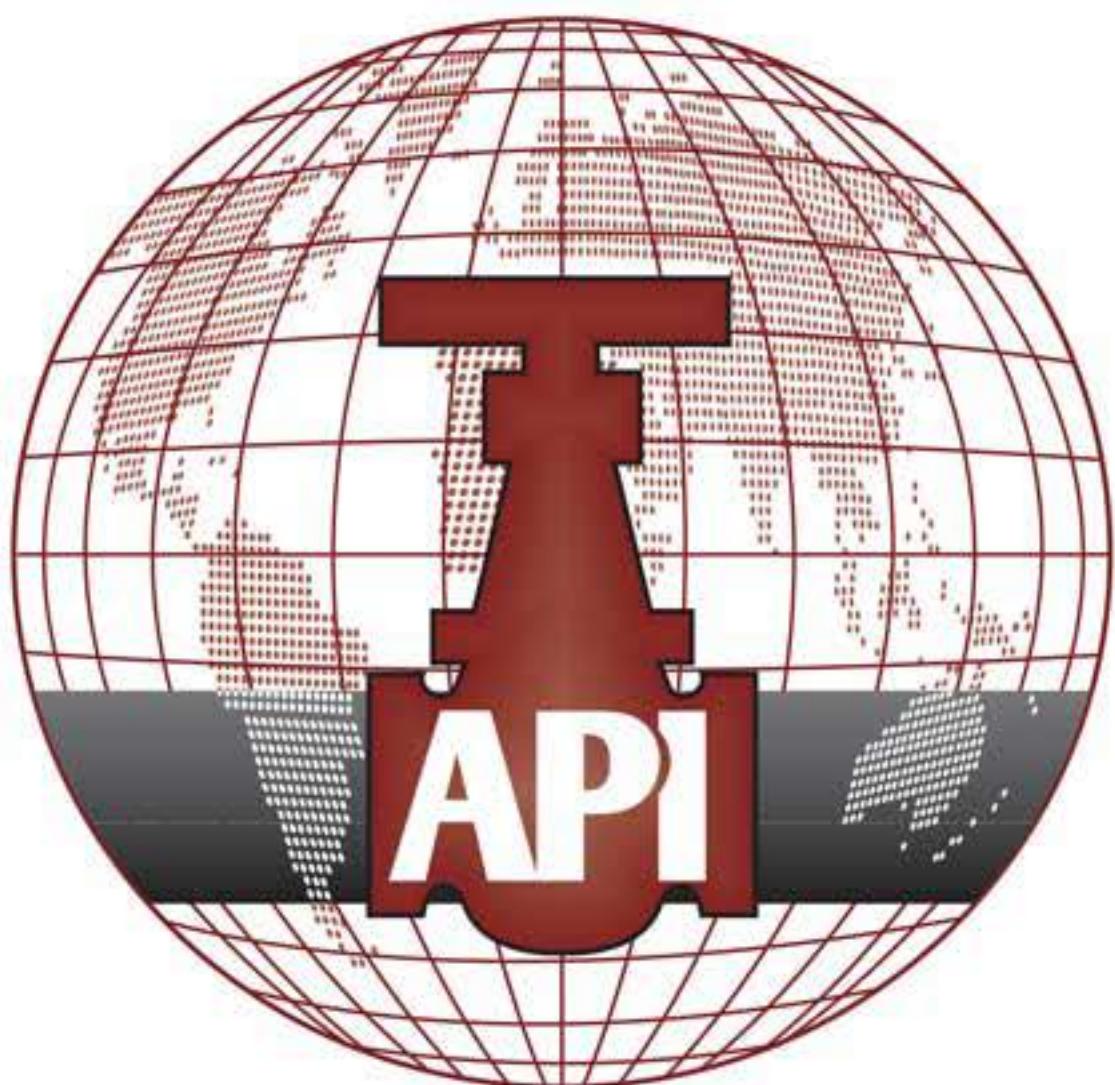


Corporate Profile



ALLIED PIPING INC.
Global Resources - Local Solutions



ALLIED PIPING INC.
GLOBAL RESOURCES - LOCAL SOLUTIONS

www.alliedpipinginc.com



CEO MESSAGE

Allied Piping Inc. is the strategic concept by bridging relationship between ourselves and customers with global resources-local solutions.

Company is fully diversified with all major international codes and standards which meant to provide solution to our corporate customers for meeting their complex technical specification materials demanded by today's industry and making sure that they are delivered in short span of time.

Our focus is to continuously working on the business innovation and technology development in the rapidly changing business environment. We have put our best effort in practicing the business philosophy, "conviction, loyalty and trust through best product and service", as a company which seeks change and advance in the era of global competition.

We have established a strategic planning horizon and our success story is carefully carved by endless hard working, dedication, performance and capability,

which makes our company a confident organization for customers from oil & gas, petrochemical, construction and process industry. Despite of having 15 years experience in the industry, we provide value-added services and flexibility of supply chain management to solve customer's problem with cost saving and pursue to become industry top class organization by building network way of business innovation.

We will keep moving forward to create better and brighter future based on the philosophy of customer satisfaction and our achievement always in line with your success to core business growth, technological innovation and cooperation.

We look forward to your continuous interest and support so that we continue to do our best in the enhancement of customer value and become a reliable business partner to you with best quality and perfect service.

Chief Executive Officer



VISION

Allied Piping Inc. will be the recognized industry leader by providing customer service, quality products, innovative technology and business ideas. Our success will be achieved through the efforts.

To realize this vision we will continually improve customer satisfaction by focusing on both product and service quality. Our overall objective is to become the preferred choice of customers.

MISSION STATEMENT

Our mission is to pursue efficient, consistent growth by providing quality products and value-added services to develop seamless market with our vendors and customers. Together with a focus on communications, quality and employee enablement, we will perform as a professional, ethical, full service organization, while maintaining the ideas of respect, reward and integrity.

Allied Piping Inc. dedicated to

- Satisfy customer expectations.
- Establishing professional relationships built on honesty and mutual respect by dedication ourselves to the benefit of those we serve.
- Generate financial return and growth.
- Provide quality services and products through quality producers.
- Continuously improve value and efficiency.
- Train, develop and challenge employees.
- Promote safe, respectful, ethical and environmentally responsible conduct.



QUALITY

QUALITY CONTROL

Allied Piping Inc. believes that continuous improvement is fundamental to its success and expansion. Each employee of API is responsible for ensuring that the customer's expectations are met by adhering to the processes and procedures detailed within the Quality Management System.

Quality means working with customers to offer an option which helps them define their real requirements for the material and then meeting these requirements reliably and economically.

It's more than just meeting the technical requirements of the material. Quality is a goal in personal relationships, accurate and efficient documentation, on-time performance and effective follow-up.

Allied Piping Inc. Quality Management System is of the highest priority for the company and has the overall basic objective of winning, maintaining and developing customer satisfaction.

To achieve this, the following principles are adhered to:

- Involvement of all company personnel in the Quality process and their empowerment to take action on Quality issues.
- Prevention of problems in the product or processes.
- Evaluation of the results as per the objectives.
- Corrective measures against any and all non-conformances.
- Continual and preventive actions for improvement to the Quality Management System.

Management Certifications



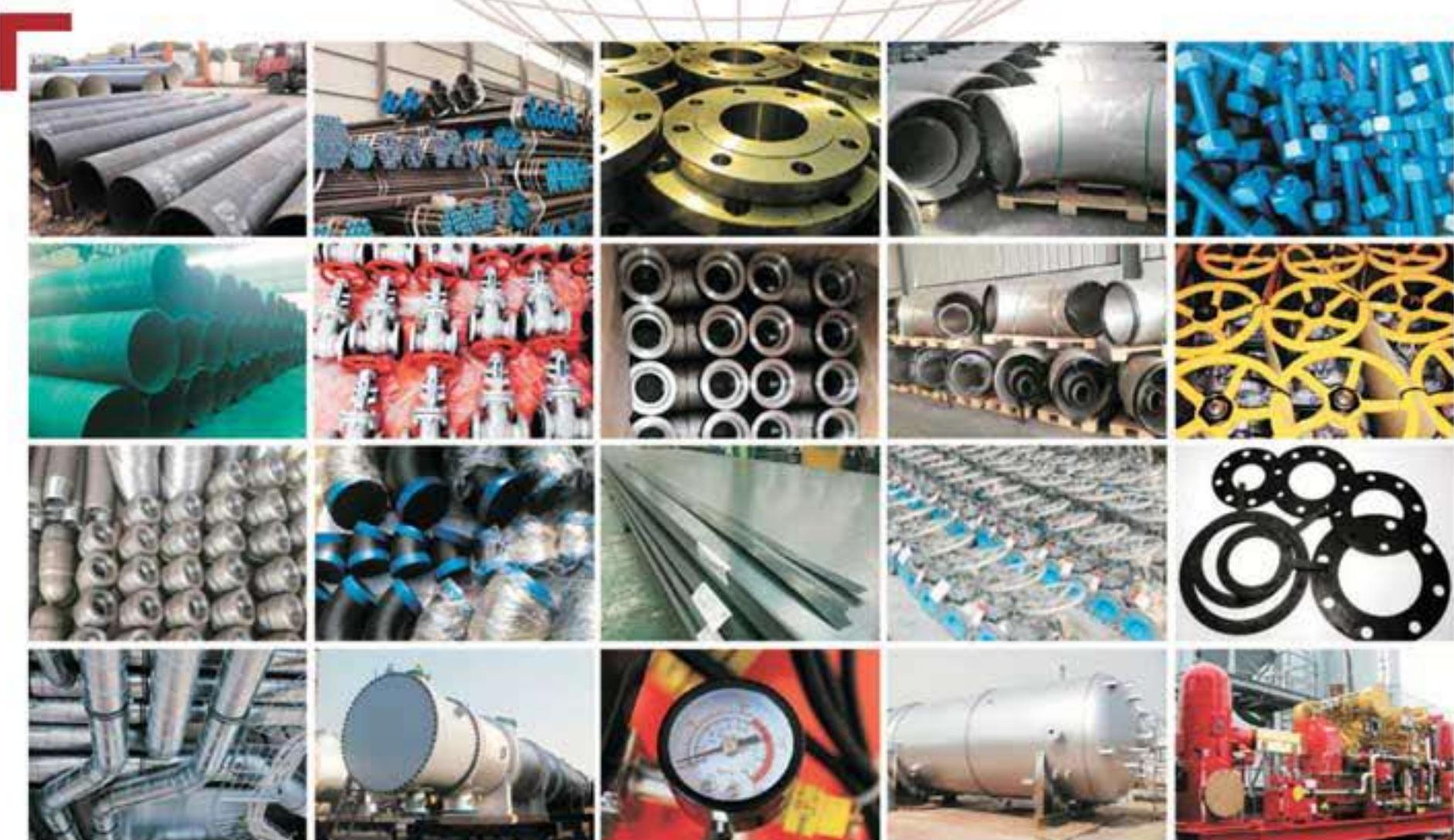
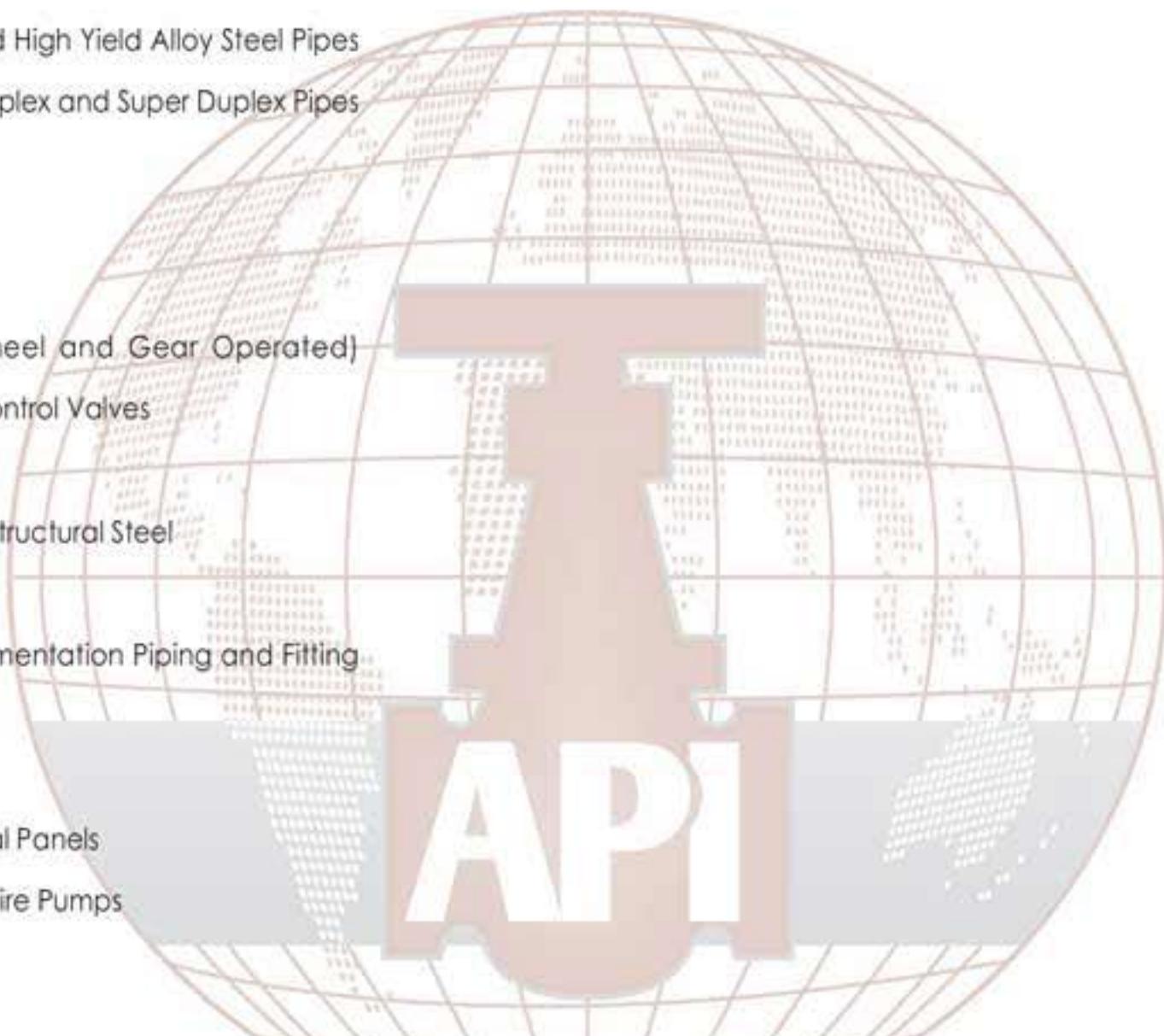
Our Principles Are Having Approvals



