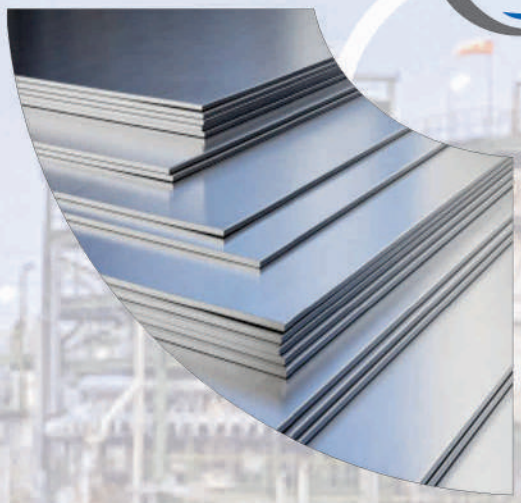
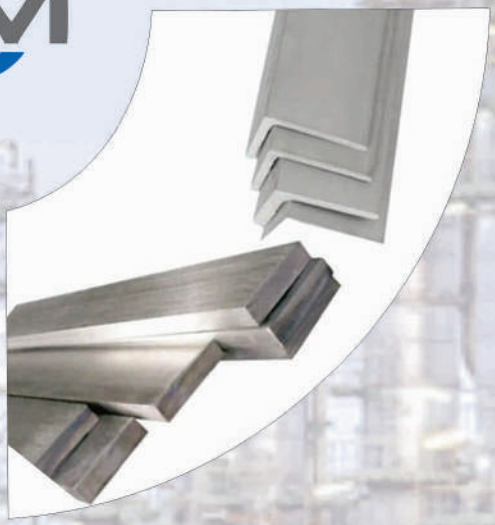
JSL JINDAL STAINLESS
Authorised Dealers Of : JINDAL STALESS LTD.

EGAC

- Stainless Steel
- Carbon Steel
- Alloy Steel
- Nickel Alloys
- Duplex Steel
- Copper Nickel





HARISH PATEL
Founder & CEO

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Office No. 9, 4th Kumbharwada,
Shree Ram Mandir Marg,
Near GoldevalTemple, Mumbai-400004.

RAJESHWAR METAL
AND ENGINEERING PRIVATE LIMITED

www.rajeshwarmetalengg.com

Company Profile

We are **Stockiest and Suppliers of Stainless Steel Seamless & Welded (ERW) Pipes, Square Pipe, Plate, Round Bar, Sheet, Coil, Flat, Fastener in 304, 304L, 310, 310S, 321, 347, 316, 316L, 316 Ti, 317L, 410, 420, 430 & other qualities**. Which are required by your Industries, in all aspects of Projects Implementation, Maintenance, Modernizations, Expansion and Shut down Application etc.

Rajeshwar Metal & Engg Pvt. Ltd. is a company promoted by Highly experienced Technical personnel who are in field of stocking & supplying Industrial raw material for more than10 years.

Rajeshwar Metal & Engg Pvt. Ltd. participates in the timely supply of raw-material to clients. We provide remedies in the critical time of troubleshooting so that the wheels of the customers industry keep moving and do not come to grinding halt.

At **Rajeshwar Metal & Engg Pvt. Ltd.** Quality of a product is always maintained, as quality is never an accident; it is outcome of High intention, sincere efforts, Intelligent direction & skillful execution; it represents the wise choice of many alternatives.

We will provide you material at Most Competitive Prices Right Time Right Quality with EXCELLENT SERVICE and most important Market Information and latest trend to facilitate you to take right Purchase decision.

Our company has responded to all & every need of industry as one of Top and the most reputed **Importers/Exporter & Stockiest of Stainless Steel Sheets, Plates, Coils, Strips, Pipes, Tubes, Pipe Fittings , Round Bar, Fasteners & Flange Fittings.**

Our Competitive Prices and full logical support will insure satisfaction to our customers .

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Quality Policy

OUR EXCELLENCE...

Quality is our prime concern. We are able to maintain high quality standards through our committed personnel and sound infrastructure. We ensure that finest quality material is used for our products. For ensure the quality of each material, we are providing Materials Test Certificate along with supply. Our team of experts maintain a vigil on the quality of the products. Every single piece is attached with test certificates and reports. We are continually improving our quality to serve our clients better.

OUR FACILITIES...

We have a sound infrastructure. Our spacious warehouse has the capacity to store large quantities of products. We possess a team of experts who are sourcing products of international standard to keep abreast with the global markets. Our quality professionals have served as a beacon not only for us but also for the entire industry in establishing top-notch quality standards.

"Our Philosophy is long-term, since we believe that the key to lasting success is the formatting of long-term RELATIONSHIP with our clients."

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RAJESHWAR METAL
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CRTIFICATES

ISO 9001:2015

Certificate of Registration

This is to Certify that
Quality Management System of

RAJESHWAR METAL AND ENGINEERING PRIVATE LIMITED

1ST FLOOR, PLOT NO.99, OFFICE NO.9, PANSARE HOUSE, 4TH KUMBHARWADA, GIRGAON, MUMBAI - 400004, MAHARASHTRA, INDIA.

has been assessed and found to conform to the requirements of

ISO 9001:2015

For the following scope :

STOCKISTS & SUPPLIERS OF FERROUS & NON FERROUS METALS, STAINLESS STEEL, CARBON STEEL, NICKEL ALLOYS SHEET, PLATE, COIL, PIPE, ROUND BAR, FLAT, ANGLE, CHANNELS, PIPE FITTING, WIRE, FASTENERS.

Certificate No	: **25MEQTC84**		
Initial Registration Date	: 11/06/2025	Issuance Date	: 11/06/2025
Date of Expiry	: 10/06/2028		
1st Surve. Due	: 11/05/2026	2nd Surve. Due	: 11/05/2027

Director

MMS · EGAC Accredited QMS Certification CAB 8011805 · IAF

(Scan to Verify)

Magnitude Management Services Pvt. Ltd.

Third Floor, A-60, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India. e-mail: info@mmscertification.com, website: www.mmscertification.com
*Subject to Successful Surveillance Audit n case Surveillance audit is not allowed to be conducted, this certificate shall be suspended/withdrawal
Certificate Verification: Please Re-check the validity of certificate at http://www.mmscertification.com/activeclients.aspx or www.mmscertification.com as Active Client.
Certificate is the property of Magnitude Management Services Pvt. Ltd. and shall be returned immediately when demanded.*

THIRD PARTY INSPECTION

EIL, HGS, P&D, GLC, TUBOSCOPE, VELOSI, MOODY, VETCO, IRS, BVIS, DNV, J & HG, BS, TCS, PDIL, TUV etc.

NABL & Government Approved Labs

Larsen & Toubro Ltd. · इंआईएल · Nuclear Power Corp. of India Ltd. · IBR Approved · Dept. of Atomic Energy · TUV INDIA · DNV DET NORSKE VERITAS

पी डी आई एल PDIL · Electromech Engg. · सेल SAIL · TATA TATA Project · Lloyd's Register Quality Assurance · एनटीपीसी NTPC · ओएनजीसी ONGC

We can also supply all the materials with NABL & Government Approved Labs Like:

1) GEO-Chem Lab
2) Metallurgical Service
3) Metallurgical Lab
4) TCR
5) Metal Analysis
6) Elca Lab

BRANDS WE DEAL IN :

JSLA PT.JINDAL STAINLESS · MAHARASHTRA SEAMLESS LIMITED · VIZAG STEEL Pride of Steel · Unbrako · सेल SAIL · ADITYA BIRLA HINDALCO · Jindal TRADE MARK · CHAMPION Thriving under Pressure · ACE Hardware · TAPARIA

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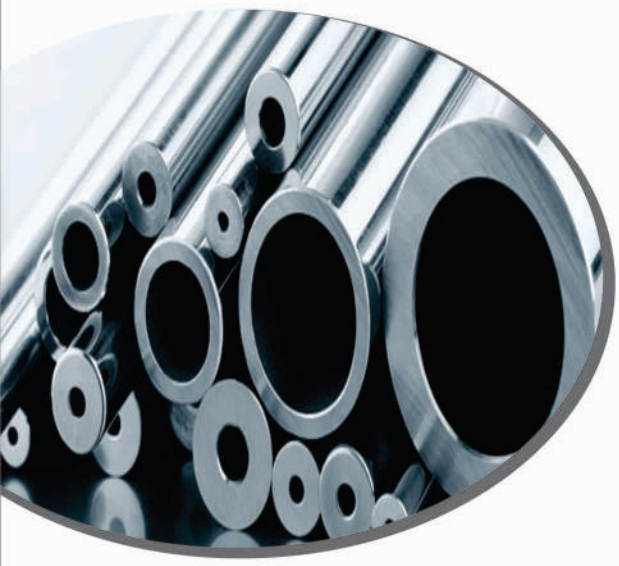


PIPES & TUBES

Stainless Steel : ASTM A312 TP 304 / 304L / 304H / 316 / 316L / 316H / 317 / 317L / 321 / 321H / 310 / 347 / 347H / 904L etc.

Carbon Steel : ASTM A53 GR. B / A106 GR. B / API 5L GR. B / API 5L GR. X42 / 46 / 52 / 56 / 60 / 65 / 70 / A333 GR. 3 / GR. 6 etc.

Mild Steel : IS 1239 / IS 3589

Alloy Steel : ASTM A335 GR. P1 / P5 / P9 / P11 / P22 / P91 etc.

Others : Duplex, Super Duplex, Inconel, Monel, Hastelloy, Nickel, Alloy 20, 254 SMO, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.

Types : Round , Square, Rectangular. | **Wall Thickness :** Sch. 5S to Sch. XXS

Size : Upto 24" NB. (Seamless & Welded)

SHEETS / PLATES / COILS / STRIPS

Stainless Steel Coils, Sheets & Plates as per ASTM A 240 Gr. TP 304, 304L, 304LN, 309, 309S, 309H, 310S, 310H, 316, 316L, 316H, 316LN, 316TI, 317, 317L, 321, 321H, 347, 347H, 348, 348H, 409, 410, 420, 430

Alloy Steel Plates as per ASTM A 387 Gr. 2, 5, 9, 11, 12 & 22 in class 1 & 2, ASTM A 204, Gr. A & B, DIN 17175 Gr. 15Mo3 & 16Mo3 with IBR Test Certificate.

