.9	15 6.8
5"	5.563 141.3	10 254	5.66 143.8	5.05 128.3	15/16 23.8	1 7/16 36.5	3 ½ 88.9	6 7/16 163.5	5.56 141.2	7 5/16 185.7	8	7/8 22.2	8 ½ 215.9	15 6.8	19 8.6
6"	6.625 168.3	11 279.4	6.72 170.7	6.07 154.2	1 25.4	1 9/16 39.7	3 ½ 88.9	7 9/16 192.1	6.63 168.4	8 ½ 215.9	8	7/8 22.2	9 ½ 241.3	19 8.6	24 10.9
8"	8.625 219.1	13 ½ 342.9	8.72 221.5	7.98 202.7	1 1/8 28.6	1 ¾ 44.4	4 101.6	9 11/16 246.1	8.63 219.2	10 5/8 269.9	8	7/8 22.2	11 ¾ 298.4	30 13.6	39 17.7
10"	10.75 273	16 406.4	10.88 276.3	10.02 254.5	1 3/16 30.2	1 15/16 49.2	4 101.6	12 304.8	10.75 273	12 ¾ 323.8	12	1 25.4	14 ½ 361.9	43 19.5	52 23.6
12"	12.75 323.8	19 482.6	12.88 327.1	12.00 304.8	1 ¼ 31.7	2 3/16 55.6	4 ½ 114.3	14 3/8 365.1	12.75 323.8	15 381	12	1 25.4	17 431.8	64 29.0	80 36.3
14"	14.0 355.6	21 533.4	14.14 359.1	To be specified by purchaser	1 3/8 34.9	2 ¼ 57.1	5 127	15 ¾ 400	14.00 355.6	16 ¼ 412.9	12	1 1/8 28.6	18 ¾ 476.2	90 41.0	110 50.0
16"	16.0 406.4	23 ½ 596.9	16.16 410.5		1 7/16 36.5	2 ½ 63.5	5 127	18 457.2	16.00 406.4	18 ½ 469.9	16	1 1/8 28.6	21 ¼ 539.7	98 44.5	140 64.0
18"	18.0 457.2	25 635	18.18 461.8		1 9/16 39.7	2 11/16 68.3	5 ½ 139.7	19 7/8 504.8	18.00 457.2	21 533.4	16	1 ¼ 31.7	22 ¾ 577.8	130 59.0	150 68.0
20"	20.0 508	27 ½ 698.5	20.20 513.1		1 11/16 42.9	2 7/8 73.0	5 11/16 144.5	22 558.8	20.00 508	23 584.2	20	1 ¼ 31.7	25 635	165 75.0	180 81.6
24"	24.0 609.6	32 812.8	24.25 615.9		1 7/8 47.6	3 ¼ 82.5	6 152.4	26 1/8 663.6	24.00 609.6	27 ¼ 692.1	20	1 3/8 34.9	29 ½ 749.3	220 99.8	260 118

STAINLESS STEEL FLANGES

ASA Specification - ANSI (ASA) B 16.5

300 lb slip-on flanges and welding neck flanges



Pipe		Flange						Hub			Drilling Template			Approx. Weight ≈ Pounds	
Nom. Size NW	OD in. mm	D in. mm	J in. mm	J1 in. mm	b in. mm	h in. mm	H1 in. mm	m in. mm	a in. mm	g in. mm	No.	I in. mm	k in. mm	S/O	kilo W/N
½"	0.84 21.3	3 ¾ 95.2	0.88 22.3	0.62 15.7	9/16 14.3	⅞ 22.2	2 1/16 52.4	0.84 21.3	1 ½ 38.1	1 ⅜ 34.9	4	⅝ 15.9	2 ⅝ 66.7	2 0.9	2 0.9
¾"	1.05 26.7	4 ⅝ 117.5	1.09 27.7	0.82 20.8	⅝ 15.9	1 25.4	2 ¼ 57.1	1.05 26.7	1 ⅞ 47.6	1 11/16 42.9	4	¾ 19.0	3 ¼ 82.5	3 1.4	3 1.4
1"	1.315 33.4	4 ⅞ 123.8	1.36 34.5	1.05 26.7	1 1/16 17.5	1 1/16 27.0	2 7/16 61.9	1.32 33.5	2 ⅛ 54.0	2 50.8	4	¾ 19.0	3 ½ 88.9	3 1.4	4 1.8
1 ¼"	1.66 42.2	5 ¼ 133.3	1.70 43.2	1.38 35.1	¾ 19.0	1 1/16 27.0	2 9/16 65.1	1.66 42.2	2 ½ 63.5	2 ½ 63.5	4	¾ 19.0	3 ⅞ 98.4	4 1.8	5 2.3
1 ½"	1.90 48.3	6 ⅛ 155.6	1.95 49.5	1.61 40.9	13/16 20.6	1 3/16 30.2	2 11/16 68.3	1.90 48.3	2 ¾ 69.8	2 ⅞ 73.0	4	⅞ 22.2	4 ½ 114.3	6 2.7	7 3.2
2"	2.375 60.3	6 ½ 165.1	2.44 62.0	2.07 52.6	⅞ 22.2	1 5/16 33.3	2 ¾ 69.8	2.38 60.4	3 5/16 84.1	3 ⅝ 92.1	8	¾ 19.0	5 127	7 3.2	9 4.1
2 ½"	2.875 73.0	7 ½ 190.5	2.94 74.7	2.47 62.7	1 25.4	1 ½ 38.1	3 76.2	2.88 73.1	3 15/16 100	4 ⅛ 104.8	8	⅞ 22.2	5 ⅛ 149.2	10 4.5	12 5.4
3"	3.50 88.9	8 ¼ 209.5	3.57 90.7	3.07 78.0	1 ⅛ 28.6	1 11/16 42.9	3 ⅛ 79.4	3.50 88.9	4 ⅝ 117.5	5 127	8	⅞ 22.2	6 ⅝ 168.3	13 5.9	15 6.8
3 ½"	4.00 101.6	9 228.6	4.07 103.4	3.55 90.2	1 3/16 30.2	1 ¾ 44.4	3 3/16 81.0	4.00 101.6	5 ¼ 133.3	5 ½ 139.7	8	⅞ 22.2	7 ¼ 184.1	17 7.7	18 8.2
4"	4.50 114.3	10 254	4.57 116.1	4.03 102.4	1 ¼ 31.7	1 ⅞ 47.6	3 ⅜ 85.7	4.50 114.3	5 ¾ 146	6 3/16 157.2	8	⅞ 22.2	7 ⅞ 200	22 10.0	25 11.3
5"	5.563 141.3	11 279.4	5.66 143.8	5.05 128.3	1 ⅜ 34.9	2 50.8	3 ⅞ 98.4	5.56 141.2	7 177.8	7 5/16 185.7	8	⅞ 22.2	9 ¼ 234.9	28 12.7	32 14.5
6"	6.625 168.3	12 ½ 317.5	6.72 170.7	6.07 154.2	1 7/16 36.5	2 1/16 52.4	3 ⅞ 98.4	6.63 168.4	8 ⅛ 206.4	8 ½ 215.9	12	⅞ 22.2	10 ⅝ 269.9	39 17.7	42 19.0
8"	8.625 219.1	15 381	8.72 221.5	7.98 202.7	1 ⅝ 41.3	2 7/16 61.9	4 ⅜ 111.1	8.63 219.2	10 ¼ 260.3	10 ⅝ 269.9	12	1 25.4	13 330.2	58 26.3	67 30.4
10"	10.75 273	17 ½ 444.5	10.88 276.3	10.02 254.5	1 ⅞ 47.6	2 ⅝ 66.7	4 ⅝ 117.5	10.75 273	12 ⅝ 320.7	12 ¾ 323.8	16	1 ⅛ 28.6	15 ¼ 387.3	81 36.7	91 41.3
12"	12.75 323.8	20 ½ 520.7	12.88 327.1	12.00 304.8	2 50.8	2 ⅞ 73	5 ⅛ 130.2	12.75 323.8	14 ¾ 374.6	15 381	16	1 ¼ 31.7	17 ¾ 450.8	115 52.2	140 63.5
14"	14.0 355.6	23 584.2	14.14 359.1	To be specified by purchaser	2 ⅛ 54	3 76.2	5 ⅝ 142.9	14.00 355.6	16 ¾ 425.4	16 ¼ 412.7	20	1 ¼ 31.7	20 ¼ 514.3	165 74.8	180 81.6
16"	16.0 406.4	25 ½ 647.7	16.16 410.5		2 ¼ 57.1	3 ¼ 82.5	5 ¾ 146	16.00 406.4	19 482.6	18 ½ 469.9	20	1 ⅜ 34.9	22 ½ 571.5	190 86.2	250 113
18"	18.0 457.2	28 711.2	18.18 461.8		2 ⅜ 60.3	3 ½ 88.9	6 ¼ 158.7	18.00 457.2	21 533.4	21 533.4	24	1 ⅜ 34.9	24 ¾ 628.6	250 113	320 145
20"	20.0 508	30 ½ 774.7	20.20 513.1		2 ½ 63.5	3 ¾ 95.2	6 ⅜ 161.9	20.00 508	23 ⅛ 587.4	23 584.2	24	1 ⅜ 34.9	27 685.8	315 143	400 181
24"	24.0 609.6	36 914.4	24.25 615.9		2 ¾ 69.8	4 3/16 106.4	6 ⅝ 168.3	24.00 609.6	27 ⅝ 701.7	27 ¼ 692.1	24	1 ⅝ 41.3	32 812.8	475 215	580 263

STAINLESS STEEL FLANGES

BS 10/1962 - Dimensions, Mass and Maximum Pressure Ratings

Tables D and E

°C	-17.8 To 232.2	260	287.8	315.6	343.3	371.1	399	427	441	454	468	482	Max Hyd. Test Press
kPa 'D' 'E'	689.7 1379.4	655.2 1275.95	586.2 1172.5	551.7 1069	482.8 965.6	448.3 896.6	379.3 793.2	344.85 689.7	- -	- -	- -	- -	1034.6 2069.5

Pipe		Diameter of Flange		Bolt Circle Diameter		Diameter of Bolts		Number of Bolts		Thickness of Flange		Approximate Weight in kilos	
Nom Size (in.)	OD (mm)	D	E	D	E	D	E	D	E	D	E	D	E
½	21.3	95.2	95.2	66.7	66.7	12	12	4	4	4.76	6.35	0.2	0.4
¾	26.9	101.6	101.6	73.0	73.0	12	12	4	4	4.76	6.35	0.2	0.5
1	33.7	114.3	114.3	82.6	82.6	12	12	4	4	4.76	7.14	0.5	0.6
1 ¼	42.2	120.6	120.6	87.3	87.3	12	12	4	4	6.35	7.94	0.6	0.8
1 ½	48.3	133.4	133.4	98.4	98.4	12	12	4	4	6.35	8.73	0.7	0.9
2	60.3	152.4	152.4	114.3	114.3	16	16	4	4	7.94	9.53	1.0	1.4
2 ½	73.0	165.1	165.1	127.0	127.0	16	16	4	4	7.94	10.32	1.1	1.6
3	88.9	184.2	184.2	146.0	146.0	16	16	4	4	9.53	11.1	1.6	1.8
3 ½	101.6	203.2	203.2	165.1	165.1	16	16	4	8	9.53	11.91	1.8	2.0
4	114.3	215.9	215.9	177.8	177.8	16	16	4	8	9.53	12.7	2.0	2.5
5	141.3	254.0	254.0	209.6	209.6	16	16	8	8	12.7	14.3	3.5	4.0
6	168.3	279.4	279.4	235.0	235.0	16	20	8	8	12.7	17.5	4.0	5.5
8	219.1	336.6	336.6	292.1	292.1	16	20	8	8	12.7	19.0	5.0	8.0
10	273	406.4	406.4	355.6	355.6	20	20	8	12	15.9	22.2	9.0	12.0
12	323.8	457.2	457.2	406.4	406.4	20	22	12	12	19.0	25.4	11.0	16.0
14	355.6	527.0	527.0	469.9	469.9	22	22	12	12	22.2	28.6	15.0	21.0
16	406.4	577.85	577.85	520.7	520.7	22	22	12	12	22.2	31.75	17.0	23.0
18	457.2	641.3	641.3	584.2	584.2	22	22	12	16	25.4	34.9	25.0	39.0
20	508	704.8	704.8	641.3	641.3	22	22	16	16	28.6	38.1	33.0	42.0
24	609.6	825.5	825.5	755.6	755.6	24	30	16	16	31.75	47.6	45.0	66.0

STAINLESS STEEL FLANGES

BS 10/1962 - Dimensions, Mass and Maximum Pressure Ratings

Tables F and H

°C	-17.8 To 232.2	260	287.8	315.6	343.3	371.1	399	427	441	454	468	482	Max Hyd. Test Press
kPa 'F'	2069.1	1931.16	1758.74	1620.80	1482.86	1344.92	1172.49	1034.55	-	-	-	-	3103.65
'H'	3448.5	3207.1	2965.7	2724.3	2448.4	2207.0	1965.6	1724.2	1482.9	1241.5	1034.55	793.16	5172.75
Pipe	Diameter of Flange		Bolt Circle Diameter		Diameter of Bolts		Raised Face	Number of Bolts		Thickness of Flange		Approximate Weight in kilos	
Nom Size (in.)	F	H	F	H	F	H	H	F	H	F	H	F	H
½	95.2	114.3	66.7	82.6	12	16	57.15	4	4	9.53	12.7	0.5	0.7
¾	101.6	114.3	73.0	82.6	12	16	57.15	4	4	9.53	12.7	0.6	0.9
1	120.6	120.6	87.3	87.3	16	16	63.5	4	4	9.53	14.3	0.8	1.1
1 ¼	133.4	133.4	98.4	98.4	16	16	76.2	4	4	12.7	17.5	1.0	1.5
1 ½	139.7	139.7	104.8	104.8	16	16	82.6	4	4	12.7	17.5	1.4	1.8
2	165.1	165.1	127.0	127.0	16	16	101.6	4	4	15.9	19.0	2.3	2.5
2 ½	184.2	184.2	146.0	146.0	16	16	114.3	8	8	15.9	19.0	2.7	3.5
3	203.2	203.2	165.1	165.1	16	16	127.0	8	8	15.9	22.2	3.2	4.5
3 ½	215.9	215.9	177.8	177.8	16	16	139.7	8	8	19.0	22.2	4.0	5.5
4	228.6	228.6	190.5	190.5	16	16	152.4	8	8	19.0	25.4	4.5	6.0
5	279.4	279.4	235.0	235.0	20	20	177.8	8	8	22.2	28.6	8.0	10.0
6	304.8	304.8	260.4	260.4	20	20	209.6	12	12	22.2	28.6	8.5	11.0
8	368.3	368.3	323.8	323.8	20	20	260.4	12	12	25.4	31.8	13.5	17.0
10	431.8	431.8	381.0	381.0	22	22	311.2	12	12	28.6	34.9	18.0	24.5
12	489	489	438.2	438.2	22	22	362.0	16	16	31.8	41.3	24.0	31.0
14	552.5	552.5	495.3	495.3	24	24	419.1	16	16	34.9	47.6	31.0	
16	609.6	609.6	552.5	552.5	24	24	482.6	20	20	41.3	54.0	35.0	
18	673.1	673.1	609.6	609.6	30	30	533.4	20	20	44.5	60.3	41.0	
20	736.6	736.6	673.1	673.1	30	30	596.9	24	24	50.8	66.7		
24	850.9	850.9	781.0	781.0	30	30	698.5	24	24	57.15	76.2		

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 25

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	100.0	75.0	11.0	4	M10	60.0 x 2.0	11.0	-	14.0	-
BS 4504/ BS EN 1092-1	10	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	16	115.0	85.0	14.0	4	M12	68.0 x 2.0	16.0	8.0	16.0	-
BS 4504/ BS EN 1092-1	25	115.0	85.0	14.0	4	M12	68.0 x 2.0	18.0	9.0	18.0	-
BS 4504/ BS EN 1092-1	40	115.0	85.0	14.0	4	M12	68.0 x 2.0	-	11.0	18.0	18.0
BS 4504/ BS EN 1092-1	64	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	100	140.0	100.0	18.0	4	M16	68.0 x 2.0	-	-	24.0	-
ASA 150		108.0	79.4	15.9	4	12.7	50.8 x 1.6	-	-	14.3	11.1
ASA 300		123.8	88.9	19.0	4	15.9	50.8 x 1.6	-	-	17.5	17.5
ASA 400		-	-	-	-	-	-	-	-	-	-
ASA 600		123.8	88.9	19.0	4	15.9	50.8 x 6.3	-	-	17.5	17.5
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		108.0	79.4	15.9	4	12.7	-	11.1	-	-	-
ASA 250		123.8	88.9	19.0	4	15.9	68.3 x 1.6	17.5	-	-	-
BS 10 D		114.3	82.6	14.3	4	12.7	-	12.7	7.9	12.7	12.7
BS 10 E		114.3	82.6	14.3	4	12.7	-	12.7	7.9	12.7	12.7
BS 10 F		120.6	87.3	17.5	4	15.9	-	12.7	9.5	12.7	12.7
BS 10 H		120.6	87.3	17.5	4	15.9	63.5 x 1.6	19.0	11.1	14.3	14.3
BS 10 J		120.6	87.3	17.5	4	15.9	63.5 x 1.6	-	19.0	19.0	19.0
BS 10 K		127.0	95.2	17.5	4	15.9	76.2 x 1.6	-	22.2	22.2	22.2
BS 10 R		127.0	95.2	17.5	4	15.9	76.2 x 1.6	-	-	22.2	22.2
SABS 1123/ SANS 1123											
5	(600/3)	100.0	75.0	11.0	4	M10	60.0 x 2.0	-	-	10.0	-
10	(1 000/3)	115.0	85.0	14.0	4	M12	68.0 x 2.0	-	-	10.0	-
15	(1 600/3)	115.0	85.0	11.0	4	M12	68.0 x 2.0	-	-	10.0	-
20	(2 500/3)	115.0	85.0	14.0	4	M12	68.0 x 2.0	-	-	16.0	-
25	(4 000/3)	115.0	85.0	14.0	4	M12	68.0 x 2.0	-	-	16.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 32