OUR PRIMARY AREAS OF EXPERTISE

Allied Piping Inc. having global network of supplier & Trading Companies with extensive solution to meet. These contacts combined with our expertise have enabled us to successfully deliver bespoke packages, meeting our client's demanding delivery schedules, throughout the world.

- Carbon Steel and High Yield Alloy Steel Pipes
- Stainless Steel, Duplex and Super Duplex Pipes
- Flanges
- Forged Fittings
- Butt Weld Fittings
- Valves (Handwheel and Gear Operated)
- Actuators and Control Valves
- Fasteners
- Steel Plates and Structural Steel
- Gaskets
- HVAC and Instrumentation Piping and Fitting
- Heat Exchangers
- Pressure Guages
- Industrial Electrical Panels
- Pressure Vessels, Fire Pumps



OUR INDUSTRIES

Allied Piping Inc. is a leading player in many different markets. Our cutting-edge technology and years of experience have led us into the following industries.

- Oil & Gas
- Petrochemical and Chemical
- Power Generation - Wind Power
- Mining
- Shipbuilding
- Railroads
- Defence
- Aerospace

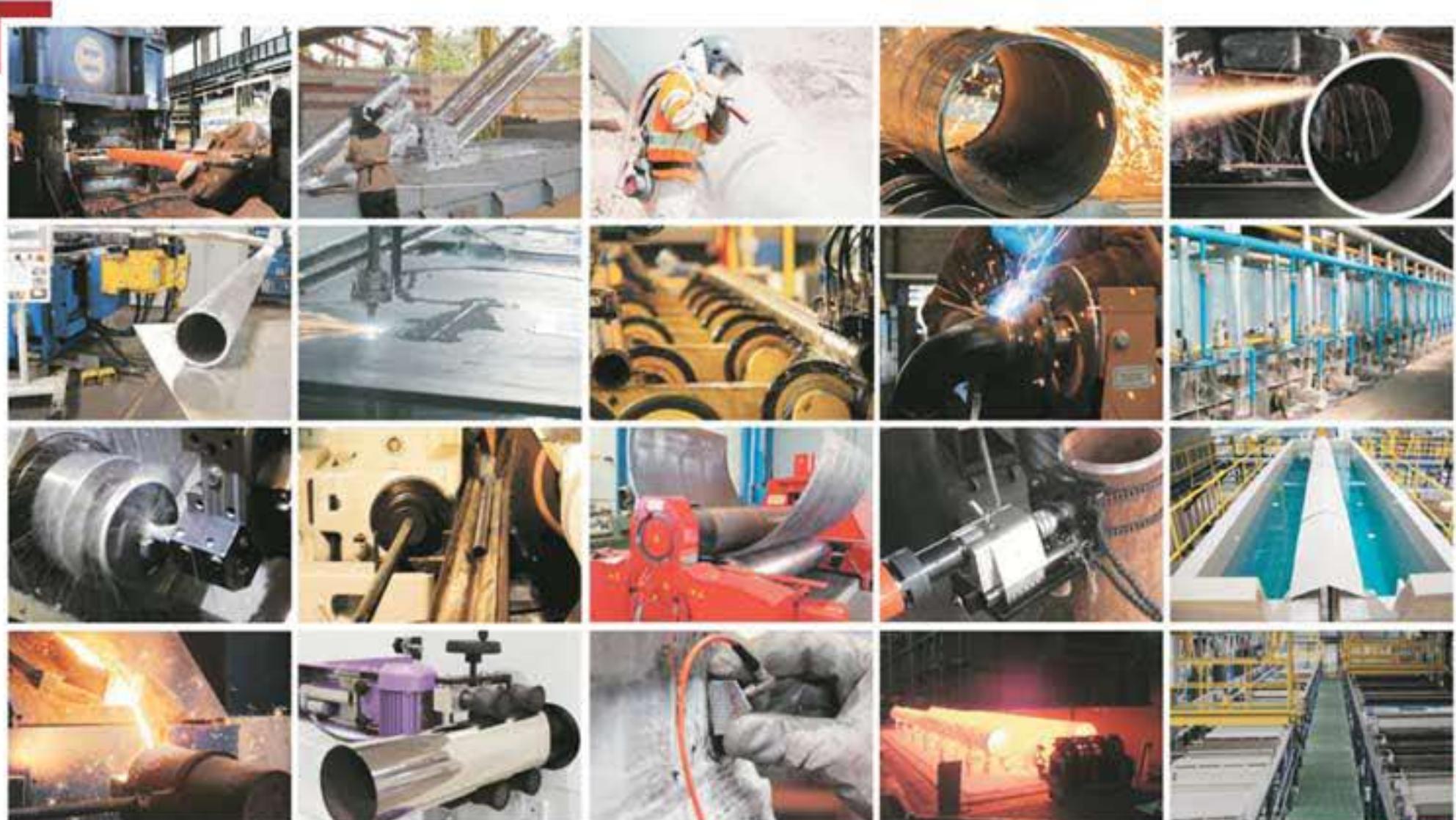


OUR SERVICES

- Forging
- Destructive Testing
- Non Destructive Testing
- Heat Treating
- Extruded
- Sand Blasting

- Annealed
- Bending
- Cutting
- Galvanizing (Hot Dip)
- Heat Treatment
- Threading

- Coating (Zinc, Phosphorus)
- Electroplating
- Machining (CNC)
- Pickled
- Welding
- Coating finishes





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL PIPES



CARBON STEEL:

ASTM A106 GRB/ ASTM A53 GRB,
API 56 GRB, API 5L X42, X46, X56,
X60 X65, X70/PSL1/PSL2,
ASTM A333 GRC



ALLOY STEEL:

ASTM-A335 P1, P2, P5, P9, P11, P12,
P23, P91, P92
ASTM 213/ T2, T5, T9, T12, T22, T23,
T91, T92



STAINLESS STEEL:

ASTM A312 304/304L/304H, TP316/
TP316L/TP316I, TP321 TP317L,
TP347H, TP310/TP310S,
UNS 32305/2205/2507,
ASTM A358/A778/A249/A269/A270



NICKEL ALLOY:

ALLOY 20, B464, B729, B474, B161,
B165, B167 B407, B619, B622, ALLOY
200, 201, 400, 601, 625, 800, 800H,
800HT, 825, C276, C22, B2, 254SMO

TYPES

- Seamless Pipe
- Longitudinal Submerged Arc Welded Pipe
- Submerged Arc Welded Pipe
- Helical Submerged Arc Welded Pipe
- Electric Resistance Welded Pipes
- High Frequency Welded Pipe
- Double Submerged Arc Welded
- Cold Formed Welded Pipe
- Casing Piping
- Tubing Piping
- 3LP Piping

SCHEDULE

10, 20, 30, STD, 60, XS, 80, 100, 120, 140
XXS, 160

SIZES

1/2 inch upto 60 inch

The above sizes range & schedules are indicative to be considered as per manufacturing standard



CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL BUTT WELD FITTINGS



CARBON STEEL:

ASTM A234 WPB, A420 WPL6
ASTM A234 WP1



ALLOY STEEL:

ASTM A234 WP9, WP11, WP22 CL3
WP5, WP9, WPL3 CL2, WP12 CL2



STAINLESS STEEL:

ASTM A403, WP304/WP304L,
WP304H, WP310, WP316, P316L,
W316H, WP317, WP321, WP321H,
WP347, WP347H, WP348, P348H



NICKEL ALLOY:

