Ministry of MSME, Govt. of India

ISO-9001 : 2008 CERTIFIED

Upholding Worldwide Reputation for

QUALITY & SERVICE

MONEL FORGE & FITTINGS

An ISO 9001:2015 Certified Company

Specialist in: High Nickel Alloys, Stainless Steel Fitting & Flanges of Stainless Steel Flanges, Stainless Steel Round Bars, Stainless Steel Coil, Sheet, Plate & Pipes, Tubes, Alloy Steel etc.

Specialist in: High Nickel Alloys, Stainless Steel Fitting & Flanges

Manufacturers & Exporter of : S.S.C.S.& A.S. S S 304 /304L, 316/316L, 310/310S, 309,400 SERIES

Stockists & Suppliers of Industrial Raw Materials

www.monelforge.com

MONEL FORGE & FITTINGS

Our Story

We are a leading company in sales of ready -at - stock of Stainless Steel & Duplex Steel Plates & Pipes in INDIA We are one of the largest Manufacturer, Exporter, Stockist and Supplier of wide range of high quality Duplex Steel, Super duplex Steel,Ferrous and Non Ferrous, UNS 32750,32760, ZERON100, LDX 2101, UNSS32304, SS347H,SS321H in From Of Sheets, Plates & Coils, Pipes, Butt-weld Fitting, Socket-weld Fitting, Flanges, Round Bars, Fasteners in, MUMBAI STEEL MARKET,INDIA

Our Success Story

Monel Forge & Fitting is a force to reckon with in the field of importing, exporting Stock- holding & Supplying of Stainless Steel, Duplex and Super Duplex Steel,Carbon Steel,Copper, Brass & High Nickel Alloys like Titanium, Inconel, Monel,Nickel,Hastelloy in all Shapes of Sheets, Plates, Pipes, Round Bar, Pipe Fittings,Flanges, etc, Manufacturing, Importing & Supplying Pipes & Piping Products Ferrous and Non- Ferrous has been and remains our Prima Business, We are a leading Company in sales of ready - at - stock of Stainless Steel 7 Duplex Steel Plates & Pipes In India

MONEL FORGE & FITTING

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MONEL FORGE & FITTINGS

MONEL FORGE & FITTINGS

We, Monel Forge & Fittings, started in the years 2018, are one of foremost Manufacturers, wholesalers, and traders an Extensive array of Duplex Steel, Plates, Pipes, Round bar, Fittings etc. Our offered range consists of best grade Inconel Plates & Sheets, Nickel Base Alloys and Industrial Round bars.

Designed By the use of excellent quality inputs, these are available in several specifications as per the requirements of customers. Owing to their impeccable finish, durability, lightweight and sturdy structure, this duplex steel highly appreciated among our patrons.

Our state - of - the art infrastructure unit is loaded with contemporary technology and machines. This helps us to cater the bulk requirements of prestigious patrons. Together with this, we have a team of talented professionals which work delicately to to provide our patrons a quality approved product range which is in compliance with the client's given specifications, Also, we deliver fitting products range within the assured time frame. Apart from this, the customized option is offered, keeping the ease the our patrons in mind

We are operating our organization under the guidance of our mentor Mr. Shivraj Raika. He possesses vast industrial experience and deep knowledge, which has continuously helped us design immaculate products for the clients,

MONEL FORGE & FITTINGS

About us

Since1980, making “Stainless Steel Plates Products” has been and remains our Prime Business, Online Metals India is a force to reckon with in the field of Importing, Exporting, Stock Holding & Supplying Of Stainless steel, Duplex Steel, Carbon Steel,& High Alloys in all Shapes of sheet, Plates, Pipes, Round Bar, Pipe Fittings, Flanges, etc. We are a leading company in sales of ready -at -stock of Stainless Steel plates in Mumbai, India

We are your one - stop shop for all metal needs. We stock a wide variety of Metals including Hot-rolled Steel, Cold - Rolled Steel, Stainless Steel, Alloys Steel, Galvanized Steel, Aluminum, Brass, Bronze and Copper.

We are involved in the manufacturing and supply of a wide array of Pipes, Tubes, Flanges, Refractory anchors, butt-weld Fitting, socket-wied fittings. Our array is designed in strict conformity to the quality standard of Pipe manufacturing Industry, the entire array is offered to the customers in Customized Specifications. Our array is extensively used in following

* Chemical Industries
* Oil & Gas Industries
* Refineries Plants
* Power Plant
* Cement Industries

We are your one - stop square for all metal needs. We stock a wide variety of metals including Hot-Rolled Steel, Cold- Rolled Steel, Stainless Steel, Alloys Steel, Galvanized Steel, Aluminum, Brass, Bronze and Copper.
Our we are a leading company in sales of Ready - at - stock of 1000 Tons of
Stainless Steel & Duplex Steel Plates and Pipes In India.

MAKE DEALS STOCKISTS & SUPPLIERS OF:

JSL JINDAL STAINLESS | outokumpu | NIPPON STEEL & SUMITOMO METAL | MAHARASHTRA SEAMLESS LIMITED | JINDAL STAR

SERVICES :

- Plasma, laser and water jet cutting.
- Tailor made products in high performance alloys and stainless steel according to customer drawing and specification.
- Welding, Forging, Rolling, Polishing and Drawing
- PMI & Spectro
- Packaging & Forwarding
- Reserved Inventories
- Decoiling and Slitting of coils.

ALLIANCE ,,,,,,,, THIRD PARTY INSPECTION

BUREAU VERITAS | ETIL | Lloyds TSB | SGS | Uhde India

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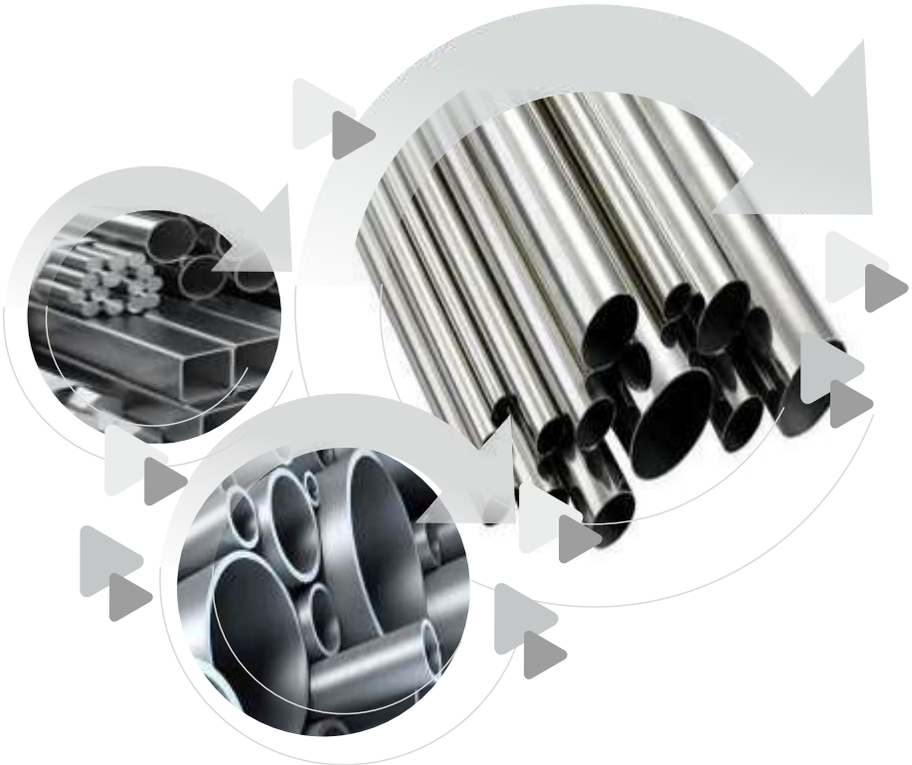
MONEL FORGE & FITTINGS

EXTENSIVE RANGE OF MATERIALS THAT WE OFFER



We are one of the most trusted Manufacturer & Stockist for offering finest range of High Nickel Alloy, Stainless Steel, Duplex Steel, Carbon & Alloy Steel Pipes & Tubes. Used in different industries for diverse applications, these pipes can be available in standard as well as customized dimensions as per the requirement. These pipes are appreciated for their sturdy and precise construction. We are known for offering our product range at reasonable prices and delivering within given time frame.

Nickel Alloys :

ASTM / ASME SB 161/B725/B730 UNS 2200 (Nickel. 200 & 201)
ASTM / ASME SB 165/B725/B730 UNS 4400 (Monel 400 & 500)
ASTM / ASME SB 729/B464/B468 UNS 8020 (Alloy 20/20 CB 3)
ASTM / ASME SB 423/B705/B704 UNS 8825 (Inconel 825)
ASTM / ASME SB 167/B517/B516 UNS 6600 (Inconel 600)
ASTM / ASME SB 444/B705/B704 UNS 6625 (Inconel 625)
ASTM / ASME SB 622/B619/B622 UNS 10276 (Hastelloy C276)

Types : Round, Square, rectangle
Size : 3/8" NB to 24" NB (seamless) / ½"to 72" welded
Wall Thickness : Sch. 5s to Sch. XXS

Stainless Steel : ASTM / ASME SA 312Gr. TP 304, 304L, 304H, 309S, 309H, 310, 310H, 316, 316Ti, 316H, 316LN, 317, 317L, 321, 321H, 347, 347H, 904L

Duplex Steel : ASTM / ASME SA 790 UNS No.: 31803 / 32760

Carbon Steel : ASTM / ASME A53 Gr. A&B, ASTM A 106 Gr. A,B & C. API 5L Gr. B, API 5L X42, X46, X52, X60, X65 & X70. ASTM / ASME A691 Gr. A,B &C

Alloy Steel : ASTM / ASME A 335 Gr. P1, P5, P9, P11, P12, P22, P23, P91

Cupro Nickel : 70 : 30 & 90 : 10

Aluminium Alloys : 2014, 2024, 5052, 5083, 5086, 6061, 6063, 6082, 6351, 7075

MONEL FORGE & FITTINGS

SHEETS / PLATES / COILS

We have been offering to our clients a vast range Sheets and Coils, that are offered in various specifications to our clients. Catering to the requirements of various industries, our range is known for its corrosion resistance, durability & high tensile strength.

Our clients can avail from us Plates that are manufactured using high grade stainless steel. These cater to the requirments of various industries and are known for their attributes, such as high tensile strength, corrosion resistance & long life usage.

Stainless Steel: Plates as per ASTM A240, Gr. TP 304,304L, 304LN, 309, 309S, 309H, 310H, 316, 316L, 316H, 316LN, 316Ti, 317, 317L, 321, 321H, 347, 347H, 409, 410, 420, 430 etc

Nickel Alloy

ASTM / ASME SB 162 UNS 2200 (NICKEL 200)
ASTM / ASME SB 162 UNS 2201 (NICKEL 201)
ASTM / ASME SB 127 UNS 4400 (MONEL 400)
ASTM / ASME SB 463 UNS 8020 (ALLOY20 / 20 CB 3)
ASTM / ASME SB 424 UNS 8825 (INCONEL 825)
ASTM / ASME SB 168 UNS 6600 (INCONEL 600)
ASTM / ASME SB 409 UNS 8810/8811 (INCONEL 800/800HT)
ASTM / ASME SB 443 UNS 6625 (INCONEL 625)
ASTM / ASME SB 575 UNS 10276 (HASTELLOY C276)

Carbon Steel / Boiler Quality Plates : as per IS 2062/ASTM A36, Gr. A, B & C, IS 2002 Gr. 1 & 2 ASTM A 516 Gr. 60 & 70

Alloy Steel Plates : as per ASTM A387 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.

Range: 0.5 mm To 200 mm thick in 1000 mm To 3000 mm width & 2500 mm to 12500 mm length available with NACE MR 01-75

SUMMARY OF THE MAIN ASTM STANDARDS GENERALLY USED FOR SHEETS / PLATES

		Chemical requirements percent (%)										Mechanical requirements					
ASTM	Grade	c Max	Mn Max	P Max	S Max	Si Max	NI	Cr.	Mo	Cu	Others	Tensile Strength mini-MPa	Yeild Strength mini-MPa	Elong mini %	Hardness Brinell	Rockwell	
A240	304	0.08	0.08	0.045	0.030	0.75	8.00-10.5	18.00-20.0				515	205	40	201	92	
	304L	0.03	2.00	0.045	0.030	0.75	8.00-12.0	18.00-20.0				485	170	40	201	92	
	310	0.08	2.00	0.045	0.030	1.50	19.0-22.0	24.0-26.0				515	205	40	217	95	
	316	0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00			515	205	40	217	95	
	316L	0.03	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00			485	170	40	217	95	
	317L	0.03	2.00	0.045	0.030	0.75	11.0-15.0	18.0-20.0	3.00-4.00			515	205	40	217	95	
	321	0.08	2.00	0.045	0.030	0.75	9.00-12.0	17.0-19.0			Ti>5xCx0.70	515	205	40	217	95	
	347	0.08	2.00	0.045	0.030	0.75	9.00-13.0	17.0-19.0			Cb+Ta>10xc>1.10	515	205	40	201	92	
A 387 Class1 Class2	2	005.21	0.55-0.80	0.035	0.040	0.15-0.40		0.50-0.80	0.45-0.60			Class1	Class2	Class1	Class2		
	5	0.15	0.30-0.60	0.04	0.030	0.050		4.00-6.00	0.45-0.65			380	486	230	310	22	max201HB max92HB
	7	0.15	0.30-0.60	0.030	0.030	1.00		6.00-8.00	0.45-0.65			415	515	205	310	18	max202HB max92HB
	9	0.15	0.30-0.60	0.030	0.030	1.00		8.00-10.0	0.90-1.10			415	515	205	310	18	max217HB max95HB
	11	0.04-0.17	0.40-0.65	0.04	0.04	0.50-0.80		1.00-1.50	0.45-0.65			415	515	205	310	18	max217HB max95HB
	12	0.04-0.17	0.035	0.04	0.04	0.15-0.40		0.80-1.50	0.45-0.60			415	515	240	310	22	max217HB max95HB
	21	0.04-0.17	0.035	0.035	0.035	0.50		2.75-3.25	0.90-1.10			380	450	230	275	22	max217HB max95HB
	22	0.05-0.17	0.035	0.035	0.035	0.50		2.00-2.50	0.90-1.10			415	515	205	310	18	max201HB max92HB
												415	515	310	310	18	max201HB max92HB
A515	55	0.22	0.90	0.035	0.04	0.15-0.40						380-515		205		27	
	60	0.27	0.90	0.035	0.04	0.15-0.40						415-550		220		25	
	65	0.31	0.90	0.035	0.04	0.15-0.40						450-585		240		23	
	70	0.33	1.20	0.035	0.04	0.15-0.40						485-620		260		21	
A516	55	0.20	0.60-1.20	0.035	0.04	0.15-0.40						380-515		205		27	
	60	0.23	0.85-1.20	0.035	0.04	0.15-0.40						415-550		202		25	
	65	0.26	0.85-1.20	0.035	0.04	0.15-0.40						450-585		240		23	
	70	0.28	0.85-1.20	0.035	0.04	0.15-0.40						485-620		260		21	
A537	Class1	0.24	0.70-1.35	0.035	0.04	0.15-0.40	0.25 max	0.80 max	0.35 max			485-620		345		22	
	Class2	0.24	0.70-1.35	0.035	0.04	0.15-0.40	0.25 max	0.80 max	0.35 max			550-690		415		22	

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MONEL FORGE & FITTINGS

DUPLEX / SUPER DUPLEX TUBULAR PRODUCTS

DUPLEX

Duplex is a stainless steel made from a mixture of Austenite and Ferrite phases. Like most austenitic stainless steels, Duplex has a strong resistance to corrosion similar to those of a type 304 and 316. Unlike similar steels, Duplex also displays an improved resistance to localised corrosion, particularly pitting, crevice corrosion and stress corrosion crackling because of Duplex has a lower nickel and molybdenum content than other austenitic stainless steels.