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	120.0	90.0	14.0	4	M12	70.0 x 2.0	16.0	-	14.0	-
BS 4504/ BS EN 1092-1	10	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	16	140.0	100.0	18.0	4	M16	78.0 x 2.0	18.0	8.0	16.0	-
BS 4504/ BS EN 1092-1	25	140.0	100.0	18.0	4	M16	78.0 x 2.0	20.0	9.0	18.0	-
BS 4504/ BS EN 1092-1	40	140.0	100.0	18.0	4	M16	78.0 x 2.0	-	11.0	18.0	18.0
BS 4504/ BS EN 1092-1	64	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	100	155.0	110.0	22.0	4	M20	78.0 x 2.0	-	-	24.0	-
ASA 150		117.5	88.9	15.9	4	12.7	63.5 x 1.6	-	10.3	15.9	12.7
ASA 300		133.4	98.4	19.0	4	15.9	63.5 x 1.6	-	15.9	19.0	19.0
ASA 400		-	-	-	-	-	-	-	-	-	-
ASA 600		133.4	98.4	19.0	4	15.9	63.5 x 6.3	-	-	20.6	20.6
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		117.5	88.9	15.9	4	12.7	-	12.7	-	-	-
ASA 250		133.4	98.4	19.0	4	15.9	77.8 x 1.6	19.0	-	-	-
BS 10 D		120.6	87.3	14.3	4	12.7	-	15.9	7.9	12.7	12.7
BS 10 E		120.6	87.3	14.3	4	12.7	-	15.9	7.9	12.7	12.7
BS 10 F		133.4	98.4	17.5	4	15.9	-	15.9	9.5	12.7	12.7
BS 10 H		133.4	98.4	17.5	4	15.9	76.2 x 1.6	22.2	11.1	17.5	17.5
BS 10 J		133.4	98.4	17.5	4	15.9	76.2 x 1.6	-	19.05	19.05	19.05
BS 10 K		133.4	98.4	17.5	4	15.9	76.2 x 1.6	-	22.2	22.2	22.2
BS 10 R		133.4	98.4	17.5	4	15.9	76.2 x 1.6	-	-	22.2	22.2
SABS 1123/ SANS 1123											
5	(600/3)	120.0	90.0	14.0	4	M12	70.0 x 2.0	-	-	10.0	-
10	(1 000/3)	140.0	100.0	18.0	4	M16	78.0 x 2.0	-	-	10.0	-
15	(1 600/3)	140.0	100.0	18.0	4	M16	78.0 x 2.0	-	-	10.0	-
20	(2 500/3)	140.0	100.0	18.0	4	M16	78.0 x 2.0	-	-	18.0	
25	(4 000/3)	140.0	100.0	18.0	4	M16	78.0 x 2.0	-	-	18.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 40

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	130.0	100.0	14.0	4	M12	80.0 x 3.0	16.0	-	14.0	-
BS 4504/ BS EN 1092-1	10	-		-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	16	150.0	110.0	18.0	4	M16	88.0 x 3.0	18.0	9.0	16.0	-
BS 4504/ BS EN 1092-1	25	150.0	110.0	18.0	4	M16	88.0 x 3.0	13.0	11.0	18.0	-
BS 4504/ BS EN 1092-1	40	150.0	110.0	18.0	4	M16	88.0 x 3.0	15.0	13.0	18.0	18.0
BS 4504/ BS EN 1092-1	64	-	-	-	-	-		-	-	-	-
BS 4504/ BS EN 1092-1	100	170.0	125.0	22.0	4	M20	88.0 x 3.0	-	-	26.0	-
ASA 150		127.0	98.4	15.9	4	12.7	73.0 x 1.6	-	14.3	17.5	14.3
ASA 300		155.6	114.3	22.2	4	19.0	73.0 x 1.6	-	17.5	20.6	20.6
ASA 400		-	-	-	-	-	-	-	-	-	-
ASA 600		155.6	114.3	22.2	4	19.0	73.0 x 1.6	-	-	22.2	22.2
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		127.0	98.4	15.9	4	12.7	-	14.3	-	-	-
ASA 250		155.6	114.3	22.2	4	19.0	90.5 x 1.6	20.6	-	-	-
BS 10 D		133.4	98.4	14.3	4	12.7	-	15.9	9.5	12.7	12.7
BS 10 E		133.4	98.4	14.3	4	12.7	-	15.9	9.5	12.7	12.7
BS 10 F		139.7	104.8	17.5	4	15.9	-	15.9	14.3	12.7	12.7
BS 10 H		139.7	104.8	17.5	4	15.9	82.6 x 1.6	22.2	12.7	17.5	17.5
BS 10 J		139.7	104.8	17.5	4	15.9	82.6 x 1.6	-	22.2	22.2	22.2
BS 10 K		152.4	114.3	22.2	4	19.0	88.9 x 1.6	-	25.4	25.4	25.4
BS 10 R		152.4	114.3	22.2	4	19.0	88.9 x 1.6	-	-	25.4	25.4
SABS 1123/ SANS 1123											
5	(600/3)	130.0	100.0	14.0	4	M12	80.0 x 3.0	-	-	10.0	-
10	(1 000/3)	150.0	110.0	18.0	4	M16	88.0 x 3.0	-	-	10.0	-
15	(1 600/3)	150.0	110.0	18.0	4	M16	88.0 x 3.0	-	-	10.0	-
20	(1 000/3)	150.0	110.0	18.0	4	M16	88.0 x 3.0	-	-	20.0	-
25	(4 000/3)	150.0	110.0	18.0	4	M16	88.0 x 3.0	-	-	20.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 50

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	140.0	110.0	14.0	4	M12	90.0 x 3.0	16.0	-	14.0	-
BS 4504/ BS EN 1092-1	10	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	16	165.0	125.0	18.0	4	M16	102.0 x 3.0	20.0	11.0	18.0	-
BS 4504/ BS EN 1092-1	25	165.0	125.0	18.0	4	M16	102.0 x 3.0	22.0	11.0	20.0	-
BS 4504/ BS EN 1092-1	40	165.0	125.0	18.0	4	M16	102.0 x 3.0	-	13.0	20.0	20.0
BS 4504/ BS EN 1092-1	64	180.0	135.0	22.0	4	M20	102.0 x 3.0	-	-	26.0	26.0
BS 4504/ BS EN 1092-1	100	195.0	145.0	26.0	4	M24	-	-	-	28.0	-
ASA 150		152.4	120.6	19.0	4	15.9	92.0 x 1.6	-	12.7	19.0	15.9
ASA 300		165.1	127.0	19.0	8	15.9	92.0 x 1.6	-	19.0	22.2	22.2
ASA 400		-	-	-	-	-		-	-	-	-
ASA 600		165.1	127.0	19.0	8	15.9	92.0 x 6.3	-	-	25.4	25.4
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		152.4	120.6	19.0	4	15.9	-	15.9	-	-	-
ASA 250		165.1	127.0	19.0	8	15.9	106.4 x 1.6	22.2	-	-	-
BS 10 D		152.4	114.3	17.5	4	15.9	-	17.5	9.5	12.7	14.3
BS 10 E		152.4	114.3	17.5	4	15.9	-	19.0	9.5	12.7	14.3
BS 10 F		165.1	127.0	17.5	4	15.9	-	19.0	11.1	15.9	15.9
BS 10 H		165.1	127.0	17.5	4	15.9	101.6 x 1.6	25.4	12.7	19.0	19.0
BS 10 J		165.1	127.0	22.2	4	19.0	101.6 x 1.6	-	25.4	25.4	25.4
BS 10 K		165.1	127.0	17.5	8	15.9	101.6 x 1.6	-	25.4	25.4	25.4
BS 10 R		165.1	127.0	17.5	8	15.9	101.6 x 1.6	-	-	25.4	25.4
SABS 1123/ SANS 1123											
5	(600/3)	140.0	110.0	14.0	4	M12	90.0 x 3.0	-	-	10.0	-
10	(1 000/3)	165.0	125.0	18.0	4	M16	102.0 x 3.0	-	-	10.0	-
15	(1 600/3)	165.0	125.0	18.0	4	M16	102.0 x 3.0	-	-	12.0	-
20	(2 500/3)	165.0	125.0	18.0	4	M16	102.0 x 3.0	-	-	20.0	-
25	(4 000/3)	165.0	125.0	18.0	4	M16	102.0 x 3.0	-	-	20.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 65

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	160.0	130.0	14.0	4	M12	110.0 x 3.0	16.0	-	14.0	-
BS 4504/ BS EN 1092-1	10	-	-	-	-	-	-	-	-	-	-
BS 4504/ BS EN 1092-1	16	185.0	145.0	18.0	4	M16	122.0 x 3.0	20.0	13.0	18.0	18.0
BS 4504/ BS EN 1092-1	25	185.0	145.0	18.0	8	M16	122.0 x 3.0	24.0	13.0	22.0	-
BS 4504/ BS EN 1092-1	40	185.0	145.0	18.0	8	M16	122.0 x 3.0	-	14.0	22.0	22.0
BS 4504/ BS EN 1092-1	64	205.0	160.0	22.0	8	M20	122.0 x 3.0	-	-	26.0	26.0
BS 4504/ BS EN 1092-1	100	220.0	170.0	26.0	8	M24	122.0 x 3.0	-	-	30.0	-
ASA 150		177.8	139.7	19.0	4	15.9	104.8 x 1.6	-	14.3	22.2	17.5
ASA 300		190.5	149.2	22.2	8	19.0	104.8 x 1.6	-	20.6	25.4	25.4
ASA 400		-	-	-	-	-	-	-	-	-	-
ASA 600		190.5	149.2	22.2	8	19.0	104.8 x 1.6	-	-	28.6	28.6
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		177.9	139.7	19.0	4	15.9	-	17.5	-	-	-
ASA 250		190.5	149.2	22.2	8	19.0	125.4 x 1.6	25.4	-	-	-
BS 10 D		165.1	127.0	17.5	4	15.9	-	17.5	11.1	12.7	14.3
BS 10 E		165.1	127.0	17.5	4	15.9	-	19.0	11.1	12.7	14.3
BS 10 F		184.2	146.0	17.5	8	15.9	-	19.0	12.7	15.9	15.9
BS 10 H		184.2	146.0	17.5	8	15.9	114.3 x 1.6	25.4	14.3	19.0	19.0
BS 10 J		184.2	146.0	22.2	8	19.0	114.3 x 1.6	-	25.4	25.4	25.4
BS 10 K		184.2	146.0	22.2	8	19.0	114.3 x 1.6	-	28.6	28.6	28.6
BS 10 R		184.2	146.0	22.2	8	19.0	114.3 x 1.6	-	-	28.6	28.6
SABS 1123/ SANS 1123											
5	(600/3)	160.0	130.0	14.0	4	M12	110.0 x 3.0	-	-	10.0	-
10	(1 000/3)	185.0	145.0	18.0	4	M16	122.0 x 3.0	-	-	12.0	-
15	(1 600/3)	185.0	145.0	18.0	4	M16	122.0 x 3.0	-	-	12.0	-
20	(2 500/3)	185.0	145.0	18.0	8	M16	122.0 x 3.0	-	-	22.0	-
25	(4 000/3)	185.0	145.0	18.0	8	M16	122.0 x 3.0	-	-	22.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 80

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	190.0	150.0	18.0	4	M16	128.0 x 3.0	18.0	-	16.0	-
BS 4504/ BS EN 1092-1	10	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	-	20.0	-
BS 4504/ BS EN 1092-1	16	200.0	160.0	18.0	8	M16	138.0 x 3.0	22.0	13.0	20.0	20.0
BS 4504/ BS EN 1092-1	25	200.0	160.0	18.0	8	M16	138.0 x 3.0	26.0	14.0	24.0	-
BS 4504/ BS EN 1092-1	40	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	16.0	24.0	24.0
BS 4504/ BS EN 1092-1	64	215.0	170.0	22.0	8	M20	138.0 x 3.0	-	-	28.0	28.0
BS 4504/ BS EN 1092-1	100	230.0	180.0	26.0	8	M24	138.0 x 3.0	-	-	32.0	-
ASA 150		190.5	152.4	19.0	4	15.9	127.0 x 1.6	-	15.9	23.8	19.0
ASA 300		209.6	168.3	22.2	8	19.0	127.0 x 1.6	-	23.0	28.6	28.6
ASA 400		-	-	-	-	-	-	-	-	-	-
ASA 600		209.6	168.3	22.2	8	19.0	127.0 x 6.3	-	-	31.8	31.8
ASA 25		-	-	-	-	-	-	-	-	-	-
ASA 125		190.5	152.4	19.0	4	15.9	-	19.0	-	-	-
ASA 250		209.6	168.3	22.2	8	19.0	144.5 x 1.6	28.6	-	-	-
BS 10 D		184.2	146.0	17.5	4	15.9	-	19.0	12.7	12.7	14.3
BS 10 E		184.2	146.0	17.5	4	15.9	-	19.0	12.7	12.7	14.3
BS 10 F		203.2	165.1	17.5	8	15.9	-	19.0	14.3	15.9	15.9
BS 10 H		203.2	165.1	17.5	8	15.9	127.0 x 1.6	28.6	15.9	22.2	22.2
BS 10 J		203.2	165.1	22.2	8	19.0	127.0 x 1.6	-	31.8	31.8	31.8
BS 10 K		203.2	165.1	22.2	8	19.0	127.0 x 1.6	-	31.8	31.8	31.8
BS 10 R		203.2	165.1	22.2	8	19.0	127.0 x 1.6	-	-	31.8	31.8
SABS 1123/ SANS 1123											
5	(600/3)	190.0	150.0	18.0	4	M16	128.0 x 3.0	-	-	10.0	-
10	(1 000/3)	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	-	12.0	-
15	(1 600/3)	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	-	14.0	-
20	(1 000/3)	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	-	22.0	-
25	(4 000/3)	200.0	160.0	18.0	8	M16	138.0 x 3.0	-	-	22.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 100

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	210.0	170.0	18.0	4	M16	148.0 x 3.0	18.0	-	16.0	-
BS 4504/ BS EN 1092-1	10	220.0	180.0	18.0	8	M16	158.0 x 3.0	-	-	20.0	-
BS 4504/ BS EN 1092-1	16	220.0	180.0	18.0	8	M16	158.0 x 3.0	24.0	16.0	20.0	20.0
BS 4504/ BS EN 1092-1	25	235.0	190.0	22.0	8	M20	162.0 x 3.0	28.0	17.0	24.0	-
BS 4504/ BS EN 1092-1	40	235.0	190.0	22.0	8	M20	162.0 x 3.0	-	19.0	24.0	24.0
BS 4504/ BS EN 1092-1	64	250.0	200.0	26.0	8	M24	162.0 x 3.0	-	-	30.0	30.0
BS 4504/ BS EN 1092-1	100	265.0	210.0	30.0	8	M27	162.0 x 3.0	-	-	36.0	-
ASA 150		228.6	190.5	19.0	8	15.9	157.2 x 1.6	-	17.5	23.8	23.8
ASA 300		254.0	200.0	22.2	8	19.0	157.2 x 1.6	-	27.0	31.8	31.8
ASA 400		254.0	200.0	25.4	8	22.2	157.2 x 6.3	-	-	34.9	34.9
ASA 600		273.0	215.9	25.4	8	22.2	157.2 x 6.3	-	-	38.1	38.1
ASA 25		228.6	190.5	19.0	8	15.9	-	19.0	-	-	-
ASA 125		228.6	190.5	19.0	8	15.9	-	23.8	-	-	-
ASA 250		254.0	200.0	22.2	8	19.0	176.2 x 1.6	31.8	-	-	-
BS 10 D		215.9	177.8	17.5	4	15.9	-	19.0	15.9	12.7	17.5
BS 10 E		215.9	177.8	17.5	8	15.9	-	22.2	15.9	12.7	17.5
BS 10 F		228.6	190.5	17.5	8	15.9	-	22.2	17.5	19.0	19.0
BS 10 H		228.6	190.5	17.5	8	15.9	152.4 x 1.6	31.8	19.0	25.4	25.4
BS 10 J		228.6	190.5	22.2	8	19.0	152.4 x 1.6	-	34.9	34.9	34.9
BS 10 K		241.3	196.8	25.4	8	22.2	152.4 x 1.6	-	34.9	34.9	34.9
BS 10 R		241.3	196.8	25.4	8	22.2	152.4 x 1.6	-	-	34.9	34.9
SABS 1123/ SANS 1123											
5	(600/3)	210.0	170.0	18.0	4	M16	148.0 x 3.0	-	-	10.0	-
10	(1 000/3)	220.0	180.0	18.0	8	M16	158.0 x 3.0	-	-	12.0	-
15	(1 600/3)	220.0	180.0	18.0	8	M16	158.0 x 3.0	-	-	14.0	-
20	(2 500/3)	235.0	190.0	22.0	8	M20	162.0 x 3.0	-	-	25.0	-
25	(4 000/3)	235.0	190.0	22.0	8	M20	162.0 x 3.0	-	-	25.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 125

