ASTM - American Society for Testing Materials
ASTM A20- General Requirements for Delivery of Rolled Steel plates of Flange and Firebox Qualities.
ASTM A53- Welded and Seamless Steel Pipe.
ASTM A105- Forged or Rolled Steel Pipe Flanges, Forged Fittings and Valves and parts for High Temperature Service.
ASTM A106- Seamless Carbon Steel Pipe for High Temperature Service.
ASTM A107- Hot Rolled Carbon Steel Bars.
ASTM A129- Open Hearth Iron Plates of Flange Quality.
ASTM A155- Electric Fusion Welded Steel Pipe for High Temperature.
ASTM A167- Specification for Corrosion Resisting Chromium-Nickel Steel Plate, Sheet or Strip.
ASTM A181- Forged or Rolled Steel Pipe Flanges, Forged Fittings and Valves and Parts for General Services.
ASTM A182- Forged or Rolled Alloy Steel Pipe Flanges, Forged Fittings and Valves and Parts for High Temperature Service.
ASTM A201- Carbon Silicon Steel Plates of Intermediate Tensile Ranges for Fusion Welded Boilers and other Pressure Vessels.
ASTM A203- Nickel Steel Plates for Boilers and other Pressure Vessels.
ASTM A204- Molybdenum Steel Plates for Boilers and other Pressure Vessels.
ASTM A212- High Tensile Strength Carbon Silicon Steel Plates for Boilers and other Pressure Vessels.
ASTM A234- Factory made Wrought Carbon Steel and Ferritic Alloy Steel Welding Fittings.
ASTM A240- Corrosion Resisting Chromium and Chromium-Nickel Steel Plate Sheet and Strip for Fusion Welded Unfired Pressure Vessels.
ASTM A268- Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service.
ASTM A269- Seamless and Welded Austenitic Stainless Steel for General Service
ASTM A270- Seamless and Welded Austenitic Stainless Steel Sanitary Tubing
ASTM A271- Seamless Austenitic Chromium-Nickel Steel Still Tubes for Refinery Service.
ASTM A276- Hot Rolled and Cold Finished Corrosion Resisting Steel Bars.
ASTM A285- Low and Intermediate Tensile Strength Plates of Flange and Firebox Qualities.
ASTM A300- Steel Plates for Pressure Vessels for Service at Low Temperatures.
ASTM A312- Seamless and Welded Austenitic Stainless Steel Pipe
ASTM A333- Seamless and Welded Steel Pipe for Low Temperature Service.
ASTM A335- Seamless Ferritic Alloy Steel Pipe for High Temperature Service.

ASTM A350- Forged or Rolled Carbon and Alloy Steel Flanged, Forged Fittings and Valves and Parts for Low Temperature Service.
ASTM A357- 5% Chromium, 0.5% Molybdenum Steel Plates for Boilers and other Pressure Vessels.
ASTM A376- Seamless Austenitic Steel Pipe for High Temperature Central Station Service.
ASTM A387- Chromium-Molybdenum Steel Plates for Boilers and other Pressure Vessels.
ASTM A403- Factory made Wrought Austenitic Steel Welding Fittings.
ASTM A404- Forged or Rolled Alloy Steel, Pipe Flanges, Flanges Fittings and Valves and Parts.
ASTM A405- Seamless Ferritic Alloy Steel Pipe Specially Heat Treated for High Temperature Service.
ASTM A409- Welded Large Diameter Austenitic Steel Pipe for Corrosive or High Temperature Service.
ASTM A420- Factory made Wrought Carbon Steel and Alloy Steel Welding Fittings of Seamless or Welded Construction for Low Temperature Service.
ASTM A450- General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes.
ASTM A465- Leaded Carbon Steel Forged Pipe Flanges and Parts for Pressure and General Service.
ASTM A511- Seamless Stainless Steel Mechanical Tubing.
ASTM A530- General Requirements for Specialized Carbon and Alloy Steel Pipe.
ASTM A554- Specification for Welded Stainless Steel Mechanical Tubing.
ASTM A632- Specification for Seamless and Welded Austenitic Stainless Steel Tubing (Small Diameter) for General Service.
ASTM A688- Welded Austenitic Stainless Steel Feed water Heater Tubes.
ASTM A778- Welded, Unannealed Austenitic Stainless Steel Tubular Products.
ASTM A789- Seamless and Welded Ferritic - Austenitic Stainless Steel Tubing for General Service.
ASTM A790- Seamless and Welded Ferritic - Austenitic Steel Pipe.
ASTM B161- Nickel Seamless Pipe and Tube.
ASTM B165- Nickel Copper Alloy (UNS N04400) Seamless Pipe and Tube.
ASTM B210- Aluminium Alloy Tubes.
ASTM B235- Aluminium Alloy Extruded Tubes.
ASTM B337- Seamless and Welded Titanium and Titanium Alloy Pipe.
ASTM B338- Seamless and Welded Titanium and Titanium Alloy Tubes for Condensers and Exchangers.