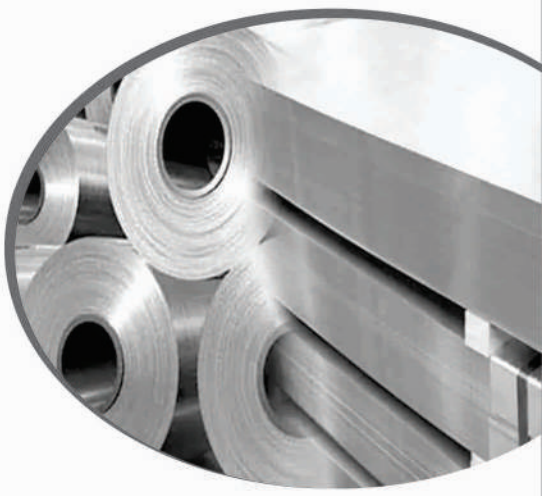
NM/ABRAX PLATE- NM 400/ABRAX 400/ROCK STAR/ROCK HARD 400/JFE400

Carbon Steel / Boiler Quality Plates as per IS 2062 Gr. A, B & C, IS 2002 Gr. 1& 2, ASTM A516 Gr. 60 & 70 ASTM A515 Gr. 70.

High Nickel Alloy : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Brass, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.

Duplex, Super Duplex Steel & SMO Plate : UNS S31803, UNS S32750, UNS S32760, 904L / SMO 254, Alloy 20

Types : Sheet, Plates, Coils, Strips, etc.



ROUND BARS

Stainless Steel Bar : ASTM A-479, A 182 F 304/304H/304L, 316/316L/316Ti, 309, 310, 317L, 321, 347, 409, 410, 420, 430, 440 (A, B, C) 446, 904L, etc.

Duplex Steel Bar : A 182 F51, F53, F55

EN Series Bar : EN8, EN9, EN 19, EN24,

Carbon Steel Bar : A 105, LF2, 4140 MOD, 4340 MOD

Alloy Steel Bar : ASTM A -182 F11, F12, F22, FF5, F9, F91

Cu-Ni Bar : C70660 (90:10) C71500 (70:30), C71640

Nickel Bar / Monel Bar : UNS N02200, N02201 , UNS N04400, N05500

Inconel Bar : UNS N06600, N06601, N06625, N08800, N08810, UNS N08825, UNSN09925, UNS N07718

Types : Round, Square, Hex (A/F), Rectangle

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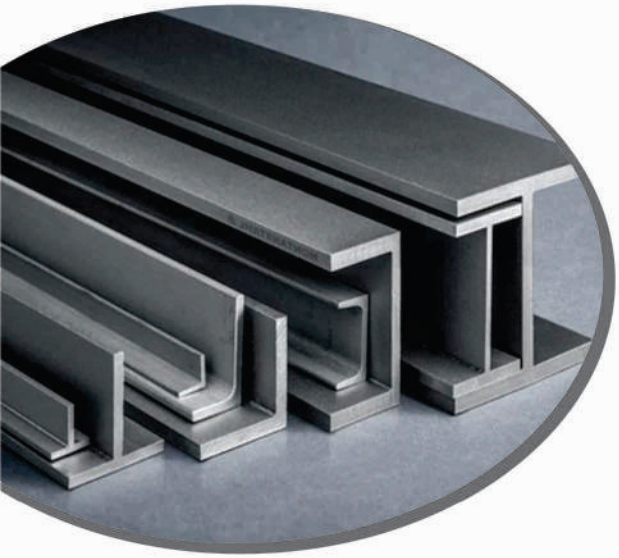

ANGLE / CHANNEL / FLAT BAR

Stainless Steel : 304/304L, 316/316L/316Ti, 321, 310/310S, 317/317L, 347, 17-4Ph, 15-5Ph, 904L, 410, 420, 430, 431, 430F, 416, 440C etc.
Copper, Brass, Aluminium, Hast Alloy, Titanium, Monel, Inconel, Nickel, etc.
Duplex Steel : UNS 31803, UNS32205, UNS 32750, UNS 32760
Alloy Steel : F5, F9, F11, F22, F91.
Carbon Steel, Mild Steel, (EN Series)
Specification : ASTM, AISI, ASME, DIN, UNS etc.

Sizes of Angles : 20mm to 150mm, in Thk = 3mm to 12mm
Sizes of Channels : 20mm to 500mm, in Thk = 3mm to 50mm

FASTENERS

Stainless Steel : AISI 302, 304, 304L, 316, 316L, 310, 317, 317L, 321, 347, 410, 420, 904L etc.

Carbon Steel : 4.6, 5.6, 6.6

High Tensile / Alloy Steel : 8.8, 10.9 & 12.9 / 'R', 'S', 'T' Conditions.

Non Ferrous Metal : Copper, Brass, Aluminium, Titanium, Nichrome, Al. Bronze Phosphorous Bronze, etc.

Others : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.

Types : Bolts, Nuts, Washers, Anchor Fasteners, Stud Bolts, Eye Bolt, Stud, Threaded Rod, Cotter Pin, Socket Screw, Fine Fasteners & Spares, Foundation Fasteners, Vare Condition, Galvanized, Phosphetised, Cadium Plated, Hot Deep Galvanized, Bloodied, Nickel Chrome Plated etc.

WELDING FILLER WIRES & ELECTRODES

Stainless Steel : 309MoL, 385 (904L), 310, 312, 317L, 318, 347, 310, 430, 410NiMo, Etc.

Mild Steel : ER70S2,ER80SB2, ER80SB6, ER80B8, ER80SNi-1, ER80SNi-2, ER90SB3, ER90SB9 Etc.

Duplex & Super Duplex : 2209, 2594

Titanium Base : Grade 1, Grade 2, Grade 5, Grade 7, Grade 12 Etc.

Nickel Base Alloys : 600, 625, C276, C22, Monel 400. Ni-1, NiCrFe-2, NiCrFe-3, NiCrMo-1, NiCu7, CuNi Etc.

Stellite Cobalt Base : Rods Grade 1, Grade 6, Grade 12, Grade 21, Grade 25 Etc.

Copper, Aluminium & Bronze : ERCu, ERCu-A1, ERCuAl-A2, ERCuSi-A, ERCuSn-A, ERCuNiAl

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BUTT-WELD FITTINGS

Stainless Steel : ASTM A403 WP 304/ 304L/ 304H/316/ 316L/ 317/ 317L/ 321/ 310/ 347/904L etc.
Carbon Steel : ASTM A234 WPB/A420 WPL3/A420 WPL6
Mild Steel : IS 1239 Part 2 / IS 3589
Alloy Steel : ASTM A234 WP1/ WP5/ WP9/ WP11/ WP22/WP91 etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Others : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.
Types : Elbow, Tee, Reducer, Return Bends, Stub-Ends, Cap, Collar, Cross, Insert etc.
Size : 1/4" NB TO 32" NB. (Seamless & Welded)
Wall Thickness : Sch. 5S To Sch. XXS.

SOCKET-WELD FITTINGS

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.
Carbon Steel : ASTM A105 / A694 F42/46/ 52/56/ 60/ 65/70 / A350 LF3/ A350 LF2.
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/F91 etc.
Types : Elbow, Tee, Union, Cross, Coupling, Cap, Bushing , Plug, Swage Nipple, Welding Boss, Hexagon Nipple, Barrel Nipple, Welding Nipple, Parraler Nipple, Street Elbow, Hexagon Nut, Hose Nipple, Bend, Adapter, Insert, Weldolet, Elbolet, Sockolet, Thredolet, Nipolet, Letrolet, NPT Fittings,
Size : 1/4" NB TO 4" NB. (Socketweld & Threaded)
Class : 3000#, 6000#, 9000#.

FERRULE FITTINGS

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.
Carbon Steel : ASTM A105 / A694 F42/46/ 52/56/ 60/ 65/70 / A350 LF3/ A350 LF2.
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/F91 etc.
Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20
Other : Stainless Steel, Nickel Alloys, Carbon Steel, Alloy Steel, Monel, Nickel, Inconel, Hastelloy, Copper, Etc.
Types : Nipples, Adaptors, Crosses, Union Ball Joints, Reducing Bushing, Reducers, Pipe Caps, Couplings, Pipe Plug, Hollow Hex Plug, Elbow, Reducing Union, 90 Deg. Union Elbow, Reducing 90 Deg. Union Elbow Etc. Extender Leg 90 Deg. Union Elbow, 45 Deg. Union Elbow, Union Tee, Female Connector, Male Connector, Manifold Tee, Reducing Tee, Tribow, Tube Socket weld To Pipe Butt Weld, Tube Butt Weld To Tube Socket Weld, Port Connector, Etc.

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DAIRY & SANITARY TUBE FITTINGS

USED FOR DAIRY, BIO-PHARMA & FOOD INDUSTRY (WELDED ENDS / EXPANDED ENDS) BEND, TEE, CROSS, REDUCER, UNION, VALVE CLAMP WITH FERRULE, CLAMP (PIPE HOLDING) WITH COUPLING, NIPPLE & BASE PLATE

RANGE : 1/2" (15 MM) OD to 12" (300 MM) THK OD 16swg, 14swg, 12swg

GRADE : AISI 304, 316, 316L

STANDARD : SMS, IDF, DIN, ISO, ASME BPE etc.

FINISH : ELECTRO POLISHED / MIRROR / MATT FINISH

FLANGES

Stainless Steel : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/ 310/ 347/ 904L etc.

Carbon Steel : ASTM A105/ A694 F42/ 46/52/56/60/65/ 70/ A350 LF2/ A350LF3, etc.

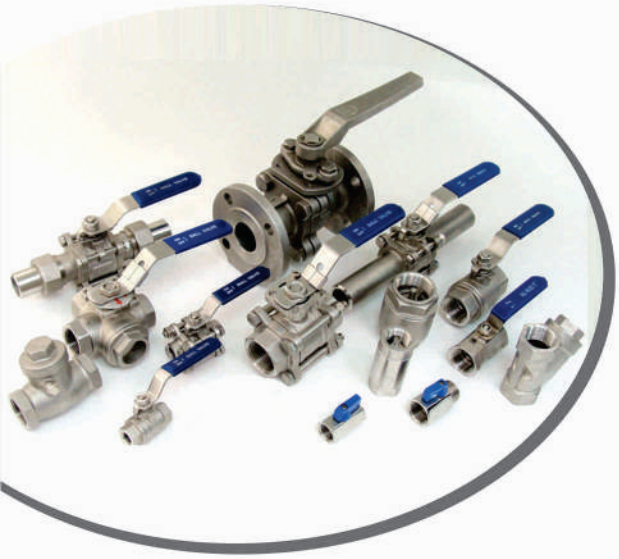
Alloy Steel : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.

Others : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.

Types : Weldneck, Slipon, Bind, Socket Weld, Lap Joint, Spectacles, Ring Joint, Oriface, Long Weldneck, Deck Flange, etc.

Size : ½" NB TO 24" NB.

Class : 150#, 300#, 600#,900#, 1500# & 2500#.