Due to its special qualities, in some cases the strength of Duplex steel can be upto double that of the most commonly used grades of stainless steel. Duplex becomes brittle at extreme temperatures so its uses is normally restricted to a max. temperature of 300 deg. Duplex also shows signs of embrittlement at -50 degrees.

Uses

Pipes for production and transportation of Oil & Gas

Structural and Mechanical components

Heat Exchangers /Cooling Pipes

Cargo vessels & containers

High strength wiring / High strength wiring

SUPER DUPLEX

Super Duplex is a stainless steel mainly used in Oil & Gas applications. Due to a very high tensile strength, Super Duplex has better resisitance to erosion, corrosion crackling and corrosion fatigue than conventional austenitic stainless steels.

Its high concentration of chromium and molybdenum content also gives Super Duplex a high resistance to acids that causess pitting and crevice corrosion. Because Super Duplex is an austenitic ferritic iron chromium-nickel alloy with molebdenum addition, it is also used for industrial processes where high strength and corrosion resistance are essential.

Structural and mechanicl components, Heat exchangers, utility and industrial systems, cargo vessels and high strength wiring solutions are ideal uses for it.

Product Range :

Products	Size Range	Thickness	Specification	Grades
Duplex Tubes / Pipes	½"to 10: NB	Upto Sch XXS	ASTM A 789, A 790	UNS S31803, UNS S32205 SAF 2205
Super Duplex Tubes / Pipes	½ " NB to 10" NB	Upto Sch XXS	ASTM A 789, A 790	UNS S32750, UNS S32760,

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Machinability:

- Cutting procedures with high speed steel tools are same as for AISI 316 With carbide tipped tools, the cutting speeds should be 40% less than
- AISI 316 in roughing operations and 20% less for finish machining.

Fabticability:

- Nearly twice the force is required to initiate plastic deformation company to that required for AISI 304L and 316L.
- Plastic deformation proceeds as easily as in Austenitic stainless steel beyond yield strength.
- It can be cold bent to 25% deformation without without requiring subsequent heat treatment
- Bending should be followed by annealing if the service conditions are prone to SCC
- Hot bending maybe carried out in the range 950-1100 deg C and should be followed by quench annealing
- Normal expanding methods can be used while expanding its tubes, but higher initial force is required and it should be completed in a single operation

Weldability:

- It is welded easily by Manual Metal Arc Welding (MMAW) using covered electrode, (GMAW), Gas Metal Arc Welding (GMAW).
- Heat input should be in the range of 0.5-2.5k 1/mm
- Interpass temperature should be held to 150 deg C max.
- Preheat or postweld heat treatment is normally not required,
- Typically Filler metals are overalloyed with nickel like E2209,
- Welding with carbon steels,other stainless steels and nickel alloys is readily archived,

Corrosion Resistance:

- Has better general corrosion resistance as compared to AISI 316L and 317L
- Welded joints easily pass inter-granular corrosion testing as per ASTM A262 Practice E-Strauss test
- Better resistance to pitting and crevice attack than 304 and 316 at high temepratures and chloride contents
- The combined high strenght, hardness and corrosion resistance provision 2205 with superior corrosion fatigue and erosion / corrosion resistance

Application:

- Chemical Industries Pumps, fans,centrifuges, sulphur melting colils .
- Chemical tanks
- Pulp & Paper Industries
- Digester in sulphate and sulfite plants , blow tanks, blow lines
- Petrochemical Industries
- Oil & Gas Industries
- Desalination
- Architecture and Construction
- Food Processing Equipment
- Biofuels plant
- Cargo tanks for ships and trucks

MONEL FORGE & FITTINGS

Lean Duplex

UNS S32101

Lean duplex stainless steels possess high strength coupled with corrosion resistance as Compaore to Austenitic grades like 316L, This grade has stable cost owing to low nickel and molybdenum contents, This can easily substitute standard austenitic grades like 304, 304L and even 316L in most environments.

Chemistry :

UNS	EN	C%	Cr%	Ni%	Mo%	N%	Mn%	Cu%
S32101	1.4162	0.04	21.0 - 22.0	1.35 - 1.7	0.1 - 0.8	0.2 - 0.25	4.0 - 6.0	0.1 - 0.8

Specification Equivalents :
UNS : S322101, EN 1.4162
Mechanical properties (as per ASTM 240)

YS (MPa)	UST (MPa)	% Elongation	Hardness (BHN)
450 min	650 min	30 min	290 max

Typical values of Mechanical Properties :

YS (MPa)	UST (MPa)	% Elongation	Hardness (BHN)
485	690	36	220

General Characteristics :

- More corrosion resistant than 304
- More price stable than 304
- 2.3 x stronger than 304 & cheaper than 304

MONEL FORGE & FITTINGS

Fabticability:

- If should be hot worked in the range of 1250 - 1000 deg C, followed by a solution annealing at 1100 deg C and rapid quench.
- If can be cold formed using methods similar to those for Stainless Steel, The primary difference is that the high yield strength makes it necessary to have higher forming forces, increased radius of bending, and increased allwance for spring back
- Deep drawing, stretch forming and similar processes are difficult to perform.

Weldability:

- It possesses good weldability and can be welded to itself and other materials by Shielded Metal ARC welding (SWAW), Gas Tungsten Arc Welding (GTAW), Plasma Arc Welding (PAW) or Submerged Arc Welding (PAW) or Submerged Arc Welding (SAW),
- Surfaces must be clean before welding.
- Preheating is not necessary, except to prevent condensation on cold metal.
- The recommended heat input should be nearly about 0.3 - 1. 5k1/mm
- The interpass temperature should not exceed 150 deg C
- The root should be shielded with commercial Ar or 90% N2/10%H2 purging gas for maximum corrosion resistance

Corrosion Resistance:

- It is highly resistant to carbide related inter- granular corrosion due to its low carbon content which lowers the
- risk of carbide precipitation at the grain boundaries during heat treatment Its critical pitting
- temperature (CPT) is superior to that of 904L
- It has excellent resistance to crevice corrosion and SSC,
- Extremely resistant To Uniform Corrosion by organic acids such as formic and acetic acid and also to inorganic acid, especially those containing chlorides.
- Excellent corrosion resistance against highly corrosive acids like Sulphuric, Nitric , Phosphoric acids.

Application:

- Oil and gas industry
- Petrochemical industries (polymerization reactor cycle pumps and pipework)
- Offshore platforms (heat exchangers, process and service water systems , fire - fighting systems,and injection and ballast water systems)
- Chemical process industries (heat exchangers and vessels)
- Desalination plants (high pressure RO-plant and seawater piping)
- Fertilizers (Recirculation tanks , sedimentation tanks,phosphate reactor recirculation pumps)
- Power industry FGD systems
- Utility & industrial scrubber systems (absorber towers, ducting, piping)
- Mining/Extraction (hot slurry pipe work,acid leach mining)
- Sewage (critically important pipelines)
- Engineering applications (pressure vessels)

MONEL FORGE & FITTINGS

Super Duplex

UNS S32750 / 32760

Super Duplex Stainless steels, which combine high strength and excellent corrasion resistance in many environments, have found application in chemical and process industries, Pulp Mills, offshore systems, flue gas desulphurization units, Localized corrosion resistance of Super - Duplex Steels is close to what is achieved with 6% Mo Super- Austenitic Grades.

UNS	C %	Cr%	Ni%	Mo%	N%	Mn%	Cu%	W	S	Si
S32750	< 0.03	24.0-26.0	6.0 - 8.0	3.0 - 5.0	0.24-0.32	< 1.20	< 0.5	-	-	-
S32760	< 0.03	24.0-26.0	6.0 - 8.0	3.0 - 4.0	0.20-0.30	< 1.00	0.5 - 1.0	0.5 - 1.0	-	-
S32750	< 0.04	24 - 27	4.5 - 6.5	2.9 - 3.9	0.10-0.25	< 1.5	1.5 - 2.5	-	0.03	1.60

Specification Equivalents :

* UNS: S32750, EN 1,4410
* UNS: S32760, EN 1,4501
* ASTM: A240, A480, A789, A790

Mechanical Properties (as per ASTM 240) :

Grade	YS (MPa)	UTS (MPa)	% Elongation	Hardness (BHN)
UNS S32750	550 min.	795 min.	15 min	310 max.
UNS S32760	550 min.	750min.	25 min	270 max.

General Characteristics :

* Super Duplex stainless steels exhibit PREN Value Higher Than 40.
* Combines Most Desirable Characteristics Of Both Super - Ferritic Steel.
* Has excellent resistance to chloride SCC, pitting, crevice and general corrosion and carbide related inter-granular corrosion.
* Possesses high strength & impact strength,
* Has high thermal conductivity and a lower coefficient of thermal expansion compared to Super Austenitic steels.

MONEL FORGE & FITTINGS

Regular Duplex

UNS S32205 / S31803

The 2205 is the most widely used of the duplex stainless steels occupying more than 80% of the duplex stainless steel market. The 2205 alloy provides better corrosion resistance in various environments where 316l is generally used with an added advantage of its higher yield strength. All 2205 alloys are metallographically examined to ensure that the shipped product is free from presence of detrimental phases such as sigma. It is often used in form of welded pipe of tubular components. The alloy has also been applied as a formed and welded sheet product in environments where resistance to general corrosion and chloride stress corrosion cracking is important.

Grade	UNS No	C%	Cr%	Ni%	P%	Si%	S%	Mo%	N%	Mn%
31803	S31803	< 0.03	21.0-23.0	4.5-6.5	1.03 max	1 max	0.02 max	2.5 - 3.5	0.08 - 0.2	< 2.0
2205	S32205	< 0.03	22.0-23.0	4.5-6.5	0.03 max	1 max	0.02 max	2.5 - 3.5	0.14 - 0.20	< 2.0

Specification Equivalents :

* UNS: S31803,
* UNS: S32205,
* EN 1,4462
* ASTM A 182, A 240, A 276, A 786, A 790 and A 815

Mechanical Properties (as per ASTM 240) :

Grade	YS (MPa)	UTS (MPa)	% Elongation	Hardness (BHN)
31803	450 min.	620 min.	25 min	293 max.
2205	450 min.	620 min.	25 min	293 max.

Physical Properties :

Density (Kg / M3)	Modulus of Elasticity (GPa)	Poisson's Ratio	Thermal Conductivity (W / moC)	Thermal Copacity (I / KgoC)	Electrical Resistivity
7800	200	0.3	15	500	0.80

General Characteristics :

* PREN value 34 (Pitting Resistance Equivalent Numbar : %Cr +3.3*%Mo+16*%N)
* It is an extra Low Carbon Duplex Stainless Steel,
* Its yield strength is nearly twice as that of the austenitic Stainless Steel,
* It has good weldedilitywith minimal inter - granular corrosion in as welded condition,
* It has high resistance to SCC in chloride and in hydrogen sulfide concaving environments,
* Exhibits high resistance to corrosion fatigue, pitting and crevice corrosion and erosion - corrosion

MONEL FORGE & FITTINGS

High Nickel Alloy Stock Profile

Alloys C276

Hastelloy C276
Specitication

ASTM B574 **NACE MRO175**
ASTM SB574

Density - 8.89

Has outstanding durability under reductive and oxidative environment. Has good corrosion resistance at weld hested srea and also shows outstanding resistance to pitting and stress corrosion

Major Chemical Composition (%)

Ni	Cr	Mo	Cr
55.0	16.0	16.0	-
Fe	-	etc	-
6.0	-	W 4.0	-

Typical Mechanial Property (RT)	ST		
Tensile Strength 794 (MPa)	-	-	-
0.2% Yield Strength (MPa)	402	-	-
Elongation (%)	60	-	-
Hardness (HB)	195	-	-

Alloys 20

Carpenter 20Cb3
Specification

ASTM B473 **NACE MRO175**
ASTM SB473

Density - 8.08

Shows outstanding corrosion resistance to reductive acid, especially to sulfuric acid and outstanding mechanical properties, and is easily processable.