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	240.0	200.0	18.0	8	M16	178.0 x 3.0	20.0	-	18.0	-
BS 4504/ BS EN 1092-1	10	250.0	210.0	18.0	8	M16	188.0 x 3.0	-	-	22.0	-
BS 4504/ BS EN 1092-1	16	250.0	210.0	18.0	8	M16	188.0 x 3.0	26.0	-	22.0	-
BS 4504/ BS EN 1092-1	25	270.0	220.0	26.0	8	M24	188.0 x 3.0	30.0	-	26.0	-
BS 4504/ BS EN 1092-1	40	270.0	220.0	26.0	8	M24	188.0 x 3.0	-	-	26.0	26.0
BS 4504/ BS EN 1092-1	64	295.0	240.0	30.0	8	M27	188.0 x 3.0	-	-	34.0	34.0
BS 4504/ BS EN 1092-1	100	315.0	250.0	33.0	8	M30	188.0 x 3.0	-	-	40.0	40.0
ASA 150		254.0	215.9	22.2	8	19.0	185.7 x 1.6	-	19.0	23.8	23.8
ASA 300		279.4	235.0	22.2	8	19.0	185.7 x 1.6	-	28.6	34.9	34.9
ASA 400		279.4	235.0	25.4	8	22.2	185.7 x 6.3	-	-	38.1	38.1
ASA 600		330.2	266.7	28.6	8	25.4	185.7 x 6.3	-	-	44.4	44.4
ASA 25		254.0	215.9	19.0	8	15.9	-	19.0	-	-	-
ASA 125		254.0	215.9	22.2	8	19.0	-	23.8	-	-	-
ASA 250		279.4	235.0	22.2	8	19.0	211.1 x 1.6	34.9	-	-	-
BS 10 D		254.0	209.6	17.5	8	15.9	-	20.6	17.5	12.7	17.5
BS 10 E		254.0	209.6	17.5	8	15.9	-	22.2	17.5	14.3	17.5
BS 10 F		279.4	235.0	22.2	8	19.0	-	25.4	19.0	22.2	22.2
BS 10 H		279.4	235.0	22.2	8	19.0	177.8 x 1.6	34.9	22.2	28.6	28.6
BS 10 J		279.4	235.0	25.4	8	22.2	177.8 x 1.6	-	38.1	38.1	38.1
BS 10 K		279.4	235.0	25.4	12	22.2	177.8 x 1.6	-	41.3	41.3	41.3
BS 10 R		279.4	235.0	25.4	12	22.2	177.8 x 1.6	-	-	41.3	41.3
SABS 1123/ SANS 1123											
5	(600/3)	240.0	200.0	18.0	8	M16	178.0 x 3.0	-	-	12.0	-
10	(1 000/3)	250.0	210.0	18.0	8	M16	188.0 x 3.0	-	-	14.0	-
15	(1 600/3)	250.0	210.0	18.0	8	M16	188.0 x 3.0	-	-	16.0	-
20	(2 500/3)	270.0	220.0	26.0	8	M24	188.0 x 3.0	-	-	28.0	-
25	(4 000/3)	270.0	220.0	26.0	8	M24	188.0 x 3.0	-	-	28.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 150

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	265.0	225.0	18.0	8	M16	202.0 x 3.0	20.0	-	18.0	-
BS 4504/ BS EN 1092-1	10	285.0	240.0	22.0	8	M20	212.0 x 3.0	-	-	22.0	-
BS 4504/ BS EN 1092-1	16	285.0	240.0	22.0	8	M20	212.0 x 3.0	26.0	-	22.0	22.0
BS 4504/ BS EN 1092-1	25	300.0	250.0	26.0	8	M24	218.0 x 3.0	34.0	-	28.0	-
BS 4504/ BS EN 1092-1	40	300.0	250.0	26.0	8	M24	218.0 x 3.0	-	-	28.0	28.0
BS 4504/ BS EN 1092-1	64	345.0	280.0	33.0	8	M30	218.0 x 3.0	-	-	36.0	36.0
BS 4504/ BS EN 1092-1	100	355.0	290.0	33.0	12	M30	218.0 x 3.0	-	-	44.0	44.0
ASA 150		279.4	241.3	22.2	8	19.0	215.9 x 1.6	-	20.6	25.4	25.4
ASA 300		317.5	269.9	22.2	12	19.0	215.9 x 1.6	-	30.2	36.5	36.5
ASA 400		317.5	269.9	25.4	12	22.2	215.9 x 6.3	-	-	41.3	41.3
ASA 600		355.6	292.1	28.6	12	25.4	215.9 x 6.3	-	-	47.6	47.6
ASA 25		279.4	241.3	19.0	8	15.9	-	19.0	-	-	-
ASA 125		279.4	241.3	22.2	8	19.0	-	25.4	-	-	-
ASA 250		317.5	269.9	22.2	12	19.0	246.1 x 1.6	36.5	-	-	-
BS 10 D		279.4	235.0	17.5	8	15.9	-	20.6	17.5	12.7	17.5
BS 10 E		279.4	235.0	22.2	8	19.0	-	22.2	17.5	17.5	17.5
BS 10 F		304.8	260.4	22.2	12	19.0	-	25.4	22.2	22.2	22.2
BS 10 H		304.8	260.4	22.2	12	19.0	209.6 x 1.6	34.9	25.4	28.6	28.6
BS 10 J		304.8	260.4	25.4	12	22.2	209.6 x 1.6	-	38.1	38.1	38.1
BS 10 K		304.8	260.4	25.4	12	22.2	209.6 x 1.6	-	-	41.3	41.3
BS 10 R		304.8	260.4	25.4	12	22.2	209.6 x 1.6	-	-	44.4	44.4
SABS 1123/ SANS 1123											
5	(600/3)	265.0	225.0	18.0	8	M16	202.0 x 3.0	-	-	12.0	-
10	(1 000/3)	285.0	240.0	22.0	8	M20	212.0 x 3.0			16.0	
15	(1 600/3)	285.0	240.0	22.0	8	M20	212.0 x 3.0	-	-	18.0	-
20	(2 500/3)	300.0	250.0	26.0	8	M24	218.0 x 3.0			30.0	
25	(4 000/3)	300.0	250.0	26.0	8	M24	218.0 x 3.0	-	-	30.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 200

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	320.0	280.0	18.0	8	M16	258.0 x 3.0	22.0	-	20.0	-
BS 4504/ BS EN 1092-1	10	340.0	295.0	22.0	8	M20	268.0 x 3.0	26.0	-	24.0	-
BS 4504/ BS EN 1092-1	16	340.0	295.0	22.0	12	M20	268.0 x 3.0	30.0	-	24.0	24.0
BS 4504/ BS EN 1092-1	25	360.0	310.0	26.0	12	M24	278.0 x 3.0	34.0	-	30.0	30.0
BS 4504/ BS EN 1092-1	40	375.0	320.0	30.0	12	M27	285.0 x 3.0	-	-	34.0	34.0
BS 4504/ BS EN 1092-1	64	415.0	345.0	36.0	12	M33	285.0 x 3.0	-	-	42.0	42.0
BS 4504/ BS EN 1092-1	100	430.0	360.0	36.0	12	M33	285.0 x 3.0	-	-	52.0	52.0
ASA 150		342.9	298.4	22.2	8	19.0	269.9 x 1.6	-	23.8	28.6	28.6
ASA 300		381.0	330.2	25.4	12	22.2	269.9 x 1.6	-	34.9	41.3	41.3
ASA 400		381.0	330.2	28.6	12	25.4	269.9 x 6.3	-	-	47.6	47.6
ASA 600		419.1	349.2	31.8	12	28.6	269.9 x 6.3	-	-	55.6	55.6
ASA 25		342.9	298.4	19.0	8	15.9	-	19.0	-	-	-
ASA 125		342.9	298.4	22.2	8	19.0	-	28.6	-	-	-
ASA 250		381.0	330.2	25.4	12	22.2	303.2 x 1.6	41.3	-	-	-
BS 10 D		336.6	292.1	17.5	8	15.9	-	22.2	19.0	12.7	19.0
BS 10 E		336.6	292.1	22.2	8	19.0	-	25.4	19.0	19.0	19.0
BS 10 F		368.3	323.8	22.2	12	19.0	-	28.6	25.4	25.4	25.4
BS 10 H		368.3	323.8	22.2	12	19.0	260.4 x 1.6	38.1	31.8	31.8	31.8
BS 10 J		368.3	323.8	25.4	12	22.2	260.4 x 1.6	-	41.3	41.3	41.3
BS 10 K		368.3	317.5	28.6	12	25.4	260.4 x 1.6	-	47.6	47.6	47.6
BS 10 R		368.3	323.8	28.6	12	25.4	260.4 x 1.6	-	-	50.8	50.8
SABS 1123/ SANS 1123											
5	(600/3)	320.0	280.0	18.0	8	M16	258.0 x 3.0	-	-	14.0	-
10	(1 000/3)	340.0	295.0	22.0	8	M20	268.0 x 3.0	-	-	18.0	-
15	(1 600/3)	340.0	295.0	22.0	12	M20	268.0 x 3.0	-	-	22.0	-
20	(2 500/3)	360.0	310.0	26.0	12	M24	278.0 x 3.0	-	-	28.0	-
25	(4 000/3)	375.0	320.0	26.0	12	M24	285.0 x 3.0	-	-	32.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

Nominal size 250

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	375.0	335.0	18.0	12	M16	312.0 x 3.0	24.0	-	22.0	-
BS 4504/ BS EN 1092-1	10	395.0	350.0	22.0	12	M20	320.0 x 3.0	28.0	-	26.0	-
BS 4504/ BS EN 1092-1	16	405.0	355.0	26.0	12	M24	320.0 x 3.0	32.0	-	26.0	26.0
BS 4504/ BS EN 1092-1	25	425.0	370.0	30.0	12	M27	335.0 x 3.0	36.0	-	32.0	32.0
BS 4504/ BS EN 1092-1	40	450.0	385.0	33.0	12	M30	345.0 x 3.0	-	-	38.0	38.0
BS 4504/ BS EN 1092-1	64	470.0	400.0	36.0	12	M33	345.0 x 3.0	-	-	46.0	46.0
BS 4504/ BS EN 1092-1	100	505.0	430.0	36.0	12	M36	345.0 x 3.0	-	-	60.0	60.0
ASA 150		406.4	362.0	25.4	12	22.2	323.8 x 1.6	-	-	30.2	30.2
ASA 300		444.5	387.4	28.6	16	25.4	323.8 x 1.6	-	-	47.6	47.6
ASA 400		444.5	387.4	31.8	16	28.6	323.8 x 6.3	-	-	54.0	54.0
ASA 600		508.0	431.8	34.9	16	31.8	323.8 x 6.3	-	-	63.5	63.5
ASA 25		406.4	362.0	19.0	12	15.9	-	22.2	-	-	-
ASA 125		406.4	362.0	25.4	12	22.2	-	30.2	-	-	-
ASA 250		444.5	387.4	28.6	16	25.4	357.2 x 1.6	47.6	-	-	-
BS 10 D		406.4	355.6	22.2	8	19.0	-	25.4	19.0	15.9	19.0
BS 10 E		406.4	355.6	22.2	12	19.0	-	25.4	22.2	22.2	22.2
BS 10 F		431.8	381.0	25.4	12	22.2	-	28.6	25.4	28.6	28.6
BS 10 H		431.8	381.0	25.4	12	22.2	311.2 x 1.6	41.3	34.9	34.9	34.9
BS 10 J		431.8	381.0	28.6	12	25.4	311.2 x 1.6	-	-	47.6	47.6
BS 10 K		431.8	381.0	28.6	16	25.4	311.2 x 1.6	-	-	50.8	50.8
BS 10 R		431.8	387.4	28.6	16	25.4	311.2 x 1.6	-	-	60.3	60.3
SABS 1123/ SANS 1123											
5	(600/3)	375.0	335.0	18.0	12	M16	312.0 x 3.0	-	-	16.0	-
10	(1 000/3)	395.0	350.0	22.0	12	M20	320.0 x 3.0	-	-	20.0	-
15	(1 600/3)	405.0	355.0	26.0	12	M24	320.0 x 3.0	-	-	25.0	-
20	(2 500/3)	425.0	370.0	26.0	12	M24	335.0 x 3.0	-	-	30.0	-
25	(4 000/3)	450.0	385.0	33.0	12	M30	345.0 x 3.0	-	-	38.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Specification Comparisons

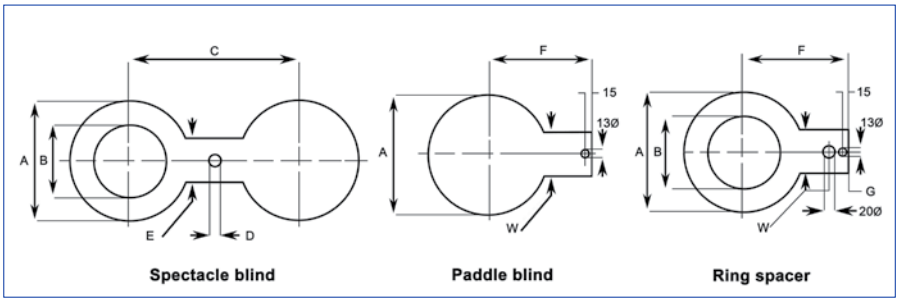
Nominal size 300

Table		Flange Diameter	P.C.D.	Hole Diameter	No. of Holes	Bolt Diameter	Raised Face d x h	Thickness (mm)			
								T1	T2	T3	T4
BS 4504/ BS EN 1092-1	6	440.0	395.0	22.0	12	M20	365.0 x 4.0	24.0	-	22.0	-
BS 4504/ BS EN 1092-1	10	445.0	400.0	22.0	12	M20	370.0 x 4.0	28.0	-	26.0	-
BS 4504/ BS EN 1092-1	16	460.0	410.0	26.0	12	M24	378.0 x 4.0	32.0	-	28.0	28.0
BS 4504/ BS EN 1092-1	25	485.0	430.0	30.0	16	M27	395.0 x 4.0	40.0	-	34.0	34.0
BS 4504/ BS EN 1092-1	40	515.0	450.0	33.0	16	M30	410.0 x 4.0	-	-	42.0	42.0
BS 4504/ BS EN 1092-1	64	530.0	460.0	36.0	16	M33	410.0 x 4.0	-	-	52.0	52.0
BS 4504/ BS EN 1092-1	100	585.0	500.0	42.0	16	M39	410.0 x 4.0	-	-	68.0	68.0
ASA 150		482.6	431.8	25.4	12	22.2	381.0 x 1.6	-	-	31.8	31.8
ASA 300		520.7	450.8	31.8	16	28.6	381.0 x 1.6	-	-	50.8	50.8
ASA 400		520.7	450.8	34.9	16	31.8	381.0 x 6.3	-	-	57.2	57.2
ASA 600		558.8	489.0	34.9	20	31.8	381.0 x 6.3	-	-	66.7	66.7
ASA 25		482.6	431.8	19.0	12	15.9	-	25.4	-	-	-
ASA 125		482.6	431.8	25.4	12	22.2	-	31.8	-	-	-
ASA 250		520.7	450.8	31.75	16	28.6	417.5 x 1.6	50.8	-	-	-
BS 10 D		457.2	406.4	22.2	12	19.0	-	25.4	22.2	19.0	22.2
BS 10 E		457.2	406.4	25.4	12	22.2	-	28.6	25.4	25.4	25.4
BS 10 F		489.0	438.2	25.4	16	22.2	-	31.8	28.6	31.8	31.8
BS 10 H		489.0	438.2	25.4	16	22.2	362.0 x 1.6	44.4	38.1	41.3	41.3
BS 10 J		489.0	438.2	28.6	16	25.4	362.0 x 1.6	-	-	50.8	50.8
BS 10 K		489.0	431.8	31.8	16	28.6	362.0 x 1.6	-	-	57.2	57.2
BS 10 R		508.0	457.2	31.8	16	28.6	362.0 x 1.6	-	-	69.8	69.8
SABS 1123/ SANS 1123											
5	(600/3)	440.0	395.0	22.0	12	M20	365.0 x 4.0	-	-	20.0	-
10	(1 000/3)	445.0	400.0	22.0	12	M20	370.0 x 4.0	-	-	22.0	-
15	(1 600/3)	460.0	410.0	26.0	12	M24	378.0 x 4.0	-	-	28.0	-
20	(2 500/3)	485.0	430.0	26.0	16	M24	395.0 x 4.0	-	-	32.0	-
25	(4 000/3)	515.0	450.0	33.0	16	M30	410.0 x 4.0	-	-	40.0	-

T1 = Cast iron T2 = Copper alloy T3 = Wrought steel T4 = Cast steel

STAINLESS STEEL FLANGES

Flange Blinds



NB Size	ANSI 150									ANSI 300								
	A	B	C	D	E	W	F	G	T	A	B	C	D	E	W	F	G	T
25	63	29	79	16	42	32	145	40	6	70	29	89	16	45	32	150	40	6
40	82	42	98	16	50	32	155	40	6	92	42	114	22	50	32	170	40	6
50	101	54	121	19	60	32	165	40	6	108	54	127	19	60	25	173	40	10
80	132	80	152	19	60	32	175	40	6	146	80	168	22	60	32	195	40	10
100	171	104	191	19	70	32	205	40	10	177	104	200	22	65	32	215	40	12
150	218	156	241	22	80	32	230	40	10	247	156	270	22	80	32	250	40	20
200	276	204	298	22	90	40	260	45	16	304	204	330	25	90	40	280	45	22
250	336	256	362	25	100	40	295	45	16	358	256	387	29	100	40	312	45	25
300	406	306	432	25	110	50	330	45	20	419	306	*Refer to note			50	350	45	30
350	447	338	476	29	120	50	360	45	22	482	338				40	383	45	32
400	510	389	*Refer to note			50	390	45	25	535	384				50	415	45	36
450	545	440				50	410	45	25	592	434				40	445	45	42
500	600	491				60	440	45	30	650	485				45	447	45	46
600	715	593				60	500	50	36	770	578				60	477	45	46