ASTM B361- Factory Made Wrought Aluminium And Aluminium Alloy Welding Fittings.
ASTM B523- Seamless and Welded Zirconium and Zirconium Alloy Tubes for Condensers and Heat Exchangers
ASTM B668- UNS N08028 Seamless Tubes.
ASTM B677- UNS N08904 and N08925 Seamless Pipe and Tube.

ASME- American Society of Mechanical Engineers
ASME Sect. I- Power Boilers.
ASME Sect. II- Material Specifications.
ASME Sect. III- General Requirements
ASME Sect. VIII- Pressure Vessels.
ASME Sect. IX- Welding and Brazing Qualifications.

ANSI- American National Standard Institute

ANSI B10.1- Standard for Pipe Threads.
ANSI B16.5- Steel Pipe Flanges and Flanged Fittings.
ANSI B16.9- Wrought Steel butt Welding Fittings.
ANSI B16.11- Forged Steel Fittings, Socket Welding and Threaded.
ANSI B16.25- Butt Welding Ends for Pipe, Valves, Flanges and Fittings.
ANSI B16.28- Wrought Steel Butt Welding Short Radius Elbows and Returns.
ANSI B31.1- Code for Pressure Piping.
ANSI B31.3- Code for Pressure Piping Petroleum Refinery Piping.
ANSI B31.8- Gas Transmission and Distribution Piping Systems.
ANSI B36.10- Standard for Wrought Steel and Wrought Iron Pipe.

MSS- Manufactures Standardization Society of the Valves and Fittings

MSS SP.6- Standard Finishes for Contact Faces of Pipe Flanges.
MSS SP.25- Standard Marking System for Valves, Fittings, Flanges and Unions.
MSS SP.43- Wrought Stainless Steel Butt Welding Fittings.
MSS SP.48- Steel Butt Welding Fittings (26" and larger).
MSS SP.59- Steel Butt Welding Short Radius Elbows and Returns.

API- American Petroleum Institute

API STD 5A- API Specification for Casing, Tubing and Drill Pipe.
API STD 5L- API Specification for Line Pipe.
API STD 5LX- API Specification for High Test Line Pipe.