Major Chemical Composition (%)

Ni	Cr	Mo	Cu
35.0	20.0	2.5	3.5
Fe	-	etc	-
37.0	-	Nb + Ta 1	-

Typical Mechanial Property (RT)	An		
Tensile Strength 794 (MPa)	617	-	-
0.2% Yield Strength (MPa)	274	-	-
Elongation (%)	50	-	-
Hardness (HB)	184	-	-

Alloys 600

Inconel 600
Specitication

ASTM B166 **AMS 5665**
ASTM SB166 **NACE MRO175**

Density - 8.42

High-Ni and high Cr Content alloy with outstandingn oxidation resistanse and corrosion resistanse at high temperatures up to 1180C

Major Chemical Composition (%)

Ni	Cr	Mo	Cr
76.0	15.5	-	-
Fe	-	etc	-
8.0	-	-	-

Typical Mechanial Property (RT)	HW	CW	An
Tensile Strength 794 (MPa)	706	882	608
0.2% Yield Strength (MPa)	431	706	284
Elongation (%)	38	20	45
Hardness (HB)	100	205	145

Alloys 625

Inconel 625
Specitication

ASTM B446 **AMS 5666**
ASTM SB446 **NACE MRO175**

Density - 8.44

Shows outstanding corrosion resistance, high strength, tenacity. oxidation resistance and fatigue strength at temperaturs from extremely low to as high as 98 C

Major Chemical Composition (%)

Ni	Cr	Mo	Cr
61.0	21.5	9.0	-
Fe	-	etc	-
2.5	-	Nb + Ta 3.7	-

Typical Mechanial Property (RT)	HW	An	
Tensile Strength 794 (MPa)	980	931	-
0.2% Yield Strength (MPa)	588	539	-
Elongation (%)	45	45	-
Hardness (HB)	210	180	-

MONEL FORGE & FITTINGS

High Nickel Alloy Stock Profile

Alloys 200 / 201

Nickel 200 / 201
Specitication

ASTM B160 **ASTM SB160**

Density - 8.89

Unalloyed wrought Ni having good mechanical properties, outstanding corrosion resistance, and useful thermal and electrical conductivitiens Suitable for use at temperature of 315C or higher, compared to Alloy 200.

Major Chemical Composition (%)

Ni	Cr	Mo	Cr
99.0	-	-	-
-	-	etc	-
-	-	Co.01	-

		HW	CW	An
Typical Mechanial Property (RT)	Tensile Strength 794 (MPa)	372	536	392
	0.2% Yield Strength (MPa)	117	441	117
	Elongation (%)	50	20	50
	Hardness (HB)	90	160	90

Alloys 400

Monal 400
Specification

ASTM B164 **NACE MRO175**
ASTM SB164

Density - 8.83

Ni - Cu Alloys With good weldability and good workability, and outstanding corrosion resistsnce in a wide reange of marine and chemical environments

Major Chemical Composition (%)

Ni	Cr	Mo	Cu
66.5	-	-	31.5
Fe	-	etc	-
1.2	-	-	-

		HW	CW/DC	An
Typical Mechanial Property (RT)	Tensile Strength 794 (MPa)	637	686	559
	0.2% Yield Strength (MPa)	409	539	255
	Elongation (%)	45	30	48
	Hardness (HB)	190	110	135

Alloys 800/ H / HT

Incoloy 800, 800H and 800HT
Specitication

ASTM B409, B 408, B 407, B 564
Density - 7.94

Incoloy 800, 800H, and 800HT are nickel-iron- chromium alloys with good sterngth and excellent resustance to oxidation and carburiztion in high - temperature exposure,

It is primarily used in applications with tempera-tures up to 1100 F, where alloys 800H and 800HT are normally used in temperatures above 1100 F where resistance to creep and rupture is required,

Major Chemical Composition (%)

Ni	Cr	Ma	Si
35	19.23	1.5	1
Co	Ti	AL	C
0.75	0.15 - 0.6	0.15 - 0.6	0.1

Typical Mechanial Property (RT)	Tensile Strength 794 (MPa)	600	-	-
	0.2% Yield Strength (MPa)	295	-	-
	Elongation (%)	44	-	-
	Hardness (HB)	-	-	-

254 Mo

Alloy 254 SMO
Specitication

ASTM A813, ASTM A469, ASTM A269, ASTM A240, ASTM A 182 (F44)

Density - 8.06

254 SMO™ is a very high end austenitic stainless steel, If is designed with a combination of impact toughness resistance to chloride stress corrosion cracking, and pitting and crrosion with strength that is twice that of stainless steel 300 series.

Major Chemical Composition (%)

Ni	Cr	Mo	N
18	20	6.1	-
C	-	-	-
0.010	-	-	-

Typical Mechanial Property (RT)	Tensile Strength 794 (MPa)	680	-	-
	0.2% Yield Strength (MPa)	300	-	-
	Elongation (%)	50 %	-	-
	Hardness (HB)	210	-	-

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MONEL FORGE & FITTINGS

Stainless Steel
310 / 310S /310H

Grade 310 (UNS S 31000) and its various subgrades combine excellent high temperature properties with good ductility and weldability.

Grade 310H (UNS 531009) has a carbon content restricted to exclude the lower end of the 310 range, so is the grade of choice for high temperature appellations.

Grade 310S(UNS S31008)is Used When The Application Environment Moist Corrodents in a temperature range lower that which is normally considered “high temperature” Service. The lower carbon content of 310S does reduce its high temperature applications.

“Dual Certification”
310H and 310are often produced in “ Dual Certified “ form - mainly in plate and pipe. These items have chemical and mechanical properties complying with both 310H sand 310 S specification. Product complying with 310 only or dual certified 310 and 310S may have a carbon content below 0.04% which will not be acceptable for some high temperature applications.

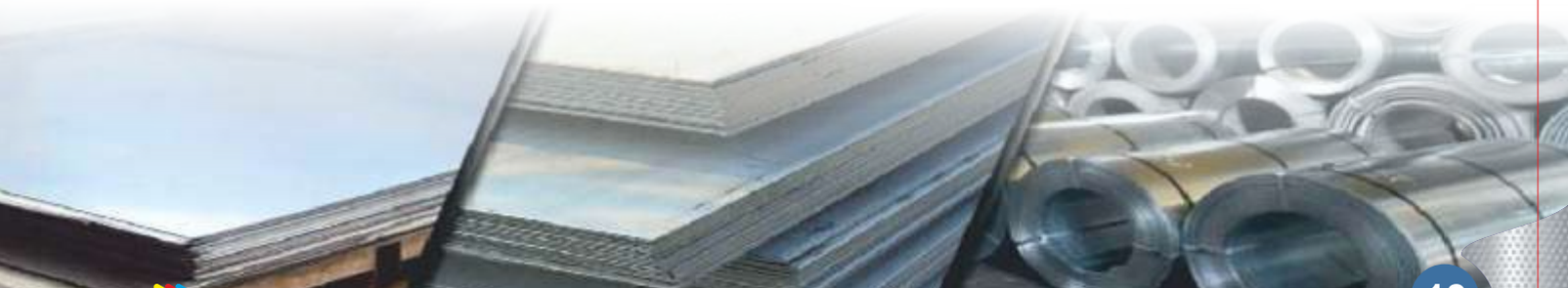
Typical Applications
Furnace parts. Oil burner parts, Carburising boxes, Heat Treatment baskets and jige, Heat exchanges, Welding filler wire and electrodes.

Compositions Specification %(single values are maximum)

Grade	-	C	Mc	Si	P	S	Cr	Ni
310	min. max.	- 0.25	- 2.00	- 1.50	- 0.045	- 0.030	24.0 26.0	19.0 22.0
310S	min. max.	- 0.08	- 2.00	- 1.50	- 0.045	- 0.030	24.0 26.0	19.0 22.0
310H	min. max.	0.04 0.10	- 2.00	- 0.75	- 0.045	- 0.030	24.0 26.0	19.0 22.0

Mechanical Property Specification

Grade	Tensile Strength (Mpa) min	Yield Strength 0.2% Proof (Mpa) min	Elongation (also 50 mm) min	Hardness	
				Rockwell B(HR B) max	Brinell (H B) max
310	515	205	40	95	2.17
310S	515	205	40	95	2.17
310H	515	205	40	95	2.17



MONEL FORGE & FITTINGS

Stainless Steel
17 - 4 PH

Type 17-4 PH Stainless steel is the most widely used of all the precipitation - hardening stainless steel. Its valuable combination of pretties gives designers opportunities to add reliability to their products while simplifying fabrication and offen reducing costs. Type 17- 4 PH is a martensitic precipitation - hardening stainless steel that provides an outstanding combination of high strength, good corrosion resistance, and good mechanical properties at temperatures up to 600 F (316°C).Its unique combination of properties make this alloy an effective solution to many design and production problems.

Chemical Composition:

	Cr	Mn	Si	Ni	P	S	C	Cu	cb + Ta
MIN	15	-	-	3	-	-	-	3	0.15
Max	17.5	1	1	5	0.04	0.03	0.07	3.5	0.45

Resistance to Corrasion:

Type 17- 4 PH stainless steel has excellent resistance. If withstand corrosive attack attack better than any of the standard hard enable saltiness steel and is comparable to type 304 in most media. this has been tested in a wide variety of corrosive conditions in the petrochemical, petroleum, paper, dairy and food processing industries, and in applications such as boat shafting.

Specifications Equivalents :

ASME : Sa564, Sa693, SA 705,Type 630
AMS : 5604, 5604, 5622, 5643, 5825
ASTM : A564,a693, A705, Type 360
UNS : S17400
W. Nr / EN : 1.4548

Specifications Equivalents :

Typical Mechanical Properties of Sheets and Strip - Cold Flattened (Annealed)

UTS (Tendlie) Ksi (Mpa)	02% Yield Strength Kis (Mpa)	Elongation % in 2" Kis (Mpa)	Hardness Rockwell C -
160	145	5	35
(1103)	(1000)		

Type 17- 4 PH stainless steel has excellent mechanical properties. For application requiring high strength and hardness as well as corrosion resistance, Type 17 - 4 PH stainless is outstanding choice, and it is more cost effective than many high nickel non - ferrous alloys.

General Characteristics :

- Excellent resistance to corrosion
- Provide toughness in both base metals and welds,
- Well suited to application that require ease of fabrication and then the addition of Strength / hardness for improved reliability

General Characteristics :

- Aerospace applications
- Chemical processing equipment
- Oil and Petroleum refining equipment
- Food processing equipment
- General metalworking

MONEL FORGE & FITTINGS

STAINLESS STEEL SEAMLESS TUBULAR PRODUCTS

PRODUCT RANGE :

Products	Size Range	Thickness	Specification	Grades
Tubes	6.35 mm to 101.6 mm OD	0.50 mm to 5.0 mm	ASTM A 213. A 269 A 270 'U" Tubes as per Customers drawing	TP 304, 304L, 304H, 316, 316L 316H, 321, 316Ti, 310S, 317, 317L, 347, 347H
Pipes	½ " NB to 24" NB	upto Sch XXS	ASTM A 312	

SALIENT FEATURES :

- Pipe upto 24" NPS. Sch. XXS without addition of filler wire as per ASTM A-312 Specification
- Condenser Tubes and Low Pressure Feed Water Heater tubes with On-line Bright Annealing and Eddy Current Testing Facilities
- Duplex Tubes and Tubes for General Engineering and process Industries
- Automobile Exhaust Tubes
- Competence to produce tubes with precision tolerance s
- Capability to produce Heat Exchanger Tubes upto a developed lenght of 30 meters
- Bright Annealed Tubes with inside roughness of 0.5 Microns for hygiene applications
- All testing facilities in-house to meet International Standards

MONEL FORGE & FITTINGS

HIGHLIGHTS OF ASTM SPECIFICATION STAINLESS STEEL TUBES AND PIPES

Specification	Allowable Outside Diameter Variation in mm			Allowable wall Thickness Variation		Exact Length Tolerences in mm		Testing
Specification	Diameter	Over	Under	Over %	Under%	Over	Under	Testing
ASTM A - 213 Seamless Boiler, Superheater and Heat Exchanger Tubes	Upto 25.4 25.4 - 38.1 incl. 38.1 - 50.8 excl. 50.8 - 63.5 encl. 63.5 - 76.2 excl. 76.2 - 101.6 incl.	0.1016 0.1524 0.2032 0.2540 0.3048 0.3810	0.1016 0.1524 0.2032 0.2540 0.3048 0.3810	+20 +20 +22 +22 +22 +22	-0 -0 -0 -0 -0 -0	3.175 3.175 3.176 3.760 4.760 4.760	0 0 0 0 0 0	Tension Test Flattening Test Hardness test 100% Hydrostatic Test Flare Test Refer to ASTM A-450
ASTM A - 249 Welded Boiler, Superheater, Heat Exchanger and Condenser Tubes	Under 25.4 25.4 -38.1 incl. 38.1 - 50.8 excl. 50.8 - 63.5 excl. 63.5 - 76.2 excl. 76.2 - 101.6 incl.	0.1016 0.1524 0.2032 0.2540 0.3048 0.3810	0.1016 0.1524 0.2032 0.2540 0.3048 0.3810	+10 +10 +10 +10 +10 +10	-10 -10 -10 -10 -10 -10	3.175 3.175 3.175 3.76 4.76 4.76	0 0 0 0 0 0	Tension Test, Fletting test Flare Test * Reverse Bend Test Hardness Test 100% Hydrostatic Test *Reverse Flattering Test Refer to ASTM A-450 Whenever applicable
ASTM A - 269 Seamless & Welded Service	Upto 12.7 12.7 -38.1 excl. 38.1 - 88.9 excl. 88.9 - 139.7 excl. 139.7 - 203.2 excl.	0.13 0.13 0.25 0.38 0.76	0.13 0.13 0.25 0.38 0.76	+15 +10 +10 +10 +10	-15 -10 -10 -10 -10	3.2 3.2 4.8 4.8 4.8	0 0 0 0 0	Tension Test Flange Test (Welded only) Hardness Test Reverse Flatterning test (Welded only) 100% Hydrostatic Test Refer to ASTM A-269
ASTM A - 312 Seamless & Welded Pipes	13.7 - 48.3 incl. 48.3 - 114.3 incl. 114.3 - 220 incl.	0.40 0.79 1.59	0.79 0.79 0.79	Minimum Wall tubes 12.5% under nominal wall Specified		6.4 6.4 6.4 (Normally Random lengths ordered)	0 0 0	Tension Test Fletting Test 100% Hydrostatic Test
ASTM - 270 Seamless & Welded Sanitary Tubes	25.4 38.1 50.8 63.5 76.2 101.6	.05 .05 .05 .05 .08 .08	.20 .20 .28 .28 .30 .38	+12.5 +12.5 +12.5 +12.5 +12.5 +12.5	-12.5 -12.5 -12.5 -12.5 -12.5 -12.5	3.2 3.2 3.2 3.2 3.2 3.2	0 0 0 0 0 0	Reverse Flattering test 100% Hydrostatic test External polish on all tubes Refer to ASTM A-270
ASTM A - 268 Seamless & Welded Femtic Stainless Steel tubes	Upto 12.7 12.7 - 38.1 excl. 38.1 - 88.9 excl. 88.9 - 168.9 excl.	0.13 0.13 0.25 0.38	0.13 0.13 0.25 0.38	+15 +10 +10 +10	-15 -10 -10 -10	3.2 3.2 4.8 4.8	0 0 0 0	Tension Test Flange Test CERW only Hardness Test Reverse Flattering Test 100% Hydrostate Test
ASTM A - 358 For Welded big Diameter Pipes	For all size	+0.5%	0.5%	No Limit	-0.3 mm	Customer's Specification		