ALLOY 20 B361, B366, B366 WPN,
B366 WPNLB366, WANI, B366
WPHC276, WPL, S31254, S31803,
S32205, S2507

TYPES

- ✓ 90deg Long/Short Radius Elbow
- ✓ 45deg Long/Short Radius Elbow
- ✓ 180deg Long/Short Radius Elbow
- ✓ 1D, 1.5D, 5D Elbow
- ✓ Seamless Butt welding 45/90deg
- ✓ Welded Elbows
- ✓ Straight Tees & Crosses
- ✓ Equal/Reducing Tee
- ✓ Equal/Reducing Cross
- ✓ Reducers
- ✓ Pipe Cap
- ✓ Pipe Nipples

SCHEDULE

10, 20, 30, STD, 60, XS, 80, 100, 120, 140
XXS, 160

SIZES

1/2 inch upto 60 inch

The above sizes range & schedules are indicative to be considered as per manufacturing standard and requirement





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL FORGED FITTINGS



CARBON STEEL:

ASTM A105, C22.8/
ASTM A350 LF2, LF3, LF6



ALLOY STEEL:

ASTM A182 F1, F5, F9, F11, F12, F22,
F91
ASTM A694 F42, F52, F60, F65, F70
ASTM A182 F44, F51, F53, F55



STAINLESS STEEL:

ASTM A182 F304/F304L, F316/F316L,
F321/F321H, F347/F347H, F410,
F440, F904L, T304, T316, T347, B247



NICKEL ALLOY:

ALLOY 20 B462, B160, B164 B166,
B408, F574
ALLOY C276, B2, A200, A400,
AK500, A600, A625, A800, A825

TYPES

- 90deg Elbow
- 45deg Elbow
- Tee
- Cross
- Full Coupling
- Half Coupling
- Reducing Coupling
- Pipe Cap
- Hex Head Bushing
- Hed Head Plug
- Square Head Plug
- Round Head Plug

SIZES

1/2 inch upto 60 inch

RATING

3000 LBS, 6000 LBS

The above sizes range & schedules are indicative to be considered as per manufacturing standard and requirement



CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL FLANGES



CARBON STEEL:

ASTM A105, C22.8/
ASTM A350 LF2, LF3, LF6



ALLOY STEEL:

ASTM A182 F1, F5, F9, F11, F12, F22,
F91
ASTM A694 F42, F52, F60, F65, F70
ASTM A182 F44, F51, F53, F55



STAINLESS STEEL:

ASTM A182 F304/F304L, F316/F316L,
F321/F321H, F347/F347H, F410,
F440, F904L, T304, T316, T347, B247



NICKEL ALLOY:

ALLOY 20 B462, B160, B164 B166,
B408, B574
ALLOY C276, B2, A200, A400,
AK500, A600, A625, A800, A825

TYPES

- ✓ Forged Flanges
- ✓ Blind Flanges
- ✓ Spectacle Blinds
- ✓ High Hub Blinds
- ✓ Orifice Flanges
- ✓ Slip-on-Flanges
- ✓ Socket Weld Flanges
- ✓ Weld Neck Flanges
- ✓ Flat Flanges
- ✓ Threaded Flanges
- ✓ Lapped Joint Flanges
- ✓ Reducing Flanges

SCHEDULE

10, 20, 30, STD, 60, XS, 80, 100, 120, 140
XXS, 160

SIZES

1/2 inch upto 60 inch

RATING

150 LBS, 300 LBS, 600 LBS, 800 LBS, 900 LBS,
1500 LBS, 2500 LBS

The above sizes range & schedules are indicative
to be considered as per manufacturing standard
and requirement





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL VALVES



CARBON STEEL:

ASTM A216 WCB, WCC, ASTM A352 LCB/LCC ASTM A105/A105N, A350 LF2



ALLOY STEEL:

ASTM A350 LF3, A182 F54/F5, A189 F9, F22, F91, A352 LF3, A217 C5, C12, WC6, WC9, C12A



STAINLESS STEEL:

ASTM A182 F304/F304L, A182 F316/F316L, A182 F321, F247, F44(6MO) A351, CF8/CF3, A351 CF8M/CF3M, F351 3F8X, CR3MCuN CN7M



NICKEL ALLOY:

ASTM B564 NO8825, NO6625, NO4400 A484 Cu5MCuC, A994 CY40, A494 CW6MC A494 M35-1

TYPES

- ✓ Gate Valve
- ✓ Globe Valve
- ✓ Ball Valve
- ✓ Butterfly Valves
- ✓ Plug Valves
- ✓ Stainers Valve
- ✓ Control Valves
- ✓ Pressure Relief Valve
- ✓ Pressure Safety Valve
- ✓ Bellows Seal Valve
- ✓ Actuators Valve
- ✓ Diaphragm Valve

SIZES

1/2 inch upto 60 inch

RATING

150 LBS, 300 LBS, 600 LBS, 800 LBS, 900 LBS,
1500 LBS, 2500 LBS

The above sizes range & schedules are indicative to be considered as per manufacturing standard and requirement

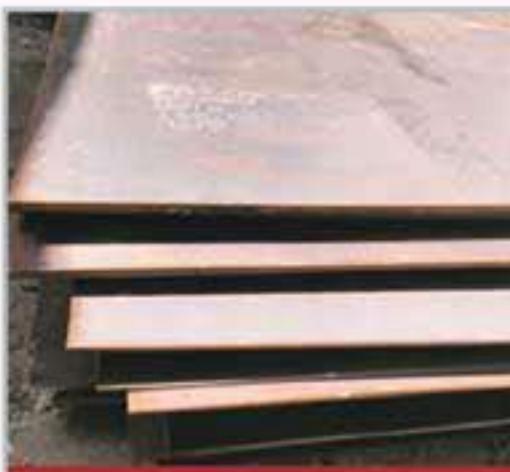


CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL PLATES & STRUCTURES



CARBON STEEL:

ASTM A36, A203, GRA, GRB, GRD, GRE, A283, A516, GR60, GR65, GR70, A517 GRB, GRE, A573 GR 65, GR70



ALLOY STEEL:

ASTM A204, GRB A387, GR11, GR22, GR5, GR9, A203 GRD



STAINLESS STEEL:

ASTM A240 T304, T316, T321, T347 B221



NICKEL ALLOY:

ALLOY 20 B463, B162, B127, B4C9, B575

TYPES

- GP Plate & Sheet
- Chequered Plates
- CRC Sheets & Coils
- HRC Plates /Sheet /Coils
- C-Channel
- T-Angle
- I-Beam
- U-Angle
- Round Bars
- Square Bars
- Flat Bars

THICKNESS

1.5mm upto 75mm

LENGTH & WIDTH

6000 x 1500, 6000 x 2000
12000 x 1500, 12000 x 2000

The above sizes range & schedules are indicative to be considered as per manufacturing standard and requirement



CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL FASTENERS



CARBON STEEL:

ASTM A193, A194 & ANSI B18.22.1 B 8
(SS 304), B 8M (SS316), B 8C (33 347),
B 8T (SS321), A2, A4, B 6, B 7, B 7M, B
16, 2, 2HM, 2H.



ALLOY STEEL:

ASTM A350 LF3, A182 F54/F5, A189
F9,F22,F91, A352 LF3, A217 C5,
C12, WC6, WC9, C12A



STAINLESS STEEL:

ASTM / ASME A193 B8(304)
B8C(SS 347), B8M(SS316) 8T(SS321),
A2, A4 / ASTM / ASME A 194
B8(304), B8C(SS 347), B8M(SS 316),
B8T(SS 321)



NICKEL ALLOY:

ASTM / ASME SB160, SB164, SB 425,
SB166, SB446, SB574, SB472

TYPES

- Finished Hex Nut
- Forged Nuts
- Heavy Nuts
- Hex Bolts
- Stainless Steel Bolt
- Stainless Steel Nuts
- Hexagonal Bolts
- Hexagonal Nut
- Stud Nuts
- Gasket Nuts
- Stud Bolts
- Cap Nuts

SIZES

1/4 inch upto 2.5 inch

LENGTH

2 inch upto 20 inch

The above sizes range & schedules are indicative
to be considered as per manufacturing standard
and requirement



CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL GASKETS



CARBON STEEL:

SOFT IRON-D, CRS



ALLOY STEEL:

N7M (HASTELLOY B),
HASTELLOY B2, C276
ASTM A182 UNS S31803



STAINLESS STEEL:

ASTM A182 F304,
F304L/ F304H, F316L/ F316H,
F321, F347, F410 Gr. F5, Gr. F51



NICKEL ALLOY:

ASTM B564 UNS N06625
(INCONOL 625, 600, 825, 800, X750)
ASTM B564 UNS N08825
(INCOLOY 825)

TYPES

- Spiral Wound Gasket
- Reinforced Graphite Gasket
- PTFE Gasket
- Asbestos Gasket
- Graphite Ring
- Packing Ring
- Corrugated Metal Gasket
- Rubber Gasket
- Fiberglass Gasket
- Metal Jacketed Gasket
- Ring Joint Gasket
- Non-Asbestos Gasket
- PTFE With Rubber Gasket

THICKNESS

1/2 inch upto 60 inch

RATING

150 LBS, 300 LBS, 600 LBS, 800 LBS, 900 LBS,
1500 LBS, 2500 LBS

The above sizes range & schedules are indicative to be considered as per manufacturing standard and requirement



OUR CORPORATE CUSTOMERS & PROJECTS

	<p>PAKISTAN PETROLEUM LIMITED</p> <p>PROJECT: ANNUAL CONTRACT FOR LINE PIPES / FITTINGS</p> <p>PRODUCT DETAILS: MOTOR OPERATED VALVE</p>		<p>PAKISTAN STATE OIL CO. LTD.</p> <p>PROJECT: BALL VALVES AT ZOT & KTB</p> <p>PRODUCT DETAILS: BALL VALVE</p>
	<p>PAK ARAB REFINERY LIMITED</p> <p>PROJECT: MEHMOOD KOT VACUUM HEATER PROJECT</p> <p>PRODUCT DETAILS: RADIANT TUBES FOR VACUUM HEATER</p>		<p>SUI SOUTHERN GAS PIPELINE LTD</p> <p>PROJECT: JHAL MAGSI GAS FIELD PIPELINE PROJECT</p> <p>PRODUCT DETAILS: SEAMLESS CARBON STEEL PIPES</p>
	<p>ENGRO CORPORATION</p> <p>PROJECT: DHARKI PLANT</p> <p>PRODUCT DETAILS: VALVES (NEEDLE), VALVES (GATE)</p>		<p>BAKRI PAKISTAN</p> <p>PROJECT: BULK OIL TERMINAL PROJECT SHIKARPUR</p> <p>PRODUCT DETAILS: CS PIPE FITTINGS, FLANGES, VALVES, GASKETS & STUD BOLTS ETC...</p>
	<p>NATIONAL REFINERY LIMITED</p> <p>PROJECT: ANNUAL SHUT DOWN</p> <p>PRODUCT DETAILS: PIPE SEAMLESS</p>		<p>OIL & GAS DEVELOPMENT COMPANY LIMITED</p> <p>PROJECT: SINJHORO GAS FIELD</p> <p>PRODUCT DETAILS: GASKETS</p>
	<p>PAKISTAN REFINERY LIMITED</p> <p>PROJECT: TA - SHUT DOWN</p> <p>PRODUCT DETAILS: GATE VALVE FLANGED, CHECK VALUE FLANGED, PLUG LUB VALVE</p>		<p>BYCO PETROLEUM PAKISTAN LTD</p> <p>PROJECT: ANNUAL SHUT DOWN</p> <p>PRODUCT DETAILS: GATE VALVE, TEE, PIPE, EQUAL, FNPT, ELBOW</p>
	<p>PAEC CHASMA MIANWALI</p> <p>PROJECT: CHASNUPP PROJECT KUNDIAN</p> <p>PRODUCT DETAILS: CS SEAMLESS PIPE</p>		<p>JDW GROUP</p> <p>PROJECT: UNITED SUGAR MILLS GHOTKI SUGAR MILLS</p> <p>PRODUCT DETAILS: CS, SS ALLOY STEEL PIPES, PLATE FROM PIPE, FITTINGS, FLANGES, GASKETS & STUD BOLTS ETC...</p>
	<p>HEAVY MECHANICAL COMPLEX</p> <p>PROJECT: PIPE STRUCTURE (ETEHAD & GULF)</p> <p>PRODUCT DETAILS: S/LPIPE</p>		<p>FIRETECH ENTERPRISES LTD</p> <p>PROJECT: PAKISTAN TOBACCO COMPANY</p> <p>PRODUCT DETAILS: M.S PIPES</p>