VALVES

Material	:	Stainless Steel / Duplex / Super Duplex / Nickel Alloy / Carbon Steel / Alloy Steel
Standard	:	ASTM / ASME / ANSI / AISI / DIN
Grade	:	WCB, WC1, WC6, WC9, LCB, LCC, LC3, C5, C12, CF8, CF8M, CF3, CF3M, CF8C, CN7M, CD4MCu, Hastelloy, Inconel, 304L, 316L, 2205, 2507 etc.
Types	:	Gate Valve, Ball Valve, Globe Valve, Butterfly Valve, Check Valve, Cryogenic Valve
Size	:	1/2" to 60"
Class	:	150#, 300#, 600#, 800#, 900#, 1500# & 2500#.

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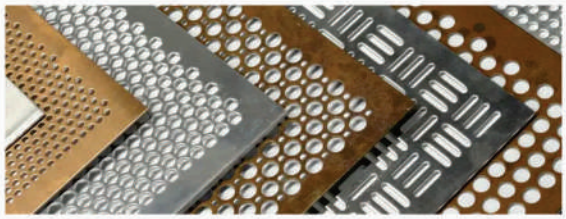
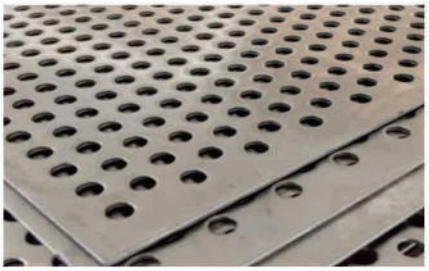
S.S. PERFORATED SHEET / COIL

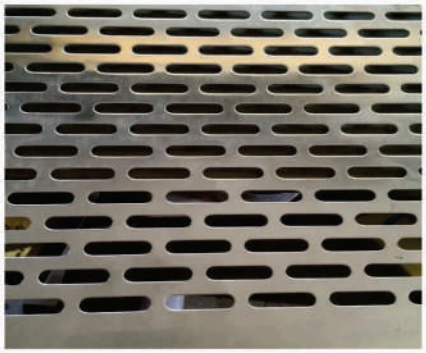


Standards ASTM A 312 ASME SA 312 / ASTM A 358 ASME SA 358
Grades ASTM / ASME SA 240 304. 304L. 304H. 3095. 309H. 3105. 310H. 316. 316L, 316T1. 317. 317L, 321. 321H. 347 347H. 409. 410. 4105.430
Thickness 0.4mm=10mr | **Width** 100mm to 1500mm
Length 2000mm. 2440mm. 3000mm. 5800mm. 6000mm & with Coil Form etc
Types Round Holes Staggered Pitch, Round Holes Square Pitch, Square Perforations, Hexagonal Perforations, Slotted Perforations, Creative Line Edgings
Surface Finish 28, 2D, BA, No.1. No.4. No.8. 8k. Mirror. checkered. Embossed. Hair ine Sand Hot rolled plate (HR), Cold rolled sheet (CR), 28, 20, BA, NO.8, SATIN (Met with Plastic Coated)
Form Coils, Foils, Rolls, Plain Sheet, Shim Sheet, Perforated Sheet, Chequered Plate, Strip, Flats, Blank (Circle), Ring (Flange) etc.



ROUND HOLE PERFORATED SHEET / COIL

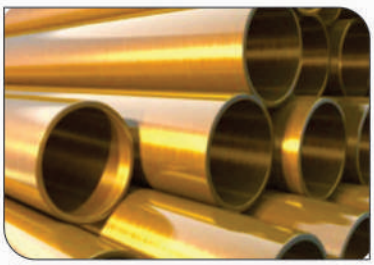
Thickness 0 4mm - 10mm | **Width** 100mm to 1500mm
Length 2000mm, 2440mm, 3000mm, 5800mm, 6000mm & with Coil Form etc.
Types Round Holes Stageered Pitch, Round Holes Sauare Pitch. 28
Surface Finish 28. 2D. BA, No.1, No.4, No.8, 8K, Mirror, Checkered, Embossed, Hair Line, Sand Hot rolled plate (HR), Cold rolled sheet (CR), 28, 2D, BA, NO.8, SATIN (Met with Plastic Coated)
Form Coils, Foils, Rolls, Plain Sheet, Perforated Sheet, Chequered Plate, Strip, Flats, Blank (Circle), Ring (flange) etc.



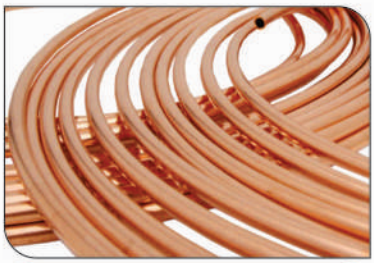
CAPSULE HOLE PERFORATED SHEET / COIL

Thickness 0.4mm - 10mm | **Width** 100mm to 1500mm
Length 2000mm, 2440mm, 3000mm, 5800mm, 6000mm & with Colil Form etc
Type Capsule Holes Staggered Pitch, Capsule Holes Sauare Pitch
Surface Finish 28, 2D, BA, NO.1, NO.4, NO.8, 8K, Mirror, Checkered, Embossed, Hair Line, Sand Hot rolled plate (HR), Cold rolled sheet (CR), 28. 20. BA, NO.8. SATIN [Met with Plastic Coated
Form Coils, Foils, Rolls, Plain Sheet, Shim Sheet, Perforated Sheet, Chequered Plate, Strip, Flats, Blank (Circle), Ring (flange) etc

Copper DHP Copper, ETP Copper, DPA Copper OFHC Copper
BRASS 63 / 37 Brass, 70 / 30 Brass, Admirality Brass, Aluminium Brass & other Compositions of Brass.
CUPRONICKEL 95 / 5 alloy, 90 / 10 alloy & 70 / 30 alloy.
BRONZES Phosphorous Bronze Aluminium Bronze & Gun Metal, Phosphorous Bronze A B1 / A B2 Bush Round.

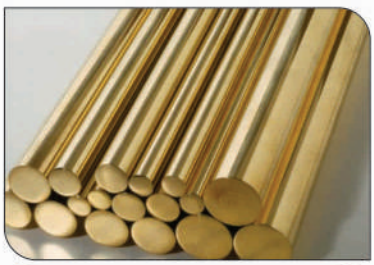


BRASS TUBES



COPPER TUBES

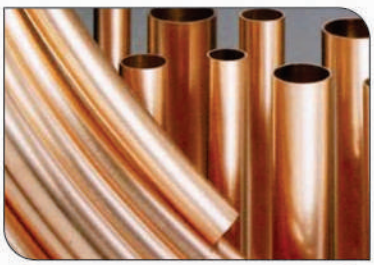
TUBES 2mm OD to 200mm OD with Wall thickness of 0.10 mm to 15 mm in length upto 10 mtrs straight (in coils upto 25 mtrs) in copper, Brass & Curpronickel.
RODS In all size upto 160mm diameter in Copper, Brass and Bronzes.
STRIPS / PROFILES Copper Strips and sections as per clients specific requirements.
WIRES Copper wires upto 42 swg in bright annealed condition.
S. E. WIRES Super enamelled copper wires upto 42 swg.



BRASS RODS

SPECIFICTIONS

Indian Standard Specification (ISS)
British Standard Specification (BSS)
American Standard for Testing of Material (ASTM)
As per Parties Specific Specifiaction.



COPPER TUBES & SECTIONS

E-mail : info@rajeshwarmetalengg.com / sales@rajeshwarmetalengg.com | Website : www.rajeshwarmetalengg.com

CHEMICAL COMPOSITION

	Designation/Grade	%C (Max)	%Mn (Max)	%P (Max)	%S (Max)	%Si (Max)	%Cr	%Ni
Austenitic Cr-Mn	201#	0.15	5.5-7.5	0.060	0.030	1.00	16.00-18.00	3.50-5.50
	201L	0.030	5.5-7.5	0.045	0.030	0.75	16.00-18.00	3.50-5.50
	201LN	0.030	6.4-7.5	0.045	0.015	0.75	16.00-17.50	4.00-5.00
	202	0.15	7.5-10.0	0.060	0.030	1.00	17.00-19.00	4.00-6.00
	204CS	0.10	6.5-9.0	0.060	0.010	0.75	16.00-17.50	1.50-3.50
	JSLAUS(J1)	0.08	6.0-8.0	0.070	0.010	0.75	16.00-18.00	4.00-6.00
	J-4	0.10	8.50-10.0	0.080	0.010	0.75	15.00-16.00	1.00-2.00
Austenitic Cr-Ni	301	0.15	2.00	0.045	0.030	1.00	16.00-18.00	6.00-8.00
	301L	0.030	2.00	0.045	0.030	1.00	16.00-18.00	6.00-8.00
	301LN	0.030	2.00	0.045	0.030	1.00	16.00-18.00	6.00-8.00
	304	0.07	2.00	0.045	0.030	0.75	17.50-19.50	8.00-10.50
	304M	0.04-0.10	2.00	0.045	0.030	0.75	18.00-20.00	8.00-10.50
	304L	0.030	2.00	0.045	0.030	0.75	17.50-19.50	8.00-12.00
	304LN	0.030	2.00	0.045	0.030	0.75	18.00-20.00	8.00-12.00
	309	0.20	2.00	0.045	0.030	0.75	22.00-24.00	12.00-15.00
	3095	0.08	2.00	0.045	0.030	0.75	22.00-24.00	12.00-15.00
	310	0.25	2.00	0.045	0.030	1.50	24.00-26.00	19.00-22.00
	310S	0.08	2.00	0.045	0.030	1.50	24.00-26.00	19.00-22.00
	316	0.08	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00
	316L	0.030	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00
	316LN	0.030	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00
	316Ti	0.08	2.00	0.045	0.030	0.75	16.00-18.00	10.00-14.00
	317	0.08	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00
	317L	0.030	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00
	317LN	0.030	2.00	0.045	0.030	0.75	18.00-20.00	11.00-15.00
	31727	0.030	1.00	0.030	0.030	1.00	17.50-19.00	14.50-16.50
	321	0.08	2.00	0.045	0.030	0.75	17.00-19.00	9.00-12.00
	347	0.08	2.00	0.045	0.030	0.75	17.00-1900	9.00-13.00
Martensitic	410	0.08-0.15	1.00	0.040	0.030	1.00	11.50-13.50	0.75max
	415	0.05	0.50-1.00	0.030	0.030	0.60	11.50-14.00	3.50-5.50
	420	0.15 min	1.00	0.040	0.030	1.00	12.00-14.00	0.75max
	431	0.20	1.00	0.040	0.030	1.00	15.00-17.00	1.25-2.50
	JBS	0.6-0.7	1.00	0.030	0.015	0.75	12.50-13.50	-
Ferritic	405	0.08	1.00	0.040	0.030	1.00	11.50-14.50	0.60
	409	0.030	1.00	0.040	0.020	1.00	10.50-11.70	0.50 max
	409L	0.030	1.00	0.040	0.030	1.00	10.50-11.70	0.50 max
	410S	0.08	1.00	0.040	0.030	1.00	11.50-13.50	0.60 max
	430	0.12	1.00	0.040	0.030	1.00	16.00-18.00	0.75 max
	430Ti	0.030	1.00	0.040	0.030	1.00	16.00-19.00	-
	436	0.120	1.00	0.040	0.030	1.00	16.00-18.00	-
	4367	0.025	1.00	0.040	0.030	1.00	16.00-19.00	-
	439	0.030	1.00	0.040	0.030	1.00	17.00-19.00	0.50 max
	441	0.030	1.00	0.040	0.015	1.00	17.50-18.50	-
Ferritic + Martensitic								
	409M	0.030	0.8-1.5	0.030	0.030	1.00	10.80-12.50	1.50 max
Duplex (Austenitic + Ferritic)								
	2205	0.030	2.00	0.030	0.020	1.00	22.00-23.00	4.50-6.50
	2304	0.030	2.50	0.040	0.030	1.00	21.50-24.50	3.00-5.50
	31803	0.030	2.00	0.030	0.020	1.00	21.00-23.00	4.50-6.50