ASTM	American Society for Testing of Materials
SAE	Society of Automotive Engineers
JIS	Japan Industrial Standards
GOST	Gosudarstvenii Standart
PED	Pressure Equipment Directive

ASME	American Society for Mechanical Engineers
DIN	Deutsches institut fur Nurmung
UNS	Unified Numbering System
TEMA	Tubular Exchanger Manufacturers Association
IBR	Indian Boiler Regulation

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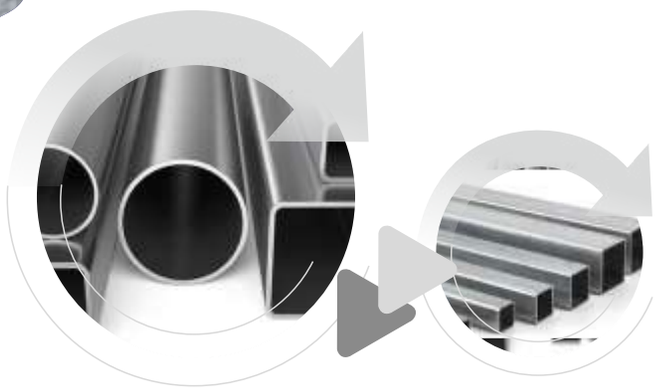
MONEL FORGE & FITTINGS



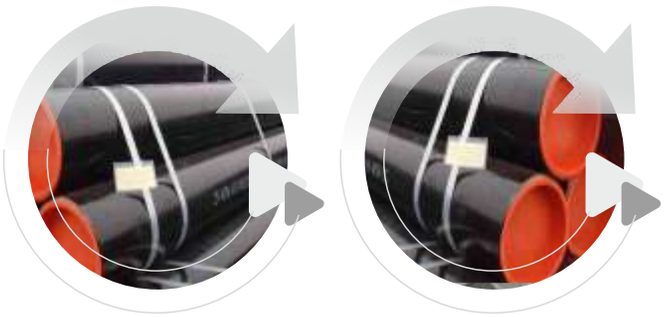
STAINLESS STEEL WELDED TUBULAR PRODUCTS

WELDED (Round, Square & Rectangular) Pipes / Tubes division consist of a number of Tube mills with square & Rectangular track , Cold finishing section, Heat treatment furnaces, Annealing & Pickling facilities, U-bending facility and testing facilities to manufacture high quality products confirming to International standards.

The Tubes / Pipes are supplied according to appropriate standards as well as customer specifications in a large variety of Steel grades, dimensions, tolerances, lengths, mechanical and corrosion properties are offered on request.

PRODUCT RANGE :

Products	Size Range	Thickness	Specification	Grades
Tubes	6.35 mm to 101.6 mm OD	0.50 mm to 5.0 mm	ASTM A 249, A 268, A 269. A 270. A 554, A 688, A 1016 'U" Tubes as per Customers drawing	TP 304, 304L, 304H, 316, 316L 316H, 321, 316Ti, 310S, 317, 317L, 347, 347H
Pipes	½ " NB to 60" NB	0.5 mm upto Sch XXS	ASTM A 312, A 554, ASTM A 358, A 928 Class 1,2,3,4,5 -100 % RT	

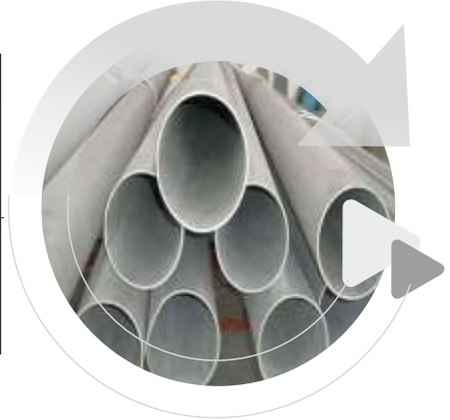


CARBON & ALLOY STEEL SEAMLESS TUBULAR PRODUCTS

PRODUCT RANGE :

Products	Size Range	Thickness	Specification
Tubes	6.35 mm to 101.6 mm OD	0.50 mm to 5.0 mm	ASTM A 179. A213, A334.
Pipes	½ " NB to 24" NB ½ " NB to 64" NB welded	Upto Sch XXS	ASTM A A106 Gr. B. A53 Gr B, A335

We can also supply API 5L X42 / X52 / X60 / X65 / X70



MONEL FORGE & FITTINGS

MILD STEEL PIPES CONFIRMING TO IS : 1239 (PART 1) - 1979

Nominal Bore		Outside Diameter		Light		Medium		Heavy	
				Thickness	Weight	Thickness	Weight	Thickness	Weight
Inch	In mm	In	mm	mm	kg/mtr	mm	Kg/Mtr.	mm	Kg/Mtr.
1/8"	3 mm	0.406	10.32	1.80	0.361	2.00	0.407	2.65	0.493
1/4"	6 mm	0.532	13.49	1.80	0.517	2.35	0.650	2.90	0.769
3/8"	10 mm	0.872	17.10	1.80	0.674	2.35	0.852	2.90	1.02
1/2"	15 mm	0.844	21.43	2.00	0.952	2.65	1.122	3.25	1.45
3/4"	20 mm	1.094	27.20	2.35	1.410	2.65	1.580	3.25	1.90
1"	25 mm	1.312	33.80	2.65	2.010	3.25	2.440	4.05	2.97
1.1/4"	32 mm	1.656	42.90	2.65	2.580	3.25	3.140	4.05	3.84
1.1/2"	40 mm	1.906	48.40	2.90	3.250	3.25	3.610	4.05	4.43
2"	50 mm	2.375	60.30	2.90	4.110	3.65	5.100	4.47	6.17
2.1/2"	65 mm	3.004	76.20	3.25	5.840	3.65	6.610	4.47	7.90
3"	80 mm	3.500	88.90	3.25	6.810	4.05	8.470	4.85	10.1
4"	100 mm	4.500	114.30	3.65	9.890	4.50	12.10	5.40	14.4
5"	125 mm	5.500	139.70	-	-	4.85	16.20	5.40	17.8
6"	150 mm	6.500	165.10	-	-	4.85	19.20	5.40	21.2

BIG DIAMETER ERW PIPES CONFIRMING TO IS 3589

Wall Thickness in mm	Nominal Bore 7" NB 193.7 mm OD	Nominal Bore 8" NB 219.1 mm OD	Nominal Bore 10" NB 273 mm OD	Nominal Bore 12" NB 323.7 mm OD	Nominal Bore 14" NB 355.6 mm OD	Nominal Bore 16" NB 406.4 mm OD	Nominal Bore 18" NB 457 mm OD	Nominal Bore 20" NB 508 mm OD
kg/mtr	kg/mtr	kg/mtr	kg/mtr	kg/mtr	kg/mtr	kg/mtr	kg/mtr	kg/mtr
4.85	22.59	25.62	32.07	38.13	-	-	-	-
5.20	24.17	27.43	34.34	40.85	-	-	-	-
5.60	26.00	29.28	36.93	43.93	48.11	-	-	-
6.00	27.88	31.53	39.50	47.02	51.49	61.00	69.00	-
6.35	29.34	33.28	41.73	49.67	54.43	62.35	70.50	78.50
7.01	32.27	36.76	46.43	55.45	61.82	69.04	-	-
7.94	-	41.00	50.95	61.85	67.98	77.92	87.80	-
8.18	-	42.56	53.42	65.12	-	-	-	-
9.53	-	51.50	60.24	73.75	81.21	93.13	105.00	117.00
12.70	-	-	-	-	107.28	123.30	139.00	155.00

Tolerance on Thickness and Weight : as per IS 1239

The following manufacturing tolerance shall be permitted on the tubes and sockets.

(a) Thickness	
(1) Butt welded Light tubes	+ Not limited - 8 percent
Medium and Heavy tubes	+ Not Limited - 10 percent
(2) Seamless tubes	+ Not Limited - 12.5 percent
(b) Weight :	
(1) Single tube (light series)	+ 10 percent - 8 percent
(2) Single tube (medium and heavy series)	+ 10 percent

MAXIMUM PERMISSIBLE PRESSURE AND TEMPERATURE FOR TUBES WITH STEEL COUPLINGS OR SCREWED AND SOCKETED JOINTS

Nominal Bore	Maximum Permissible Presure		Maximum Permissible Temperature
mm	N/mm^2	$Kg./cm^2$	^0C
Upto and Including 25 mm	1.20	12.24	260
Over 25 mm upto and Including 40 mm	1.03	10.50	260
Over 40 mm upto and Including 80 mm	0.86	8.77	260
over 80 mm upto and Including 100 mm	0.69	7.04	260
	0.83	8.47	177
Over 100 mm upto and Including 125 mm	0.69	7.04	171
Over 125 mm upto and Inlcuding 150 mm	0.50	5.10	160

For tubes fitted with appropriate fittings of suitably butt welded together, the Max. permissible pressure shall be 21.00 Kg/cm^2 and Max. permissible temp. 260^0C

MATERIAL SPECIFICATION FOR PIPES & TUBES OF STAINLESS STEEL, ALLOY STEEL, CARBON STEEL & MILD STEEL.

PIPE SPECIFICATION	CHEMICAL PROPERTIES								MECHANICAL PROPERTIES				OTHERS
	C%	Mn%	P% (Max)	S% (Max)	Si%	Cr%	Ni%	Mo%	U.T.S. (Min) Mpa	Y.S. (Min) Mpa	ELONG. (Min) L	ELONG. (Min) T	
ASTMA 312 Gr. TP 304	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-11.0	-	515	205	35	25	-
ASTMA 312 Gr. TP 304L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-13.0	-	485	170	35	25	-
ASTMA 312 Gr. TP 304H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-11.0	-	515	205	35	25	-
ASTMA 312 Gr. TP 304LN	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-12.0	-	515	205	35	25	N%=0.10-0.16
ASTMA 312 Gr. TP 309S	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	22.0-24.0	12.0-15.0	0.75 Max	515	205	35	25	-
ASTMA 312 Gr. TP 310S	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	24.0-26.0	19.0-22.0	0.75 Max	515	205	35	25	-
ASTMA 312 Gr. TP 316	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	-
ASTMA 312 Gr. TP 316L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	10.0-14.0	2.00-3.00	485	170	35	25	-
ASTMA 312 Gr. TP 316H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	-
ASTMA 312 Gr. TP 316LN	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	N%=0.10-0.16
ASTMA 312 Gr. TP 317	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	11.0-14.0	3.00-4.00	515	205	35	25	-
ASTMA 312 Gr. TP 317L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	11.0-15.0	3.00-4.00	515	205	35	25	-
ASTMA 312 Gr. TP 321	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-12.0	-	515	205	35	25	Ti%= (5xC)-0.70
ASTMA 312 Gr. TP 321H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-12.0	-	515	205	35	25	Ti%=(4xC)-0.60
ASTMA 312 Gr. TP 347	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-13.0	-	515	205	35	25	Cb%=(10xC)-1.00
ASTMA 312 Gr. TP 347H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-13.0	-	515	205	35	25	Cb%= (8xC)-1.10
ASTMA 358 Gr. TP 304	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	18.0-20.0	8.0-10.0	-	515	205	40		N%=0.10 Max,HRB=92 Max
ASTMA 358 Gr. TP 304L	0.035 Max	2.00 Max	0.045	0.030	0.75 Max	18.0-20.0	8.0-12.0	-	485	170	40		N%=0.10 Max,HRB=92 Max
ASTMA 358 Gr. TP 309S	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	22.0-24.0	12.0-15.0	-	515	205	40		HRB=95 Max
ASTMA 358 Gr. TP 310S	0.080 Max	2.00 Max	0.045	0.030	1.50 Max	24.0-26.0	19.0-22.0	-	515	205	40		HRB=95 Max
ASTMA 358 Gr. TP 316	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	16.0-18.0	10.0-14.0	2.00-3.00	515	205	40		N%+0.10 Max, HRB=95 Max
ASTMA 358 Gr. TP 316L	0.035 Max	2.00 Max	0.045	0.030	0.75 Max	16.0-18.0	10.0-14.0	2.00-3.00	485	170	40		N%=0.10 Max, HRB=95 Max
ASTMA 358 Gr. TP 321	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	17.0-19.0	9.0-12.0	-	515	205	40		N%=0.10 Max, Ti%=5x(C+N)-0.70, HRB=95 Max
ASTMA 358 Gr. TP 347	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	17.0-19.0	9.0-13.0	-	515	205	40		Cb=(10xC)-1.00, HRB=92 Max
ASTMA 106 Gr. A	0.25 Max	2.00 Max	0.035	0.030	0.10 Min	0.40 Max	0.40 Max	0.15 Max	330	205	30	25	Cu%;0.40 Max, Va%; 0.80
ASTM A 106 Gr. B	0.30 Max	0.29-1.06	0.035	0.035	0.10 Min	0.40 Max	0.40 Max	0.15 Max	415	240	30	16.5	Cu%; 0.40 Max, Va% 0.80
ASTM A 106 Gr. C	0.35 Max	0.29-1.06	0.035	0.035	0.10 Min	0.40 Max	0.40 Max	0.15 Max	485	275	30	16.5	Cu%; 0.40 Max , Va% 0.80
ASTM A 53 Gr. A	0.25 Max	0.95 Max	0.050	0.035	-	0.40 Max	0.40 Max	0.15 Max	330	205	30	16.5	Cu%; 0.40 Max, Va% 0.80
ASTM A 53 Gr. B	0.30 Max	1.20 Max	0.050	0.045	-	0.40 Max	0.40 Max	0.15 Max	415	240	30	16.5	Cu%; 0.40 Max Va%0.80
ASTM A 333 Gr. 1	0.30 Max	0.40-1.06	0.025	0.045	-	-	-	-	380	205	35	25	Impact Test= -45 °C, J=18, Min, HRB=85 Max
ASTM A 333 Gr. 6	0.30 Max	0.29-1.06	0.025	0.025	0.10 Min	-	-	-	415	240	30	16.5	Impact Test= -45 °C, J=18, Min, HRB=85 Max
ASTM A 335 Gr. P1	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	-	0.44-0.65	380	205	30	20	
ASTM A 335 Gr. P2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	-	0.44-0.65	380	205	30	20	
ASTM A 335 Gr. P5	0.15 Max	0.30-0.60	0.025	0.025	0.50 Max	4.00-6.00	-	0.44-0.65	415	205	30	20	
ASTM A 335 Gr. P9	0.15 Max	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.00	-	0.90-1.10	415	205	30	20	
ASTM A 335 Gr. P11	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	415	205	30	20	
ASTM A 335 Gr. P12	0.05-0.15	0.30-0.61	0.025	0.025	0.50 Max	0.80-1.25	-	0.44-0.65	415	220	30	20	
ASTM A 335 Gr. P22	0.05-0.15	0.30-0.60	0.025	0.025	0.50 Max	1.90-2.60	-	0.87-1.13	415	205	30	20	
ASTMA 335 Gr. P91	0.08-0.12	0.30-0.60	0.020	0.010	0.20-0.50	8.00-9.50	0.40 Max	0.85-1.05	620	440	20	-	V%=0.18-0.25, N%=0.030-0.070, Al%=0.02 Max, Cb%=0.06-0.10
ASTM A 213 Gr. T2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	-	0.44-0.65	415	205	30		HRB=85 Max
ASTM A 213 Gr. T5	0.15 Max	0.30-0.60	0.025	0.025	0.50 Max	4.00-6.00	-	0.45-0.65	415	205	30		HRB=85 Max
ASTM A 213 Gr. T11	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	415	205	30		HRB=85 Max
ASTM A 213 Gr. T12	0.05-0.15	0.30-0.61	0.025	0.025	0.50 Max	0.80-1.25	-	0.44-0.65	415	220	30		HRB=85 Max
ASTM A 213 Gr. T22	0.05-0.15	0.30-0.60	0.025	0.025	0.50 Max	1.90-2.60	-	0.87-1.13	415	205	30		HRB=85 Max
ASTM A 179	0.06-6.18	0.27-0.63	0.035	0.035	-	-	-	-	325	180	35		HRB=72 Max
ASTM A 210 Gr. A1	0.27 Max	0.93 Max	0.035	0.035	0.10 Min	-	-	-	415	255	30		HRB=79 Max