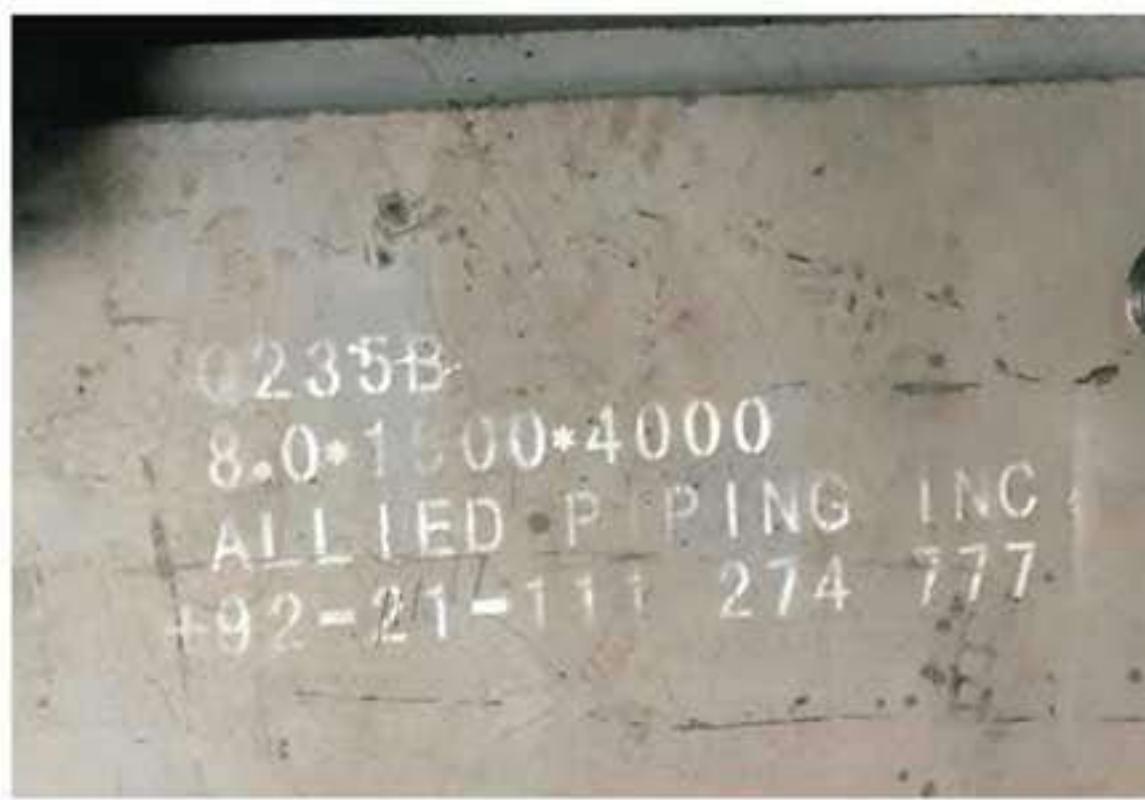
OUR CORPORATE CUSTOMERS & PROJECTS

 <p>KMLG Kohinoor Maple Leaf Group</p>	<p>KOHINOOR MAPLE LEAF POWER LTD</p> <p>PROJECT: MAPLE LEAF POWER PROJECT</p> <p>PRODUCT DETAILS: PIPE</p>	 <p>ARL</p>	<p>ATTOCK REFINERY LTD</p> <p>PROJECT: ANNUAL MAINTENANCE JOB</p> <p>PRODUCT DETAILS: T-TYPE STRAINER, FORGED STEEL, VALVE GLOBE, ELBOW</p>
 <p>DESCON</p>	<p>PROJECT: CIVIL & MECHANICAL CONSTRUCTION OF REVERSE OSMOSIS PROJECT</p> <p>PRODUCT DETAILS: FLANGE CS, PIPE CS</p>	 <p>LOTTE CHEMICAL PAKISTAN</p>	<p>LOTTE CHEMICAL PAKISTAN LTD</p> <p>PROJECT: PLANT MODIFICATION PROJECT</p> <p>PRODUCT DETAILS: DUPLEX SS, DUPLEX SS EQUAL TEE, BUTT WELD, PIPE, STAINLESS STEEL EFW</p>
 <p>KARACHI SHIPYARD & ENGINEERING WORKS (KSEW)</p>	<p>PROJECT: PIPE PROJECT</p> <p>PRODUCT DETAILS: M.S PIPES</p>	 <p>PDL</p>	<p>PAKISTAN OILFIELDS LTD</p> <p>PROJECT: ANNUAL MAINTENANCE PROJECT</p> <p>PRODUCT DETAILS: CARBON STEEL, SEAMLESS PIPE</p>
 <p>UNDERGROUND COAL GASIFICATION PROJECT</p>	<p>PROJECT: COAL PROJECT THAR</p> <p>PRODUCT DETAILS: VALVES, FITTINGS, C.S PIPES & VALVES</p>	 <p>ATL CONTRACTORS - ENGINEERS</p>	<p>AL TARIQ CONSTRUCTORS (PVT) LTD</p> <p>PROJECT: TANK FOAM PIPING</p> <p>PRODUCT DETAILS: PIPES</p>
 <p>SUI NORTHERN GAS PIPELINES LTD</p>	<p>PROJECT: MULTAN CAMP STORE</p> <p>PRODUCT DETAILS: LINE PIPE SEAMLESS</p>	 <p>CNCEC</p>	<p>CHINA NATIONAL CHEMICAL ENGINEERING</p> <p>PROJECT: NRL ISBL UPGRADATION PROJECT</p> <p>PRODUCT DETAILS: CARBON STEEL PIPES FITTINGS, FLANGES, GASKET NUTS & BOLTS</p>
 <p>RANIPUR SUGAR MILLS (PVT) LTD</p>	<p>PROJECT: RSM BOILER HEADER PROJECT</p> <p>PRODUCT DETAILS: M.S PIPE</p>	 <p>e2e Business Enterprise</p>	<p>E2E BUSINESS ENTERPRISES</p> <p>PROJECT: BASANTI</p> <p>PRODUCT DETAILS: PIPE, FITTINGS, FLANGES, VALVES, GASKETS, STUD, NUTS</p>
 <p>HMC</p>	<p>HEAVY MECHANICAL COMPLEX 3</p> <p>PROJECT: FFW (TANDLIANWALA) S.M FFW (SHEIKHOO) S.M</p> <p>PRODUCT DETAILS: S/L PIPE</p>	 <p>KANUPP KARACHI NUCLEAR POWER PLANT</p>	<p>KARACHI NUCLEAR POWER PLANT</p> <p>PROJECT: KANUPP PLANT MAINTENANCE PROJECT</p> <p>PRODUCT DETAILS: FITTINGS,</p>

SOME OF MAJOR PROJECT SUPPLIES



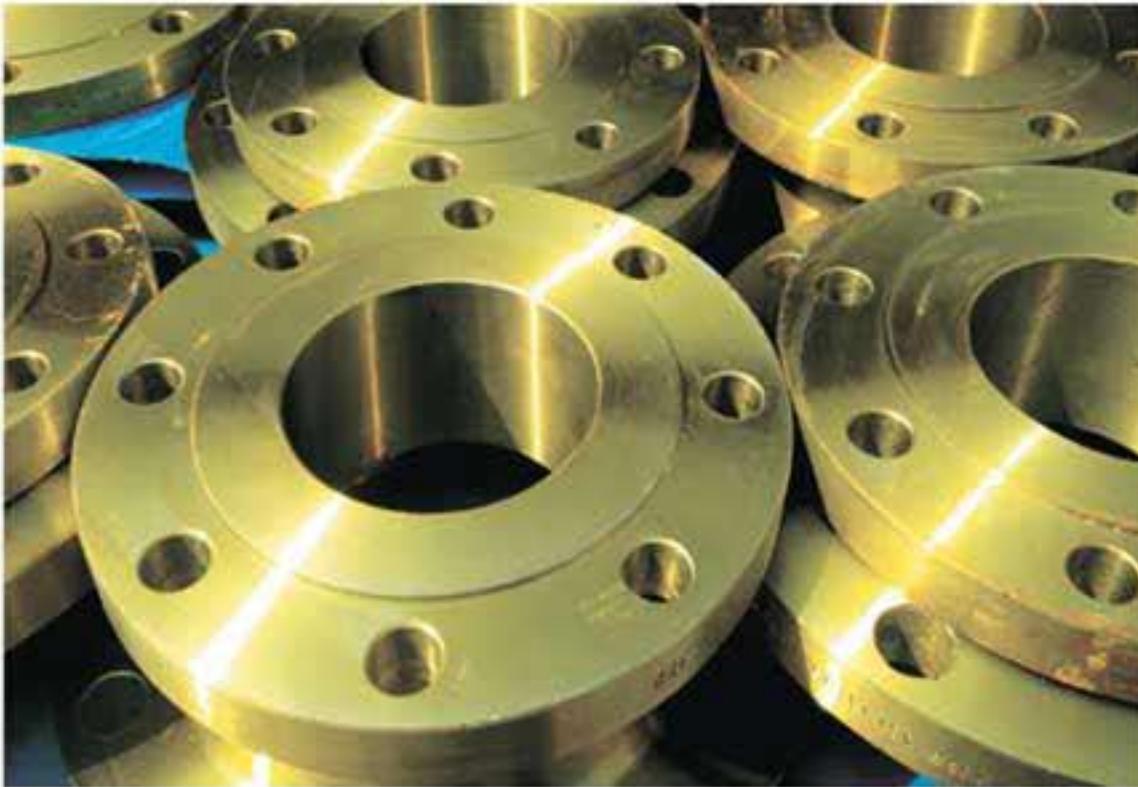
SOME OF MAJOR PROJECT SUPPLIES



SOME OF MAJOR PROJECT SUPPLIES



SOME OF MAJOR PROJECT SUPPLIES



SOME OF MAJOR PROJECT SUPPLIES



SOME OF MAJOR PROJECT SUPPLIES





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL HVAC & INSTRUMENTATION PIPINGS & FITTINGS





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL ACTUATORS & CONTROL VALVES