RAJESHWAR METAL
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			MECHANICAL COMPOSITION			
%Mo	N PPm (Max)	%OTHERS	Tensile Strength MPa (min)	Yield strength MPa (min)	%Elongation (min)	Headness Rockwell B (max)
-	2500	-	655	310	40	100
-	2500	-	655	260	40	95
-	1000-2500	Cu = 1.0 Max	655	310	45	100
-	2500	-	620	260	40	100
-	1000-2000	Cu = 2.0-4.0	620	310	40	100
-	1000	Cu = 1.5-2.0	550	205	40	95
-	2000	Cu = 1.5-2.0	650	325	40	100
-	1000	-	515	205	40	95
-	2000	-	550	220	45	100
-	700-2000	-	550	240	45	100
-	1000	-	515	205	40	92
-	-	-	515	205	40	92
-	1000	-	485	170	40	92
-	1000-1600	-	515	205	40	95
-	-	-	515	205	40	95
-	-	-	515	205	40	95
-	-	-	515	205	40	95
-	-	-	515	205	40	95
2.00-3.00	1000	-	515	205	40	95
2.00-3.00	1000	-	485	170	40	95
2.00-3.00	1000-1600	-	515	205	40	95
2.00-3.00	1000	Ti=5X(C+N) Min., 0.70Max	515	205	35	95
3.00-4.00	1000	-	515	205	40	95
3.00-4.00	1000	-	515	205	40	95
3.00-4.00	1000-2200	-	550	240	35	95
3.80-4.50	1500-2100	Cu=2.8-4.0	550	245	40	96
-	1000	Ti=5X(C+N)Min., 0.70Max	515	205	40	95
-		Nb= 10XCMin., 1.00 Max.	515	205	20	92
-	-	-	450	205	15	96
0.50-1.00	-	-	795	620	15	32rc
0.50 max	-	-	690	-	-	96
-	-	-	-	-	-	29rc
-	-	-	-	-	20	-
-	-	Al = 0.10-0.30	415	170	20	88
-	-	Ti = 6X(C+N)Min., 0.5Max.	380	170	20	88
-	300	Ti = 6X(C+N)Min., 0.75Max.	380	170	22	88
-	-	-	415	205	22	89
-	-	-	450	205	22	89
-	-	Ti = 0.10-1.00	360	175	22	90
0.75-1.25	-	Nb = 5XC Min., 0.70Max.	450	240	20	89
0.75-1.25	250	%Nb or & Ti or %combination = 8X(C+N) Min., 0.80 Max.	410	245	22	96
-	300	Ti =0.20+4X(C+N) Min., 1.10 Max. Al=0.5 Max	415	205	18	89
-	-	Nb = 3X%C+0.3Min. 1% Max., T1=0.1-06%	430	250		88
-	300	Ti= 0.75Max	450	275	20	90
3.0-3.50	1400-2000	-	655	450	25	31rc
0.05-0.60	500-2000	Cu 0.05 Min.-0.60Max	600	400	25	32rc
2.50-3.50	800-2000	-	620	450	25	31rc

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EQUIVALENT INTERNATIONAL STAINLESS STEEL GRADES

	JSL Designation/ Grade	UNS Designation	USA - Canada / AISI - ASTM - ASME	INDIA/IS Letter Symbol	European	Chinese	GERMANY/DIN Designation	Japan/JIS	GOST
Austenitic Cr-Mn	201	20100	201	X10Cr17Mn6Ni4N20	-	-	X12CrMnNiN17-7-5	SUS201	-
	201L	20103	201L	-	1.4371	-	X2CrMnNiN17-7-5	-	-
	201LN	20153	201LN	-	-	-	-	-	-
	202	20200	202	X10Cr18Mn9Ni5	-	-	X12CrMnNiN18-9-5	SUS202	-
	204Cu	20430	-	-	-	-	-	-	-
	JSLAUS(J1)	-	-	-	-	-	-	-	-
Austenitic Cr-Ni	301	30100	301	X10Cr17Ni7	1.4310	1Cr17Ni7	X12CrNi17-7	SUS301	-
	301L	30103	301L	-	-	-	-	-	-
	301LN	30153	301LN	-	1.4318	-	X2CrNiN18-7	-	-
	304	30400	304	X04Cr19Ni9	1.4301	0Cr18Ni9	X5CrNi18-10	SUS304	-
	304H	30409	304H	-	-	-	-	-	-
	304L	30403	304L	-	1.4307	-	X2CrNi18-9	SUS304L	-
	304LN	30453	304LN	-	1.4311	-	X2CrNiN18-10	SUS304LN	-
	309	30900	309	X15Cr24Ni13	1.4828	-	-	-	-
	3095	30908	309S	-	1.4833	1Cr23Ni13	X7CrNi23-14	SUS3095	-
	310	31000	310	X20Cr25Ni20	-	-	X15CrNisi25-20	SUH310	20Ch25N20S2
	310S	31008	310S	-	1.4845	0Cr25Ni20	X12CrNi25-21	SUS310S	20Ch23N18
	316	31600	316	X04Cr17Ni12Mo2	1.4401	0Cr17Ni12Mo2	X5CrNiMo17-12-2	SUS316	-
	316L	31603	316L	X02Cr17Ni12Mo2	1.4404	00Cr17Ni14Mo2	X2CrNiMo17-13-2	SUS316L	-
	316LN	31653	316LN	-	1.4429	-	X2CrNiMoN17-11-2	SUS316LN	-
	316Ti	31635	316Ti	X04Cr17Ni12Mo2Ti	1.4571	0Cr18Ni12Mo2Ti	X6CrNiMoTi17-12-2	SUS316Ti	10Ch17N13M2T
	317	31700	317	-	-	-	-	-	-
	317L	31703	317L	-	1.4438	00Cr19Ni13Mo3	X2CrNiMo18154	SUS317L	-
	317LN	31753	317LN	-	-	-	-	-	-
	J31727	31727	-	-	-	-	-	-	-
	321	32100	321	X04Cr18Ni10Ti	1.4541	0Cr18Ni10Ti	X6CrNiTi18-10	SUS321	08Ch18N10T
	347	34700	347	X04Cr18Ni10Nb	1.4550	0Cr18Ni11Nb	X6CrNiNb18-10	SUS347	08Ch18N12B
Martensitic	410	41000	410	X12Cr12	1.4006	1Cr12	X12Cr13	SUS410	-
	415	41500	-	-	1.4313	-	X3CrNiMo13-4	-	-
	420	42000	420	X12Cr13	1.4021	-	X20Cr13	SUS420JI	-
	431	43100	431	-	1.4057	1Cr17Ni2	X17CrNi15-2	-	20Ch17N2
	JBS	-	-	-	-	-	-	-	-
Ferritic	405	40500	405	X04Cr12	1.4002	0Cr17Ni2	X6CrAl13	SUS405	-
	409	40900	409	-	1.4512	-	X2CrTi12	SUH409	-
	409RC	-	-	-	-	-	-	-	-
	410S	41008	410S	-	1.4000	0Cr13	X6Cr-13	SUS403	-
	430	43000	430	X07Cr17	1.4016	1Cr17	X6Cr17	SUS430	-
	430Ti	-	-	-	-	-	X3CrTi17	SUS430LX	-
	436	43600	436	-	-	-	-	-	-
	436L	43932	436L	-	-	-	-	SUS436L	-
	439	43035	439	-	-	00Cr18Ti	X3CrTi17	-	-
	441	43940	-	-	1.4509	-	X2CrTiNb18	-	-
Ferritic + Martensitic									
	409M	-	-	-	-	-	-	-	-
Duplex (Austenitic + Ferritic)									
	2205	32205	2205	-	-	-	-	-	-
	31803	31803	-	-	1.4462	-	X2CrNiMoN 22-5-3	SUS329J3L	-
	2304	32304	2304	-	1.4362	-	X2CrN N 23-4	-	-

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Chemical Composition of Nickel Alloys

NOMINAL CHEMICAL COMPOSITION, % (NOT FOR SPECIFICATION PURPOSES)