MONEL FORGE & FITTINGS

FASTENERS

We hold expertise in offering fasteners, such as nuts, bolts, washers, anchor fasteners, stud bolts, Threaded Rod to our clients. These are manufactured utilizing high grade, such as Stainless Steel, Carbon steel, Duplex steel, Monel, Inconel, Hastelloy, Titanium and Nickel alloy, which Alloy steel assure their high tensile strength and corrosion resistance. Our range finds applications in numerous industries and is offered in sizes ranging from M4 To M100, length up to 5 meters as per the client's requirement.

SALIENT FEATURES :

- Severe vibration under impulse pressure
- Dimensional preciseness
- Long service life
- Static Pressure
- Corrosion Resistance
- Study Construction
- High Tolerance
- Perfect Installation & application
- Fast Performance

Inconel Alloys : Inconel Alloy 600, Inconel Alloy 601, Inconel Alloy 625, Inconel Alloy 718, Inconel Alloy 725, Inconel Alloy X750

Monel Alloys : Monel 400, Monel R405, Monel K500.

Incoloy Alloys : Incoloy Alloy 20, Incoloy Alloy 800, Incoloy Alloy 800H/800HT, Incoloy Alloy 825, Incoloy Alloy 925, Incoloy Alloy A286

Hastelloy Alloy : Hastelloy C4, Hastelloy B2, Hastelloy G30, Hastelloy B3, Hastelloy C276, Hastelloy X, Hastelloy C22

Duplex & Super Duplex : UNS S31803, UNS S32750, UNS S32760, UNS S32550.

Stainless Steels : 347, 310, 303, 304/304H, 316/316L, 317/317L, 17/4PH, 410, 431, Nitronic 50, Nitronic 60, Nimonic 80A

TYPE

- ANCHOR FASTENERS
- HEX HEAD BOLTS
- SOCKET CAPS SCREW
- HEX NUTS
- EYE BOLTS
- STUD BOLTS
- THREADED RODS
- COUNTERSUNK BOLTS
- FLAT / SPRING / LOCK WASHE
- FOUNDATION BOLTSRS

E-MAIL: sales@monelforge.com, WEBSITE: www.monelforge.com

MONEL FORGE & FITTINGS

FLANGES

We are one of the leading manufacturers and exporter of wide range of Flanges in various Grades and sizes for different applications in petrochemicals, refineries, chemical industry, water works, engineering & construction works. Owing to its high quality, optimum performance, less maintenance, our range of flanges are appreciated by our clients and are available in various material configurations like High Nickel Alloys, Duplex, Super Duplex, Stainless Steel, Carbon Steel, Alloy Steel and Copper Alloys. Based on the sizes, dimensions, shapes and length of these flanges, we can customize the products for our respected clients and in following material of construction.

● Nickel Alloy ● Stainless Steel ● Duplex Steel / Super Duplex

Stainless Steel & Duplex Steel Flanges

Size	: ½"NB to 24" NB, ANSI B 16.5
Class	: 150#, 300#, 600#, 900#, 1500#, 2500#
Stainless Steel	: ASTM A TP 304/304L/304H/316/316L/ 316H / 316Ti / 309 / 310 / 317L / 321/347/904L
Duplex Steel	: ASTM A 815- UNS S31803, S32750, S32760, S32205

Alloy Steel, Carbon Steel & LTCS Flanges

Alloy Steel	: ASTM A 182-F5, F9, F11, F12, F22 & F91 / **Low temp. AS** A 350 Lf
Carbon Steel	: ASTM A 105 ASTM A 694 F42, F46, F52, F60, F65, F70

Copper & Nickel Alloys Flanges

Cupro Nickel	: C70600(90:10), C71500 (70:30), C71640
Nickel	: UNS N02200, N02201
Monel	: UNS N04400, N05500, Alloy 20
Inconel	: UNS N06600, N06601, N06625, N08800, N08810
Hastelloy	: UNS N10276, N06022, N10665, N06455
Titanium	: Gr. 2 & 5, DTH 3.7025, DTH 3.7055

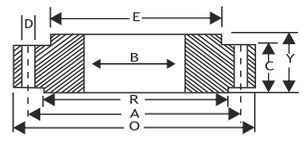
TYPE

- PLATE BLANK FLANGE
- LAP JOINT FLANGE
- WELDNECK FLANGE
- ORIFICE FLANGE
- LONG WELD NECK FLANGE
- SCREWED FLANGE
- SOCKETWELD FLANGE
- BLIND FLANGE
- RTJ FLANGE
- THREADED FLANGE

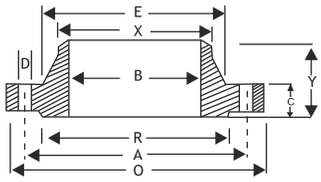
MONEL FORGE & FITTINGS

DIMENSIONS OF FORGED FLANGES AS PER ANSI 16.5

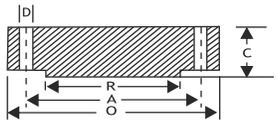
FLANGES CLASS 150 & 300



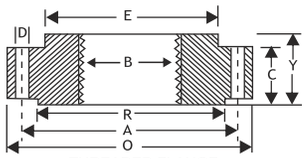
SLIP-ON FLANGE



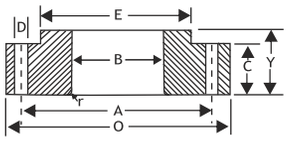
WELDING NECK FLANGE



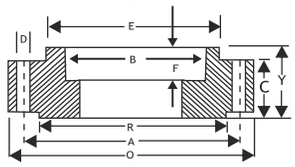
BLIND FLANGE



THREADED FLANGE



LAP JOINT FLANGE



SOCKET WELD FLANGE

DIMENSIONS OF CLASS150 FLANGES AS PER B16.5

Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	No. Of Bolt Holes	No. Of Holes	Thk of Flange	Dia of Hub	Length through Hub			Dia Bore		Dia of R/F	Depth of Socket	Pipe Dia
							S / O & S / W	W/N	L/J	S/O & S/W	L/J			
	O	A	D		C	E	Y	Y	Y	B	B	R	F	X
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	170.7	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	410.5	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	457.20
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 B16.5

Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	No. Of Bolt Holes	No. Of Holes	Thk of Flange	Dia of Hub	Length through Hub			Dia Bore		Dia of R/F	Depth of Socket	Pipe Dia
							S / O & S / W	W/N	L/J	S/O & S/W	L/J			
	O	A	D		C	E	Y	Y	Y	B	B	R	F	X
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	20.6	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	36.5	206.4	52.4	98.4	52.4	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

Metric values are direct conversion from Inches table of B16.5
Flanges except Lap Joint will be furnished with (1.6 mm) raised face, Which is included in " Thickness" (C) and Length Through Hub (Y).

MONEL FORGE & FITTINGS

SOCKET WELD / FORGED FITTINGS

We offer to our clients specially designed forged pipe fittings. We also undertake new projects as per the drawings and specifications of the client for forged fittings. The product is delivered in a short time frame. We offer special forged pipes fittings in different metals which find application in various industries. We can offer forged fittings in following materials of construction :-

- Nickel Alloy & Copper Nickel Alloy
- Stainless Steel & Duplex Steel

Stainless Steel & Duplex Steel Forged Fittings

Standard : ANSI B16.11, MSS SP - 97, BS 3799
Size : ½"NB to 4" NB, (Socketweld & Threaded)
Class : 3000#, 6000#, 9000#
Stainless Steel : ASTM A TP 304/304L/304H/316/316L/ 316H / 316Ti / 309 / 310 /317L/321/347/904L
Duplex Steel : ASTM A 815- UNS S31803, S32750, S32760, S32205

Alloy Steel, Carbon Steel & LTCS Forged Fittings

Size : ½"NB to 4" NB, (Socketweld & Threaded)
Class : 3000#, 6000#, 9000#
Alloy Steel : ASTM A 182-F5, F9, F11, F12, F22 & F91
Carbon Steel : ASTM A 106 Gr. A/B/C
Low temp. CS : A 350 Lf2

TYPE

ELBOW	PLUG	WELDING NIPPLE	BEND	SOCKOLET
TEE	SWAGE NIPPLE	PARRALER NIPPLE	ADAPTER	THREDOLET
UNION	WELDING BOSS	STREET ELBOW	INSERT	NIPOLET
CROSS	HEXAGON NIPPLE	HEXAGON NUT	WELDOLET	LETROLET
BUSHING	BARREL NIPPLE	HOSE NIPPLE	ELBOWLET	

MONEL FORGE & FITTINGS

BRITISH STANDARD PIPE FLANGES

DIMENSION OF PIPE FLANGES AS PER TABLE BS -10

Table D: For Working Steam Pressure upto 50 lbs per sq. inch

Nominal pipe size	O.D of Pipe	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
½"	21.3	95.3	66.7	4	12.7	4.8
3/4"	26.7	101.6	73.0	4	12.7	4.8
1"	33.4	114.3	82.6	4	12.7	4.8
1 1/4"	42.2	120.7	87.6	4	12.7	6.4
1 1/2"	48.3	133.4	98.4	4	12.7	6.4
2"	60.3	152.4	114.3	4	15.9	7.9
2 ½"	73.0	165.1	127.0	4	15.9	7.9
3"	88.9	184.2	146.1	4	15.9	9.5
3 ½"	101.6	203.2	165.1	4	15.9	9.5
4"	114.3	215.9	177.8	4	15.9	9.5
5"	141.3	254.0	209.6	8	15.9	12.7
6"	168.3	279.4	228.6	8	15.9	12.7
7"	190.5	304.8	260.4	8	15.9	12.7
8"	219.1	336.6	292.1	8	15.9	12.7
9"	244.5	368.3	323.9	8	15.9	15.9
10"	273.0	406.4	355.6	8	19.1	15.9
12"	323.9	457.2	406.4	12	19.1	15.9
14"	355.6	527.1	469.9	12	22.2	19.1
16"	406.4	577.9	520.7	12	22.2	19.1
18"	457.2	641.4	584.2	12	22.2	22.2
20"	508.0	704.9	641.4	16	22.5	25.4
24"	609.6	825.5	755.7	16	25.4	28.6

Table E: For Working Steam Pressure 50 lbs. upto 100 lbs per sq. inch

Nominal pipe size	O.D of Pipe	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
½"	21.3	95.3	66.7	4	12.7	6.4
3/4"	26.7	101.6	73.0	4	12.7	6.4
1"	33.4	114.3	82.6	4	12.7	7.1
1 1/4"	42.2	120.7	87.6	4	12.7	7.9
1 1/2"	48.3	133.4	98.4	4	12.7	8.7
2"	60.3	152.4	114.3	4	15.9	9.5
2 ½"	73.0	165.1	127.0	4	15.9	10.3
3"	88.9	184.2	146.1	4	15.9	11.1
3 ½"	101.6	203.2	165.1	8	15.9	11.9
4"	114.3	215.9	177.8	8	15.9	12.7
5"	141.3	254.0	209.6	8	15.9	14.3
6"	168.3	279.4	228.6	8	19.1	17.5
7"	190.5	304.8	260.4	8	19.1	19.1
8"	219.1	336.6	292.1	8	19.1	19.1
9"	244.5	368.3	323.9	12	19.1	20.6
10"	273.0	406.4	355.6	12	19.1	22.2
12"	323.9	457.2	406.4	12	22.2	25.4
14"	355.6	527.1	469.9	12	22.2	25.4
16"	406.4	577.9	520.7	12	22.2	25.4
18"	457.2	641.4	584.2	16	22.2	28.6
20"	508.0	704.9	647.4	16	22.2	31.8
24"	609.6	825.5	755.7	16	25.4	38.1