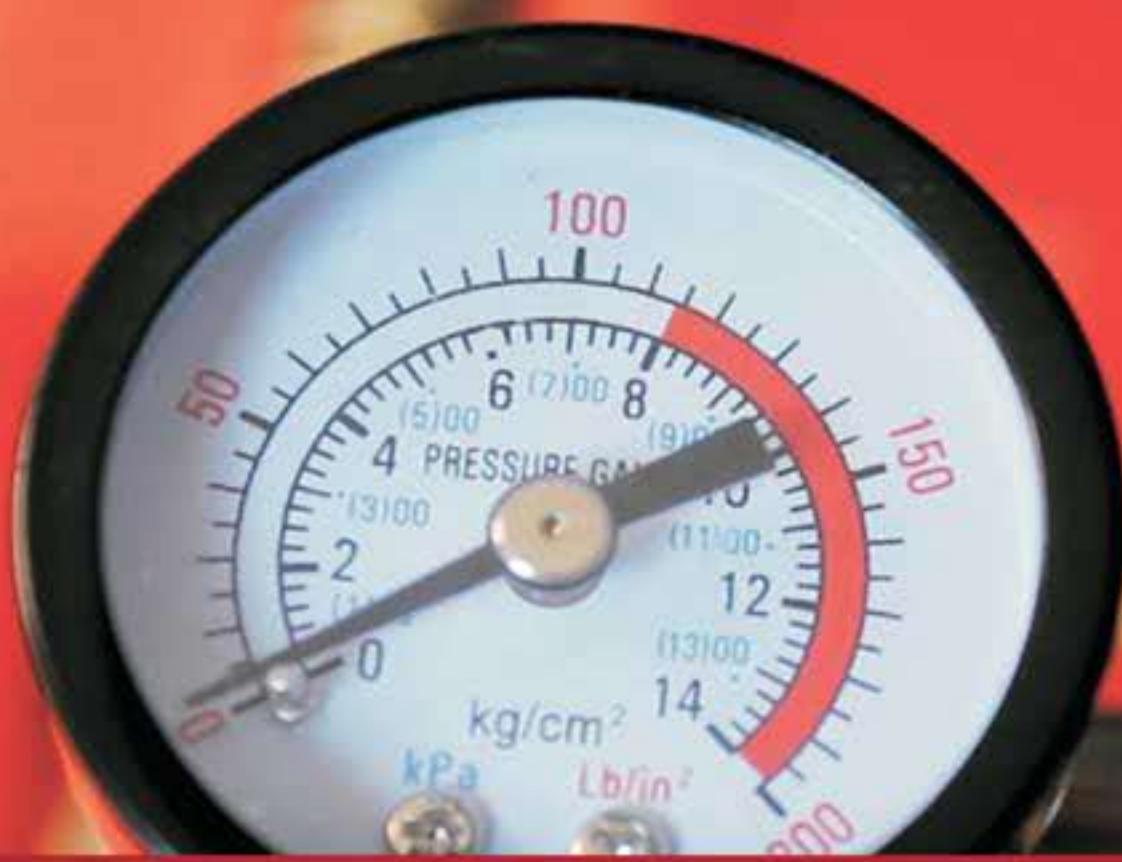


CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX HEAT EXCHANGER

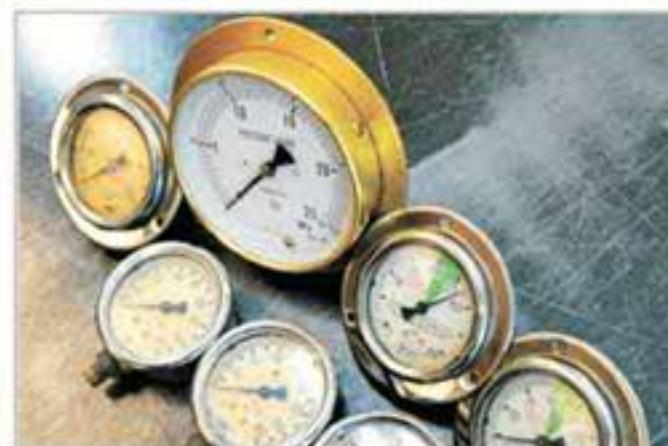


CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX FIRE PUMPS





CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX STEEL HVAC & STEEL PRESSURE GAUGES



CARBON STEEL, HIGH YEILD ALLOY, STAINLESS STEEL, DUPLEX AND SUPER DUPLEX PRESSURE VESSELS



LIST OF MAJOR CODES IN PROCESS INDUSTRY

Standard	Description
ASME A1	Liquefied Petroleum Gas System
ASME A13.1	Scheme for Identification of Piping Systems
ASME B.16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
ASME B. 16.5	Pipe Flanges and Fittings
ASME B 16.9	Steel Butt welding Fittings
ASME B31	Corrosion Control for B31.1
ASME B31.1	Power Piping
ASME B31.2	Fuel Gas Piping
ASME B31.3	Chemical Plant and Petroleum Refinery Piping
ASME B31.4	Liquid Petroleum Transportation Piping Systems
ASME B31.5	Refrigeration Piping
ASME B31.8	Gas Transmission and Distribution Systems (1982)
ASME B31.11	Slurry Transportation Piping Systems
ASME B36.10	Welded and Seamless Wrought Pipe
ASME B36.19	Stainless Steel Pipe
ASME B73.1M	Horizontal, End Suction Centrifugal Pumps
ASME B73.2M	Vertical In-line Centrifugal Pumps
ASME B133.2	Basic Gas Turbine
ASME B133.4	Gas Turbine Control and Protection Systems
LOS4C 1	Flushing and Cleaning Gas Turbine Gen. Lube Systems
58	Standard for the Storage and Hauling of Liquefied Petroleum Gas
MC96.1	Temperature Measurement Thermocouples
API RP 1110	Pressure Testing of Liquid Petroleum Pipelines
API RP 2001	Fire Protection in Refineries
API RP 2003	Protection Against Ignitions Arising out of Static, Lighting and Stray Currents
API Publ. 2009	Safe Welding and Cutting Practices in Refineries
API Publ. 941	Steel for Hydrogen Service at Elevated Temperature and Pressures in Petroleum Refineries and Petrochemical Plants

LIST OF MAJOR CODES IN PROCESS INDUSTRY

Standard	Description
API Publ. 2009	safe Welding and Cutting Practices in Refineries
API Publ. 2015	Safe Entry and Cleaning of Petroleum Storage Tanks
API Publ. 2021	Fighting Fires In and Around Flammable and Combustible Liquid Atmosphere
API RP 14C	Analysis, Design, Installation and Testing of Basic Surface Safety Systems on Offshore Platforms
API RP 14F	Design and Installation of Offshore Platforms
API RP 14G	Fire Prevention and Control on Open Type Offshore Production Platforms
ANSI B16.9	API RP 30
API RP 500	Recommended Practice for Classification of Locations for Electrical Installations of Petroleum Facilities
API RP 520	Sizing, Selection, and Installation of Pressure Delivery Devices in Refineries. Parts 1 and 2
API RP 521	Guide for Pressure Delivery and Depressuring Systems
API RP 526	Flanged Steel Safety Relief Valves
API RP 551	Process Measurement Instrumentation
API RP 560	Fired Heater for General Refinery Services
API RP 651	Cathodic Protection of Aboveground Petroleum Storage Tanks
API RP 652	Lining of Aboveground Storage Tank Bottoms
API RP 682	Shaft Sealing System for Centrifugal and Rotary Pumps
API 5L	Line Pipe
API 6D	Pipeline Valves
API 6FA	Fire Test for Valves
API 12D	Field Welded Tanks for Storage of Production Liquids
API 12F	Shop Welded Tanks for Storage of Production Liquids
API 12J	Oil and Gas Separators
API 12K	Indirect Type Oil Field Heaters
API 12L	Specification for Vertical and Horizontal Emulsion Treaters
API 12P	Specification for Fiberglass Reinforced Plastic Tanks
API 510	Pressure Vessel Inspection Code
API 526	Flanged Steel Safety - Relief Valves



LIST OF MAJOR CODES IN PROCESS INDUSTRY

Standard	Description
API 527	Seat lightness of Pressure Relief Valves
API 594	Wafer and Wafer-Lug Check Valves
API 598	Valve Inspection and Testing
API 599	Metal Plug Valves - Flanged and Butt-Welding Ends
API 600	Steel Gate Valves - Flanged and Butt-Welding Ends
API 602	Compact Steel Gate Valves - Flanged Threaded, Welding, and Extended-Body Ends
API 603	Class 150, Cast, Corrosion-Resistant, Flanged-End Gate Valves
API 607	Fire Test for Soft-Seated Quarter-Turn Valves
API 608	Metal Ball Valves - Flanged and Butt-Welding Ends
API 609	Lug - and Wafer - Type Butterfly Valves
API 610	Centrifugal Pumps For Petroleum, Heavy Duty Chemical and Gas Industry Services
API 611	General Purpose Steam Turbines for Refinery Services
API 612	Special Purpose Steam Turbines for Refinery Services
API 613	Special Purpose Gear Units for Refinery Services
API 614	Lubrication, Shaft-Sealing and Control Oil Systems for Special Purpose Application
API 615	Sound Control of Mechanical Equipment for Refinery Services
API 616	Gas Turbines for Refinery Services
API 617	Centrifugal Compressors for General Refinery Services
API 618	Reciprocating Compressors for General Refinery Services
API 619	Rotary-Type Positive Displacement Compressors for General Refinery Services
API 620	Design and Construction of Large, Welded, Low Pressure Storage Tanks
API 630	Tube and Header Dimensions for Fired Heaters for Refinery Service
API 650	Welded Steel Tanks for Oil Storage
API 660	Heat Exchangers for General Refinery Service
API 661	Air-Cooled Heat Exchangers for General Refinery Service
API 670	Vibrations, Axial Position, and Bearing-Temperature Monitoring System
API 671	Special Purpose Coupling for Refinery Service
API 674	Positive Displacement Pumps - Reciprocating

LIST OF MAJOR CODES IN PROCESS INDUSTRY

Standard	Description
API 675	Positive Displacement Pumps - Controlled Volume
API 676	Positive Displacement Pumps - Rotary
API 677	General Purpose Gear Units for Refineries Services
ASTM A179/A179M	Seamless cold drawn low alloy steel heat exchanger and condenser tubes.
API 5L	Line pipe.
ASTM A53M	Black and zinc coated welded and seamless steel pipe.
ASTM A106M	Seamless carbon steel pipe for high temperature service.
ASTM A105M	Carbon steel forgings for piping applications
ASTM A234M	Piping fittings of wrought carbon steel and alloy steel for moderate and high temperature service
BS 3799	Steel pipe fittings, screwed and socket welding for the petroleum industry.
AS 1163	Structural steel hollow sections
AS 1074	Steel tubes and tubular for ordinary service
BS 13872	Screwed and socketed steel tube and tubulars.
EN 10241	Steel threaded pipe fittings.
AS 1442	Carbon steels and carbon manganese steels - hot rolled bars and semi-finished product
AS 1443	Carbon steels and carbon manganese steels - cold finished bars.
ASTM A576	Steel bars, carbon, hot wrought, special quality.
JIS G4051	Carbon steels for machine structural use.
ASTM A519	Seamless carbon and alloy steel mechanical tubing.
ISO 2938	Hollow bars for machining
DIN 1629	Seamless circular unalloyed steel tubes - special purpose.
AS 1444	Wrought alloy steels - standard and hardenability (H) series and hardened and tempered to designated mechanical strengths.
ASTM A331	Steel bars, alloy, cold finished
ASTM A434	Steel bars, alloy, hot wrought or cold finished, quenched and tempered
ASTM A29/A29M	Steel bars, carbon and alloy, hot wrought and cold finished; general requirements.
ASTM A304	Steel bars, alloy, subject to end quench hardenability requirements.