NB Size	ANSI 600									ANSI 900								
	A	B	C	D	E	W	F	G	T	A	B	C	D	E	W	F	G	T
25	70	29	89	16	52	32	150	40	6	76	29	102	25	60	32	164	40	10
40	92	42	114	22	65	32	170	40	10	95	42	124	29	65	32	179	40	40
50	108	52	127	19	65	25	173	40	10	139	52	165	25	70	32	198	40	12
80	146	76	168	22	65	32	195	40	16	164	76	191	25	75	32	210	40	16
100	190	100	216	25	75	32	225	40	16	202	100	235	32	90	32	235	40	10
150	263	149	292	29	85	32	267	40	25	284	149	316	32	100	32	280	40	30
200	317	196	349	32	95	40	300	45	30	354	196	394	39	110	40	325	45	36
250	397	246	*Refer to note			40	345	45	36	430	246	*Refer to note			40	363	45	42
300	454	292				38	370	45	42	493	292				40	395	45	50
350	488	320				40	393	45	46	515	320				40	410	45	55
400	561	366				50	432	45	50	570	366				50	443	45	65
450	610	412				50	463	45	60	635	412				50	485	45	70
500	680	460				45	500	45	65	695	460				60	520	45	80
600	786	552				50	560	50	80	835	552				60	615	50	95

* Use paddle blinds and ring spacers where no dimensions are shown for spectacle blind.
Dimensions based on sizes designed to suit ANSI B.16.5 flanges. All dimension given in mm.
T = Thickness

STAINLESS STEEL FLANGES

Approximate masses for SABS 1123/SANS 1123 flanges in kilograms

Nom Size mm	Nom Pressure 600 kPa				Nom Pressure 1 000 kPa				Nom Pressure 1 600 kPa				Nom Pressure 2 500 kPa				Nom Pressure 4 000 kPa				Nom Size mm
	600/2 W/N	600/3 Slip-on	600/4 Scrwd	600/8 Blind	1000/2 W/N	1000/3 Slip-on	1000/4 Scrwd	1000/8 Blind	1600/2 W/N	1600/3 Slip-on	1600/4 Scrwd	1600/8 Blind	2500/2 W/N	2500/3 Slip-on	2500/4 Scrwd	2500/8 Blind	4000/2 W/N	4000/3 Slip-on	4000/4 Scrwd	4000/8 Blind	
10	0.223	0.26	0.215	0.317	0.33	0.3	0.31	0.36	0.33	0.3	0.31	0.36	0.5	0.47	0.39	0.54	0.5	0.47	0.39	0.54	10
15	0.261	0.29	0.249	0.367	0.37	0.34	0.45	0.41	0.37	0.34	0.45	0.41	0.65	0.6	0.49	0.71	0.65	0.6	0.49	0.71	15
20	0.338	0.378	0.331	0.471	0.48	0.43	0.55	0.5	0.48	0.43	0.55	0.5	0.82	0.75	0.63	0.86	0.82	0.75	0.63	0.86	20
25	0.427	0.464	0.425	0.585	0.57	0.63	0.67	0.6	0.57	0.63	0.67	0.6	1.15	1.07	0.85	1.24	1.15	1.07	0.85	1.24	25
32	0.6	0.688	0.6	0.857	1.06	0.94	1.2	1.13	1.06	0.94	1.2	1.13	1.88	1.7	1.45	2	1.88	1.7	1.45	2	32
40	0.67	0.75	0.687	1	1.16	1	1.4	1.31	1.16	1	1.4	1.31	2.33	2.1	1.66	2.67	2.33	2.1	1.66	2.67	40
50	0.77	0.81	0.783	1.14	1.69	1.22	1.67	1.93	1.69	1.22	1.96	1.93	2.82	2.5	2.43	3.2	2.82	2.5	2.43	3.2	50
65	0.95	1	1.1	1.5	2.04	1.8	2.54	2.4	2.04	1.8	2.54	2.4	3.74	3.2	2.98	4.3	3.74	3.2	2.98	4.3	65
80	1.69	1.44	1.78	2.13	2.59	1.98	3.16	3.22	2.59	1.98	3.26	3.22	4.75	3.67	3.6	5.04	4.75	3.67	3.6	5.04	80
100	2	1.61	1.99	2.63	3.23	2.16	3.73	3.92	3.23	2.16	3.84	3.92	6.52	5.48	5.63	7.92	6.52	5.48	5.63	7.92	100
125	3.24	2.34	3.23	4.07	4.58	3.18	5.26	5.89	4.58	3.18	5.36	5.89	9.07	7.7	8.1	11.85	9.07	7.7	8.1	11.85	125
150	3.72	2.64	3.83	5	6.34	4.37	7.14	8.59	6.34	4.37	7.4	8.59	11.8	9.7	9	15.54	11.80	9.7	9	15.54	150
175					8.3	5.26		11.83	8.3	6.58		11.83	12.2	10.58		16.34	18.20	14.7		24	175
200	5.06	4.07		8.75	8.48	6.3		12.38	10.08	7.98		15.13	15.3	12		21.00	21.50	15.06		25.41	200
250	7.85	5.67		13.45	11.31	8.46		18.46	14.04	11.54		24.04	22.88	16.41		31.41	34.90	27.14		44.5	250
300	12.73	9.17		23.18	14.89	10.58		26.23	22	15.5		35	31.2	21.47		43.29	49.70	42		60.95	300
350	16.1	13.12		32	21.4	17.41		37.98	28.07	22.97		48	45	33.75		62.63	68.10	61.88		87.07	350
400	18.3	14.93		38.5	26.1	20.7		47.6	36.3	32.08		59.06	58.7	46.96		90	96.50	88.13		125	400
450		20.42		54.17		30		69.64		48		100		65.16		123.75		100.31		149.52	450
500	24.6	21.25		62.5	34.7	32.84		75	59.3	54.55		122.22	86.1	74.14		155.56	117.00	116.67		198.21	500
550		30.5		85.2		46		114.6						100.5							550
600	31.5	30.94			42.2	47.95			73.4	90.39			101	109.09							600

STAINLESS STEEL FLANGES

Approximate masses for BS4504 in kilograms

Nom size mm	Nom Pressure 6 Bar				Nom Pressure 10 Bar				Nom Pressure 16 Bar				Nom Pressure 25 Bar				Nom Pressure 40 Bar				Nom size mm
	6/2 W/N	6/3 Slip-on	6/4 Scrwd	6/8 Blind	10/2 W/N	10/3 Slip-on	10/4 Scrwd	10/8 Blind	16/2 W/N	16/3 Slip-on	16/4 Scrwd	16/8 Blind	25/2 W/N	25/3 Slip-on	25/4 Scrwd	25/8 Blind	40/2 W/N	40/3 Slip-on	40/4 Scrwd	40/8 Blind	
10	0.335	0.31	0.323	0.38	0.58	0.53	0.544	0.63	0.58	0.53	0.544	0.63	0.661	0.62	0.63	0.72	0.661	0.62	0.63	0.72	10
15	0.392	0.35	0.373	0.44	0.648	0.59	0.613	0.71	0.648	0.59	0.613	0.71	0.746	0.69	0.71	0.81	0.746	0.69	0.71	0.81	15
20	0.592	0.53	0.59	0.66	0.952	0.85	0.91	1	0.952	0.85	0.91	1	1.06	0.97	1.03	1.1	1.06	0.97	1.03	1.1	20
25	0.747	0.65	0.743	0.82	1.14	1	1.1	1.2	1.14	1	1.1	1.2	1.29	1.2	1.28	1.4	1.29	1.2	1.28	1.4	25
32	1.05	1.1	1.05	1.2	1.69	1.5	1.6	1.8	1.69	1.5	1.6	1.8	1.88	1.7	1.87	2	1.88	1.7	1.87	2	32
40	1.18	1.2	1.2	1.4	1.86	1.6	1.78	2.1	1.86	1.6	1.78	2.1	2.33	2.1	2.14	2.4	2.33	2.1	2.14	2.4	40
50	1.34	1.3	1.37	1.6	2.53	2.2	2.43	2.9	2.53	2.2	2.43	2.9	2.82	2.5	2.86	3.2	2.82	2.5	2.86	3.2	50
65	1.67	1.6	1.92	2.1	3.06	2.7	3.18	3.6	3.06	2.7	3.18	3.6	3.74	3.2	3.85	4.3	3.74	3.2	3.85	4.3	65
80	2.71	2.6	2.85	3.4	3.7	3.3	4.12	4.6	3.7	3.3	4.12	4.6	4.75	4	4.8	5.5	4.75	4	4.8	5.5	80
100	3.24	2.9	3.19	4.2	4.62	3.6	4.47	5.6	4.62	3.6	4.47	5.6	6.52	5.7	6.43	7.6	6.52	5.7	6.43	7.6	100
125	4.49	3.9	4.47	6.1	6.3	5	6.13	8.1	6.3	5	6.13	8.1	9.07	7.7	8.77	11	9.07	7.7	8.77	11	125
150	5.15	4.4	5.3	7.5	7.75	6	7.92	10.5	7.75	6	7.92	10.5	11.8	9.7	10.5	14.5	11.8	9.7	10.5	14.5	150
175					10	7.9		14.2	10	7.9		14.2	13.4	11		18.3	18.2	15.7		24	175
200	7.78	6.4		12.5	11.3	8.4		16.5	11	8.7		16.5	17	12		22.5	21.5	16		27	200
250	10.8	8.5		18.5	14.7	11		24	15.6	12		25	24.4	17.5		33.5	34.9	28.5		44.5	250
300	14	11		25.5	17.6	12.5		31	22	15.5		35	31.2	25.5		46	49.7	42		64	300
350	16.1	15.5		32	21.4	19.5		39.5	28.7	24.5		48	45	40.5		68	68.1	63		89	350
400	18.3	19		38.5	26.1	26.5		49.5	36.3	33		63	58.7	54		90	96.5	94		125	400
450		24.5		52		36		65		48		85		75.3		115.5		107		155.5	450
500	24.6	25.5		60	34.7	39		75	59.3	60		110	86.1	86		140	117	120		185	500
600	31.5	33			42.4	53			73.4	94			101	120							600

STAINLESS STEEL FLANGES

Flange Bolt Dimensions
SABS 1123/SANS 1123

Nominal Bore (NB)	600 kPa	1 000 kPa	1 600 kPa	2 500 kPa	4 000 kPa
10	4 M10 x 40	4 M12 x 45	4 M12 x 45	4 M12 x 45	4 M12 x 45
15	4 M10 x 40	4 M12 x 45	4 M12 x 45	4 M12 x 50	4 M12 x 50
20	4 M10 x 40	4 M12 x 45	4 M12 x 45	4 M12 x 50	4 M12 x 50
25	4 M10 x 40	4 M12 x 45	4 M12 x 45	4 M12 x 55	4 M12 x 55
32	4 M12 x 45	4 M16 x 50	4 M16 x 50	4 M16 x 65	4 M16 x 65
40	4 M12 x 45	4 M16 x 50	4 M16 x 50	4 M16 x 65	4 M16 x 65
50	4 M12 x 45	4 M16 x 50	4 M16 x 50	4 M16 x 65	4 M16 x 65
65	4 M12 x 45	4 M16 x 50	4 M16 x 50	8 M16 x 70	8 M16 x 70
80	4 M16 x 50	8 M16 x 50	8 M16 x 55	8 M16 x 70	8 M16 x 70
100	4 M16 x 50	8 M16 x 50	8 M16 x 55	8 M20 x 90	8 M20 x 90
125	8 M16 x 50	8 M16 x 55	8 M16 x 65	8 M24 x 90	8 M24 x 90
150	8 M16 x 50	8 M20 x 65	8 M20 x 75	8 M24 x 90	8 M24 x100
175	8 M16 x 55	8 M20 x 70	8 M20 x 75	12 M24 x 90	12 M24 x100
200	8 M16 x 55	8 M20 x 75	12 M20 x 75	12 M24 x 90	12 M24 x100
225	8 M16 x 65	8 M20 x 75	12 M20 x 90	12 M24 x100	12 M30 x110
250	8 M16 x 65	12 M20 x 75	12 M24 x 90	12 M24 x100	12 M30 x115
300	12 M20 x 75	12 M20 x 75	12 M24 x 90	16 M24 x100	16 M30 x125
350	12 M20 x 75	16 M20 x 90	16 M24 x100	16 M30 x110	16 M30 x130
400	16 M20 x 75	16 M24 x 90	16 M24 x115	16 M30 x125	16 M36 x150
450	16 M20 x 90	20 M24 x100	20 M24 x125	20 M30 x140	20 M36 x165
500	20 M20 x 90	20 M24 x100	20 M30 x125	20 M30 x140	20 M36 x190
550	20 M24 x 90	20 M24 x110	20 M30 x120	20 M36 x165	-
600	20 M24 x100	20 M24 x115	20 M30 x150	20 M36 x165	-

Above bolt lengths make allowance for 2 x 3 mm thick washers and a 3 mm thick gasket.

STAINLESS STEEL FLANGES

Flange Bolt Dimensions
BS 4504/BS EN 1092-1

Nominal Bore (NB)	Table 6	Table 10	Table 16	Table 25	Table 40
10	4 M10 x 45	4 M12 x 50	4 M12 x 50	4 M12 x 55	4 M12 x 55
15	4 M10 x 45	4 M12 x 50	4 M12 x 50	4 M12 x 55	4 M12 x 55
20	4 M10 x 45	4 M12 x 55	4 M12 x 55	4 M12 x 55	4 M12 x 55
25	4 M10 x 50	4 M12 x 55	4 M12 x 55	4 M12 x 65	4 M12 x 65
32	4 M12 x 65	4 M16 x 65	4 M16 x 65	4 M16 x 65	4 M16 x 65
40	4 M12 x 65	4 M16 x 65	4 M16 x 65	4 M16 x 75	4 M16 x 75
50	4 M12 x 65	4 M16 x 65	4 M16 x 65	4 M16 x 75	4 M16 x 75
65	4 M12 x 65	4 M16 x 65	4 M16 x 65	8 M16 x 75	8 M16 x 75
80	4 M16 x 65	8 M16 x 75	8 M16 x 75	8 M16 x 75	8 M16 x 75
100	4 M16 x 65	8 M16 x 75	8 M16 x 75	8 M20 x 90	8 M20 x 90
125	8 M16 x 75	8 M16 x 75	8 M16 x 75	8 M24 x 90	8 M24 x 90
150	8 M16 x 75	8 M20 x 75	8 M20 x 75	8 M24 x100	8 M24 x100
175	-	-	8 M20 x 75	12 M24 x 90	12 *M27 x100
200	8 M16 x 75	8 M20 x 75	12 M20 x 90	12 M24 x 90	12 *M27 x115
250	12 M16 x 75	12 M20 x 90	12 M24 x 90	12 *M27 x115	12 M30 x140
300	12 M20 x 90	12 M20 x 90	12 M24 x 90	16 *M27 x115	16 M30 x140
350	12 M20 x 90	16 M20 x 90	16 M24 x100	16 M30 x140	16 *M33 x165
400	16 M20 x 90	16 M24 x100	16 *M27 x115	16 *M33 x140	16 M36 x180
450	16 M20 x 90	-	-	-	20 M36 x180
500	20 M20 x 90	20 M24 x115	20 M30 x140	20 *M33 x165	20 *M39 x200

Above bolt lengths make allowance for 2 x 3 mm thick washers and a 3 mm thick gasket.

* Non-Preferred diam

STAINLESS STEEL FLANGES

Flange Bolt Dimensions
ASA Specification - ANSI (ASA) B 16.5

Nominal Bore (NB)	150 lb		300 lb	
15	4	M12 x 45	4	M12 x 55
20	4	M12 x 50	4	M16 x 65
25	4	M12 x 55	4	M16 x 65
32	4	M12 x 55	4	M16 x 65
40	4	M12 x 65	4	M20 x 75
50	4	M16 x 65	8	M16 x 75
65	4	M16 x 75	8	M20 x 90
80	4	M16 x 75	8	M20 x 90
90	8	M16 x 75	8	M20 x100
100	8	M16 x 75	8	M20 x100
125	8	M20 x 90	8	M20 x100
150	8	M20 x 90	12	M20 x115
200	8	M20 x 90	12	M24 x125
250	12	M24 x100	16	M24 x140
300	12	M24 x100	16	M30 x150
350	12	M24 x115	20	M30 x150
400	16	M24 x115	20	M30 x165
450	16	M30 x125	24	M30 x165
500	20	M30 x125	24	M30 x180
600	20	M30 x150	24	*M39 x200

Above bolt lengths make allowance for 2 x 3 mm thick washers and a 3 mm thick gasket.