Table F: For Working Steam Pressure above 100 lbs and upto 150 lbs per sq. inch

Nominal pipe size	O.D of Pipe	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
½"	21.3	95.3	66.7	4	12.7	9.5
3/4"	26.7	101.6	73.0	4	12.7	9.5
1"	33.4	120.7	87.3	4	15.9	9.5
1 1/4"	42.2	133,4	98.4	4	15.9	12.7
1 1/2"	48.3	139.7	104.8	4	15.9	12.7
2"	60.3	165.1	127.0	4	15.9	15.9
2 ½"	73.0	184.2	146.1	8	15.9	15.9
3"	88.9	203.2	165.1	8	15.9	15.9
3 ½"	101.6	215.9	177.8	8	15.9	19.1
4"	114.3	228.6	190.5	8	15.9	19.1
5"	141.3	279.4	235.0	8	19.1	22.2
6"	168.3	304.8	260.4	12	19.1	22.2
7"	190.5	336.3	292.1	12	19.1	22.2
8"	219.1	368.3	323.9	12	19.1	25.4
9"	244.5	406.4	355.6	12	22.2	25.4
10"	273.0	431.8	381.0	12	22.2	25.4
12"	323.9	489.0	438.2	16	22.2	28.6
14"	355.6	552.5	495.3	16	25.4	31.8
16"	406.4	609.6	552.5	20	25.4	31.8
18"	457.2	673.1	609.6	20	28.6	34.9
20"	508.0	736.6	673.1	24	28.6	38.1
24"	609.6	850.9	781.1	24	31.8	41.3

Table H: For Working Steam Pressure above 150 lbs and upto 250 lbs per sq. inch

Nominal pipe size	O.D of Pipe	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
½"	21.3	114.3	66.7	4	15.9	12.7
3/4"	26.7	114.3	73.0	4	15.9	12.7
1"	33.4	120.78	87.3	4	15.9	14.3
1 1/4"	42.2	133,4	98.4	4	15.9	17.5
1 1/2"	48.3	139.7	104.8	4	15.9	17.5
2"	60.3	165.1	127.0	4	15.9	19.1
2 ½"	73.0	184.2	146.1	8	15.9	19.1
3"	88.9	203.2	165.1	8	15.9	22.2
3 ½"	101.6	215.9	177.8	8	15.9	22.2
4"	114.3	228.6	190.5	8	15.9	25.4
5"	141.3	279.4	235.0	8	19.1	28.6
6"	168.3	304.8	260.4	12	19.1	28.6
7"	190.5	336.6	292.1	12	19.1	31.8
8"	219.1	368.3	323.9	12	19.1	31.8
9"	244.5	406.4	355.6	12	22.2	34.9
10"	273.0	431.8	381.0	12	22.2	34.9
12"	323.9	489.0	438.2	16	22.2	38.1
14"	355.6	552.5	495.3	16	25.4	41.3
16"	406.4	609.6	552.5	20	25.4	44.5
18"	457.2	673.1	609.6	20	28.6	47.6
20"	508.0	736.6	673.1	24	28.6	50.8
24"	609.6	850.9	781.1	24	31.8	57.2

MILD STEEL PIPES CONFIRMING TO IS : 1239 (PART 1) - 1979

Norminal Bore		Outside Diameter		Light Thick Weight		Medium Thick Weight		Heavy Thick Weight	
Inch	in mm	Inch	in mm	mm	Kg./mtr.	mm	Kg./mtr.	mm	Kg./mtr.
1/8"	3mm	0.406	10.32	1.80	0.361	2.00	0.407	2.65	0.493
1/4"	6mm	0.532	13.49	1.80	0.517	2.35	0.650	2.90	0.769
3/8"	10mm	0.673	17.10	1.80	0.674	2.35	0.852	2.90	1.02
1/2"	15mm	0.844	21.43	2.00	0.952	2.65	1.220	3.25	1.45
3/4"	20mm	1.094	27.20	2.35	1.410	2.65	1.580	3.25	1.90
1"	25mm	1.312	33.80	2.65	2.010	3.25	2.440	4.05	2.97
1.1/4"	32mm	1.656	42.90	2.65	2.580	3.25	3.140	4.05	3.84
1.1/2"	40mm	1.906	48.40	2.90	3.250	3.25	3.610	4.05	4.43
2"	50mm	2.375	60.30	2.90	4.110	3.65	5.100	4.47	6.17
2.1/2'	65mm	3.004	76.20	3.25	5.840	3.65	6.610	4.47	7.90
3"	80mm	3.500	88.90	3.25	6.810	4.05	8.470	4.85	10.1
4"	100mm	4.500	114.30	3.65	9.890	4.50	12.10	5.40	14.4
5"	125mm	5.500	139.70	-	-	4.85	16.20	5.40	17.8
6"	150mm	6.500	165.10	-	-	4.85	19.20	5.40	21.2

STAINLESS STEEL SCHEDULE PIPES N.B.,W.T. & WEIGHT PER FT & (MTR.)

Norminal Bore			Sch 5		Sch 10		Sch 40		Sch 80		Sch 160	
MM	inch	MM O/D	W/T	(kg./m)	W/T	(kg./m)	W/T	(kg./m)	W/T	(kg./m)	W/T	(kg./m) kg./F
3	1/8"	10.3	1.24	(0.276)	1.24	(0.278)	1.73	(0.365)	2.41	(0.469)	-	-
6	1/4"	13.7	1.24	(0.380)	1.65	(0.492)	2.24	(0.633)	3.02	(0.797)	-	-
10	3/8"	17.7	1.4	(0.166)	1.65	(0.544)	2.31	(0.630)	3.20	(0.846)	-	(0.1.10)
15	1/2"	21.3	1.65	(0.801)	2.11	(1.00)	2.77	(1.27)	3.73	(1.67)	4.75	(1.94)
20	3/4"	26.7	1.65	(1.02)	2.11	(1.27)	2.78	(1.68)	3.91	(2.20)	4.54	(2.89)
25	1"	33.4	1.65	(1.29)	2.77	(2.09)	3.38	(2.50)	4.55	(3.27)	6.35	(4.24)
32	11/4"	42.2	1.65	(1.65)	2.77	(2.69)	3.56	(3.38)	4.85	(4.46)	6.35	(5.61)
40	11/2"	48.3	1.65	(1.899)	2.77	(3.11)	3.68	(4.05)	5.08	(5.41)	7.14	(7.25)
50	2"	60.3	1.65	(2.39)	2.77	(3.937)	3.91	(5.44)	5.54	(7.48)	8.71	(11.09)
65	21/2"	73.0	2.11	(3.707)	3.05	(5.249)	5.16	(8.63)	7.01	(11.4)	9.53	(14.9)
80	3"	88.9	2.11	(4.528)	3.05	(6.463)	5.16	(11.3)	7.62	(15.3)	11.13	(21.3)
100	4"	114.3	2.11	(5.938)	3.05	(8.366)	6.02	(16.1)	8.56	(22.3)	13.29	-
125	5"	141.3	2.77	(9.55)	3.40	(11.61)	6.55	(21.8)	9.53	(31.0)	15.9	(49.2)
150	6"	168.3	2.77	(11.37)	3.40	(14.04)	7.11	(28.25)	10.97	(42.5)	18.24	(67.8)
200	8"	219.1	2.77	(14.80)	3.76	(20.01)	8.18	(42.7)	12.7	(64.6)	23.01	(111.2)
250	10"	273.0	3.40	(22.74)	4.19	(28.2)	9.27	(61.20)	15.06	(96.1)	28.5	(173.3)
300	12"	323.89	3.96	(31.43)	4.57	(36.53)	10.30	(79.71)	17.45	(132.1)	33.32	(240.1)

Conversion Table SWG To Inches

SWG No.	Thickness		SWG No. In	Thickness	
	In.	mm		In.	mm
7/0	0.500	12.700	17	0.056	1.422
6/0	0.464	11.785	18	0.048	1.219
5/0	0.432	10.973	19	0.040	1.016
4/0	0.400	10.160	20	0.036	0.914
3/0	0.372	9.449	21	0.032	0.813
2/0	0.348	8.839	22	0.028	0.711
0	0.324	8.229	23	0.024	0.610
1	0.300	7.620	24	0.022	0.559
2	0.276	7.010	25	0.020	0.508
3	0.252	6.400	26	0.018	0.457
4	0.235	5.894	27	0.0164	0.417
5	0.212	5.385	28	0.0148	0.376
6	0.192	4.877	29	0.0136	0.345
7	0.176	4.470	30	0.0124	0.315
8	0.160	4.064	31	0.0116	0.295
9	0.144	3.658	32	0.0108	0.275
10	0.128	3.251	33	0.0100	0.254
11	0.116	2.946	34	0.0092	0.234
12	0.104	2.642	35	0.0084	0.213
13	0.092	2.337	36	0.0076	0.193
14	0.080	2.032	38	0.0068	0.152
15	0.072	1.829	39	0.0052	0.132
16	0.064	1.626			

ANGLES CHANNELS BEAMS

M.S ANGLES		M.S. BEAMS		M.S. CHANNELS	
Size in mm.	weight in kgs. per feet	Size in mm.	weight in kgs. per feet	Size in mm.	weight in kgs. per feet
25x25x3	0.335	100x50	2.432	75x40	2.172
25x25x5	0.548	125x70	4.023	100x50	2.925
40x40x3	0.548	150x75	4.571	125x65	3.992
40x40x5	0.915	175x85	5.943	150x75	5.120
50x50x5	1.158	200x100	7.893	175x75	5.973
60x60x6	1.645	250x125	11.612	200x75	6.796
65x65x6	1.767	300x140	14.782	250x80	9.326
75x75x6	2.072	350x140	16.125	300x90	11.063
75x75x8	2.712	400x140	19.080	400x100	15.270
75x75x10	3.352	450x150	22.280		
100x100x6	2.804	500x180	26.730		
50x50x6	1.372	600x210	37.370		

COMPARISION OF STANLESS STEEL TO VARIOUS STANDARDS APPROXIMATELY

USA		Germany		Greet Britain	Russia	Greet Britain
AISI	SAE	Standard No.	Designation	En Steel Replaced	GOST	SIS-14
202	-	1.4371	XBCrMnNi189	-	12Kh17G9AN4	-
301	30301	1.4310	X12CrNi17	-	-	-
304	30304	1.4301	X5CrNis189	58E	08Kh18N10	2332/2333
304L	30304L	1.4306	X2CrNi189	-	-	2352
309	30309	1.4828	X15cRNiSi2012	-	20Kh20NI14S2	-
310	303010	1.4841	X15CrNiSi2520	-	20Kh25N20S2	-
316	30316	1.4401	Z5CrNiMo1810	58J	-	2347/2343
316Ti	-	1.4571	X6CrNiMoTi122	-	10Ch17N13M2T	-
316L	30316L	1.4404	X2CrNiMo1810	-	-	2353
317	30317	1.4449	X5CrNiMo1713	-	-	-
317L	-	1.4435	X2CrNiMo1812	-	03Ch17N14M2	2367
.321	30321	1.4541	X10CrNiTi189	-	1Kh18N10T	2337
347	30347	1.4550	X10CrNiNb189	58F&58G	08Kh18N12B	2338
410	51410	1.4006	X10Cr13	56A	12Kh13	2302
420	51420	1.402	X20Cr13	56C	20Kh13	2302
430	51430	1.4016	X6Cr17	60	12Kh17	2320
431	51431	1.4057	X12CrNi17	57	20Kh17N2	2321

CHEMICAL & COMPOSITION OF STAINLESS STEEL

Grade Designation AISI	C Max	Mn Max	P Max	S Max	Si Max	CR	NI	MO	Other Element
201	0.15	5.50/7.50	0.060	0.030	1.00	16.00/18.00	3.50/5.50	-	0.25N Max
202	0.15	7.50-10.00	0.060	0.030	1.00	17.00/19.00	4.00/6.00	-	025 N
301	0.15	2.00	0.045	0.040	1.00	16.00/18.00	6.00/8.00	-	-
304	0.08	2.00	0.045	0.030	1.00	18.00/20.00	8.00/10.50	-	-
304L	0.30	2.00	0.045	0.030	1.00	18.00/20.00	8.00/12.00	-	-
309	0.20	2.00	0.045	0.030	1.00	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	-	-
316	0.08	2.00	0.045	0.030	1.00	16.00/18.00	10.00/14.00	2.00/3.00	-
316L	0.030	2.00	0.045	0.030	1.00	16.00/18.00	10.00/14.00	2.00/3.00	-
317	0.080	2.00	0.045	0.030	1.00	18.00/20.00	11.00/15.00	3.00/4.00	-
317L	0.030	2.00	0.045	0.030	1.00	18.00/20.00	11.00/15.00	3.00/4.00	-
316TI	0.080	2.00	0.045	0.030	1.00	16.00/18.00	10.00/14.00	2.00/3.00	Ti5xCmin
321	0.08	2.00	0.045	0.030	1.00	17.00/19.00	9.00/12.00	-	5xCTi(min
347	0.08	2.00	0.045	0.030	1.00	17.00/19.00	9.00/12.00	-	(10xc NB)
430	0.12	1.00	0.040	0.030	1.00	16.00/18.00	0.75	-	-
410	0.15	1.00	0.040	0.030	1.00	11.50/13.50	-	-	-
410S	0.08	1.00	0.040	0.030	1.00	11.50/13.50	0.60 max	-	-
420	0.15(min)	1.00	0.040	0.030	1.00	12.00/14.00	-	-	-
431	0.20	1.00	0.040	0.030	1.00	15.00/17.00	1.25-2.50	-	-