PRODUCT SPECIFICATION

Standard	Description
ASTM A312/A312M	Seamless and welded austenitic stainless steel pipe.
ASTM A358/A358M	Electric-Fusion-Welded (EFW) austenitic chromium-nickel alloy steel pipe for high temperature service.
ASTM A409/A409M	Welded large diameter austenitic steel pipe for corrosive or high temperature service.
ASTM A731/A731M	Seamless and welded ferritic and martensitic stainless steel pipe.
ASTM A790/A790M	Seamless and welded ferritic/austenitic stainless steel pipe.
ASTM A450/A450M	General requirements for carbon, ferritic alloy and austenitic alloy steel tubes
ASTM A530/A530M	General requirements for specialised carbon and alloy steel pipe
ASTM A999/A999M	General requirements for alloy and stainless steel pipe.
JIS G3459	Stainless steel pipes.
ANSI/ASME B36.19M	Stainless steel pipe
ASTM B673	UNS N08904 welded pipe.
ASTM B677	UNS N08904 seamless pipe and tube
ASTM A167	Stainless and heat resisting chromium-nickel steel plate, sheet and strip.
ASTM A 176	Stainless and heat resisting chromium steel plate, sheet and strip
ASTM A240/A240M	Chromium and chromium-nickel stainless steel plate, sheet and strip for pressure
ASTM A263	Corrosion resisting chromium steel clad plate, sheet and strip
ASTM A264	Stainless chromium-nickel steel clad plate, sheet and strip
ASTM A265	Nickel and nickel base alloy clad steel plate.
ASTM A666	Austenitic stainless steel sheet, strip, plate and flat bar for structural applications.
ASTM A480/A480M	General requirements for flat rolled stainless and heat resisting steel plate, sheet and strip
EN 10088-2	Stainless steels - Part C 2: Technical delivery conditions for sheet/plate and strip for general purposes.
ASTM A511	Seamless stainless steel mechanical tubing
ASTM A450/A450M	General requirements for carbon, ferritic alloy and austenitic alloy tubes
ASTM A276	Stainless and heat resisting steel bars and shapes
ASTM A564/A564M	Hot rolled and cold finished age-hardening stainless and heat resisting steel bars and shapes
ASTM A582	Free machining stainless and heat resisting steel bars and hot rolled or cold finished.
ASTM A 193/A 193M	Alloy steels and stainless steel bolting materials for high temperature service.

PRODUCT SPECIFICATION

Standard	Description
ASTM A 182/A 182M	Forged or rolled alloy steel pipe flanges, forged fittings and valves and parts for high temperature service.
ASTM A403/A403M	Wrought austenitic stainless steel piping fittings.
ASTM A815/A815M	Wrought ferritic, ferritic/austenitic and martensitic stainless steel piping fittings.
AS 2129	Flanges for pipes, valves and fittings.
ASME B 1.20.1	Pipe threads, general purpose (inch)
ANSI B16.5	Steel pipe flanges and flanged fittings.
ANSI B16.9	Steel pipe fittings, screwed and socket welding for the petroleum industry.
ANSI B16.11	Structural steel hollow sections
ANSI B 16.25	Steel tubes and tubular for ordinary service
MSS SP43	Screwed and socketed steel tube and tubulars.
BS21	Steel threaded pipe fittings.
ISO 4144	Carbon steels and carbon manganese steels - hot rolled bars and semi-finished product
ASTM A213/A213M	Seamless ferritic and austenitic alloy steel boiler, superheater and heat exchanger tubes.
ASTM A249/A249M	Welded austenitic steel boiler, superheater, heat exchanger and condenser tubes
ASTM A269	Seamless and welded austenitic stainless steel tubing for general purposes.
ASTM A270	Seamless and welded austenitic stainless steel sanitary tubing.
ASTM A450/A450M	General requirements for carbon, ferritic alloy and austenitic alloy steel tubes.
ASTM A554	Welded stainless steel mechanical tubing.
ASTM A791/A791M	Welded unannealed ferritic stainless steel tubing
ASTM A789/A789M	Seamless and welded ferritic/austenitic stainless steel tubing for general service.
AS 1163	Structural steel hollow sections (dimensional tolerances).
AS 1528, Parts 1 to 4	Tubes (stainless steel) and tube fittings for the food industry
ASTM B674	UNS N08904 welded tube.
ASTM B677	UNS N08904 seamless pipe and tube.
ASTM A 194/A 194M	Carbon and alloy steel nuts for bolts for high pressure and high temperature service.
ASTM A320/A320M	Alloy steel bolting materials for low temperature service
ASTM A479/A479M	Stainless and heat resisting steel bars and shapes for use in boilers and other pressure vessels



SELECTION STUD BOLTS & RTJ GASKETS FOR ANSI FLANGES

NOMINAL PIPE SIZE	FLANGE RATING	DIAMETER OF FLANGE D	BOLT CIRCLE DIAMETER A	NUMBER OF BOLTS	BOLT SIZE		RING SIZE RTJ	DIAMETER OF HOLES L	DIAMETER OF RAISED FACE B	THICKNESS OF FLANGE T
					RF (inch)	RTJ (inch)				
1/2"	150 LB	3.50	2.38	4	1/2 X 2.25	-	-	0.62	1.38	0.44
	300 LB	3.75	2.62	4	1/2 X 2.50	1/2 X 3.00	R11	0.62	1.38	0.56
	600 LB	3.75	2.62	4	1/2 X 3.00	1/2 X 3.00	R11	0.62	1.38	0.56
	900 LB	4.75	3.25	4	3/4 X 4.25	3/4 X 4.25	R12	0.88	1.38	0.88
	1500 LB	4.75	3.25	4	3/4 X 4.25	3/4 X 4.25	R12	0.88	1.38	0.88
	2500 LB	5.25	3.50	4	3/4 X 4.25	3/4 X 4.25	R13	0.88	1.38	1.19
3/4"	150 LB	3.88	2.75	4	1/2 X 2.50	-	-	0.62	1.69	0.50
	300 LB	4.62	3.25	4	5/8 X 3.00	5/8 X 3.50	R13	0.75	1.69	0.62
	800 LB	4.62	3.25	4	5/8 X 3.50	5/8 X 3.50	R13	0.75	1.69	0.62
	900 LB	5.12	3.50	4	3/4 X 4.50	3/4 X 4.50	R14	0.88	1.69	1.00
	1500 LB	5.12	3.50	4	3/4 X 4.50	3/4 X 4.50	R14	0.88	1.69	1.00
	2500 LB	5.50	3.75	4	3/4 X 5.00	3/4 X 5.00	R16	0.88	1.69	1.25
1"	150 LB	4.25	3.12	4	1/2 X 2.50	1/2 X 3.00	R15	0.62	2.00	0.56
	300 LB	4.88	3.50	4	5/8 X 3.00	5/8 X 3.50	R16	0.75	2.00	0.69
	800 LB	4.88	3.50	4	5/8 X 3.50	5/8 X 3.50	R16	0.75	2.00	0.69
	900 LB	5.88	4.00	4	7/8 X 5.00	7/8 X 5.00	R16	1.00	2.00	1.12
	1500 LB	5.88	4.00	4	7/8 X 5.00	7/8 X 5.00	R16	1.00	2.00	1.12
	2500 LB	6.25	4.25	4	7/8 X 5.50	7/8 X 5.50	R18	1.00	2.00	1.38
1 1/4"	150 LB	4.62	3.50	4	1/2 X 3.25	1/2 X 3.25	R17	0.62	2.50	0.62
	300 LB	5.25	3.88	4	5/8 X 3.75	5/8 X 3.75	R18	0.75	2.50	0.75
	800 LB	5.25	3.88	4	5/8 X 3.75	5/8 X 3.75	R18	0.75	2.50	0.81
	900 LB	6.25	4.38	4	7/8 X 5.00	7/8 X 5.00	R18	1.00	2.50	1.12
	1500 LB	6.25	4.38	4	7/8 X 5.00	7/8 X 5.00	R18	1.00	2.50	1.12
	2500 LB	7.25	5.12	4	1.00 X 6.00	1.00 X 6.00	R21	1.12	2.50	1.50
1 1/2"	150 LB	5.00	3.88	4	1/2 X 2.75	1/2 X 3.25	R19	0.62	2.88	0.69
	300 LB	6.12	4.50	4	3/4 X 3.50	3/4 X 4.00	R20	0.88	2.88	0.81
	800 LB	6.12	4.50	4	3/4 X 4.25	3/4 X 4.25	R20	0.88	2.88	0.88
	900 LB	7.00	4.88	4	1.00 X 5.50	1.00 X 5.50	R20	1.12	2.88	1.25
	1500 LB	7.00	4.88	4	1.00 X 5.50	1.00 X 5.50	R20	1.12	2.88	1.25
	2500 LB	7.00	5.75	4	11/8 X 6.75	11/8 X 6.75	R23	1.25	2.88	1.75
2"	150 LB	6.00	4.75	4	5/8 X 3.25	5/8 X 3.75	R22	0.75	3.62	0.75
	300 LB	6.50	5.00	8	5/8 X 3.50	5/8 X 4.00	R23	0.75	3.62	0.88
	800 LB	6.50	5.00	8	5/8 X 4.25	5/8 X 4.25	R23	0.75	3.62	1.00
	900 LB	8.50	6.50	8	7/8 X 5.75	7/8 X 5.75	R24	1.00	3.62	1.50
	1500 LB	8.50	6.50	8	7/8 X 5.75	7/8 X 5.75	R24	1.00	3.62	1.50
	2500 LB	9.25	6.75	8	1.00 X 7.00	1.00 X 7.00	R26	1.12	3.62	2.00
2 1/2"	150 LB	7.00	5.50	4	5/8 X 3.50	5/8 X 4.00	R25	0.75	4.12	0.88
	300 LB	7.50	5.88	8	3/4 X 4.00	3/4 X 4.50	R26	0.88	4.12	1.00
	800 LB	7.50	5.88	8	3/4 X 4.75	3/4 X 4.75	R26	0.88	4.12	1.12
	900 LB	9.62	7.50	8	1.00 X 6.25	1.00 X 6.25	R27	1.12	4.12	1.62
	1500 LB	9.62	7.50	8	1.00 X 6.25	1.00 X 6.25	R27	1.12	4.12	1.62
	2500 LB	10.50	7.75	8	11/8 X 7.75	11/8 X 8.00	R28	1.25	4.12	2.25
3"	150 LB	7.50	6.00	4	5/8 X 3.50	5/8 X 4.00	R29	0.75	5.00	0.94
	300 LB	8.25	6.62	8	3/4 X 4.25	3/4 X 4.25	R31	0.88	5.00	1.12
	600 LB	8.25	6.62	8	3/4 X 5.00	3/4 X 5.00	R31	0.88	5.00	1.25
	900 LB	9.50	7.50	8	7/8 X 5.75	7/8 X 5.75	R31	1.00	5.00	1.50
	1500 LB	10.50	8.00	8	11/8 X 7.00	11/8 X 7.00	R35	1.25	5.00	1.88
	2500 LB	12.00	9.00	8	11/4 X 8.75	11/4 X 9.00	R32	1.38	5.00	2.62
4"	150 LB	9.00	7.50	8	5/8 X 3.50	5/8 X 4.00	R36	0.75	6.19	0.94
	300 LB	10.00	7.88	8	3/4 X 4.50	3/4 X 5.00	R37	0.88	6.19	1.25
	600 LB	10.75	8.50	8	7/8 X 4.50	7/8 X 5.75	R37	1.00	6.19	1.50
	900 LB	11.50	9.25	8	11/8 X 6.75	11/8 X 6.75	R37	1.25	6.19	1.75
	1500 LB	12.25	9.50	8	11/4 X 7.75	11/4 X 7.75	R39	1.38	6.19	2.12
	2500 LB	14.00	10.75	8	11/2 X 10.00	1/2 X 10.25	R38	1.62	6.19	3.00