* Non-Preferred diam

STAINLESS STEEL FLANGES

Flange Bolt Dimensions
BS 10/1962

Nominal Bore (NB)	Table D	Table E	Table F	Table H	Table J
15	4 M12 x 30	4 M12 x 40	4 M12 x 50	4 M16 x 55	4 M16 x65
20	4 M12 x 30	4 M12 x 40	4 M12 x 50	4 M16 x 55	4 M16 x65
25	4 M12 x 30	4 M12 x 40	4 M16 x 50	4 M16 x 55	4 M16 x65
32	4 M12 x 40	4 M12 x 40	4 M16 x 55	4 M16 x 65	4 M16 x65
40	4 M12 x 40	4 M12 x 40	4 M16 x 55	4 M16 x 65	4 M16 x75
50	4 M16 x 50	4 M16 x 50	4 M16 x 65	4 M16 x 65	4 M20 x90
65	4 M16 x 50	4 M16 x 50	8 M16 x 65	8 M16 x 65	8 M20 x90
80	4 M16 x 50	4 M16 x 50	8 M16 x 65	8 M16 x 75	8 M20 x90
90	4 M16 x 50	8 M16 x 50	8 M16 x 65	8 M16 x 75	8 M20 x90
100	4 M16 x 50	8 M16 x 50	8 M16 x 65	8 M16 x 75	8 M20 x100
125	8 M16 x 55	8 M16 x 55	8 M20 x 75	8 M20 x 90	8 M20 x115
150	8 M16 x 55	8 M20 x 65	12 M20 x 75	12 M20 x 90	12 M20 x115
200	8 M16 x 55	8 M20 x 75	12 M20 x 90	12 M20 x100	12 M20 x115
250	8 M20 x 65	12 M20 x 75	12 M20 x 90	12 M20 x100	12 M24 x140
300	12 M20 x 65	12 M20 x 90	16 M20 x100	12 M20 x115	16 M24 x140
350	12 M20 x 75	12 M20 x 90	16 M24 x115	16 M24 x140	16 *M27 x165
400	12 M20 x 75	12 M20 x100	20 M24 x140	20 M24 x150	20 *M27 x165
450	12 M20 x 75	16 M20 x100	20 *M27 x140	20 *M27 x165	20 M30 x180
500	16 M20 x 90	16 M20 x115	24 *M27 x140	20 *M27 x180	24 M30 x200
600	16 M24 x100	16 *M27 x140	24 M30 x165	20 M30 x200	24 *M33 x230

Above bolt lengths make allowance for 2 x 3 mm thick washers and a 3 mm thick gasket.

* Non-Preferred diam

TECHNICAL INFORMATION
PIPE WORKING PRESSURES - SEAMLESS & WELDED PIPE

Barlows Formula:
Bursting Pressures: $P = \frac{2 \times S \times t}{D}$

P = Pressure Rating (MPa)
S = Minimum tensile strength (MPa) (S= 517MPa)*
t = Wall Thickness (mm)
D = Outside Diameter of Pipe (mm)

Nominal Working Pressures: figures shown in tables are nominal working pressures for seamless pipe under constant operating conditions. Where pressures or temperature fluctuations occur, increased safety factors should be adopted. Listed are factors of safety recommended for varying pressure conditions.

Apply
5 to bursting pressure for no pressure fluctuations
8 to bursting pressure for small/regular pressure fluctuations
12 to bursting pressure for small/regular fluctuations

* Tensile strength of 304 at room temperature

Note: the figures given for nominal working pressures and factor of safety are for quick reference purposes only. Detailed design calculations should be in accordance with the applicable design standard.

Conversion Table

Megapascal	1
Bar	10
kgf/cm^2	10.2
Kilopascal	1000
Hectopascal	10000
Millibar	10000
kgf/m^2	101971.6
Pascal	1000000

1 Bar	14,7 psi

NOMINAL WORKING PRESSURE CHART - GENERAL AUSTENITIC GRADES

(This chart is based on a nominal safety factor of 4 and applies to seamless pipe only)

Nominal Bore Size		Schedule 10S								Schedule 40S								Schedule 80S							
		Temp° C																							
mm	In	50	100	150	200	250	300	350	400	50	100	150	200	250	300	350	400	50	100	150	200	250	300	350	400
6	⅛	30.1	26.8	23.4	21.7	20.2	19.2	18.5	17.9	42.1	37.3	32.6	30.3	28.2	26.7	25.9	25.0	58.6	52.0	45.5	42.2	39.3	37.3	36.0	34.8
8	¼	30.1	26.8	23.4	21.7	20.2	19.2	18.5	17.9	40.9	36.3	31.8	29.5	27.5	26.0	25.2	24.3	55.2	49.0	42.8	39.7	37.0	35.1	33.9	32.8
10	⅜	24.1	21.4	18.7	17.4	16.2	15.4	14.9	14.4	33.8	30.0	26.2	24.3	22.7	21.5	20.8	20.1	46.8	41.6	36.4	33.7	31.4	29.8	28.8	27.8
15	½	24.8	22.0	19.2	17.9	16.6	15.8	15.3	14.7	32.5	28.9	25.3	23.4	21.8	20.7	20.0	19.3	43.8	38.9	34.0	31.6	29.4	27.9	27.0	26.0
20	¾	19.8	17.6	15.4	14.2	13.3	12.6	12.2	11.8	26.9	23.9	20.9	19.4	18.1	17.1	16.6	16.0	36.6	32.5	28.4	26.4	24.6	23.3	22.6	21.8
25	1	20.8	18.4	16.1	14.9	13.9	13.2	12.8	12.3	25.3	22.5	19.7	18.2	17.0	16.1	15.6	15.1	34.1	30.3	26.5	24.6	22.9	21.7	21.0	20.3
32	1¼	16.4	14.6	12.8	11.8	11.0	10.5	10.1	9.8	21.1	18.7	16.4	15.2	14.2	13.4	13.0	12.5	28.8	25.5	22.3	20.7	19.3	18.3	17.7	17.1
40	1½	14.4	12.7	11.1	10.3	9.6	9.1	8.8	8.5	19.1	16.9	14.8	13.7	12.8	12.1	11.7	11.3	26.3	23.4	20.4	19.0	17.7	16.7	16.2	15.6
50	2	11.5	10.2	8.9	8.3	7.7	7.3	7.1	6.8	16.2	14.4	12.6	11.7	10.9	10.3	10.0	9.6	23.0	20.4	17.8	16.6	15.4	14.6	14.1	13.7
65	2½	10.5	9.3	8.1	7.5	7.0	6.7	6.4	6.2	17.7	15.7	13.7	12.7	11.9	11.3	10.9	10.5	24.0	21.3	18.7	17.3	16.1	15.3	14.8	14.3
80	3	8.6	7.6	6.7	6.2	5.8	5.5	5.3	5.1	15.5	13.7	12.0	11.1	10.4	9.8	9.5	9.2	21.5	19.1	16.7	15.5	14.4	13.7	13.2	12.8
90	3½	7.5	6.7	5.8	5.4	5.0	4.8	4.6	4.5	14.1	12.6	11.0	10.2	9.5	9.0	8.7	8.4	19.9	17.7	15.4	14.3	13.4	12.7	12.2	11.8
100	4	6.7	5.9	5.2	4.8	4.5	4.2	4.1	4.0	13.2	11.7	10.2	9.5	8.8	8.4	8.1	7.8	18.7	16.6	14.5	13.5	12.6	11.9	11.5	11.1
125	5	6.0	5.3	4.7	4.3	4.0	3.8	3.7	3.6	11.6	10.3	9.0	8.4	7.8	7.4	7.1	6.9	16.9	15.0	13.1	12.2	11.3	10.7	10.4	10.0
150	6	5.1	4.5	3.9	3.6	3.4	3.2	3.1	3.0	10.6	9.4	8.2	7.6	7.1	6.7	6.5	6.3	16.3	14.5	12.7	11.7	11.0	10.4	10.0	9.7
200	8	4.3	3.8	3.3	3.1	2.9	2.7	2.6	2.6	9.3	8.3	7.3	6.7	6.3	5.9	5.7	5.6	14.5	12.9	11.3	10.4	9.7	9.2	8.9	8.6
250	10	3.8	3.4	3.0	2.8	2.6	2.4	2.4	2.3	8.5	7.5	6.6	6.1	5.7	5.4	5.2	5.0	11.6	10.3	9.0	8.4	7.8	7.4	7.2	6.9
300	12	3.5	3.1	2.7	2.5	2.4	2.2	2.2	2.1	7.4	6.5	5.7	5.3	4.9	4.7	4.5	4.4	9.8	8.7	7.6	7.1	6.6	6.2	6.0	5.8

Nominal working pressures are shown in MPa
Nominal working pressures for welded pipe can be calculated by multiplying the figure in the tables by 0.85 (weld joint efficiency factor).

TABLE OF TOLERANCE ASTM A530/A530M

ASTM A312 Pipe

Standard cross-section and weight tolerances (ASTM A530/A530M)

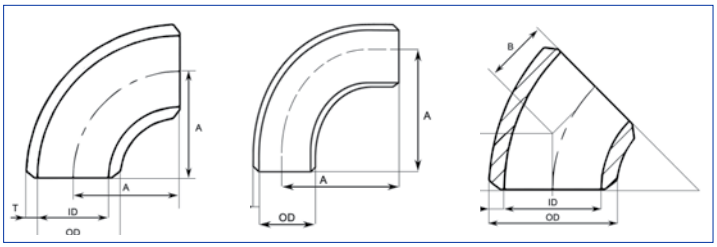
NPS	Outside Diameter (OD)[1]				Wall Thickness (t)[2]		Weight [3]	
	Under		Over		Under	Over	Under	Over
	in	mm	in	mm	%	%	%	%
⅛ – 1½	0.031	0.8	0.015	0.4	12.5	20	3.5	10
> 1½ – 4	0.031	0.8	0.031	0.8	12.5	20	3.5	10
> 4 – 8	0.031	0.8	0.062	1.6	12.5	22.5	3.5	10
> 8 – 12	0.031	0.8	0.093	2.4	12.5	22.5	3.5	10
> 12 – 18	0.031	0.8	0.093	2.4	12.5	22.5	5	10
> 18 – 26	0.031	0.8	0.125	3.2	12.5	22.5	5	10
> 26 – 34	0.031	0.8	0.156	4.0	12.5	22.5	5	10
> 34 – 48	0.031	0.8	0.187	4.8	12.5	22.5	5	10

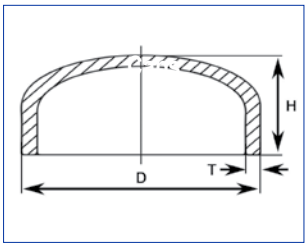
Notes

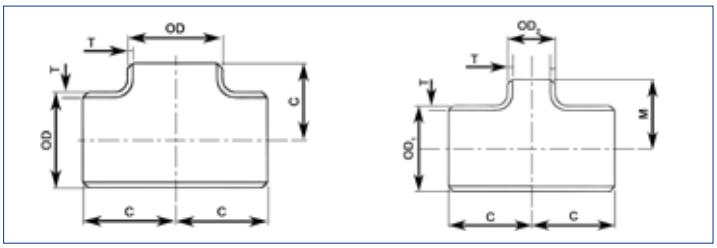
1. Includes ovality tolerance except for thin wall pipe (ie t>3% OD)
2. Min wall thickness = Nominal wall thickness (t) x 0.875. Not applicable if filler metal added
3. For non standard pipes W (lb/ft) = 10.68 (OD-t)t, or W (kg/m) = 0.02466 (OD-t)t

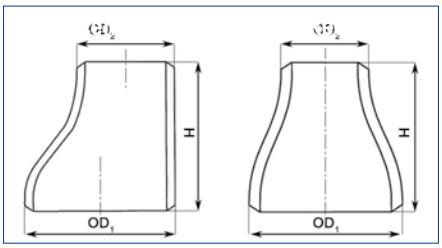
- **Standard Cut Lengths**
  Pipe ordering alternatives are:
  - **Random** Standard lengths are in the range 15 to 24 feet. Shorter lengths are agreed with the purchaser.
  - **Specified Lengths** Cut lengths as specified, with end finish also specified
- **Length tolerances**
  No pipe shall be shorter than specified. No pipe shall be more than ¼ in (6mm) longer than specified. Tighter tolerances may be specified, e.g. for bevelled pipe
- **Straightness**
  All finished pipe shall be reasonably straight. For metal-arc welded pipe maximum deviation from straight = ⅛ in (3.2mm) in 10 ft (3 m)

TABLE OF TOLERANCE BUTTWELD FITTINGS





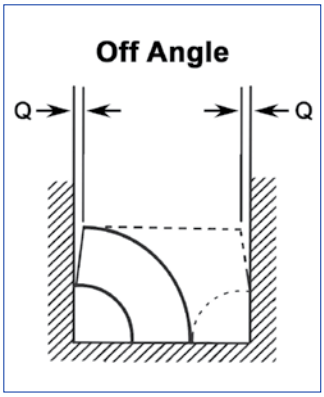


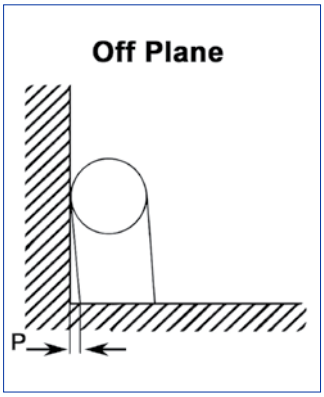


ANSI B16.9, B16.28							(in mm)
All fittings				90° and 45° Elbows	Tees	Reducers	Caps
Nom Pipe Size (inches)	Outside Diameter at Bevel OD	Inside Diameter at End ID	Wall Thickness T	Centre-to-End Dimension A, B	Centre-to-End Dimension C, M	Overall Length H	Overall Length H
½ - 2½	+1.5 -0.7	±0.7	Not less than 87-½% of nominal thickness	±1.5	±1.5	±3.0	±3.0
3 - 4	±1.5	±1.5					
5 -8	+2.2 -1.5						±6.3
10 - 18	+4.0 -3.0	±3.0		±2.2	±2.2	±6.3	
20 - 24	+6.3 -4.8	±4.8					
26 - 30				±3.0	±3.0	±9.6	±9.6
32 - 48				±4.8	±4.8		

Angularity Tolerance

Nom Pipe Size (inches)	(in mm) Angularity Tolerance	
	Off Angle Q	Off Plane P
½ - 4	0.7	1.5
5 - 8	1.5	3.0
10 - 12	2.2	4.8
14 - 16		6.3
18 - 24	3.0	9.6
26 - 30	4.8	
32 - 42		12.7
44 - 48		19.0





CORROSION RESISTANCE DATA

R - The material is **RESISTANT** to the named chemical up to the temperature shown, subject to limitations indicated by the footnotes at the end of the Corrosion Resistance Data table

NR - The material is **NOT RECOMMENDED**

ND - **NO DATA** is available

	Stainless Steel 18/8 (304, 304L & 321)			Molybdenum Stainless Steel (316 & 316L)			Duplex Ferritic-Austenitic Stainless Steel			3CR12		
Temperature °C	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**
Aldyhydes	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]
Acetic Acid (10%)	R	R	R	R	R	R	R	R	R	R	R	ND
Acetic Acid (glac & anh)	R	R	NR	R	R	R	R	R	NR	ND	ND	ND
Acetic Anhydride	R[2]	NR	NR	R	R	NR	R	R	R	R[2]	NR	ND
Acetylene	R	R	R	R	R	R	R	R	R	R	ND	ND
Acid Fumes	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[4]	NR	NR	NR	NR	NR
Alcohols	R	R	R	R	R	R	R	R	R	R	R	R
Alphatic Esters	R	R	R	R	R	R	R	R	R	R	ND	ND
Alkyl Chlorides	R[5]	R[5]	R[5]	R[5]R	R[5]	R[5]	R	R	R	R[5]	ND	ND
Alum	R	R[6]	NR	R	R[1]	NR	R	R	NR	ND	ND	ND
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	R[5]	NR	NR	R[5]	R[5]	NR	R	R	NR	NR	NR	NR
Aromatic Solvents	R	R	R	R	R	R	R	R	R	R	R	R
Atmospheric: Industrial	R[7]	ND	ND	R	ND	ND	R	ND	ND	R[7]	ND	ND
Atmospheric: Marine	R[7]	ND	ND	R	ND	ND	R	ND	ND	R[7]	ND	ND
Atmospheric: Rural	R	ND	ND	R	ND	ND	R	ND	ND	R[7]	ND	ND
Ascorbic Acid	R[1]	R[1]	R[1]	R	R	R	R	R	R	R[1]	ND	ND
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	R[8]	NR	NR	R[8]	NR	NR	R	R	R	NR	NR	NR
Bromide (k) soln	R[9]	NR	NR	R[9]	R[9]	R[9]	R	ND	ND	NR	NR	NR
Bromide (+ aqu)	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	R[8]	NR	NR	R[10]	R[10]	R[10]	NR	NR	NR
Carbon Disulphide	R	R	ND	R	R	ND	R	R	R	R	R	R
Carbonic Acid	R	R	R	R	R	R	R	R	R	R	R[9]	NR
Carbon Tetrachloride	R	R	R	R	R	R	R	R	R	R	R	R
Caustic Soda & Potash	R	R	R[6]	R	R	R[6]	R[6]	R[6]	ND	ND	R[6]	R[6]
Cellulose Paint	R	R	R	R	R	R	R	R	R	R	R	R
Chlorates of Na, K, Ba	R[1]	R[1]	R[1]	R[1]	R[1]	R[1]	R	R	R	ND	ND	ND
Chlorine, Dry		R	R	R	R	R	R	R	R	ND	ND	ND

CORROSION RESISTANCE DATA

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ND - **NO DATA** is available