Nickel	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	TI	Other
Nickel	99.5	0.08	0.18	0.2	0.005	0.18	0.13	-	-	-	-	-	-
Nickel201	99.5	0.01	0.18	0.2	0.005	0.18	0.13	-	-	-	-	-	-
Nickel 205	99.5	0.08	0.18	0.10	0.004	0.08	0.08	-	-	-	-	0.03	Mg 0.05
Nickel 212	97.7	0.10	2.0	0.05	0.005	0.05	0.03	-	-	-	-	-	-
Nickel 222	99.5	0.01	0.02	0.04	0.0025	0.01	0.01	0.01	0.06	-	0.01	0.01	Mg 0.08
Nickel 270	99.98	0.01	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	Mg<0.001
	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	Ti	Other
MONEL alloy 400	63.0min	0.15	1.0	25 max	0.024 max	0.05 max	31.0	-	-	-	-	-	-
MONEL k alloy-500	63.0min	0.15	1.5max	2.0 max	0.010max	0.5	30.0	-	-	-	2.9	0.6	-
Cast MONEL alloy	63.0min	0.07	0.75	2.5max	0.02max	0.04max	30.0	0.10max	-	0.20max	0.05max	0.01max	-
Cast MONEL alloy	63.0min	0.03max	0.20max	2.5max	0.02max	0.04max	30.0	0.10	-	0.20max	0.05 max	0.01max	-
INCONEL alloy 600	72.0min	0.15max	1.0max	8.0	0.015max	0.05max	0.5max	15.5	-	-	-	-	Nb + Ta
INCONEL alloy 625	60.5	0.10max	0.25	5.0max	0.015max	0.5max	-	21.5	-	9.0	0.25	0.25	3.65
INCOLOY alloy 800	32.5	0.10max	1.5max	Bal	0.015max	1.0max	0.75max	21.0	-	-	0.38	0.38	-
INCOLOY alloy 825	42.0	0.05max	1.0max	Bal	0.03max	0.5max	2.25	21.5	-	3.0	0.20max	0.9	-
INCOLOY alloy 904	32.5	0.025	0.025	Bal	0.015	0.25	0.25	-	14.5	-	0.1	1.6	-
INCOLOY alloy DS	37.0	1.2	1.2	Bal	-	2.3max	2.3max	18.0	-	-	-	0.20	-
Hastelloy B	Rest/Bal	0.10	0.80	5.58	0.7		0.6	1.25	28	-	-	-	-
Hastelloy C	Rest/Bal	0.07	0.80	5.75	0.7		16.0	1.25	17	-	-	-	-
Hastelloy G	Rest/Bal	0.05	1.0-2.0	18.0-21.0	0.7		1.5	1.25	5.575	-	-	-	-
Alloy							21-23.5						

PHYSICAL AND MECHANICAL PROPERTIES

Nickel	Density Kg./mm²	Melting range C	Specific heat at 20°C J/Kg C	Thermal Conductivity at 20°C W/m C	Thermal expansion 10-c/C 20-95°C	Electrical resistivity at 20°C Mocrohm cm	Tensile Strength N/mn³	Hardness HV
Nickel 200	8.89	1435-1445	456	74.9	13.3	9.5	380-550	90-120
Nickel 201	8.89	1435-1445	456	79.2	13.3	7.6	340-420	75-100
Nickel 205	8.89	1435-1445	456	74.9	13.3	9.5	340	77
Nickel 212	8.89	1435-1445	430	44.1	-	10.9	476	144
Nickel 222	8.89	1435-1445	456	74.9	13.3	8.8	340	77
Nickel 270	8.89	1435-1445	460	85.7	13.3	7.5	340	80
MONEL alloy 400	8.83	1300-1350	419	21.7	14.1	51.0	480-620	111-151
MONEL alloy K-500	8.46	1315-1350	419	17.4	13.7	61.4	620-760	141-189
INCONEL alloy 600	8.42	1370-1425	461	14.8	13.3	103	550-690	121-173
INCONEL alloy 625	8.44	1290-1350	410	9.8	12.8	129	830-1040	146-247
INCOLOY alloy 800	7.95	1355-1385	502	11.7	14.2	99	520-700	121-188
INCOLOY alloy 825	8.14	1370-1400	441	10.9	14.0	113	590-730	121-183
INCOLOY alloy 904	8.12	-	442	14.9	4.6	72	923	-
INCOLOY alloy DS	7.92	1330-1400	452	12.0	14.1	108	680	208

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CHEMICAL COMPOSITIONS OF TITANIUM GRADES & ALLOYS

Trade Name	UNS	Titanium Industry Specifications	Chemical Composition	Min.Tensile (KSI)	Min.Yield (KSI)	Hardness	Modulus of Elasticity	Poisson's Ratio
Grade 1	**UNS R50250**	**AMS** AMS-T-81915 **ASTM** F67(1), B265(1), B338(1), B348(1), B381(F-1), B861(1), B862(1), B863(1), F467(1), F468(1), F1341 **MIL SPEC** MIL-T-81556	**C** 0.10 max **Fe** 0.20 max **H** 0.015 max **N** 0.03 max **O** 0.18 max **Ti** Remaining	35	25	14.9	103 GPa	0.34-0.40
Grade 2	**UNS R50400**	**AMS** 4902, 4941, 4942, AMS-T-9046 **ASTM** F67(2), B265(2), B337(2), B338(2), B348(2), B367(C-2), B381(F-2), B861(2), B862(2), B863(2), F467(2), F468(2), F1341 **MIL SPEC**MIL-T-81556 **SAE** J467(A40)	**C** 0.10 max **Fe** 0.30 max **H** 0.015 max **N** 0.03 max **O** 0.25 max **Ti** Remaining	50	40	14.9	103 GPa	0.34-0.10
Grade 5	**UNS R56400**	**AMS** 4905, 4911, 4920, 4928, 4930, 4931, 4932, 4934, 4935, 4954, 4963, 4965, 4967, 4993, AMS-T-9046, AMS-T-81915,AS7460, AS7461 **ASTM** B265(5), B348(5), B367(C-5), B381(F-5), B861(5), B862(5), B863(5), F1472 **AWS** A5.16 (ERTi-5) **MIL SPEC** MIL-T-81556	**Al** 5.5-6.75 max **C** 0.10 max **Fe** 0.40 max **H** 0.015 max **N** 0.05 max **O** 0.20 max **Ti** Remaining **V** 3.5-4.5	130	120	16.4	114 GPa	0.30-0.33
Grade 7	**UNS R52400**	**ASTM** B265(7), B338(7), B348(F-7), B861(7), B862(7), B863(7), F467(7), F468(7)	**C** 0.10 max **Fe** 0.30 max **H** 0.015 max **N** 0.03 max **O** 0.25 max **Ti** Remaining **Other** Pd 0.12-0.25	50	40	14.9	103GPa	-
Grade 9	**UNS R56320**	**AMS** 4943, 4944, 4945, AMS-T-9046 **ASME** SFA5.16(ERTi-9) **ASTM** B265(9), B338(9), B348(9), B381(9), B861(9), B862(9), B863(9) **AWS** A5.16(ERTi-9)	**Al** 2.5-3.5 **C** 0.05 max **Fe** 0.25 max **H** 0.013 max **N** 0.02 max **O** 0.12 max **Ti** Remaining **V** 2.0-0-3.0	90	70	13.1	107GPa	0.34
Grade 12	**UNS R53400**	**ASTM** B265(12), B338(12), B348(12), B381(F-12), B861(12), B862(12), B863(12)	**C** 0.08 max **Fe** 0.30 max **H** 0.015 max **Mo** 0.2-0.4 **N** 0.03 max **Ni** 0.6-0.9 **O** 0.25 max **Ti** Remaining	70	50	14.9	103GPa	-

RAJESHWAR METAL
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Titanium Alloys

Grade 1	UNS R56400	Titanium 6Al-4V
Grade 2	UNS R53400	Titanium 5Al-2.5Sn
Grade 5	UNS R56320	Titanium 3Al-2.5V
Grade 7	Titanium CP4	Titanium Grade 12-Ti-0.3-0.8Ni,
Grade 9	Titanium CP3	Titanium Grade 23
Grade 12	Titanium CP2	Titanium 6Al-4V ELI.
UNS R50250	Titanium CP1	
UNS R50400	CP Ti-0.15Pd	

Aluminium Alloys

1050 / 19500	6082 / He 30	5056 / 55000	2014 / 24345
1060 / 19600	6061	5052 / 52000	2011
7475 / 8011	6101	3003	2007
7075 / DT5124	5754	2024	
7050	5086 / 53000	2017	
6351	5083 / 54300	2014A	

Chemical Composition of Carbon Alloys

GRADE	C	Mn	Si	S	P	Cr	Ni	Mo
EN-8	.35-.45	.60-1.00	.10-.35	.050MAX	.050MAX	-	-	-
EN-8D	.40-.45	.70-.90	.05-.35	.060 MAX	.060 MAX	-	-	-
EN-9	.50-.60	.50-.80	.05-.35	.040 MAX	.040 MAX	-	-	-
EN-19	.35-.45	.50-.80	.10-.35	.040	.040	.90-1.40	-	.20-.40
EN-24	.35-.45	.45-.70	.10-.35	.040	.040	.90-1.40	1.30-1.80	.20-.40
EN-31	.90-1.20	.30-.75	.10-.35	.040	.040	1.00-1.60	-	-
EN-41B	.35-.45	60 Max	.10-.45	.040	.040	1.50-1.80	40 MAX	.10-.25
EN-47	.45-.55	.50-.80	.50 Max	.040	.040	.80-1.20	-	-
20MnCr5	.17-.22	1.10-1.40	.10-.35	.035	.035	1.00-1.30	-	-
SAE-4140	.38-.43	.75-.1.00	.20-.35	.035	.035	.80-1.10	.15-.25	-
SAE-8620	.18-.23	.70-.90	.20-.35	.040	.040	.40-.60	.40-.70	.15-.25
EN-353	.20 Max	.50-1.00	.35 Max	.040	.040	.75-1.25	1.00-1.50	.80-.15
EN-36C	.12-.18	.30-.60	.10-.35	.040	.040	.60-1.10	3.00-3.75	.10-.25
OHNS	.85-1.00	1.00-1.20	.15-.35	.03	.03	.50-.70	-	-
WPS-D3	2.0-2.35	.60	.60	.03	.03	11-13.50	.30	-
WPS-D2	1.40-1.60	.60	.60	.03	.03	11.0-13.0	.30	.70-1.20
H11	.33-.43	.20-.50	.80-1.20	.03	.03	4.75-5.50	.30	1.10-1.60
H13	.32-.45	.20-.50	.80-1.20	.03	.03	4.75-5.50	.30	1.10-1.75
DIN 1.2714	.50-.60	.65-.95	.10-.40	<.004	<.015	1.0-1.20	1.50-1.80	.45-.55
P20 1.2311	.40	1.45	.30	-	-	1.95	-	0.20
P20 1.2738	.35-.45	1.30-1.60	.20-.40	Max .035	Max .030	1.80-2.10	.90-1.20	.15-.25
P20 1.2316	.33-.43	Max 1.00	Max 1.00	Max .005	-	15.0-17.0	Max 1.00	1.00-1.30

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Stainless Steel Pipe Dimension as per ASTM and weight per Mtr (ANSI B 36.19-1965)