BS- British Standard Institute

BS 10- Flanges and Bolts for Pipes, Valves and Fittings.
BS 21- Pipe Threads for Tubes and Fittings where Pressure High Joints are made on Threads.
BS 806- Ferrous Pipes and Piping Installations for Connection with Lead Boilers.
BS 970 Pt.1- Stainless Heat Resisting Steels in the Form of Blooms, Billets, Bars and Forgings.
BS 1449 Pt.2- Stainless and Heat Resisting Steel Plate, Sheet and Strip.
BS 1500- Fusion Welded Pressure Vessels for use in the Chemical Petroleum and Allied Industries.
BS 1501-1506- Steels for Use in the Chemical Petroleum and Allied Industries.
BS 1502- Steels for Fired and Unfired Pressure Vessels Sections and Bars.
BS 1503- Steel Forgings for Pressure Purposes.
BS 1510- Low Temperature Supplementary Requirements to BS 1501-1506.
BS 1560- Steel Pipe Flanges and Flanged Fittings for the Petroleum Industry
BS 1600- Dimension of Steel Pipe for the Petroleum Industry.
BS 1640- Steel Butt Welding Pipe Fittings for the Petroleum Industry.
BS 1640 PT.1- Wrought and Cast Austenitic Chromium-Nickel Steel Fitting.
BS 1640 Pt.2- Wrought and Cast Austenitic Chromium-Nickel Steel Fittings.
BS 1740- Wrought Steel Pipe Fitting Screwed BSP Thread.
BS 1965 Pt.1- Carbon Steel Butt Welding Pipe Fitting for Pressure Purposes.
BS 1965 Pt.2- Austenitic Stainless Steel Butt Welding Pipe Fitting for Pressure Purposes.
BS 2041- Tubular Heat Exchangers for Use in the Petroleum Industry.
BS 3014- As welded and Cold Drawn Welded Austenitic Stainless Steel Tubes for Mechanical Structural and General Engineering Purposes.
BS 3059- Steel Boiler and Superheater Tubes.
BS 3274- Tubular Heat Exchangers for General Purposes
BS 3293- Carbon Steel Pipe Flanges over 24” for the Petroleum Industry.
BS 3351- Piping Systems for the Petroleum Industry.

**ASTM STANDARDS USED FOR PIPING**

<table>
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<tr>
<th>ASTM</th>
<th>GRADE</th>
<th>Chemical requirements percent (%)</th>
<th>Mechanical requirements</th>
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<td>______</td>
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<tr>
<td>A 53</td>
<td>Types</td>
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<td>0.20</td>
<td>0.29-1.06</td>
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| A 335 |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |
| P1 | 0.10-0.20 | 0.30-0.60 | 0.025 | 0.025 | 0.10-0.05 | 0.50-0.81 | 0.44-0.65 | 0.18-0.25 | 380-305000 |   |   |   |
| P2 | 0.20-0.30 | 0.30-0.60 | 0.025 | 0.025 | 0.10-0.30 | 4.00-6.00 | 0.60-1.00 | 380-305000 |   |   |   |
| P5 | 0.15-0.30 | 0.30-0.60 | 0.025 | 0.025 | 0.10-0.50 | 8.00-10.00 | 0.44-0.65 | 380-305000 |   |   |   |
| P9 | 0.15-0.30 | 0.30-0.60 | 0.025 | 0.025 | 0.25-1.00 | 4.00-6.00 | 0.44-0.65 | 380-305000 |   |   |   |
| P11 | 0.15 | 0.30-0.60 | 0.025 | 0.025 | 0.50-1.00 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |
| P12 | 0.15 | 0.30-0.60 | 0.025 | 0.025 | 0.15-1.65 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |
| P15 | 0.15 | 0.30-0.60 | 0.025 | 0.025 | 0.15-1.65 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |
| P21 | 0.15 | 0.30-0.60 | 0.025 | 0.025 | 0.15-1.65 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |
| P22 | 0.08-0.12 | 0.30-0.60 | 0.010 | 0.025 | 0.50-1.00 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |
| P91 | 0.15 | 0.30-0.60 | 0.025 | 0.025 | 0.15-1.65 | 8.00-9.50 | 0.44-0.65 | 380-305000 |   |   |   |

| A 358 |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |
| TP 304 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 | No |   |   |   |
| TP 310S | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 |   |   |   |   |
| TP 316 | 0.30 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 |   |   |   |   |
| TP 316LTP | 0.035 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 |   |   |   |   |
| 317L | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 |   |   |   |   |
| 316LTP | 0.035 | 2.00 | 0.045 | 0.030 | 0.75 | 8.0-10.65 | 18.0-20.0 | 2.0-3.0 |   |   |   |   |