	Stainless Steel 18/8 (304, 304L & 321)			Molybdenum Stainless Steel (316 & 316L)			Duplex Ferritic-Austenitic Stainless Steel			3CR12		
Temperature °C	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**
Chlorine, Wet	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlorides of Na, K, Mg, Ca, Ni, HN_4 , Al, Sn, Zn	R[10]	NR	NR	R[9]	R[11]	R[11]	R	R	ND	R[5]	NR	NR
Chlorosulphonic Acid	NR	NR	NR	R[10]	NR	NR	ND	ND	ND	ND	ND	ND
Chromic Acid (80%)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Citric Acid	R[6]	R[6]	R[6]	R	R	R[6]	R	R	R	NR	NR	NR
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 conc)	R	R	R	R	R	R	R	R	R	ND	ND	ND
Esters & Ethers	R	R	R	R	R	R	R	R	R	R	R	R
Fatty Acids (> C_6)	R	R	R	R	R	R	R	R	R	R	R	R
Ferritic Chloride	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluorinated Refrigerants, Aerosols eg Freon	R[5]	R	R	R[5]	R	R	R	R	R	R[5]	R	NR
Fluorine, Dry	R	ND	ND	R	ND	ND	R	R	ND	ND	ND	ND
Formic Acid	R	NR	NR	R	R	ND	R	R	ND	NR	NR	NR
Fruit Juices	R[12]	R	R	R	R	R	R	R	R	R[13]	NR	NR
Gelatine	R[1]	R	R	R[1]	R	R	R	R	R	R[1]	R[1]	ND
Glycols	R	R	R	R	R	R	R	R	R	R	R	R
Hydrobromic Acid (50%)	NR	NR	ND	NR	NR	ND	NR	NR	ND	NR	NR	NR
Hydrochloric Acid (10%)	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Hydrochloric Acid (conc)	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Hydrocyanic Acid	R	R	ND	R	R	ND	R	R	ND	R	ND	ND
Hydrofluoric Acid	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hydrogen Peroxide (30%)	R	R	R	R	R	R	R	R	R	R	R	ND
Hydrogen Sulphide	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]
Hypochlorite (Na 12-14%)	R[14]	NR	NR	R[14]	NR	ND	R[14]	ND	ND	R[14]	ND	ND
Ketones	R	R	R	R	R	R	R	R	R	R	ND	ND
Lactic Acid (100%)	R	NR	NR	R	R	NR	R	R	ND	NR	NR	NR
Lead Acetate	R	R	R	R	R	R	R	R	R	R	R	R[6]
Lead Perchlorate	R[1]	R[1]	R[1]	R	R[1]	ND	ND	ND	ND	NR	NR	NR
Lime (CaO)	R	R	R	R	R	R	R	R	R	R	R	R

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	Stainless Steel 18/8 (304, 304L & 321)			Molybdenum Stainless Steel (316 & 316L)			Duplex Ferritic-Austenitic Stainless Steel			3CR12		
Temperature °C	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**
Manganate, Potassium (K)	R	R	R	R	R	R	R	ND	ND	R[6]	ND	ND
Meat Juices	R	R	ND	R	R	ND	R	R	R	R[7]	NR	NR
Mercuric Chloride	NR	NR	NR	NR	NR	NR	R	R	R	NR	NR	NR
Milk and Milk Products	R	R	R	R	R	R	R	R	R	R	NR	NR
Molasses	R	R	R	R	R	R	R	R	R	R	R	R
Monoethanolamine	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, NH_3, Ag	R	R	R	R	R	R	R	R	R	R	R	R
Nitric Acid (<25%)	R	R	R	R	R	R	R	R	R	R	R[15]	NR
Nitric Acid (50%)	R	R	R	R	R	R	R	R	R	R	R[15]	NR
Nitric Acid (90%)	R	NR	NR	R	NR	NR	R	NR	ND	R	NR	NR
Nitric Acid, Fuming	R	R[2]	NR	R	R[2]	NR	R	NR	NR	ND	ND	ND
Oil, Diesel, Petroleum Spirits	R	R	R	R	R	R	R	R	ND	R	R	R
Oils, Essential	R	R	R	R	R	R	R	R	R	R	R	R
Oil, Lube with Aromatic Acids	R	R	R	R	R	R	R	R	R	R	R	R
Oils, Vegetables & Animal	R	R	R	R	R	R	R	R	R	R	R	R
Oxalic Acid	R[6]	NR	NR	R[6]	R[16]	NR	R	R	R	NR	NR	NR
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%)	R	R	R	R	R	R	R	R	R	NR	NR	NR
Phosphoric Acid (50%)	R	R	NR	R	R	R	R	R	R	NR	NR	NR
Phosphoric Acid (95%)	R	R	NR	R	R	NR	R[17]	R[17]	R[17]	NR	NR	NR
Phosphorous pentoxide	R	R	R[5]	R	R	R[5]	R	R	R	ND	ND	ND
Pyridine	R	R	R	R	R	R	R	R	R	R	R	R
Sea Water	R[9]	NR	NR	R[9]	NR	NR	R	R	R	NR	NR	NR
Silicic Acid	R	R	R	R	R	R	R	R	R	R	R	R
Sodium Peroxide	R[16]	NR	NR	R[6]	R[16]	R[16]	R	R	R	NR	NR	NR
Sodium Silicate	R	R	R	R	R	R	R	R	R	R	R	R
Sodium Sulphide	R	R	NR	R	R	NR	R	R	NR	R[6]	R[6]	NR
Starch	R	R	R	R	R	R	R	R	R	R	R	R
Sugar, Syrup, Jam	R[12]	R	R	R	R	R	R	R	R	R[12]	R[12]	R[12]
Sulphamic Acid	R[18]	NR	NR	R	R[19]	NR	R	R	NR	NR	NR	NR

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	Stainless Steel 18/8 (304, 304L & 321)			Molybdenum Stainless Steel (316 & 316L)			Duplex Ferritic-Austenitic Stainless Steel			3CR12		
Temperature ºC	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**	**20**	**60**	**100**
Sulphates (Na, K, Mg, Ca, Al, Fe)	R	R	R	R	R	R	R	R	R	R	R	R
Sulphates	R	R	R	R	R	R	R	R	R	NR	NR	NR
Sulphur Dioxide, Dry	R	R	R	R	R	R	R	R	R	R	R	R
Sulphur Dioxide, Wet	R	NR	NR	R	R	NR	R	R	NR	NR	NR	NR
Sulphur Dioxide, ag soln (96%)	R	NR	NR	R	R	R	R	R	R	NR	NR	NR
Sulphur Trioxide	NR	NR	NR	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	NR	NR	NR
Sulphuric Acid (>50%)	NR	NR	NR	R[16]	NR	NR	R	R	NR	NR	NR	NR
Sulphuric Acid (70%)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sulphuric Acid (95%)	R	NR	NR	R	NR	NR	R	NR	NR	R[15]	NR	NR
Sulphuric Acid, Fuming	R	R[2]	NR	R	R	NR	R	R	NR	R[2]	R[2]	NR
Tannic Acid (10%)	R	R	R	R	R	R	R	R	R	R	R	NR
Tartaric Acid	R	R	R	R	R	R	R	R	R	NR	NR	NR
Trichloroethylene	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]	R[5]
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

Footnotes

1 not if chlorides present
2 limited data
3 depends upon the acid
4 dry acid fumes, attack may occur if moisture builds up
5 anhydrous
6 depends upon 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 SO_2
13 may cause contamination of product
14 dilute hypochlorites can be used to sterilise some stainless steel with extreme care
15 general corrosion may become excessive
16 10%
17 in the absence of impurities
18 dilute
19 some attack at high temperatures

Pitting & crevice corrosion resistance

Exposure in chloride containing media can result in localised corrosion.

In order of increasing resistance to localised corrosion: 3CR12 <304L <316L <Duplex

Conditions for avoiding pitting and 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.

NOMINAL COMPOSITION OF SOME COMMON GRADES OF STAINLESS STEEL

Similar grades (on a basis of composition only) from the ASTM and EN Standards are grouped together.

Notes:

1. Nominal compositions are given in this table. These must not be used for specification purposes. For the exact composition, reference must be made to the appropriate specification.
2. The % content is a maximum unless a compositional range is given.
3. Al = aluminium C = carbon Cr = chromium Cu = copper
   Mn = manganese Mo = molybdenum N = nitrogen
   Nb = niobium (as Cb = columbium in American Specifications) Ni = nickel
   P = phosphorus S = sulphur Se = selenium Si = silicon
   Ti = titanium V = vanadium
4. Only the primary alloying elements (C, Cr, Ni, Mo and N) are individually listed in the table.
5. All stainless steels contain Si, Mn, P and S. These are controlled to maximum contents of typically 0.75% or 1.0% Si, 2.0% Mn, 0.015% S, 0.045%P. If these elements are intentionally added as alloying elements the higher % content is listed under "% Other".
6. The % content of any other alloying elements that are contained in some of the stainless steels is listed under "% Other".
7. Typical Proprietary Grades (which are commonly referred to in South Africa) are given for the purpose of example only. The inclusion of any such Proprietary Grade must not be interpreted as an endorsement or recommendation; and vice versa, the exclusion of any such Proprietary Grade must not be interpreted as a non-recommendation.

NOMINAL COMPOSITION OF SOME COMMON GRADES OF STAINLESS STEEL

Grade Number	UNS Number Grade Designation	%C	%Cr	%Ni	%Mo	%N	%Other
Austenitic Stainless Steels and Austenitic Stainless Alloys							
201	S20100	0.15	16.0-18.0	3.5-5.5	-	0.25	5.5-7.5 Mn
1.4372	X12CrMnNiN 17-7-5	0.15	16.0-18.0	3.5-5.5	-	0.05-0.25	5.5-7.5 Mn
201L	S20103	0.03	16.0-18.0	3.5-5.5	-	0.25	5.5-7.5 Mn
1.4371	X2CrMnNiN 17-7-5	0.03	16.0-17.0	3.5-5.5	-	0.15-0.20	6.0-8.0 Mn
202	S20200	0.15	17.0-19.0	4.0-6.0	-	0.25	7.5-10.0 Mn
1.4373	X12CrMnNiN 18-9-5	0.15	17.0-19.0	4.0-6.0	-	0.05-0.25	7.5-10.5 Mn
CROMANITE™		0.08	18.0-20.0	1.0	-	0.4-0.6	9.5-11.5 Mn
301	S30100	0.15	16.0-18.0	6.0-8.0	-	0.10	-
1.4310	X10CrNi 18-8	0.05 - 0.15	16.0-19.0	6.0-9.5	0.80	0.11	-
1.4318	X2CrNi 18-7	0.03	16.5-18.5	6.0-8.0	-	0.10-0.20	-
303	S30300	0.15	17.0-19.0	8.0-10.0	-	-	>0.15 S (Free machining properties)
1.4305	X8CrNiS 18-9	0.10	17.0-19.0	8.0-10.0	-	0.11	0.15-0.35 S (Free machining properties)
303Se	S30323	0.15	17.0-19.0	8.0-10.0	-	-	0.06 S & >0.15 Se (Free machining properties)
304	S30400	0.08	18.0-20.0	8.0-10.5	-	0.10	-
1.4301	X5CrNi 18-10	0.07	17.0-19.5	8.0-10.5	-	0.11	-
304L	S30403	0.03	18.0-20.0	10.0-12.0	-	0.10	-
1.4306	X2CrNi 19-11	0.03	18.0-20.0	10.0-12.0	-	0.11	-
304LN	S30453	0.03	18.0-20.0	8.0-12.0	-	0.10-0.16	-
1.4311	X2CrNiN 18-10	0.03	17.0-19.5	8.5-11.5	-	0.12-0.22	-
304H	S30409	0.04 - 0.10	18.0-20.0	8.0-10.5	-	-	-
1.4948	X6CrNi 18-10	0.04 - 0.08	17.0-19.0	8.0-11.0	-	0.11	-
305	S30500	0.12	17.0-19.0	10.5-13.0	-	-	-
1.4303	X4CrNi 18-12	0.06	17.0-19.0	11.0-13.0	-	0.11	-
309	S30900	0.20	22.0-24.0	12.0-15.0	-	-	-
1.4828	X15CrNiSi 20-12	0.20	19.0-21.0	11.0-13.0	-	0.11	1.5-2.0 Si
309S	S30908	0.08	22.0-24.0	12.0-15.0	-	-	-
1.4833	X12CrNi 23-13	0.15	22.0-24.0	12.0-14.0	-	0.11	-
310	S31000	0.25	24.0-26.0	19.0-22.0	-	-	1.5 Si
1.4841	X15CrNiSi 25-21	0.20	24.0-26.0	19.0-22.0	-	0.11	1.5-2.5 Si
310S	S31008	0.08	24.0-26.0	19.0-22.0	-	-	1.5Si
1.4845	X8CrNi 25-21	0.10	24.0-26.0	19.0-22.0	-	0.11	1.5Si
310MoLN	S31050	0.02	24.0-26.0	20.5-23.5	1.6-2.6	0.09-0.15	-
1.4466	X1CrNiMoN 25-22-2	0.02	24.0-26.0	21.0-23.0	2.0-2.5	0.10-0.16	-
*253MA	S30815	0.12	20.0	10.0		0.12	1.4 Si, Ce
1.4835							
316	S31600	0.08	16.0-18.0	10.0-14.0	2.0-3.0	0.10	-
1.4401	X5CrNiMo 17-12-2	0.07	16.5-18.5	10.0-13.0	2.0-2.5	0.11	-
1.4436	X3CrNiMo 17-13-3	0.05	16.5-18.5	10.5-13.0	2.5-3.0	0.11	-

* Chemical composition minimum values

NOMINAL COMPOSITION OF SOME COMMON GRADES OF STAINLESS STEEL

Grade Number	UNS Number Grade Designation	%C	%Cr	%Ni	%Mo	%N	%Other
Austenitic Stainless Steels and Austenitic Stainless Alloys *cont'd...*							
316L	S31603	0.03	16.0-18.0	10.0-14.0	2.0-3.0	0.10	-
1.4404	X2CrNiMo 17-12-2	0.03	16.5-18.5	10.0-13.0	2.0-2.5	0.11	-
1.4432	X2CrNiMo 17-12-3	0.03	16.5-18.5	10.5-13.0	2.5-3.0	0.11	-
1.4435	X2CrNiMo 18-14-3	0.03	17.0-19.0	12.5-15.0	2.5-3.0	0.11	-
316LN	S31653	0.03	16.0-18.0	10.0-14.0	2.0-3.0	0.10-0.16	-
1.4406	X2CrNiMoN 17-11-2	0.03	16.5-18.5	10.0-12.0	2.0-2.5	0.12-0.22	-
1.4429	X2CrNiMoN 17-13-3	0.03	16.5-18.5	11.0-14.0	2.5-3.0	0.12-0.22	-
316Ti	S31635	0.08	16.0-18.0	10.0-14.0	2.0-3.0	0.10	(5x[%C+%N])-0.7 Ti
1.4571	X6CrNiMoTi 17-12-2	0.08	16.5-18.5	10.5-13.5	2.0-2.5	-	(5x%C)-0.7 Ti
316Cb	S31640	0.08	16.0-18.0	10.0-14.0	2.0-3.0	-	(10x%C)-1.1 Cb
1.4580	X6CrNiMoNb 17-12-2	0.08	16.5-18.5	10.5-13.5	2.0-2.5	-	(10x%C)-1.0 Nb
317L	S31703	0.03	18.0-20.0	11.0-15.0	3.0-4.0	0.10	-
1.4438	X2CrNiMo 18-15-4	0.03	17.5-19.5	13.0-16.0	3.0-4.0	0.11	-
~ ~ ~	S31726	0.03	17.0-20.0	13.5-17.5	4.0-5.0	0.10-0.20	-
1.4439	X2CrNiMoN 17-13-5	0.03	16.5-18.5	12.5-14.5	4.0-5.0	0.12-0.22	-
317LN	S31753	0.03	18.0-20.0	11.0-15.0	3.0-4.0	0.10-0.22	-
1.4434	X2CrNiMoN 18-12-4	0.03	16.5-19.5	10.5-14.0	3.0-4.0	0.10-0.20	-
321	S32100	0.08	17.0-19.0	9.0-12.0	-	0.10	(5x[%C+%N])-0.7 Ti
1.4541	X6CrNiTi 18-10	0.08	17.0-19.0	9.0-12.0	-	-	(5x%C)-0.7 Ti
347	S34700	0.08	17.0-19.0	9.0-13.0	-	-	(10x%C)-1.0 Cb
1.4550	X6CrNiNb 18-10	0.08	17.0-19.0	9.0-12.0	-	-	(10x%C)-1.0 Nb
*254 SMo	S31254	0.02	19.5	17.5	6.0	0.18	0.5 Cu
1.4547							
~ ~ ~	SN08904	0.02	19.0-23.0	23.0-28.0	4.0-5.0	0.10	1.0-2.0 Cu
1.4539	X1NiCrMoCu 25-20-5	0.02	19.0-21.0	24.0-26.0	4.0-5.0	0.15	1.2-2.0 Cu
Typical similar proprietary grades:- 904L ~ Cronifer 1925LC ~ 2RK65 ~ Uranus B6							
~ ~ ~	N08925/6	0.02	19.0-21.0	24.0-26.0	6.0-7.0	0.15-0.25	0.5-1.5 Cu
1.4529	X1NiCrMoCuN 25-20-7	0.02	19.0-21.0	24.0-26.0	6.0-7.0	0.15-0.25	0.5-1.5 Cu
Typical similar proprietary grades:- Cronifer 1925hMo ~ 25-6Mo ~ Uranus B26							
~ ~ ~	N08028	0.03	26.0-28.0	29.5-32.5	3.0-4.0	-	0.6-1.4 Cu
1.4563	X1NiCrMoCu 31-27-4	0.02	26.0-28.0	30.0-32.0	3.0-4.0	0.11	0.7-1.5 Cu
Typical similar proprietary grades:- Nicrofer 3127LC ~ Sanicro 28							
~ ~ ~	N08020	0.07	19.0-21.0	32.0-38.0	2.0-3.0	-	(8x%C)-1.0 Cb & 3.0-4.0 Cu
2.4660	NiCr 20 CuMo	0.05	19.0-21.0	36.0-39.0	2.0-3.0	-	(8x%C)-1.0 Nb & 3.0-4.0 Cu
Typical similar proprietary grades:- Alloy 20Cb3 ~ Nicrofer 3620Nb ~ Inco alloy 20							
~ ~ ~	N08825	0.05	19.5-23.5	38.0-46.0	2.5-3.5	-	0.6-1.2 Ti & 1.5-3.0 Cu & 0.20 Al
2.4858	NiCr 21 Mo	0.025	19.5-23.5	38.0-46.0	2.5-3.5	-	0.6-1.2 Ti & 1.5-3.0 Cu & 0.20 Al
Typical similar proprietary grades:- Incoloy 825 ~ Nicrofer 4221							
~ ~ ~	N08330 & N08332	0.10	17.0-20.0	34.0-37.0	-	-	0.75-1.50 Si & 1.0 Cu
1.4864	X12NiCrSi 35-16	0.15	15.0-17.0	33.0-37.0	-	0.11	1.0-2.0 Si
Typical similar proprietary grades:- Incoloy DS ~ Nicrofer 3718							
~ ~ ~	N08800 & N08811	0.10	19.0-23.0	30.0-35.0	-	-	39.5 Fe(min) & 0.15-0.60 Ti & 0.15-0.60 Al
1.4876	X10NiCrAlTi 32-21	0.12	19.0-23.0	30.0-34.0	-	-	0.15-0.60 Ti& 0.15-0.60 Al
Typical similar proprietary grades:- Incoloy 800 & 800HT ~ Nicrofer 3220& 3220H ~ Uranus 800 & 800H							