Nomical Bore		Outside Diameter	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		Schedule 160S		Schedule XXS	
MM	INCH	MM	Wt MM	Weight (Kg/m	Wt MM	Wight (Kg/M	Wt MM	Weight (Kg/M)	Wt MM	Weight (Kg/M)	Wt MM	Weight (Kg/M)	Wt MM	Weight (Kg/M)
3	1/8	10.3	1.24	0.276	1.24	0.28	1.73	0.37	2.41	0.47	-	-	-	-
6	1/4	13.7	1.24	0.390	1.65	0.49	2.24	0.631	3.02	0.80	-	-	-	-
10	3/8	17.1	1.24	0.490	1.65	0.63	2.31	0.845	3.20	1.10	-	-	-	-
15	1/2	21.3	1.65	0.800	2.11	1.00	2.77	1.27	3.75	1.62	4.75	1.94	7.47	2.55
20	3/4	26.7	1.65	1.03	2.11	1.28	2.87	1.68	3.91	2.20	5.54	2.89	7.82	3.63
25	1	33.4	1.65	1.30	2.77	2.09	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45
32	1.1/4	42.2	1.65	1.65	2.77	2.70	3.56	3.38	4.85	4.47	6.35	5.61	9.70	7.77
40	1.1/2	48.3	1.65	1.91	2.77	3.11	3.68	4.05	5.08	5.41	7.14	7.25	10.16	9.54
50	2	60.3	1.65	2.40	2.77	3.93	3.91	5.44	5.54	7.48	8.74	11.1	11.07	13.44
65	2.1/2	73.0	2.11	3.69	3.05	5.26	5.16	8.63	7.01	11.4	9.53	14.9	14.2	20.39
80	3	88.9	2.11	4.51	3.05	6.45	5.49	11.30	7.62	15.2	11.1	21.3	15.24	27.65
100	4	114.3	2.11	5.84	3.05	8.36	6.02	16.07	8.56	22.3	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.47	3.40	11.57	6.55	21.8	9.53	31.97	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.32	3.40	13.84	7.11	28.3	10.97	42.7	18.2	67.56	21.95	79.22
200	8	219.1	2.77	14.79	3.76	19.96	8.18	42.6	12.7	64.6	23.0	111.2	22.23	107.8
250	10	273.1	3.40	22.63	4.19	27.78	9.27	60.5	12.7	96.0	28.6	172.4	25.40	155.15
300	12	323.9	3.96	31.25	4.57	36.00	9.52	73.88	12.7	132.0	33.32	238.76	25.40	186.97
350	14	355.6	3.96	34.69	4.78	41.3	11.13	94.59	19.05	158.08	35.71	281.70	-	-
400	16	406.4	4.19	41.56	4.78	47.29	12.7	123.30	24.41	203.33	40.46	365.11	-	-
450	18	457.2	4.19	46.80	4.78	53.42	14.27	155.80	23.8	254.36	45.71	466.40	-	-
500	20	508.0	4.78	59.25	5.54	68.71	15.09	183.42	26.19	311.2	49.99	564.68	-	-
600	24	609.6	5.54	82.47	6.35	94.45	17.48	255.41	30.96	442.08	59.54	808.22	-	-

CARBON STEEL SEAMLESS PIPE DIAMENSION & WELDED (ANSI B 36.10)

Nomical pipe Size		OD	Schedule 10		Schedule 20		Schedule 30		Schedule Standard		Schedule 40		Schedule 60		Schedule XS		Schedule 80		Schedule 100		Schedule 120		Schedule 140		Schedule 160		Schedule XXS	
mm	Inch	mm	Wall	kg/m	Wall	kg/m	Wall	kg/m	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.
3	1/8	10.3							1.7	0.357	1.7	0.357			2.4	0.470	2.4	0.470										
6	1/4	13.7							2.2	0.625	2.2	0.625			3.0	0.804	3.0	0.804										
10	3/8	17.1							2.8	1.26	2.8	1.26			3.7	1.10	3.2	1.10										
15	1/2	21.3							2.8	1.26	2.8	1.26			3.7	1.62	3.7	1.62							4.8	1.95	7.5	2.54
20	3/4	26.7							2.9	1.68	2.9	1.68			3.9	2.19	3.9	2.19							5.6	2.89	7.8	3.63
25	1	33.4							3.4	2.50	3.4	2.50			4.5	3.23	4.5	3.23							6.4	4.23	9.1	5.45
32	11/4	42.2							3.6	3.38	3.6	3.38			4.8	4.47	4.9	4.46							6.4	5.60	9.7	7.97
40	11/2	48.3							3.7	4.05	3.7	4.05			5.1	5.40	5.1	5.40							7.1	7.23	10.2	9.58
50	2	60.3							3.9	5.43	3.9	5.43			5.5	7.47	5.5	7.47							8.7	11.1	11.1	13.4
65	21/2	73.0							5.2	8.62	5.2	8.62			7.0	11.4	7.0	11.4							9.5	14.9	14.0	20.4
80	3	88.9							5.5	11.3	5.5	11.3			7.6	15.3	7.6	15.3							11.1	21.3	15.2	27.7
90	31/2	101.6							5.7	13.6	5.7	13.6			8.1	18.6	8.1	18.6									16.2	34.1
100	4	114.3							6.0	16.1	6.0	16.1			8.6	22.3	8.6	22.3			11.1	28.3			13.5	33.5	17.1	41.1
125	5	141.3							6.6	21.8	6.6	21.8			9.5	30.9	9.5	30.9			12.7	40.2			15.9	49.0	19.0	57.4
150	6	168.3							7.1	28.2	7.1	28.2			11.0	42.5	11.0	42.5			14.3	54.2			18.3	67.5	21.9	79.1
200	8	219.1			6.4	33.3	7.0	36.7	8.2	42.5	8.2	42.5	10.3	53.1	12.7	64.6	12.7	64.6	15.1	75.8	18.3	90.4	20.6	101	23.0	112.0	22.2	108.0
250	10	273.0			6.4	41.7	7.8	50.9	9.3	60.2	9.3	60.2	12.7	81.5	12.7	81.5	15.1	95.8	18.3	114.7	21.4	132.9	25.4	155	28.6	172.2	25.4	155.0
300	12	323.8			6.4	49.7	8.4	65.1	9.5	73.8	10.3	79.7	14.3	109.0	12.7	97.4	17.4	132.0	21.4	160.0	25.4	187.0	28.6	208	33.3	239.0	25.4	187.0
350	14	355.6	6.4	54.6	7.9	68.1	9.5	81.2	9.5	81.2	11.1	94.6	15.1	126.4	12.7	107.0	19.0	158.0	23.8	195.0	27.8	224.0	31.8	253	35.7	281.0		
400	16	406.4	6.4	62.6	7.9	77.9	9.5	93.1	9.5	93.3	12.7	123.0	16.7	160.0	12.7	123.0	21.4	203.0	26.2	245.0	30.9	286.0	26.5	333	40.5	365.0		
450	18	457.2	6.4	70.5	7.9	87.8	11.1	122.0	9.5	105.0	14.3	156.0	19.0	206.0	12.7	139.0	23.8	254.0	29.4	310.0	34.9	363.0	39.7	408	42.2	459.0		
500	20	508.0	6.4	78.5	9.5	117.0	12.7	155.0	9.5	117.0	15.1	183.0	20.6	248.0	12.7	155.0	26.2	311.0	32.5	381.0	38.1	441.0	44.4	508	50.0	564.0		
550	22	558.8	6.4	86.4	9.5	129.0	12.7	171.0	9.5	129.0			22.2	294.0	12.7	171.0	28.6	373.0	34.9	451.0	41.3	526.0	47.6	600	54.0	671.0		
600	24	609.6	6.4	94.7	9.5	141.0	14.3	210.0	9.5	141.0	17.4	255.0	24.6	355.0	12.7	187.0	30.9	441.0	38.9	547.0	45.0	639.0	52.4	719	59.5	807.0		
650	26	660.4	7.9	128.0	12.7	203.0			9.5	153.0					12.7	203.0												
700	28	711.2	7.9	137.4	12.7	219.0	15.9	272.0	9.5	165.0					12.7	219.0												
750	30	762.0	7.9	147.0	12.7	234.6	15.9	292.6	9.5	176.0					12.7	234.6												
800	32	812.8	7.9	157.0	12.7	250.6	15.9	312.5	9.5	188.2					12.7	250.6												
850	34	863.6	7.9	167.0	12.7	266.0	15.9	332.4	9.5	200.0					12.7	266.5												
900	36	9.14.4	7.9	176.6	12.7	282.4	15.9	352.2	9.5	212.0					12.7	281.4												

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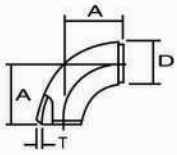
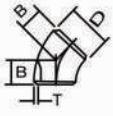
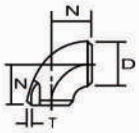
Butt Welding Pipe Fitting Dimensional Standard ANSI B-16.9, B-16.2B