E-MAIL: sales@monelforge.com, WEBSITE: www.monelforge.com

MONEL FORGE & FITTINGS

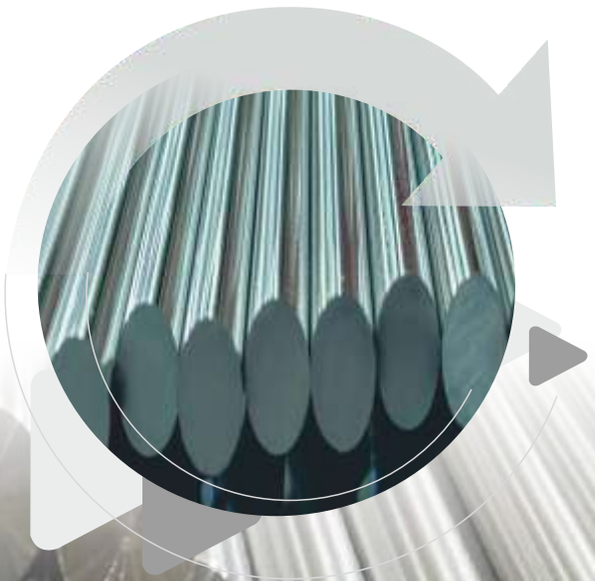
www.monelforge.com

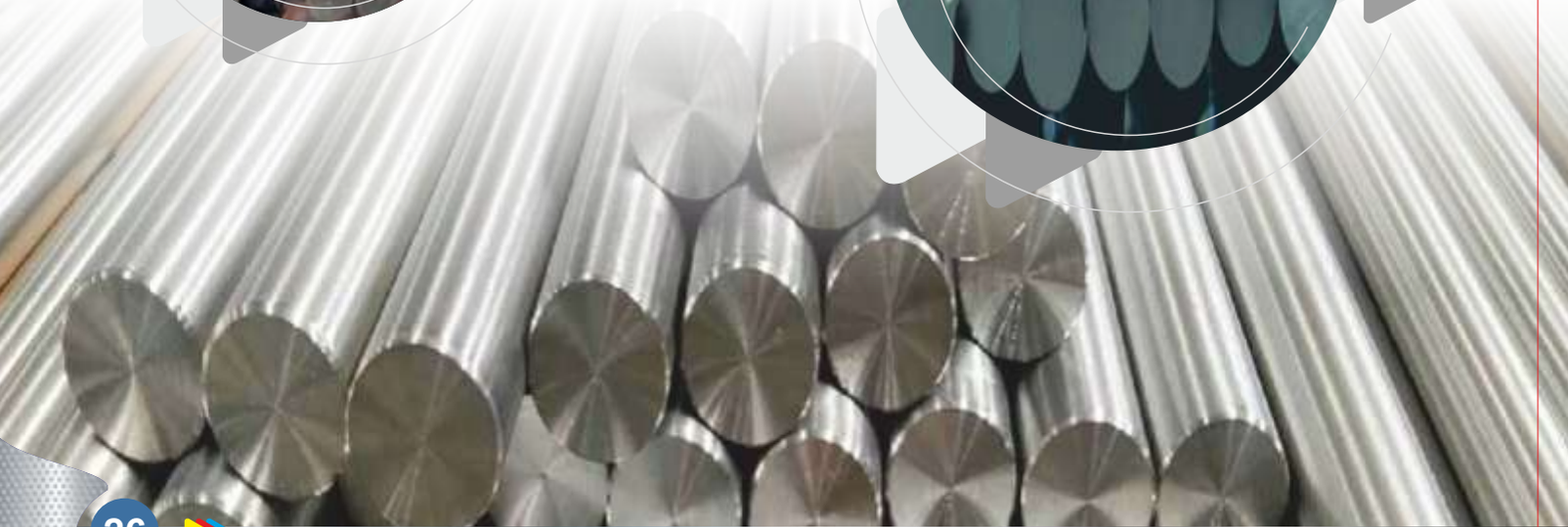
MONEL FORGE & FITTINGS

Bars

BAR

Range	:	Dia 5 mm to 500 mm & Length 500 mm to 6000 mm.
Stainless Steel	:	ASTM A- 479, A- 182 - 304, 304L , 316, 316L, 309, 310, 317L, 321, 347, 409, 410, 420, 430, 440, 446, 904L , etc.
Duplex Steel	:	2205, 31803, 32750, 32760, 2101, 2304,
Super Duplex Steel	:	UNS - 32720, 32760, 32550, 31254
Alloy Steel	:	A - 182 - F5, F9, F 11, F 12, F21, F22, & F 91
Special Grade	:	Stainless Steel 17- 4 PH, Alloy 800, Alloy 600, Hastelloy C 276,
Carbon Steel	:	A - 105, LF 2, Duplex Steel,
Form	:	Round, Square, Hex, (A) , Rectangle , Flat , Ingot , Etc
Other Services	:	Forging, Railing, Casting, Machining (CNC), Centraless Grinding (CG), Heat Treatment Polish, Anodising, Cutting, Bending, Minor Fabrication,
Test Certificate	:	MTC , Lab TC, from Govt APP, Lab, with Third Party Inspection.





MONEL FORGE & FITTINGS

Titanium Grade - 2 & Grade - 5

Nitrogen	Carbon	Hydrogen	Iron	Oxygen	Aluminium	Vansdium	Residuals / Each	Residuals / Total	Titanlum
Grade - 2 (3.7035) % max									
0.003	0.08	0.015	0.30	0.25	6 - min	-	0.1	0.4	Rem
Grade - 5 (3.7035) % max									
0.003	0.10	0.015	0.30	-	4 - min	-	0.1	0.4	Rem

Sheet / Plate :

Thickness : 0.5t, 0, 8t, 1, 0t,
1, 2t, 1, 5t, 2,0t, 5, 0t

Max Width : 1229 mm

Sheet / Plate :

Thickness : 0.5t, 0, 8t, 1, 0t,
1, 2t, 1, 5t, 2,0t, 5, 0t

Max Width : 1229 mm

Flange :

Thickness : min,5.0t,
max, 50t

Size : 1/2" to 12"

Mesh:

Size : 1m x 1m,
Opening, 5mm x 12mm,
As per Drawing

Weld Wire:

Thickness : 1.0mm, 1.5mm,
2.0mm, 3.0mm

Length : 1500 mm

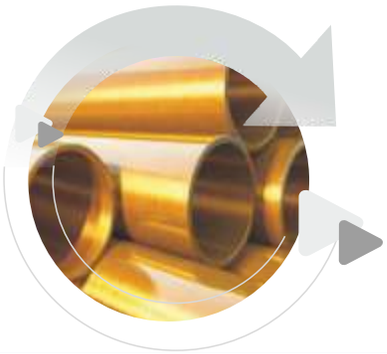
Round Bar

Size : 4mm,5mm,6mm,
8mm,10mm,12mm,
16mm, 20mm,
up to 100 mm

MONEL FORGE & FITTINGS

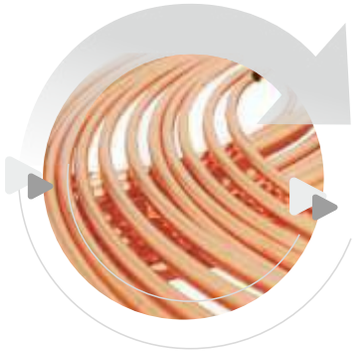
COPPER PRODUCTS

BRASS TUBES



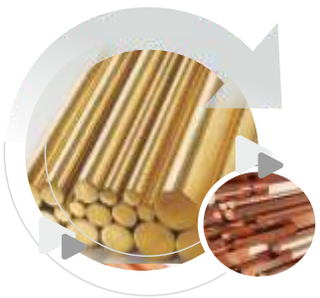
Copper	DHP Copper, ETP Copper, DPA Copper OFHC Copper
BRASS	63 / 37 Brass, 70 / 30 Brass, Admirality Brass, Aluminium Brass & other Compositions of Brass.
CUPRONICKEL	95 / 5 alloy, 90 / 10 alloy & 70 / 30 alloy.
BRONZES	Phosphorous Bronze Aluminium Bronze & Gun Metal, Phosphorous Bronze A B1 / A B2 Bush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

COPPER TUBES

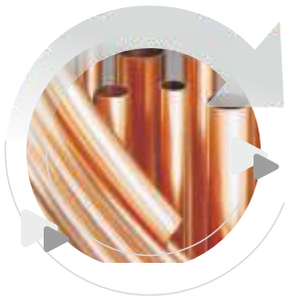


TUBES	2mm OD to 200mm OD with Wall thickness of 0.10 mm to 15 mm in length upto 10 mtrs straight (in coils upto 25 mtrs) in copper, Brass & Curpronickel.
RODS	In all size upto 160mm diameter in Copper, Brass and Bronzes.
STRIPS / PROFILES	Copper Strips and sections as per clients specific requirements.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

BRASS RODS



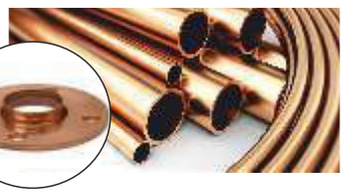
COPPER TUBE & SECTIONS



SPECIFICTIONS

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

Melt No.	Chemical Compositions Wt. %										
	C	Si	Mn	P	S	Cr	Ni	V	W	Ti	Cu
I/1	3.01	1.07	0.6	0.03	0.05	12.9	0.07	0.005	0.031	0.005	0.039
I/2	2.35	0.65	1.06	0.05	0.07	2.5.6	1.09	0.009	0.065	0. 010	0.962
I/3	1.78	0.70	0.33	0.05	0.06	18.3	0.07	0.005	0.055	0.004	0.047
I/4	3.14	0.96	0.54	0.05	0.06	24.6	0.42	0.047	0.047	0.014	0.079
I/5	3.24	0.71	1.36	0.05	0.06	26.6	0.64	0.032	0.025	0.009	0.047
I/6	4.50	1.06	1.04	0.04	0.06	25.2	1.02	0.007	0.025	0.009	1.20
I/7	3.35	1.51	0.63	0.03	0.05	21.2	0.61	0.036	0.062	0.013	0.193
I/8	3.60	0.93	0.27	0.02	0.01	16.1	0.01	-	-	5.04	0.005

STAINLESS STEEL PIPE, SCHEDULE, DIMENSION, WALL THICKNESS, WEIGHT / METER

DESIGNATION OF DIAMETER		O/D DIA	NOMINAL WALL THICKNESS																																	
			SCH 5S		SCH 5		SCH 10S		SCH 10		SCH 20S		SCH 30		SCH 40S		SCH 40		SCH 60		SCH 80S		SCH 80		SCH 100		SCH 120		SCH 140		SCH 160		SCH XXS			
(A)	(B)	METER MM	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR	WALL THK	WEIGHT KG / MTR
6	1/8	10.3	1.0	0.23			1.2	0.27			1.5	33			1.73	0.37					2.41	0.47														
8	1/4	13.72	1.2	0.37			1.65	0.49			2.00	58			2.24	0.64					3.02	0.82														
10	3/8	17.2	1.2	0.47			1.65	0.63			2.00	74			2.31	0.87					3.20	1.12														
15	1/2	21.3	1.65	0.81	1.65	0.81	2.11	1.02		1.02	2.5	1.15			2.77	1.29					3.73	1.64											4.78	1.98	7.47	2.59
20	3/4	26.7	1.65	1.03	1.65	1.03	2.11	1.30		1.30	2.5	1.49			2.87	1.71					3.91	2.23											5.56	2.94	7.82	3.69
25	1	33.4	1.65	1.31	1.65	1.31	2.77	2.12		2.12	3.00	2.24			3.38	2.54					4.55	3.29											6.35	4.30	9.09	5.53
32	1.1/4	42.2	1.65	1.67	1.65	1.67	2.77	2.73		2.73	3.00	2.90			3.56	3.44					4.85	4.53											6.35	5.59	9.70	7.88
40	1.1/2	48.3	1.65	1.93	1.65	1.93	2.77	3.15		3.15	3.00	3.35			3.68	4.11					5.08	5.49											7.14	7.35	10.16	9.69
50	2	60.3	1.65	2.42	1.65	2.42	2.77	3.99		3.99	3.5	4.90			3.91	5.52					5.54	7.60											8.74	11.29	11.07	13.65
65	2.1/2	73.0	2.11	3.75	2.11	3.75	3.05	5.34		5.34	3.5	6.00			5.16	8.77					7.01	11.60											9.53	15.15	14.02	20.72
80	3	88.9	2.11	4.59	2.11	4.59	3.05	6.56		6.56	4.00	8.37			5.49	11.50					7.62	15.51											11.13	21.67	15.24	28.11
90	3.1/2	101.6	2.11	5.25	2.11	5.25	3.05	7.53		7.53	4.00	9.62			5.74	13.78					8.08	18.92													16.15	34.56
100	4	114.3	2.11	5.93	2.11	5.93	3.05	8.50		8.50	4.5	12.18			6.02	16.32					8.56	22.66					11.13	28.75			13.49	34.05	17.12	41.66
125	5	141.3	2.77	9.61	2.77	6.61	3.40	11.74		11.74	5.00	16.80			6.55	22.10					9.53	31.44					12.70	40.90			15.88	49.37	19.05	58.31
150	6	168.3	2.77	11.47	2.77	11.47	3.40	14.04		14.04	5.5	22.08			7.11	28.69					10.97	43.21					14.27	55.03			18.26	68.59	21.95	79.2
200	8	219.1	2.77	15.00	2.77	15.00	3.76	20.27		20.27	6.35	33.82	7.04	37.38	8.18	43.20			10.81	53.90	12.70	65.63			15.06	76.93	18.24	91.73	20.62	102.47	23.01	112.97	22.23	108.00
250	10	273.1	3.40	22.95	3.40	22.95	4.19	28.20		28.20	6.35	42.41	7.80	51.81	9.27	61.22			12.20	82.80	12.70	82.80	15.06	97.27	18.24	116.38	21.41	134.90	25.40	155.50	28.58	174.95	25.40	155.5
300	12	323.9	3.96	31.72	4.19	33.60	4.57	36.54		36.54	6.35	50.48	8.38	66.20	9.53	75.01	10.31	80.94	14.27	110.62	12.70	98.95	17.45	133.88	21.41	162.14	25.40	189.82	28.58	211.31	33.32	242.40	25.40	189.82
350	14	355.6	3.96	34.86			4.78	41.99		55.53	7.92	68.95	9.53	82.58	9.53	82.58	11.13	96.00	15.06	128.42	12.70	109.04	19.05	160.54	23.80	197.74	27.76	227.88	31.75	257.47	35.71	286.04		
400	16	406.4	4.19	42.20			4.78	48.07		63.61	7.92	79.03	9.53	94.70	9.53	94.70	12.70	125.20	16.66	162.59	12.70	125.20	21.41	206.40	26.19	249.34	30.94	290.88	36.53	338.32	40.46	370.74		
450	18	457.2	4.19	47.46			4.78	54.15		71.69	7.92	89.10	11.13	124.32	9.53	106.83	14.27	158.27	19.05	209.00	12.70	141.35	23.80	258.29	29.36	314.54	34.93	369.34	39.67	414.74	45.24	466.67		
500	20	508.0	4.78	60.23			5.54	69.70		79.76	9.53	118.93	12.70	157.51	9.53	118.93	15.06	185.89	20.62	251.65	12.70	157.51	26.19	315.97	32.54	387.41	38.10	448.30	44.45	515.94	49.99	573.31		
550	22	558.8	4.78	65.95			5.54	76.75		87.84	9.53	131.07	12.70	173.66	9.53	131.07	15.88	216.04	22.23	298.55	12.70	173.66	28.57	379.70	34.92	457.83	41.27	535.17	47.62	609.30	53.97	682.57		
600	24	609.6	5.54	83.80			6.35	95.92		95.92	9.53	143.20	14.27	212.72	9.53	143.20	17.45	258.74	24.59	360.21	12.70	189.82	30.94	448.30	38.89	555.76	46.02	649.44	52.37	730.72	59.51	819.70		
650	26	660.4								129.40	12.70	205.97			9.53	155.32					12.70	205.97														
700	28	711.2								139.47	12.70	222.13	15.88	276.48	9.53	167.44					12.70	222.13														
750	30	762.0	6.35	120.15			7.92	149.55		149.55	12.70	238.28	15.88	296.68	9.53	179.56					12.70	238.28														
800	32	812.8								159.62	12.70	254.44	15.88	316.88	9.53	191.69	17.48	348.11			12.70	254.44														
850	34	863.6								169.64	12.70	270.50	15.88	336.96	9.53	203.74	17.48	370.22			12.70	270.50														
900	36	914.4								179.77	12.70	286.75	15.88	357.28	9.53	215.93	19.05	427.09			12.70	286.75														