* Chemical composition minimum values

NOMINAL COMPOSITION OF SOME COMMON GRADES OF STAINLESS STEEL

Grade Number	UNS Number Grade Designation	%C	%Cr	%Ni	%Mo	%N	%Other
Ferritic Stainless Steels							
3CR12™	X2CrNi 12	0.03	11.0-12.0	1.5	-	0.03	0.6Ti
1.4003		0.03	10.5-12.5	0.3-1.0	-	0.03	-
~ ~ ~	S40910	0.03	10.5-11.7	0.5	-	0.03	(6x[%C+%N])-0.5 Ti & 0.17 Cb
1.4512	X2CrTi 12	0.03	10.5-12.5	-	-	-	(6x[%C+%N])-0.65 Ti
430	S43000	0.12	16.0-18.0	0.75	-	-	
1.4016	X6Cr 17	0.08	16.0-18.0	-	-	-	
*441	S43940	0.03	17.5-18.5	-	-	0.045	0.10-0.60 Ti &(0.3+[3x%C])-1.0 Nb
1.4509	X2CrTiNb 18	0.03	17.5-18.5	-	-	0.045	0.10-0.60 Ti &(0.3+[3x%C])-1.0 Nb
439	S43035	0.07	17.0-19.0	0.50	-	0.04	(0.2+4x[%C+%N])-1.1 Ti & 0.15Al
1.4510	X3CrTi 17	0.05	16.0-18.0	-	-	-	(0.15+4x[%C+%N])-0.80 Ti
444	S44400	0.025	17.5-19.5	1.0	1.8-2.5	0.035	(0.20+4x[%C+%N])-0.80 Ti+Cb
1.4521	X2CrMoTi 18-2	0.025	17.0-20.0	-	1.8-2.5	0.03	(0.15+4x[%C+%N])-0.8 Ti
446	S44600	0.20	23.0-27.0	0.75	-	0.25	
1.4762	X10CrAlSi25	0.12	23.0-26.0	-	-	-	1.2-1.7 Al & 0.7-1.4 Si
Martensitic Stainless Steels							
410	S41000	0.15	11.5-13.5	-	-	-	-
1.4006	X12Cr 13	0.08-0.15	11.5-13.5	0.75	-	-	-
416	S41600	0.15	12.0-14.0	-	-	-	>0.15 S (Free machining properties)
1.4005	X12CrS 13	0.08-0.15	12.0-14.0	-	0.60	-	0.15-0.35 S (Free machining properties)
420	S42000	>0.15	12.0-14.0	-	-	-	-
1.4021	X20Cr 13	0.16-0.25	12.0-14.0	-	-	-	-
431	S43100	0.20	15.0-17.0	1.25-2.50	-	-	-
1.4057	X17CrNi 16-2	0.12-0.22	15.0-17.0	1.5-2.5	-	-	-
440A	S44002	0.60-0.75	16.0-18.0	-	0.75	-	-
440B	S44003	0.75-0.95	16.0-18.0	-	0.75	-	-
1.4112	X90CrMoV 18	0.85-0.95	17.0-19.0	-	0.9-1.3	-	0.07-0.12 V
440C	S44004	0.95-1.20	16.0-18.0	-	0.75	-	-
1.4125	X105CrMo 17	0.95-1.20	16.0-18.0	-	0.4-0.8	-	-

* Designation 441 is not officially included in ASTM A240 standard but it is widely used as a colloquial synonym for Grade 1.4509.

NOMINAL COMPOSITION OF SOME COMMON GRADES OF STAINLESS STEEL

Grade Number	UNS Number Grade Designation	%C	%Cr	%Ni	%Mo	%N	%Other
Duplex Stainless Steels							
2304	S32304	0.03	21.5-24.5	3.0-5.5	0.1-0.6	0.05-0.20	0.05-0.6 Cu
1.4362	X12CrNiN 23-4	0.03	22.0-24.0	3.5-5.5	0.1-0.6	0.05-0.20	0.1-0.6 Cu
Typical similar proprietary grades: SAF2304 ~ 2304							
~ ~ ~	S31803	0.03	21.0-23.0	4.5-6.5	2.5-3.5	0.08-0.20	-
2205	S32205	0.03	22.0-23.0	4.5-6.5	3.0-3.5	0.14-0.20	-
1.4462	X2CrNiMoN 22-5-3	0.03	21.0-23.0	4.5-6.5	2.5-3.5	0.10-0.22	-
Typical similar proprietary grades: SAF2205 ~ 2205 ~ Uranus 45N							
2507	S32750	0.03	24.0-26.0	6.0-8.0	3.0-5.0	0.24-0.35	-
1.4410	X2CrNiMoN 25-7-4	0.03	24.0-26.0	6.0-8.0	3.0-4.5	0.20-0.35	-
Typical similar proprietary grades: SAF2507 ~ 2507 ~ Uranus 47N							
*LDX 2101	S32101	0.03	21.5	1.5	0.3	0.22	5.0 Mn
1.4162							-
*LDX 2404	S82441	0.02	24	3.6	1.6	0.27	3.0 Mn
1.4662							-
*DX 2202	S32202	0.025	23	2.5	<0.30	0.20	1.3 Mn
1.4062	X2CrNiN 22-2						
255	S32550	0.04	24.0-27.0	4.5-6.5	2.9-3.9	0.10-0.25	1.5-2.5 Cu
1.4507	X2CrNiMoCuN 25-6-3	0.03	24.0-26.0	5.5-7.5	2.7-4.0	0.15-0.30	1.0-2.5 Cu
Typical similar proprietary grades: Ferralium 255-3SF ~ Uranus 52N							
Precipitation Hardenable (PH) Stainless Steels							
630	S17400	0.07	15.0-17.5	3.0-5.0	-	-	3.0-5.0 Cu & 0.1-0.5 Cb
1.4542	X5CrNiCuNb 16-4	0.07	15.0-17.0	3.0-5.0	0.6	-	3.0-5.0 Cu & (5x%C)-0.45 Nb
Typical similar proprietary grade: 17-4PH							
631	S17700	0.09	16.0-18.0	6.5-7.75	-	-	0.7-1.5 Al
1.4568	X7CrNiAl 17-7	0.09	16.0-18.0	6.5-7.8	-	-	0.7-1.5 Al
Typical similar proprietary grade: 17-7PH							
632	S15700	0.09	14.0-16.0	6.5-7.75	2.0-3.0	-	0.7-1.5 Al
1.4532	X8CrNiMoAl 15-7-2	0.10	14.0-16.0	6.5-7.8	2.0-3.0	-	0.7-1.5 Al
Typical similar proprietary grade: PH 15-7Mo							

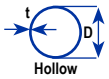
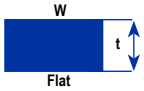
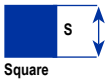
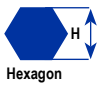
* Typical Composition %

EQUIVALENTS OF STANDARD WIRE GAUGES

No.	Inch	mm
1	.300	7.62
2	.276	7.01
3	.252	6.40
4	.232	5.89
5	.212	5.38
6	.192	4.88
7	.176	4.47
8	.160	4.06
9	.144	3.66
10	.128	3.25
11	.116	2.95
12	.104	2.64
13	.092	2.34
14	.080	2.03
15	.072	1.83
16	.064	1.63
17	.056	1.42
18	.048	1.22
19	.040	1.02
20	.036	0.914
21	.032	0.813

No.	Inch	mm
22	.028	0.711
23	.024	0.610
24	.022	0.559
25	.020	0.508
26	.018	0.457
27	.0164	0.417
28	.0148	0.376
29	.0136	0.345
30	.0124	0.315
31	.0116	0.295
32	.0108	0.274
33	.0100	0.254
34	.0092	0.234
35	.0084	0.213
36	.0076	0.193
37	.0068	0.173
38	.0060	0.152
39	.0052	0.132
40	.0048	0.122
41	.0044	0.112
42	.0040	0.102

FORMULAE FOR THEORETICAL MASS CALCULATION

Section	Formula x Spec	Ali	Brass	Bronze	Copper	Steel	Stainless
 Round	D x D x	0.002132	0.006675	0.006924	0.007010	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	0.006963

FRACTIONS OF INCHES

With their decimal and millimetre equivalents

Inch	Inch/Decimal	mm
1/64	.01562	0.397
1/32	.0312	0.794
3/64	.04687	1.191
1/16	.0625	1.588
5/64	.07812	1.984
3/32	.0937	2.381
7/64	.10937	2.778
1/8	.125	3.175
9/64	.14062	3.572
5/32	.1562	3.969
11/64	.17187	4.366
3/16	.1875	4.763
13/64	.20312	5.159
7/32	.21875	5.556
15/64	.23437	5.953
1/4	.25	6.350
17/64	.26562	6.747
9/32	.28125	7.144
19/64	.29687	7.541
5/16	.3125	7.937
21/64	.32812	8.334
11/32	.34375	8.731
23/64	.35937	9.128
3/8	.375	9.525
25/64	.39062	9.922
13/32	.40625	10.319
27/64	.42187	10.716
7/16	.4375	11.112
29/64	.45312	11.509
15/32	.46875	11.906
31/64	.48437	12.303
1/2	.5	12.700

Inch	Inch/Decimal	mm
33/64	.51562	13.097
17/32	.53125	13.494
35/64	.54687	13.891
9/16	.5625	14.287
37/64	.57812	14.684
19/32	.59375	15.081
39/64	.60937	15.478
5/8	.625	15.875
41/64	.64062	16.272
21/32	.65625	16.669
43/64	.67187	17.066
11/16	.6875	17.462
45/64	.70312	17.859
23/32	.71875	18.256
47/64	.73437	18.653
3/4	.75	19.050
49/64	.76562	19.447
25/32	.78125	19.844
51/64	.79687	20.241
13/16	.8125	20.637
53/64	.82812	21.034
27/32	.84375	21.431
55/64	.85937	21.828
7/8	.875	22.225
57/64	.89062	22.622
29/32	.90625	23.019
59/64	.92187	23.416
15/16	.9375	23.812
61/64	.95312	24.209
31/32	.96875	24.606
63/64	.98437	25.003
1	1.0	25.400

CONVERSION FACTORS

Inches	x 25.4	= Millimetres
Millimetres	x 0.03937	= Inches
Feet	x 0.3048	= Metres
Yards	x 0.9144	= Metres
Metres	x 39.370	= Inches
Metres	x 3.2808	= Feet
Metres	x 1.0936	= Yards
Kilometres	x 0.6214	= Miles
Miles	x 1.6093	= Kilometres
Square millimetres	x 0.00155	= Square inches
Square centimetres	x 0.1550	= Square inches
Square inches	x 6.4516	= Square centimetres
Square metres	x 10.7639	= Square feet
Square metres	x 1.1960	= Square yards
Square yards	x 0.8361	= Square metres
Square feet	x 0.0929	= Square metres
Cubic centimetres	x 0.0610	= Cubic inches
Cubic inches	x 16.3871	= Cubic centimetres
Cubic metres	x 35.3147	= Cubic feet
Cubic feet	x 0.0283	= Cubic metres
Kilograms	x 2.2046	= Pounds
Pounds	x 0.45359	= Kilograms
Metric tons (1 000 kilograms)	x 0.9842	= Tons
Tons	x 1.016	= Metric tons
Kilograms per square metre	x 0.2048	= Pounds per square foot
Pounds per square foot	x 4.882	= Kilograms per square metre
Kilograms per square centimetre	x 14.223	= Pounds per square inch
Pounds per square inch	x 0.0703	= Kilograms per square centimetre
Kilograms per cubic centimetre	x 36.1273	= Pounds per cubic inch
Kilograms per cubic metre	x 0.06243	= Pounds per cubic foot
Kilograms per cubic metre	x 1.68555	= Pounds per cubic yard
Pounds per cubic inch	x 0.0277	= Kilograms per cubic centimetre
Pounds per cubic foot	x 16.019	= Kilograms per cubic metre
Pounds per cubic yard	x 0.5933	= Kilograms per cubic metre
Kilograms per metre run	x 2.016	= Pounds per yard
Kilogram per metre run	x 0.672	= Pound per foot
Pounds per yard run	x 0.496	= Kilograms per metre
Pounds per foot run	x 1.488	= Kilograms per metre

HARDNESS COMPARISON TABLE

Vickers' Hardness (DPH)	Brinell Hardness 10mm Diam Ball Load: 3000 kg			Rockwell Hardness (2)				Rockwell Special Hardness Special Brale Equipment			Shore Hardness	Tensile Strength (100sqm² approx.)	Vickers' Hardness Load: 50 kg
	Std Ball	Hultgren Ball	Tungstic Carbide Ball	A Scale Load: 60 kg Brale Equip.	B Scale Load: 100 kg 1/16in. Diam Ball	C Scale Load: 150 kg Brale Equip.	D Scale Load: 100 kg Brale Equip.	15-N Scale Load: 15 kg	30-N Scale Load: 30 kg	45-N Scale Load: 45 kg			
410	388	388	388	71.4	-	41.8	56.8	81.4	61.1	45.3	-	195	410
400	379	379	379	70.8	-	40.8	56.0	81.0	60.2	44.1	55	190	400
390	369	369	369	70.3	-	39.8	55.2	80.3	59.3	42.9	-	185	390
380	360	360	360	69.8	(110.0)	38.8	54.4	79.8	58.4	41.7	52	180	380
370	350	350	350	69.2	-	37.7	53.6	79.2	57.4	40.4	-	175	370
360	341	341	341	68.7	(109.0)	36.6	52.8	78.6	56.4	39.1	50	170	360
350	331	331	331	68.1	-	35.5	51.9	78.0	55.4	37.8	-	166	350
340	322	322	322	67.6	(108.0)	34.4	51.1	77.4	54.4	36.5	47	161	340
330	313	313	313	67.0	-	33.3	50.2	76.8	53.6	35.2	-	156	330
320	303	303	303	66.4	(107.0)	32.2	49.4	76.2	52.3	33.9	45	151	320
310	294	294	294	65.8	-	31.0	48.4	75.6	51.3	32.5	-	146	310
300	284	284	284	65.2	(105.5)	29.8	47.5	74.9	50.2	31.1	42	141	300
295	280	280	280	64.8	-	29.2	47.1	74.6	49.7	30.4	-	139	295
290	275	275	275	64.5	(104.5)	28.5	46.5	74.2	49.0	29.5	41	136	290
285	270	270	270	64.2	-	27.8	46.0	73.8	48.4	28.7	-	134	285
280	265	265	265	63.8	(103.5)	27.1	45.3	73.4	47.8	27.9	40	131	280
275	261	261	261	63.5	-	26.4	44.9	73.0	47.2	27.1	-	129	275
270	256	256	256	63.1	(102.0)	25.4	44.3	72.6	46.4	26.2	38	126	270
265	252	252	252	62.7	-	24.8	43.7	72.1	45.7	25.2	-	124	265
260	247	247	247	62.4	(101.0)	24.0	43.1	71.6	45.0	24.3	37	121	260
255	243	243	243	62.0	-	23.1	42.2	71.1	44.2	23.2	-	119	255
250	238	238	238	61.6	99.5	22.2	41.7	70.6	43.4	22.2	36	116	250
245	233	233	233	61.2	-	21.3	41.1	70.1	42.5	21.1	-	114	245
240	228	228	228	60.7	98.1	20.3	40.3	69.6	41.7	19.9	34	110	240
230	219	219	219	-	96.7	(18.0)	-	-	-		33	106	230
220	209	209	209	-	95.0	(15.7)	-	-	-	-	32	101	220
210	200	200	200	-	93.4	(13.4)	-	-	-	-	30	97	210
200	190	190	190	-	91.5	(11.0)	-	-	-	-	29	92	200
190	181	181	181	-	89.4	(8.5)	-	-	-	-	28	88	190
180	171	171	171	-	87.1	(6.0)	-	-	-	-	26	84	180
170	162	162	162	-	85.0	(3.0)	-	-	-	-	25	79	170
160	152	152	152	-	81.7	(0.0)	-	-	-	-	24	75	160
150	143	143	143	-	78.7	-	-	-	-	-	22	71	150
140	133	133	133	-	75.0	-	-	-	-	-	21	66	140
130	124	124	124	-	71.2	-	-	-	-	-	20	62	130
120	114	114	114	-	66.7	-	-	-	-	-		57	120
110	105	105	105	-	62.3	-	-	-	-	-	-	-	110
100	95	95	95	-	56.2	-	-	-	-	-	-	-	100
95	90	90	90	-	52.0	-	-	-	-	-	-	-	95
90	86	86	86	-	48.0	-	-	-	-	-	-	-	90
85	81	81	81	-	41.0	-	-	-	-	-	-	-	85

USEFUL CONVERSION FORMULAE

- Circumference of a circle = diameter x 22/7 (or 3.1416)
- Area of a circle = square of the diameter x 0.7854
- Area of a square, rhombus or rhomboid = base x height
- Area of a triangle = 1/2 base x perpendicular height
- Area of a trapezium = 1/2 sum of two parellel sides x height
- Area of any rectilinear figure of four or more unequal sides is found by dividing it into triangles,finding the area of each, and adding together
- Area of any regular polygon = 1/2 radius of inscribed circle x length of sides x number of sides
- Area of a parabola = base x height x 2/5
- Area of an elipse = long axis x short axis x 0.7854
- Surface of a prism or cylinder = area of two ends + (length x perimeter); volume = area of base x height
- Surface of a cone or pyramid = 1/2 (slant height x perimeter of base) + area of base; volume = 1/3 (area of base x perpendicular height)
- Surface of a cube or parallelepiped = sum of areas of all sides; volumes = length x breadth x depth
- Surface of a sphere = square of diameter x 3.1416; volume = cube of diameter x 0.5236
- Area of a sector of a circle = length of arc x 1/2 radius
- Area of a segment of a circle = area of a sector less area of a triangle
- Side of a square of area equal to a circle = diameter x 0.8862
- Diameter of a circle equal in area to a square = side x 1.1284
- Area of a regular hexagon = 0.8661 x (width across flats)^2; width of flats
- Area of a regular octagon = 0.8284 x (width across flats)^2; width of flat = 0.4142 x width across flats

DISCLAIMER

The material contained in this catalogue has been designed as a guide for NDE Stainless Steel customers. However, it is not intended as a substitute for any person's procedures and should not be relied upon for any specific application without first obtaining competent advice. Furthermore, NDE Stainless Steel disclaims any responsibility for the suitability of the steel in question for any particular purpose or for the performance or selection of the steel, unless NDE Stainless Steel specifically and expressly authorises the purpose or selection.