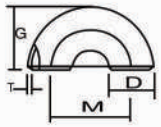
90°Elbow
long radius



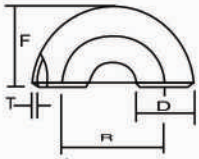
45°Elbow



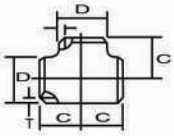
90°Elbow
short radius



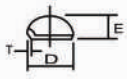
180°Return Bend
short radius



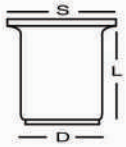
180°Return Bend
long radius



Tee equal

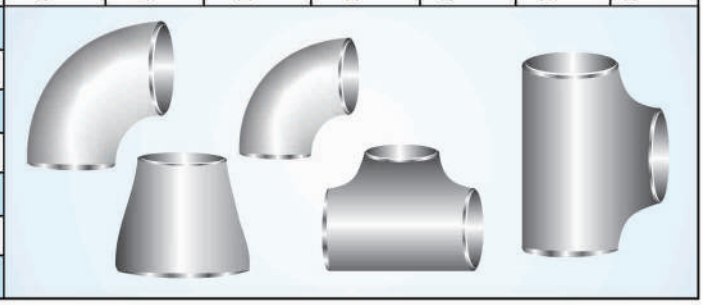


Caps



Stubend

Nominal Pipe Size		Outside Diameter	Center to Face				Back to Face			Center to Center			Length 'L'	
Inch.	mm	D	A	B	C	N	E	F	G	R	M	S	MSS SP43	ANSI B 16.9
1/2	15	21.3	38	16	25	_	25	48	_	76	_	34.9	50.8	76.2
3/4	20	26.7	29	11	29	_	25	43	_	57	_	42.8	50.8	76.2
1	25	33.4	38	22	38	25	38	56	41	76	51	50.8	50.8	101.6
1 1/4	32	42.2	48	25	48	32	38	70	52	95	64	63.5	50.8	101.6
1 1/2	40	48.3	57	29	57	38	38	83	62	114	76	73.0	50.8	101.6
2	50	60.3	76	35	64	51	38	106	81	152	102	92.0	63.5	152.4
2 1/2	65	73.0	95	44	76	64	38	132	100	191	127	104.8	63.5	152.4
3	80	88.9	114	51	86	76	51	159	121	229	152	127.0	63.5	152.4
3 1/2	90	101.6	133	57	95	89	64	184	140	267	178	139.7	76.2	152.4
4	100	114.3	152	64	105	102	64	210	159	305	203	157.2	76.2	152.4
5	125	141.3	190	79	124	127	76	262	197	381	254	185.7	76.2	203.2
6	150	168.3	229	95	143	152	89	313	237	457	305	215.9	88.9	203.2
8	200	219.1	305	127	178	203	102	414	313	610	406	270.0	101.6	203.2
10	250	273.1	381	159	216	254	127	518	391	762	508	324.0	127.0	254.0
12	300	323.9	457	190	254	305	152	619	467	914	610	381.0	152.4	254.0
14	350	355.6	533	222	279	356	165	711	533	1067	711	412.8	152.4	305.0
16	400	406.4	610	254	305	406	178	813	610	1219	813	470.0	152.4	305.0
18	450	457.2	686	286	343	457	203	914	686	1372	914	533.4	152.4	305.0
20	500	508.0	762	318	381	508	229	1016	762	1524	1016	584.2	152.4	305.0
22	550	559.0	838	343	419	559	254	1118	838	1676	1118	614.4	152.4	305.0
24	600	610.0	914	381	432	610	267	1219	914	1829	1219	692.2	152.4	305.0
26	650	660.0	991	406	495	660	267	_	_	_	_	_	_	_
28	700	711.0	1067	438	521	711	267	_	_	_	_	_	_	_
30	750	762.0	1143	470	559	762	267	_	_	_	_	_	_	_
32	800	813.0	1219	502	597	813	267	_	_	_	_	_	_	_
34	850	864.0	1295	533	635	864	267	_	_	_	_	_	_	_
36	900	914.0	1372	565	673	914	267							
38	950	965.0	1448	600	711	965	305							
40	1000	1016.0	1524	632	749	1016	305							
42	1050	1067.0	1600	660	762	1067	305							
44	1100	1118.0	1676	695	813	1118	343							
46	1150	1168.0	1753	727	851	1168	343							
48	1200	1219.0	1829	759	889	1219	343							



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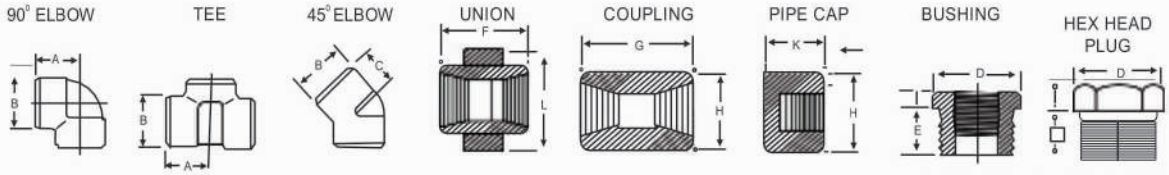
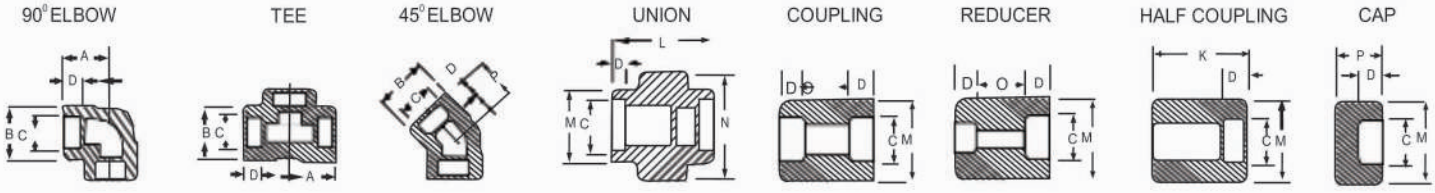
DIMENSION IN MM OF FORGED SCREWED FITTING TO ANSI B-16.11 THREADED TO ASA B 2.1



HALF COUPLING=G/2

NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S					
		A	B	C	G	H	K	D	E	F	I	J	L	A	B	C	G	H	K
1/8"	10.3	21	22	17	32	16	19	11	10	40	-	6	-	25	25	19	32	22	-
1/4"	13.7	25	25	19	35	19	25	16	11	43	3	6	32	29	33	22	35	25	27
3/8"	17.2	29	33	22	38	22	25	17.5	13	48	4	8	38	33	38	25	38	32	27
1/2"	21.3	33	38	25	48	29	32	22	15	51	5	8	46	38	46	29	48	38	33
3/4"	26.7	38	46	29	51	35	37	27	16	57	6	10	51	44	56	33	51	44	38
1"	33.4	44	56	33	60	44	41	35	19	64	6	10	60	51	62	35	60	57	43
1 1/4"	42.2	51	62	35	67	57	44	44.5	21	70	7	14	72	60	75	43	67	64	46
1 1'2"	48.3	60	75	43	79	64	44	51	21	79	8	16	80	64	84	44	79	76	48
2"	60.3	64	84	45	86	76	48	63.5	22	88	9	17	94	83	102	52	86	92	51
2 1/2"	73.02	83	102	52	92	92	60	76	27	118	10	21	122	95	121	64	92	108	64
3"	89.0	95	121	64	108	108	65	89	29	121	10	25	140	106	146	79	108	127	68
4"	114.5	114	152	79	121	140	68	117.5	32	150	13	25	180	114	152	79	121	159	75

SOCKET WELD FITTING TO ANSI B-16.11



NOM BORE	PIPE O.D.	3000 L.B.S.									COMMON FACTORS				6000 L.B.S				
		A	B	K	J	L	M	N	P	Q	C min	D min	O min	O max	A	B	M	K	N
1/8"	10.3	22	18.5	26	16	40	17.3	32	17.5	10	10.7	10	5	8	22	22	20	25	46
1/4"	13.7	22	22	26	18	43	21.2	32	17.5	10	14.1	10	5	8	27	25	24	25	51
3/8"	17.2	25	25	26	19	48	25.4	36	19	10	17.6	10	3	9	27	28	28	26	60
1/2"	21.3	27	32	30	21	51	31	43	22	10	21.7	10	6	13	31	34	34	31	72
3/4"	26.7	34	38	36	24	57	37	50	25	13	27	13	6	13	37	42	41	35	80
1"	33.4	37	46	40	25	64	45.2	60	27	13	33.8	13	9	17	42	50	50	40	94
1 1/4"	42.2	42	56	40	29	70	55	70	30	13	42.6	13	9	17	47	59	58	41	100
1 1'2"	48.3	47	62	40	30	79	61.4	78	32	13	48.7	13	9	17	53	67	55	43	122
2"	60.3	56	75	52	37	89	75	95	38	13	61.2	16	15	23	59	84	83	55	
2 1/2"	73.02	60	92	52	48	114	91.3	125	38	16	73.8	16	14	24		102		56	
3"	89.00	76	110	52	51	127	108.8	140	44	16	89.8	16	14	24		121		58	
4"	114.50	88	137	58		150	136.9		48	19	115.5	19	14	24		152		64	

DIMENSIONS AND OTHERS SPECIFICATIONS AS PER CUSTOMERS REQUIREMENTS ARE AVAILABLE ON REQUEST

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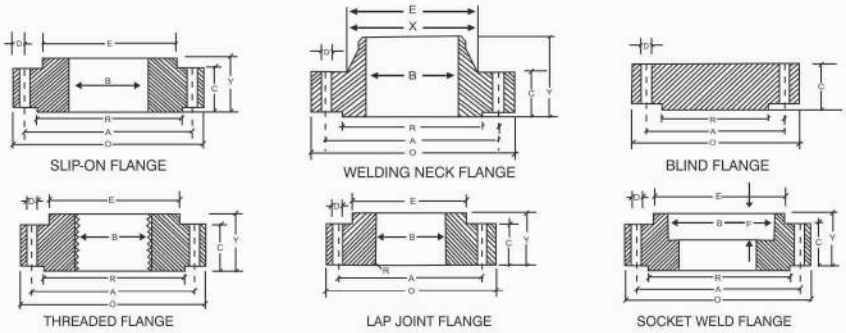
FLANGES

DIMENSIONS OF CLASS 150/300/600 FLANGES AS PER B 16.5



DIMENSIONS OF CLASS 150 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk. of Holes C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5	21.33
20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1	26.67
25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7	33.40
32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3	42.16
40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9	48.26
50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5	60.31
65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	28.6	74.7	75.4	104.8	19.0	73.02
80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6	88.90
100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8	114.30
125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8	141.30
150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.1	171.4	215.9	27.0	168.27
200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7	219.07
250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3	273.05
300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7	323.85
350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3	355.60
400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	41.5	411.2	469.9	44.4	406.40
450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2	457.00
500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0	508.00
600	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5	609.60

DIMENSIONS OF CLASS 300 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk.of Holes C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3	42.16
40	155.6	114.3	22.2	4	20.3	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9	48.26
50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5	60.31
65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6	88.90
100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8	114.30
125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	-	141.30
150	317.5	269.9	22.2	12	38.5	206.4	52.4	98.4	62.4	170.7	171.4	215.9	-	168.27
200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	-	219.07
250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	-	273.05
300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	-	323.85
350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	-	355.60
400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	-	406.40
450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	-	457.20
500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	-	508.00
600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	615.9	692.1	-	609.60

DIMENSIONS OF CLASS 600 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	Thk. of Holes	No. of Holes C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.3	22.8	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	20.6	63.5	28.6	66.7	28.4	43.2	43.6	63.5	14.2	42.16
40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	73.0	15.8	48.26
50	165.1	127.0	19.0	8	25.4	84.1	36.5	73.0	36.5	62.0	62.4	92.1	17.4	60.31
65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	-	88.90
100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-	114.30
125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	-	141.30
150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	-	168.27
200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	-	219.07
250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.3	323.8	-	273.05
300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.1	381.0	-	323.85
350	603.2	527.0	38.1	20	69.9	431.8	93.7	165.1	127.0	359.1	360.1	412.7	-	355.80
400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	-	406.40
450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.2	533.4	-	457.20
500	812.8	729.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	-	508.00
600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	-	609.60

All Dimensions are in Millimeters.

Flanges except Lap Joint Will be furnished with 1.6 mm raised face Class 150/300 & 6.35 mm for Class 600. Which is included in " Thickness" (C) and Length Through Hub (Y).