E-MAIL: sales@monelforge.com, WEBSITE: www.monelforge.com

MONEL FORGE & FITTINGS

TECHNICAL INFORMATION
FORMULAE OF CALCULATING WEIGHT

1) Weight of Stainless Steel 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 Stainless Steel Round Bar
Dia (mm) X Dia (mm) X 0.00623 = Wt. per Mtr.
Dia (mm) X Dia (mm) X 0.0019 = Wt. per Feet

3) Weight of Stainless Steel Square Bar
Dia (mm) X Dia (mm) X 0.00788 = Wt. per Mtr.
Dia (mm) X Dia (mm) X 0.0024 = Wt. per Feet

4) Weight of Stainless Steel 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 Stainless Steel Flat Bar
Width (mm) X Thickness (mm) X 0.00798 = Weight per Mtr.
Width (mm) X Thickness (mm) X 0.00243 = Weight per Feet

6) Weight of Stainless Steel Sheets & Plates
Lenght (Mtrs) X Width (Mtrs) X Thick (mm) X 8 = Weight per PC
Lenght (Feet) X Width (Feet) X Thick (mm) X 3/4 = Weight per PC

7) Weight of Stainless Steel Circle
Dia (mm) X Dia (mm) X Thck (mm) / 160 =Gms. per PC
Dia (mm) X Dia (mm) X Thck (mm) X 0.0000063 = Kg. per PC

8) Weight of Brass Pipes / Copper Pipes
O.D. (mm) - W. Thick (mm) X W. Thick (mm) X 0.0260 = Wt. Per Mtr.

9) Weight Lead Pipe
O.D (mm) - W. Thick (mm) X W. Thick (mm) X 0.0345 = Wt. Per Mtr

10) Weight of Aluminium Pipe
O.D. (mm) - W. Thick (mm) X W. Thick (mm) X 0.0083 = Wt. per Mtr.

11) Weight of Aluminium Sheet
Length (Mtrs) X Width(Mtrs) X Thick (mm) X 2.69 = Weight per PC

12) Weight Conversion of Mtr. to Ft.
Length (Mtrs) X Width (Mtrs) X Thick (mm) X 2.69 = Weight per PC

13) Wt. of 1 Mtr / 3.2808 = Wt per Ft.
Barlow's Formula for calculating bursting pressure
P = 2ST/D or t-DP/2S or S-DP/2T or D=2ST/P
P = Bursting Pe\ressure P Si.,
S= Tensile Strength of tubes, T = Wall Thickness (in inches)
D = Outside Diameter (in inches)

14) Formula for Healthy Business
Honesty + Quality of Goods + Quick Service = Good Healthy Business

MONEL FORGE & FITTINGS

The Comprehensive Valve Range

GATE VALVES

API 600 | API 6D

Material Of Construction :
CI | CS | SS | AS | WCB | LCB | WC6 | WC9

End Connections :
Screwed to BSP | BSPT | NPT | Socket Weld| Butt Weld Ends| Flanged Ends | Ring Type Joints (RTJ)

Pressure Rating :
ASA 125# | 150# | 300# | 400# | 600# | 900# 1500# | 2500#

Operation :
Manual | Gear and Electrical Actuated

Size Range :
25mm to 1200mm

BALL VALVES – FLOATING & TRUNION MOUNTED

API-6D | BS-5351 | BS-5159 | ISO 17292

Material Of Construction :
CI | CS | SS | AS | A 105 | F304 | F316 CF3 | CF3M | CN7M

Seat & Seals :
PTFE | Reinforced PTFE | Buna-N | Graphoil | Graphite

End Connections :
Screwed to BSPT | NPT | Socket Weld| Butt Weld with extended Nipple| Flanged Ends | Butt Weld Ends

Pressure Rating :
ASA 150# | 300# | 600# | 800# | 900# | 1500# | 2500#

Type :
Single Pc | Two Pc | Three Pc | 3 Way | 4 Way

Operation :
Lever | Gear | Electrical Actuator | Pneumatic Rotary Actuator

Size Range :
6mm to 750mm

NON RETURN VALVES

Material Of Construction :
CI | CS | SS | AS | LCB | WC6 | WC9

Size Range :
15mm to 1000mm

SWING TYPE

BS 1868

Flanged End | Buttweld End

Pressure Rating:
125# | 150# | 300# | 600# | 900# 1500# | 2500# | PN 16, 40, 64

WAFER CHECK VALVE

API 6D

Wafer Type

Pressure Rating:
PN 10 | PN 16

NON SLAM DISC CHECK VALVE

BS 7438

Wafer Type

Pressure Rating:
PN 10 | PN 16 | PN 40

GLOBE VALVES

BS-1873 | ND-16 | ND-40

Material Of Construction :
CI | CS | SS | AS | LCB | WC6 | WC9

End Connections :
Screwed to BSP | BSPT | NPT | Socket Weld| Butt Weld Ends| Flanged Ends | Ring Type Joints (RTJ)

Pressure Rating :
ASA 125# | 150# | 300# | 600# | 900# | 1500# | 2500# | PN 16 | PN 40 | PN 64

Operation :
Manual | Gear and Electrical Actuated

Size Range :
15mm to 1000mm

BUTTERFLY VALVES

API 609 | BS-5155 | BS EN 593 | AWWA C504 | IS 13095

Material of Construction :
CI | DI | CS | SS

Seat & Seals :
Nitrile | Neoprene | PTFE | Viton | Hypalon | Silicon

End Connections :
Wafer Type | Double Flanged | Lug End

Pressure Rating :
ASA 125# | 150# | PN 1.0 | PN 1.6 | PN 20 | PN 2.5

Type :
Centric Disc Design | Offset Disc Design | Triple Offset Disc Design | High Performance

Operation :
Lever | Gear | Electrical Actuator | Pneumatic Rotary Actuator

Size Range :
40mm to 2000mm

ALSO AVAILABLE IN ISI MARK

STRAINERS

MARCK 014

Material of Construction :
Cast Iron | Cast Steel | Stainless Steel

End Connections :
Flanged | Screwed End

Type :
"Y" Type | "T" Type | Pot Type | Basket Type

Pressure Rating :
ASA 150# | 300# | PN 40

Size Range :
15mm to 800mm

DUAL PLATE CHECK VALVE

API 594

Flanged End | Wafer Type

Pressure Rating:
PN 10 | PN 16

MONEL FORGE & FITTINGS

The Comprehensive Valve Range

SLUICE & REFLUX VALVES

IS 14846 | IS 5312

Material Of Construction :
Body : Cast Iron | C.S. with G.M. or S.S. Internals

ALSO AVAILABLE IN ISI MARK

End Connections :
Flanged Ends

Pressure Rating :
Rating : PN 0.6 | PN 1.0 | PN 1.6
Body : 0.9 Mpa | 1.5 Mpa | 2.4 Mpa
Seat : 0.6 Mpa | 1.0 Mpa | 1.6 Mpa

Type :
Inside Screw (Non Rising Spindle) for Sluice | Outside Screw (Rising Spindle) for Gate

Size Range :
50mm to 1200mm

KNIFE EDGE GATE VALVE | PULP VALVE

MSS SP-81

Material of Construction :
Body : C.I | CS | SS

End Connections :
Flanged End | Wafer Lugg Type

Type :
UNI-DIRECTIONAL | BI-DIRECTIONAL

Operation :
Handwheel | Gear | Pneumatic Cylinder

Pressure Rating :
PN 10 | PN 16

Size Range :
50mm TO 1200mm

PFA LINED VALVES

API-599 | BS-5158 | BS-5351 | BS-5159 | BS-5155

Material of Construction :
Ductile Iron | CS

Type :
Butterfly | Plug | Ball | Ball Check & Diaphragm Valves

Lining :
FEP | PFA | PTFE | PVDF Lined Valves

Ends :
Wafer & Lugged End Type for Butterfly & Flanged End

Size Range :
25mm to 200mm

PLUG VALVES

BS-5158 | BS- 5353 | API- 599 | API 6D

Material of Construction :
CI | DI | CS | SS

Type :
PTFE Sleeved | Lubricated | Non-Lubricated

End Connections :
Screwed | Flanged | Buttweld

Pressure Rating :
Class 150#

Size Range :
25mm to 200mm

FORGED STEEL VALVES - GATE, GLOBE, CHECK | "T" - TYPE STRAINERS

API 602 | BS-5352 | MARCK-024

Material of Construction :
ASTM A 105 | F304 | F304L | F316 | F316L | F5 | F9 | F11 | F22

End Connections :
Socketweld | Screwed | Butt Weld
Flanged End

Type :
Straight Pattern | "Y" Type Pattern

Pressure Rating :
ASA 150# |300# | 600# | 800# | 1500# | 2500#

Size Range :
15mm to 50mm

DIAPHRAGM VALVES

BS-5156 | BS 6755-1

Material of Construction :
CI | CS | SS

Lining Options :
Rubber Lined | Glass Lined | Unlined

End Connections :
Screwed | Flanged End

Pressure Rating :
PN 10 | PN 16 | 150# Class

Size Range :
25mm to 400mm

AIR VALVES

MARCK-016 | IS 14845

ALSO AVAILABLE IN ISI MARK

Material of Construction :
CI | CS | GM

End Connections :
Screwed | Flanged End

Type :
Single Acting | Double Acting | Kinetic Type Isolating

Pressure Rating :
ASA 125# | 150# | 300# | PN 1.6

Size Range :
25mm to 600mm

SAFETY VALVE

API 526

Material of Construction :
CS | SS

End Connections :
Flanged End

Type :
Ordinary Lift Type | High Lift Type | Full Lift Type

Pressure Rating :
ASA 150# | 300# | PN 40

Size Range :
25mm to 200mm

MONEL FORGE & FITTINGS

Contact Person :

Mr. Shivraj Raika (CEO)

+91 8652412630

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MONEL FORGE & FITTINGS

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

MSME सूक्ष्म, लघु एवं मध्यम उद्यम MICRO, SMALL & MEDIUM ENTERPRISES

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER: UDYAM-MH-19-0111916

NAME OF ENTERPRISE: MONEL FORGE AND FITTINGS

TYPE OF ENTERPRISE *

SNo.	Classification Year	Enterprise Type	Classification Date
1	2024-25	Micro	27/04/2024
2	2023-24	Micro	09/05/2023
3	2022-23	Micro	26/06/2022
4	2021-22	Micro	23/01/2022

MAJOR ACTIVITY: MANUFACTURING

SOCIAL CATEGORY OF ENTREPRENEUR: OBC

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	MONEL FORGE AND FITTINGS

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	BASEME.25C,SONARIKA	Name of Premises/ Building	BUILDING,NANU
Village/Town	BHAI DESAI ROAD	Block	C P TENK,
Road/Street/Lane	GIRGAON	City	MUMBAI
State	MAHARASHTRA	District	MUMBAI , Pin 400004
Mobile	8652412630	Email:	sales@monelforge.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 01/07/2018

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 01/07/2018

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	24 - Manufacture of basic metals	2420 - Manufacture of basic precious and other non-ferrous metals	24209 - Manufacture of other non-ferrous metals n.e.c	Manufacturing
2	63 - Information service activities	6312 - Web portals	63122 - Operation of other websites that act as portals to the Internet, such as media sites providing	Services

MONEL FORGE & FITTINGS

An ISO 9001:2015 Certified Company

SHOP NO. 24, BASEMENT PLOT NO, 25 C SONARIKA BUILDING, N D DESAI ROAD,
C.P. TANK GIRGAON, MUMBAI 400004, MAHARASHTRA, INDIA.

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