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Vat. Nos. Cape Town 4760118721, Johannesburg 4380118127, Durban 4230120356, Port Elizabeth 4210120277, Head Office 4600118121

APPLICATION FOR CREDIT FACILITIES AND SURETYSHIP

Private & Confidential

Registered name ("the debtor")	
Trading name	
Type of business (Company, CC, Trust, Partnership, Sole Proprietorship)	
Registration number	
Date of registration of business	
Date of commencement of business	
Address of principal place of business	
Delivery address for goods	
Address of registered office (not a box number)	
Postal address of business	
Postal code	
Business telephone number	
Business fax number	
Name and title of person responsible for payment of account	
Telephone number	
Cellphone number	
E-mail address	
Financial manager's name	
E-mail address	
Bank details of the business	
Branch	
Account number	
Name of auditors/accounting officers/ bookkeepers	
VAT number	
Financial statements	Are your latest financial statements available for inspection? ☐ YES ☐ NO
Guarantees	Has the Company, CC, Trust, Partnership, Sole Proprietorship issued/signed any Guarantees in favour of other creditors? ☐ YES ☐ NO Have the directors/partners/members issued/signed any Guarantees in favour of other creditors? ☐ YES ☐ NO If yes please specify

Full Names of Owners/ Directors / Partners / Members	Identity Number/ Date of birth	Residential Address	Telephone number
1.			
2.			
3.			
4.			

Please initial here .....

Trade references (please supply four trade references)

Name	Telephone Number	Address
1.		
2.		
3.		
4.		

Details of property owned by Company/CC as well as Partners/Proprietors and Directors

Address	Stand Number and Township	Estimated Valuation	Bond holder	Amount of Bond	In whose name is property registered
		R		R	
		R		R	
		R		R	
		R		R	

Details of present contracts

Location	Employer	Value	Value of work completed	Paid % of total	Type of building construction
		R	R	%	
		R	R	%	
		R	R	%	

The amount of the anticipated credit limit should be R .....

I, the undersigned ..... in my capacity as.....

of the DEBTOR, and in my personal capacity:

1. hereby warrant that I am duly authorised by the DEBTOR to make this application on its behalf and that the above information is true and correct;
2. do hereby on behalf of the DEBTOR, accept and agree to the terms and conditions of contract set out under the terms and conditions, which I acknowledge having read and understood;
3. do hereby acknowledge and agree that by my signature hereto I bind myself, in accordance with the terms and conditions, as surety and co-principal, debtor in solidum with the DEBTOR in favour of "the COMPANY" for the due payment by the DEBTOR of all amounts which may now or at any time hereafter become payable by the DEBTOR to "the COMPANY".

Suretyship

I, _____, do hereby acknowledge and agree that by my signature hereto I bind myself in accordance with the terms and conditions, as surety and co-principle debtor in *solidum* with the debtor in favour of the company for the due payment by the debtor of amounts which may now or at any time hereafter become payable by a debtor to the company.

I agree that no extension of time or other indulgence granted by the company to the debtor in respect of payment or performance shall discharge me from liability hereunder or otherwise affect my liability to the company.

I shall not be entitled to withdraw or cancel this suretyship unless and until all indebtedness as contemplated which may become due, owing and payable by the debtor to the company in terms of this agreement has been discharged or extinguished in full.

Dated.....

on the..... day of ..... 20.....

Signature .....
For the DEBTOR and in my personal capacity as surety and co-principal debtor

Print name.....

30 DAYS NETT

Please initial here .....

TERMS AND CONDITIONS OF NATIONAL DAIRY EQUIPMENT (PTY) LTD, trading as NDE, Reg. No. 1952/001360/07 (hereafter referred to as "the COMPANY")

1. Acceptance of conditions

Any order resulting herefrom shall be subject to the conditions stated herein unless specifically varied by "the COMPANY" in writing, and these conditions shall at all times take precedence over any terms, conditions or stipulations contained in any of the DEBTOR'S documentation as may be in conflict herewith. Should the DEBTOR in any way purport to attach any conditions which vary, amend or are in conflict with the conditions set forth herein, then notwithstanding anything to the contrary stipulated by the DEBTOR, the conditions set forth herein shall prevail and be of full force and effect unless specifically varied by "the COMPANY" in writing with specific reference to the DEBTOR'S contrary documentation.

2. Quotations

All prices are quoted in South African Rands and quotations shall be valid for a period of 14 (fourteen) days, unless stipulated otherwise in writing provided that:

2.1 quotations are in writing and the acceptance thereof shall be in writing;

2.2 quotations shall exclude the cost of all delivery charges, freight costs (where applicable) and insurance premiums

2.3 "The COMPANY" shall be entitled to vary the contract price if, after the date of the written quotation but prior to "the COMPANY'S" receipt of the DEBTOR'S written acceptance thereof, the cost to the COMPANY in respect of the goods and/or services contracted for increase as a result of changes to applicable foreign exchange rates, government import costs or similar levies or charges, and the DEBTOR shall be liable to pay to "the COMPANY" such adjustment in the contract price.

3. Domicilium

The DEBTOR nominates as its domicilium citandi et executandi the address reflected on the face hereof under the heading Registered Office/Business Physical Address, and the surety nominates as their domicilium citandi et executandi the address reflected on the face hereof alongside their name, for service upon them of all notices and processes in connection with any claim for any sum due to "the COMPANY" arising out of credit granted by "the COMPANY" to the DEBTOR.

4. Credit facilities

4.1. The DEBTOR acknowledges that credit facilities granted are payable within thirty (30) days from date of statement, which date shall be deemed to be the last day of every month.

4.2 Credit facilities may be withdrawn by "the COMPANY" at any time without prior notice and "the COMPANY" reserves the right to review the extent, nature and duration of such facilities at all times.

5. Delivery

Not withstanding any other provision to the contrary, the obligation to deliver goods shall in all cases be subject to the following conditions precedent:

5.1 The availability to "the COMPANY" of the goods ordered.

5.2 Time shall not be of the essence of the contract and delivery dates shall be treated as approximate only based on the latest information available to "the COMPANY" Under no circumstances shall the DEBTOR be entitled to withdraw from or terminate the contract on account of any delay in delivery or have any claim of any nature whatsoever against "the COMPANY" arising from late delivery.

5.3 The COMPANY shall be exempted from and shall not be liable under any circumstances whatsoever for any indirect or consequential damages of any nature whatsoever or any loss or profit or special damages of any nature whatsoever and whether in the contemplation of the parties or not which the DEBTOR may suffer as a result of any delay in delivery of the goods ordered.

5.4 The DEBTOR shall be liable for all delivery charges, freight costs (where applicable) and insurance premiums unless expressly agreed to otherwise in writing by both parties.

5.5 The DEBTOR shall ensure that the goods are unloaded promptly and without delay from "the COMPANY'S" delivery vehicle or the delivery vehicle of "the COMPANY'S" nominated carrier whereafter all risk in the goods shall pass to the DEBTOR.

5.6 Any loss arising from delay caused by the DEBTOR in the offloading of the goods at the DEBTOR'S appointed place of delivery shall be for the DEBTOR'S account and the DEBTOR shall on demand pay to "the COMPANY" all reasonable costs, including but not limited to insurance premiums which "the COMPANY" has incurred in respect of the goods during the delay period.

6. Ownership

Ownership in the goods sold and delivered to the DEBTOR on account shall pass to the DEBTOR only when all amounts due by the DEBTOR to "the COMPANY" shall have been paid, notwithstanding delivery of the said goods to the DEBTOR. Risk in and to the goods shall however pass to the DEBTOR on delivery.

7. Force majeure

7.1 Except for the obligation to pay the full purchase price in respect of any material that may already have been shipped and invoiced or delivered, neither party shall be liable to the other for any failure to perform any of its obligations, in whole or in part, in the event of, and to the extent that such failure is caused by, force majeure.

7.2 Force majeure shall, without in any way restricting its ordinary meaning, include act of God, war, civil commotion, strikes, lockouts, revolutions, fires, explosions, floods, political disturbances, acts of any Government or local authority, breakdowns of plant equipment, shortages of raw materials, storms or any matters that are beyond the control of either or both parties.

7.3 During the currency of a force majeure the respective parties' obligations may be suspended as soon as the party who is unable to perform his obligations as a result thereof, has given the other party notice, in writing, informing him of the nature and the expected duration of the force majeure.

7.4 In the event that a force majeure lasts for a period of more than 30 days, the parties may agree, or one or the other of them may elect to cancel the outstanding obligations, upon written notice.

8. Compliance with specifications

The DEBTOR shall ensure that the goods delivered by "the COMPANY" comply with the DEBTOR'S specifications in terms of the contract with "the COMPANY" and any claims by the DEBTOR relating to alleged errors in dispatch must be brought to "the COMPANY'S" attention in writing within 7 (seven) days from date of delivery.

9. Return of goods for credit

Should "the COMPANY" agree to accept the return of any goods for credit, the DEBTOR shall be liable to pay "the COMPANY" a handling charge of a minimum 10% on the invoiced price of the goods so returned.

10. Waiver of rights

No relaxation or indulgence granted to the DEBTOR by "the COMPANY", at any time, shall be deemed to be a waiver of any of "the COMPANY'S" rights in terms hereof, and such relaxation or indulgence shall not be deemed a novation of any of the terms and conditions set out herein, or create any estoppel against "the COMPANY".

Please initial here .....

11. Cancellation

11.1 The DEBTOR agrees and acknowledges that in the event of: -

11.1.1 the DEBTOR breaching any condition contained in these conditions;
11.1.2 the DEBTOR failing to pay any amount due and payable on due date;
11.1.3 the DEBTOR suffering any civil judgment to be taken or entered against it;
11.1.4 the DEBTOR causing a notice of surrender of its estate to be published in terms of the Insolvency Act No 24 for 1936, as amended;
11.1.5 the DEBTOR dying;
11.1.6 the DEBTOR'S estate being placed under any order of provisional or final sequestration, provisional or final winding up, or provisional or final judicial management, as the case may be;

then and in that event "the COMPANY" shall, without detracting from any other remedies which may be available to it, be entitled to summarily cancel the sale of any goods to the DEBTOR without notice to the DEBTOR, and to rely on the provisions of Clause 9, and to re-possess those goods sold and delivered by "the COMPANY" to the DEBTOR, or to claim specific performance of all the DEBTOR'S obligations whether or not such obligations would otherwise then have fallen due for performance, in either event without prejudice to "the COMPANY'S" right to claim damages.

11.2 Any agreement purporting to vary the terms of this agreement, or any consensual cancellation, shall not be valid unless reduced to writing and signed by both the DEBTOR and "the COMPANY".

12. Complaints

12.1 It is a condition of each sale that goods are sold voetstoots and without any warranties whatsoever. In addition the DEBTOR shall be precluded from raising any complaints or disputing liability to "the COMPANY" in any way unless it shall have notified "the COMPANY" of its complaints or grounds of dispute in writing within 7 (seven) days of receipt of the goods in question. Notwithstanding the timeous raising of a complaint or dispute of liability by the DEBTOR, the DEBTOR shall, under no circumstances, be entitled to withhold payment in respect of the goods from "the COMPANY" pending the resolution of such dispute or complaint. Subject to the aforegoing, "the COMPANY" shall, in its discretion, be entitled to either remedy any failure by adjusting, repairing or replacing the goods in question, or refunding the whole or part (as the case may be) of the contract price paid to it by the DEBTOR in respect of such goods.

12.2 Should the DEBTOR have any complaint of whatsoever nature concerning any of the goods which are not manufactured by "the COMPANY", it shall be entitled to require "the COMPANY" to cede to it any rights which "the COMPANY" may have against the supplier of those goods but shall have no other claim against "the COMPANY" in respect of the matter complained of. The DEBTOR shall not be entitled to withhold payment from "the COMPANY" in respect of such goods for any reason whatsoever.

13. Damages

Save as otherwise specifically provided for herein, "the COMPANY" shall not be liable to the DEBTOR or to any other person for any indirect or consequential damages of any nature whatsoever or any loss of profit or special damages of any nature whatsoever and whether in the contemplation of the parties or not which the DEBTOR may suffer as a result of any breach by "the COMPANY" of any of its obligations under these conditions or out of any other court whatsoever. The DEBTOR hereby indemnifies "the COMPANY" against any claim which may be made against "the COMPANY" by any other person in respect of any matter for which the liability of "the COMPANY" is excluded in terms of the aforegoing.

14. Jurisdiction

The DEBTOR consents to the jurisdiction of the Magistrate's Court in terms of Section 45 of the Magistrates Court Act No 32 of 1944, as amended, having jurisdiction under Section 28 of the said Act, notwithstanding that the claim by "the COMPANY" exceeds the nominal jurisdiction of the Magistrates Court as to amount. The company shall, in its discretion, be entitled to proceed against the DEBTOR in any other Court of competent jurisdiction, notwithstanding the aforegoing.

15. Legal costs

In the event of "the COMPANY" instructing attorneys to collect from the DEBTOR an amount owing to "the COMPANY", the DEBTOR agrees to pay all costs on the scale as between attorney and own client including collection charges.

16. Surety

16.1 The signatory hereto binds himself as surety and co-principal debtor in solidum with the DEBTOR in favour of "the COMPANY" for the due payment of all amounts which may at any time be payable by the DEBTOR to "the COMPANY" from any cause of action whatsoever and whether acquired by "the COMPANY" by way of cession or otherwise. The signatory further waives the benefits of excussion and division and of the legal exceptions non numeratae pecuniae and non causa debiti and acknowledges themself to be fully acquainted with the meaning of these terms. The terms and conditions of this application shall apply mutatis mutandis to this suretyship.

16.2 The suretyship is a continuing suretyship and shall remain of full force and effect notwithstanding any fluctuations in, or temporary extinction of the DEBTOR'S indebtedness to "the COMPANY". It may not be withdrawn, revoked or cancelled by the signatory without "the COMPANY'S" prior written consent. Any consensual cancellation or withdrawal of this suretyship by the signatory and "the COMPANY" shall only be valid and effective if reduced to writing and signed by both parties thereto.

16.3 A certificate under the hand of any director or manager of "the COMPANY" (whose appointment need not be proved) as to the existence and the amount of the DEBTOR'S indebtedness and the surety's indebtedness to "the COMPANY" at any time, as to the fact that such amount is due and payable, the amount of interest accrued thereon and as to any other fact, matter or thing relating to the DEBTOR'S indebtedness to "the COMPANY" and the surety's indebtedness to "the COMPANY" shall be sufficient and satisfactory proof of the contents and the correctness thereof for the purpose of provisional sentence, summary judgment or any other proceedings of whatsoever nature against the DEBTOR and /or the surety in any competent court and shall be valid as a liquid document for such purpose.

16.4 Any admission made by the DEBTOR as to the fact that it is indebted to "the COMPANY" or as to the amount of any such indebtedness to "the COMPANY" shall be binding upon the surety.

17. Special Order Goods

17.1 The DEBTOR acknowledges that:

17.1.1 it has requested the COMPANY to supply it with particular goods ("SPECIAL ORDER GOODS") which are specific to the DEBTOR'S requirements;
17.1.2 the COMPANY does not supply the SPECIAL ORDER GOODS to its customers in the ordinary course of its business, and accordingly cannot supply the SPECIAL ORDER GOODS to any customer other than the DEBTOR;
17.1.3 the COMPANY has nevertheless agreed to procure and supply the SPECIAL ORDER GOODS specifically for the DEBTOR and in this regard, to purchase and hold sufficient stock of the SPECIAL ORDER GOODS to meet the DEBTOR'S requirements.

17.2 If for a period of 30 consecutive days, the COMPANY does not receive a written order from the DEBTOR for the SPECIAL ORDER GOODS, the DEBTOR agrees to purchase, at the then applicable purchase price of the SPECIAL ORDER GOODS, all SPECIAL ORDER GOODS which the COMPANY has in stock and has ordered, but has not yet received.

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