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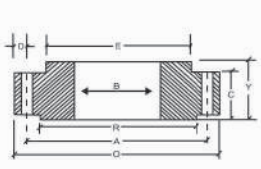
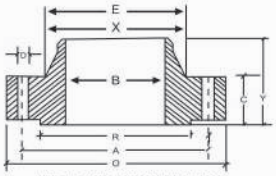
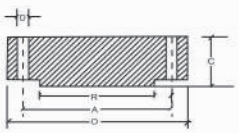
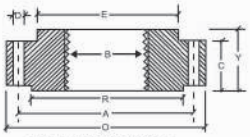
FLANGES

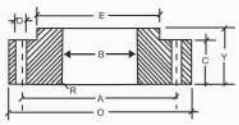
DIMENSIONS OF CLASS 900/1500/2500 FLANGES AS PER B 16.5

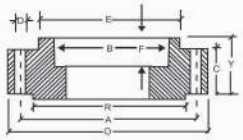

SLIP-ON FLANGE


WELDING NECK FLANGE


BLIND FLANGE


THREADED FLANGE


LAP JOINT FLANGE


SOCKET WELD FLANGE

DIMENSIONS OF CLASS 900 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk. of Flange C	Dia of Hub E	Length through Hub S/O & S / W Y	Length through Hub W/N Y	Length through Hub L/J Y	Dia Bore S/O & S / W B	Dia Bore L/J B	Dia of R/F R	Depth of Socket F	Pipe Dia X
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1	26.67
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	35.0	50.8	12.7	33.40
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2	42.16
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
50	215.9	165.1	25.4	8	38.1	104.9	57.1	101.6	57.1	62.0	62.4	92.1	17.4	60.31
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
80	2241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	-	88.90
100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.0	116.8	157.1	-	114.30
125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	114.5	185.7	-	141.30
150	381.0	317.5	31.7	12	55.6	234.9	85.5	139.7	85.8	170.6	171.4	215.9	-	168.27
200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	114.3	221.4	222.2	269.8	-	219.07
250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	-	273.05
300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	-	323.85

DIMENSIONS OF CLASS 1500 FLANGES AS PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub S/O & S / W Y	Length through Hub W/N Y	Length through Hub L/J Y	Dia Bore S/O & S / W B	Dia Bore L/J B	Dia of R/F R	Depth of Socket F	Pipe Dia X
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	34.9	27.7	28.1	42.9	11.1	26.67
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.3	34.5	35.0	50.8	12.7	33.40
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.3	43.2	43.6	63.5	14.2	42.16
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.0	92.1	17.4	60.31
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
80	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.7	127.0	-	88.90
100	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	-	114.30
125	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	-	141.30
150	393.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.7	171.4	215.9	-	168.27
200	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	-	219.07
250	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	-	273.05
300	673.1	571.5	54.0	16	123.8	450.8	181.0	282.6	218.9	327.1	328.1	381.0	-	323.85

DIMENSIONS OF CLASS 2500 FLANGES PER B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk. of Flange C	Dia of Hub E	Length through Hub S/O & S / W Y	Length through Hub W/N Y	Length through Hub L/J Y	Dia Bore S/O & S / W B	Dia Bore L/J B	Dia of R/F R	Depth of Socket F	Pipe Dia X
15	133.3	88.9	22.2	4	30.2	42.9	39.7	73.0	39.7	22.3	22.3	34.9	-	21.33
20	139.7	95.2	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	-	26.67
25	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	-	33.40
32	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	-	42.16
40	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	-	48.26
50	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	-	60.31
65	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	-	73.02
80	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	-	88.90
100	355.6	273.0	41.3	8	76.2	165.1	107.9	190.5	107.9	116.1	116.1	157.2	-	114.30
125	416.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.8	185.7	-	141.30
150	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.1	-	168.27
200	552.4	438.1	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	-	219.07
250	673.1	539.7	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	-	273.05
300	762.0	619.1	73.0	12	184.1	441.3	254.9	463.5	254.0	327.1	327.1	381.0	-	323.85

All Dimensions are in Millimeters.

Flanges except Lap Joint Will be furnished with 6.35 mm raised face, Which is included in " Thickness" (C) and Length Through Hub (Y).

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TABLE - D

For Working Stream Pressure aboe 250 lbs and upto 350 lbs per sq. inch

Nominal Pipe Size (in m)	Dia. of Flang	Dia. of Bolt Circle (PCD)	No. of Bolt	Dia. of Bolt	Thickness of Flange
mm	mm	mm	mm	mm	mm
15	95	67	4	13	5
20	102	73	4	13	5
25	114	83	4	13	5
32	121	87	4	13	6
40	133	98	4	13	6
50	152	114	4	16	8
65	165	127	4	16	8
80	184	145	4	16	10
100	216	178	4	16	10
125	254	210	8	16	13
150	279	235	8	16	13
200	337	292	8	16	13
250	406	356	8	19	16
300	457	406	12	19	16
350	527	470	12	22	19
400	578	521	12	22	19
450	641	584	12	22	22
500	705	641	16	22	25
600	826	756	16	25	29

TABLE - E

For Working Stream Pressure above 350 lbs and upto 450 lbs per sq. inch

Nominal Pipe Size (in mm)	Dia. of Flang	Dia. of Bolt Circle(PCD)	No. of Bolt	Dia. of Bolt	Thickness of Flange
mm	mm	mm	mm	mm	mm
15	95	67	4	13	6
20	102	73	4	13	6
25	114	83	4	13	7
32	121	87	4	13	8
40	133	98	4	13	9
50	152	114	4	6	10
65	165	127	4	16	10
80	184	145	4	16	11
100	216	178	8	16	13
125	254	210	8	16	14
150	279	235	8	19	17
200	337	292	8	19	19
250	406	356	12	19	22
300	457	406	12	22	25
350	527	470	12	22	25
400	578	521	12	22	25
450	641	584	16	22	29
500	705	641	16	22	32
600	826	756	16	25	38

TABLE - F

For Working Stream Pressure aboe 250 lbs and upto 350 lbs per sq. inch

Nominal Pipe Size (in mm)	Dia. of Flang	Dia. of Bolt Circle (PCD)	No. of Bolt	Dia. of Bolt	Thickness of Flange
mm	mm	mm	mm	mm	mm
15	95	67	4	13	10
20	102	73	4	13	10
25	121	87	4	16	10
32	133	98	4	16	13
40	140	105	4	16	13
50	165	127	4	16	16
65	184	145	8	16	16
80	203	165	8	16	16
100	229	191	8	16	19
125	279	235	8	19	22
150	305	260	12	19	22
200	368	324	12	19	25
250	432	381	12	22	25
300	489	438	16	22	29
350	552	495	16	25	32
400	610	552	20	25	32
450	673	610	20	29	35
500	737	673	24	29	38
600	851	781	24	32	38

TABLE - H

For Working Stream Pressure above 350 lbs and upto 450 lbs per sq. inch

Nominal Pipe Size (in mm)	Dia. of Flang	Dia. of Bolt Circle(PCD)	No. of Bolt	Dia. of Bolt	Thickness of Flange
mm	mm	mm	mm	mm	mm
15	114	83	4	16	13
20	114	83	4	16	13
25	121	87	4	16	14
32	133	98	4	16	17
40	140	105	4	16	17
50	165	127	4	16	19
65	184	145	8	16	19
80	203	165	8	16	22
100	229	191	8	16	25
125	279	235	8	19	29
150	305	260	12	19	29
200	368	324	12	19	32
250	432	381	12	22	35
300	489	438	16	22	38
350	552	495	16	25	41
400	610	552	20	25	44
450	673	610	20	29	48
500	737	673	24	29	51
600	851	781	24	32	57

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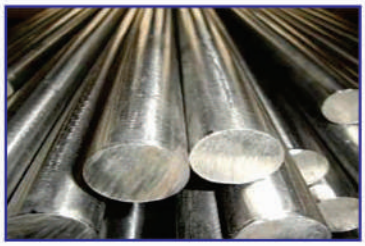
1) **WEIGHT OF S. S. PIPE**
O.D. (mm) - W. Thick (mm) X W. Thick (mm) x 0.0248 = Wt. Per Mtr.
O.D. (mm) - W. Thick (mm) X W. Thick (mm) x 0.00756 = Wt. Per Feet

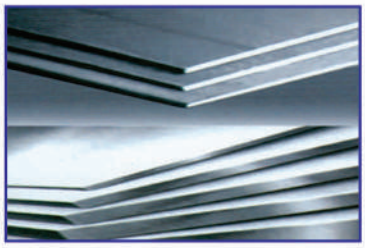
2) **WEIGHT OF S. S. ROUND BAR**
DIA (mm) x DIA (mm) x 0.00623 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x0.0019 = Wt. Per Feet

3) **WEIGHT OF S. S. SQUARE BAR**
DIA (mm) x DIA (mm) x 0.00788 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x0.0024 = Wt. Per Feet



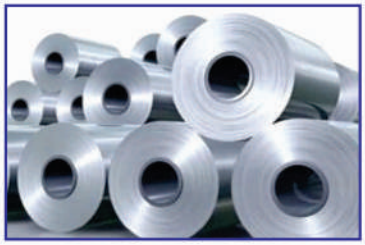
4) **WEIGHT OF S. S. HEXAGONAL BAR**
DIA (mm) x DIA (mm) x 0.00680 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.002072 = Wt. Per Feet

5) **WEIGHT OF S. S. FLAT BAR**
Width (mm) x Thick (mm) x 0.00798 = Wt. Per Mtr.
Width (mm) x Thick (mm) x 0.00243 = Wt. Per Feet



6) **WEIGHT OF S. S. SHEETS & PLATES**
Length (Mtrs) x Width (Mtrs) x Thick (mm) x 8 = Wt. Per PC
Length (Fit) x Width (Fit) x Thick (mm) x 3/4 = Wt. Per PC

7) **WEIGHT OF S. S. CIRCLE**
DIA (mm) x DIA (mm() x Thick (mm) ÷ 160 = Gms. PC
DIA (mm) x DIA (mm() x Thick (mm) x 0.0000063 - Kg. Per PC



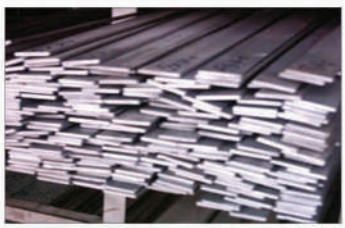
8) **WEIGHT OF BRASS PIPE / COPPER PIPE**
O.D. (mm) - Thick (mm) x Thick (mm) 0.0260 = Wt. Pet Mtr.

9) **WEIGHT OF LEAD PIPE**
O. D. (mm) - Wt. (mm) x Wt. (mm) x 0.0345 = Wt. Per Mtr.

10) **WEIGHT OF ALUMINIUM PIPE**
O. D. (mm) - Thick (mm) x Thick (mm) x 0.0083 = Wt. Per Mtr.

11) **WEIGHT OF ALUMINIUM SHEET**
Length (Mtr.) x Width (Mtr.) x Thick (mm) x 2.69 = Wt. Per PC

12) **WEIGHT OF CONVERSION OF MTR. TO FEET**
Wt. of Mtr. ÷ 3.2808 = Wt. Per Feet.



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