SELECTION STUD BOLTS & RTJ GASKETS FOR ANSI FLANGES

NOMINAL PIPE SIZE	FLANGE RATING	DIAMETER OF FLANGE D	BOLT CIRCLE DIAMETER A	NUMBER OF BOLTS	BOLT SIZE		RING SIZE RTJ	DIAMETER OF HOLES L	DIAMETER OF RAISED FACE B	THICKNESS OF FLANGE T
					RF (inch)	RTJ (inch)				
5"	150 LB	10.00	8.50	8	3/4 X 3.75	3/4 X 4.25	R40	0.88	7.31	0.94
	300 LB	11.00	9.25	8	3/4 X 4.75	3/4 X 5.25	R41	0.88	7.31	1.34
	600 LB	13.00	10.50	8	1.00 X 6.50	1.00 X 6.50	R41	1.12	7.31	1.75
	900 LB	13.75	11.00	8	1 1/4 X 7.50	1 1/4 X 7.50	R41	1.38	7.31	2.00
	1500 LB	14.75	11.50	8	1 1/2 X 9.75	1 1/2 X 9.75	R44	1.62	7.31	2.88
	2500 LB	16.50	12.75	8	1 3/4 X 11.75	1 3/4 X 12.25	R42	1.88	7.31	3.62
6"	150 LB	11.00	9.50	8	3/4 X 4.00	3/4 X 4.50	R43	0.88	8.50	1.00
	300 LB	12.50	10.62	12	3/4 X 4.75	3/4 X 5.50	R45	0.88	8.50	1.44
	800 LB	14.00	11.50	12	1.00 X 6.75	1.00 X 6.75	R45	1.12	8.50	1.88
	900 LB	15.00	12.50	12	1 1/8 X 7.50	1 1/8 X 7.75	R45	1.25	8.50	2.19
	1500 LB	15.50	12.50	12	1 3/8 X 10.25	1 3/8 X 10.50	R46	1.50	8.50	3.25
	2500 LB	19.00	14.50	8	2.00 X 13.50	2.00 X 14.00	R47	2.12	8.50	4.25
8"	150 LB	13.50	11.75	8	3/4 X 4.25	3/4 X 4.75	R48	0.88	10.62	1.12
	300 LB	15.00	13.00	12	7/8 X 5.50	7/8 X 6.00	R49	1.00	10.62	1.62
	800 LB	16.50	13.75	12	1 1/8 X 7.50	1 1/8 X 7.75	R49	1.25	10.62	2.19
	900 LB	18.50	15.50	12	1 3/8 X 8.75	1 3/8 X 8.75	R49	1.50	10.62	2.50
	1500 LB	19.00	15.50	12	1 5/8 X 11.50	1 5/8 X 12.75	R50	1.75	10.62	3.62
	2500 LB	21.75	17.25	12	2.00 X 15.00	2.00 X 15.50	R51	2.12	10.62	5.00
10"	150 LB	16.00	14.25	12	7/8 X 4.75	7/8 X 5.00	R52	1.00	12.75	1.19
	300 LB	17.50	15.25	16	1.00 X 6.25	1.00 X 6.75	R53	1.12	12.75	1.88
	800 LB	20.00	17.00	16	1 1/4 X 8.50	1 1/4 X 8.50	R53	1.38	12.75	2.50
	900 LB	21.50	18.50	16	1 3/8 X 9.25	1 3/8 X 9.25	R53	1.50	12.75	2.75
	1500 LB	23.00	19.00	12	1 7/8 X 13.25	1 7/8 X 13.50	R54	2.00	12.75	4.25
	2500 LB	26.50	21.25	12	2 1/2 X 19.25	2 1/2 X 20.00	R55	2.62	12.75	6.50
12"	150 LB	19.00	17.00	12	7/8 X 4.75	7/8 X 5.25	R56	1.00	15.00	1.25
	300 LB	20.50	17.75	16	1 1/8 X 6.75	1 1/8 X 7.25	R57	1.25	15.00	2.00
	800 LB	22.00	19.25	20	1 1/4 X 8.75	1 1/4 X 8.75	R57	1.38	15.00	2.62
	900 LB	24.00	21.00	20	1 3/8 X 10.00	1 3/8 X 10.00	R57	1.50	15.00	3.12
	1500 LB	26.50	22.50	16	2.00 X 14.75	2.00 X 15.25	R58	2.12	15.00	4.88
14"	150 LB	21.00	18.75	12	1.00 X 5.25	1.00 X 5.75	R59	1.12	16.25	1.38
	300 LB	23.00	20.25	20	1 1/8 X 7.00	1 1/8 X 7.50	R61	1.25	16.25	2.12
	800 LB	23.75	20.75	20	1 3/8 X 9.25	1 3/8 X 9.25	R61	1.50	16.25	2.75
	900 LB	25.25	22.00	20	1 1/2 X 10.75	1 1/2 X 11.00	R62	1.62	16.25	3.38
	1500 LB	29.50	25.00	16	2 1/4 X 16.00	2 1/4 X 16.75	R63	2.38	16.25	5.25
16"	150 LB	23.50	21.25	18	1.00 X 5.25	1.00 X 5.75	R64	1.12	18.50	1.44
	300 LB	25.50	22.50	20	1 1/8 X 7.50	1 1/8 X 8.00	R65	1.38	18.50	2.25
	800 LB	27.00	23.5	20	1 1/2 X 10.00	1 1/2 X 10.00	R65	1.62	18.50	3.00
	900 LB	27.75	24.25	20	1 5/8 X 11.25	1 5/8 X 11.50	R66	1.75	18.50	3.50
	1500 LB	32.50	27.75	16	2 1/2 X 17.50	2 1/2 X 18.50	R67	2.62	18.50	5.75
18"	150 LB	25.00	22.75	16	1 1/8 X 5.75	1 1/8 X 6.25	R68	1.25	21.00	1.69
	300 LB	28.00	24.75	24	1 1/4 X 7.75	1 1/4 X 8.25	R69	1.38	21.00	2.50
	800 LB	29.25	25.75	20	1 5/8 X 10.75	1 5/8 X 10.75	R69	1.75	21.00	3.50
	900 LB	31.00	27.00	20	1 7/8 X 12.75	1 7/8 X 13.25	R70	2.00	21.00	4.25
	1500 LB	36.00	30.50	16	2 3/4 X 19.50	2 3/4 X 20.75	R71	2.88	21.00	7.00
20"	150 LB	27.50	25.00	20	1 1/8 X 6.25	1 1/8 X 6.75	R72	1.25	23.00	1.69
	300 LB	30.50	27.00	24	1 1/4 X 8.00	1 1/4 X 8.75	R73	1.38	23.00	2.50
	800 LB	32.00	28.50	24	1 5/8 X 11.25	1 5/8 X 11.50	R73	1.75	23.00	3.50
	900 LB	33.75	29.50	20	2.00 X 13.75	2.00 X 14.25	R74	2.12	23.00	4.25
	1500 LB	38.75	32.75	16	3.00 X 21.25	3.00 X 22.25	R75	3.12	23.00	7.00
24"	150 LB	32.00	29.50	20	1 1/4 X 6.75	1 1/4 X 7.25	R76	1.38	27.25	1.88
	300 LB	36.00	32.00	24	1 1/2 X 9.00	1 1/2 X 10.00	R77	1.62	27.25	2.75
	800 LB	37.00	33.00	24	1 7/8 X 13.00	1 7/8 X 13.25	R77	2.00	27.25	4.00
	900 LB	41.00	35.50	20	2 1/2 X 17.25	2 1/2 X 18.00	R78	2.62	27.25	5.50
	1500 LB	46.00	39.00	16	3.5 X 24.25	3.5 X 25.50	R79	3.62	27.25	8.00

PIPE DIMENSION & WEIGHT

NOMINAL PIPE SIZE	OD	SCHEDULE DESIGNATION		WALL THICKNESS		ID		WEIGHT	
		INCH MM	INCH MM	ASME	INCH MM	INCH MM	LBS/FT	KG/M	
1/8 6	0.405 10.3	10 STD XS	40 80	10S 80S	0.049 0.095	1.24 2.41	0.307 0.215	7.82 5.84	0.19 0.31
1/4 8	0.540 13.7	10 STD XS	40 80	10S 80S	0.065 0.119	1.65 3.02	0.410 0.302	10.40 7.66	0.33 0.54
3/8 10	0.675 17.1	10 STD XS	40 80	10S 80S	0.065 0.126	1.65 3.20	0.545 0.423	13.80 10.70	0.42 0.74
1/2 15	0.840 21.3	5 10 STD XS	40 80	5S 10S 80S	0.065 0.083 0.109	1.65 2.11 2.77	0.710 0.674 0.622	18.00 17.08 15.76	0.54 0.67 0.85
		160 Xxs			0.147 0.188 0.294	3.73 4.78 7.47	0.546 0.464 0.252	13.84 11.74 6.36	1.09 1.31 1.72
3/4 20	1.050 26.7	5 10 STD XS	40 80	5S 10S 80S	0.065 0.083 0.113	1.65 2.11 2.87	0.920 0.884 0.824	23.40 22.48 20.96	0.69 0.86 1.13
		160 Xxs			0.154 0.219 0.308	3.91 5.56 7.82	0.742 0.612 0.434	18.88 15.58 11.06	1.48 1.95 2.44
1 25	1.315 33.4	5 10 STD XS	40 80	5S 10S 80S	0.065 0.109 0.133	1.65 2.77 3.38	1.185 1.097 1.049	30.10 27.86 26.64	0.87 1.41 1.68
		160 Xxs			0.179 0.250 0.358	4.55 6.35 9.09	0.957 0.815 0.599	24.30 20.70 15.22	2.17 2.85 3.66
1-1/4 32	1.660 42.2	5 10 STD XS	40 80	5S 10S 80S	0.065 0.109 0.140	1.65 2.77 3.56	1.530 1.442 1.380	38.90 36.66 35.08	1.11 1.81 2.27
		160 Xxs			0.191 0.250 0.382	4.85 6.35 9.70	1.278 1.160 0.896	32.50 29.50 22.80	3.00 3.77 5.22
1-1/2 40	1.900 48.3	5 10 STD XS	40 80	5S 10S 80S	0.065 0.109 0.145	1.65 2.77 3.68	1.770 1.682 1.610	45.00 42.76 40.94	1.28 2.09 2.72
		160 Xxs			0.200 0.281 0.400	5.08 7.14 10.15	1.500 1.338 1.100	38.18 34.02 28.00	3.63 4.86 6.41
2 50	2.375 60.3	5 10 STD XS	40 80	5S 10S 80S	0.065 0.109 0.154	1.65 2.77 3.91	2.245 2.157 2.067	57.00 54.76 52.48	1.61 2.64 3.66
		160 Xxs			0.218 0.344 0.436	5.54 8.74 11.07	1.939 1.687 1.503	49.22 42.82 38.16	5.03 7.47 9.04
2-1/2 65	2.875 73.0	5 10 STD XS	40 80	5S 10S 80S	0.083 0.120 0.203	2.11 3.05 5.16	2.709 2.635 2.469	68.78 66.90 62.68	2.48 3.53 5.80
		160 Xxs			0.276 0.375 0.552	7.01 9.53 14.02	2.323 2.125 1.771	58.98 53.94 44.96	7.67 10.02 13.71
3 80	3.500 88.9	5 10 STD XS	40 80	5S 10S 80S	0.083 0.120 0.216	2.11 3.05 5.49	3.334 3.260 3.068	84.68 82.80 77.92	3.03 4.34 7.58
		160 Xxs			0.300 0.438 0.600	7.62 11.13 15.24	2.900 2.624 2.300	73.66 66.64 58.42	15.27 21.35 27.68
3-1/2 90	4.000 101.6	5 10 STD XS	40 80	5S 10S 80S	0.083 0.120 0.226	2.11 3.05 5.74	3.834 3.760 3.548	97.38 95.50 90.12	3.48 4.98 9.12
		160 Xxs			0.318 0.438 0.636	8.08 11.13 16.15	3.364 3.624 2.728	85.44 92.04 69.30	13.57 28.32 34.03
4 100	4.500 114.3	5 10 STD XS	40 80	5S 10S 80S	0.083 0.120 0.156	2.11 3.05 3.96	4.334 4.260 4.188	110.08 108.20 106.38	3.92 5.62 7.24
		120 Xxs			0.188 0.237 0.337	4.78 6.02 8.56	4.124 4.026 3.826	104.74 102.26 97.18	8.67 10.80 15.00
		160 Xxs			0.438 0.531 0.674	11.13 13.49 17.12	3.624 3.438 3.152	92.04 87.32 80.06	19.02 22.53 27.57
4-1/2 115	5.000 127.0	STD XS	40 80	40S 80S	0.247 0.355 0.710	6.27 9.02 18.03	4.506 4.290 3.580	114.46 108.96 90.94	12.55 17.63 32.56
		Xxs							18.67 26.24 48.45

NOMINAL PIPE SIZE	OD	SCHEDULE DESIGNATION		WALL THICKNESS		ID		WEIGHT	
INCH MM	INCH MM	ASME	INCH MM	INCH MM	LBS/FT	KG/M			
5 125	5.563 141.3	5 10 STD XS	40 80	10S 80S	0.109 0.134	2.77 3.40	5.345 5.295	135.76 134.50	6.36 7.78
		120 160 XXS			0.258 0.375	6.55 9.53	5.047 4.813	128.20 122.24	21.77 30.97
6 150	6.625 168.3	5 10 STD XS	40 80	10S 80S	0.109 0.134	2.77 3.40	6.407 6.357	162.76 161.50	7.59 9.30
		120 160 XXS			0.280 0.432	6.065 10.97	6.249 5.761	158.74 146.36	19.28 28.26
7 175	7.625 193.7	5 10 STD XS	40 80	10S 80S	0.301 0.500	7.65 12.70	7.023 6.625	178.40 168.30	23.57 38.08
		120 160 XXS			0.875 22.23	14.27 21.95	8.75 4.897	149.24 124.40	35.10 56.69
8 200	8.625 219.1	5 10 STD XS	40 80	10S 80S	0.109 0.148	2.77 3.76	8.407 8.329	213.56 211.58	9.92 13.41
		120 160 XXS			0.250 0.406	6.35 10.31	8.125 7.813	206.40 198.48	14.78 33.32
9 225	9.625 244.5	5 10 STD XS	40 80	10S 80S	0.342 0.500	8.69 12.70	8.941 8.625	227.12 219.10	33.94 48.77
		120 160 XXS			0.875 22.23	14.27 21.95	8.75 7.875	200.04 175.84	50.54 72.60
10 250	10.750 273.0	5 10 STD XS	40 80	10S 80S	0.134 0.165	3.40 4.19	10.482 10.420	266.20 264.62	15.21 18.67
		120 160 XXS			0.188 0.250	4.78 6.35	10.374 10.250	263.44 260.30	22.78 31.62
11 275	11.750 298.5	5 10 STD XS	40 80	10S 80S	0.134 0.165	3.40 4.19	10.750 10.750	273.10 273.10	21.23 21.23
		120 160 XXS			0.188 0.250	4.78 6.35	10.020 10.136	257.40 254.46	31.62 41.76
12 300	12.750 323.8	5 10 STD XS	40 80	10S 80S	0.156 0.180	3.96 4.57	12.438 12.390	315.88 314.66	21.00 24.19
		120 160 XXS			0.188 0.250	4.78 6.35	12.374 12.250	314.24 311.10	35.98 33.41
13 330	13.750 354.0	5 10 STD XS	40 80	10S 80S	0.156 0.180	3.96 4.57	13.090 12.950	307.04 304.74	49.61 43.81
		120 160 XXS			0.188 0.250	4.78 6.35	12.938 12.750	303.18 298.40	53.57 55.48
14 350	14.000 355.6	5 10 STD XS	40 80	10S 80S	0.188 0.250	4.78 6.35	13.250 13.000	336.54 333.34	54.62 63.50
		120 160 XXS			0.375 0.438	11.13 11.13	13.124 12.812	333.34 325.42	81.33 94.55
15 375	15.000 376.4	5 10 STD XS	40 80	10S 80S	0.188 0.250	4.78 6.35	14.212 13.950	317.50 317.50	107.40 126.72

PIPE DIMENSION & WEIGHT

NOMINAL PIPE SIZE	OD	SCHEDULE DESIGNATION		WALL THICKNESS		ID		WEIGHT		NOMINAL PIPE SIZE	OD	SCHEDULE DESIGNATION		WALL THICKNESS		ID		WEIGHT							
INCH MM	INCH MM	ASME		INCH MM	INCH MM	LBS/FT	KG/M	INCH MM	INCH MM	ASME		INCH MM	INCH MM	LBS/FT	KG/M										
16 400	16000 406.4	10 20 STD XS 60 80 100 120 140 160	10S 40S 80S	0.188	4.78	15.624	396.84	31.78	47.34	24 600	24.000 610	10 20 XS 30 40 60 80 100 120 140 160	10S 40S 80S	0.250	6.35	15.500	393.70	42.09	62.65	0.250	6.35	23.500	597.30	63.47	94.53
				0.250	6.35	15.500	393.70	42.09	62.65					0.375	9.53	23.250	590.94	94.71	141.12						
				0.312	7.92	15.376	390.56	52.32	77.83					0.500	12.70	23.000	584.60	125.61	187.07						
				0.375	9.53	15.250	387.34	62.64	93.27					0.562	14.27	22.876	581.46	140.81	209.65						
				0.500	12.70	15.000	381.00	82.85	123.31					0.688	17.48	22.624	575.04	181.45	255.43						
				0.656	16.66	14.688	373.08	107.60	160.13					0.969	24.61	22.062	560.78	238.57	355.28						
				0.844	21.44	14.312	363.52	136.74	203.54					1.219	30.96	21.562	548.08	296.86	442.11						
				1.031	26.19	13.938	354.02	164.98	245.57					1.531	38.89	20.938	532.22	367.74	547.74						
				1.219	30.96	13.562	344.48	192.61	286.66					1.812	46.02	20.376	517.96	429.79	640.07						
				1.438	36.53	13.124	333.34	223.85	333.21					2.062	52.37	19.876	505.26	483.57	720.19						
				1.594	40.49	12.812	325.42	245.48	365.38					2.344	59.54	19.312	490.92	542.64	808.27						
18 450	18.000 457	10 20 STD XS 30 80S	10S 40S	0.188	4.78	17.624	447.44	35.80	53.31					0.312	7.92	25.376	644.16	85.68	127.36						
				0.250	6.35	17.500	444.30	47.44	70.57					0.375	9.53	25.250	640.94	102.72	152.88						
				0.312	7.92	17.376	441.16	58.99	87.71					0.500	12.70	25.000	634.60	136.30	202.74						
				0.375	9.53	17.250	437.94	70.65	105.17					0.312	7.92	27.376	695.16	92.35	137.32						
				0.438	11.13	17.124	434.74	82.23	122.38					0.375	9.53	27.250	691.94	110.74	164.86						
				0.500	12.70	17.000	431.60	93.54	139.16					0.500	12.70	27.000	685.60	146.99	218.71						
				0.562	14.27	16.876	428.46	104.76	155.81					0.625	15.88	26.750	679.24	182.90	272.23						
				0.750	19.05	16.500	418.90	138.30	205.75					0.312	7.92	29.376	746.16	99.02	147.29						
				0.938	23.83	16.124	409.34	171.08	254.57					0.375	9.53	29.250	742.94	118.76	176.85						
				1.156	29.36	15.688	398.28	208.15	309.64					0.500	12.70	29.000	736.60	157.68	234.68						
				1.375	34.93	15.250	387.14	244.37	363.58					0.625	15.88	28.750	730.24	196.26	292.20						
20 500	20.000 508	10 20 STD XS 30 80S	10S 40S	0.218	5.54	19.564	496.92	46.10	68.61					0.312	7.92	31.376	797.16	105.69	157.25						
				0.250	6.35	19.500	495.30	52.78	78.56					0.375	9.53	31.250	793.94	126.78	188.83						
				0.375	9.53	19.250	488.94	78.67	117.15					0.500	12.70	31.000	787.60	168.37	250.65						
				0.500	12.70	19.000	482.60	104.23	155.13					0.625	15.88	30.750	781.24	209.62	312.17						
				0.594	15.09	18.812	477.82	123.23	183.43					0.688	17.48	30.624	778.04	230.29	342.94						
				0.812	20.62	18.376	466.76	166.56	247.84					0.312	7.92	33.376	848.16	112.36	167.21						
				1.031	26.19	17.938	455.62	209.06	311.19					0.375	9.53	33.250	844.94	134.79	200.82						
				1.281	32.54	17.438	442.92	256.34	381.55					0.500	12.70	33.000	838.60	179.06	266.63						
				1.500	38.10	17.000	431.80	296.65	441.52					0.625	15.88	32.750	832.24	222.99	332.14						
				1.750	44.45	16.500	419.10	341.41	508.15					0.688	17.48	32.624	829.04	245.00	364.92						
				1.969	50.01	16.062	407.98	379.53	564.85					0.312	7.92	35.376	898.16	119.03	176.97						
22 550	22.0																								



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