

Standard Available in forms :

- ASTM A182/ ASME SA182 Stainless Steel Pipe Fittings
- ASTM A213 / ASME SA213 Seamless Stainless Steel Pipes
- ASTM A240/ ASME SA240 Stainless Steels Sheets / Plates
- ASTM A249/ ASME SA249 Stainless Steel Welded Tubes
- ASTM A269/ ASME SA269 Stainless Steel Tubes
- ASTM A270/ ASME SA270 Stainless Steel Sanitary Tubes
- ASTM A312/ ASME SA312 Stainless Steel Pipes
- ASTM A403/ ASME SA403 Stainless Steel Pipe Fittings
- ASTM A554/ ASME SA554 Stainless Steel Welded Tubes
- ASTM A731/ ASME SA731 Stainless Steel Pipes
- ASTM A789/ ASME SA789 Stainless Steel Tubes
- ASTM A790/ ASME SA790 Stainless Steel Pipes
- ASTM A791/ ASME SA791 Stainless Steel Tubes

Products Available in forms :

- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Plates
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Pipes
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Round Bar
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Tube
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Flanges
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Wire
- SS 302, Type 302, WNR 1.4319, UNS S30200, AISI 302 Fittings

Manufacturing Process

- Grade 302 steel requires slow speeds, and high feeds will aid in overcoming this alloy's tendency to work harden.
- It is recommended that chip breakers are used on all tooling due to the occurrence of gummy chips.
- While welding grade 302, it is recommended that resistance or shielded fusion methods are used.
- The filler metals to be used are AWS E/ER308 or 312.
- Post weld annealing is performed when the chromium carbide needs to be dissolved so as to provide maximum resistance to inter-granular attack.
- Forging is ideally performed at these temperatures - 1149-1260°C [2100-2300°F].
- It is advisable not to forge below 927°C [1700°F].
- Forgings should be fully annealed after all operations so as to maintain full corrosion resistance.
- Hot working requires uniform heating to 1149°C [2100°F] while cold working helps to increase the hardness of this material.
- Grade 302 is quite ductile and can be readily drawn, spun and upset.
- Cold working causes this alloy to gain magnetic properties, and hence post-fabrication annealing is required to recover maximum corrosion resistance and a non- magnetic condition.
- Annealing is performed between 1010 and 1121°C [1850 and 2050°F] with fast cooling so as to avoid precipitation of chromium carbides.

Annealing

- Parts can be annealed at 1900°F - 2050°F held for minimum 60 inutes per inch of thickness and water quenched.
- Prolonged exposure between 800°F - 1500°F must be avoided to prevent embrittlement and loss of corrosion properties.
- This grade does not harden with heat treatment.

Machinability

- Like most other austenitic steels, this grade machines with rough and stringy chips.
- Therefore, chip curlers can be beneficial.

Weldability

- This grade is readily weldable by any conventional methods employed by austenitic stainless steels.
- Type 308L/308LSi stainless steel filler is generally recommended.
- For maximum corrosion resistance, annealing after welding is recommended.
- In hard condition, resistance welding is recommended to prevent softening.

Cold workability

- This grade can be readily cold worked.
- This is a high strain-hardening grade.
- Operations such as wire drawing, forging, upsetting and bending are common.
- Severe forging may require intermediate annealing.

Hot workability

- This grade can readily be hot worked.
- Heat initially to 2100°F-2300°F and can be finished as low as 1500°F.
- Severe reductions below 1700°F should be avoided.
- Parts should be water quenched after hot working for good corrosion resistance.
- For maximum corrosion resistance, parts should be annealed and water quenched.

Corrosion resistance

- This grade has good corrosion resistance in a wide variety of corrosive media, such as foodstuffs, sterilizing solutions, most organic chemicals and dyes, most petroleum products, steam and combustion gases.
- It resists nitric acid well, sulphuric acid moderately and halogen acids and halogen compounds poorly.
- For maximum corrosion resistance, material should be used in annealed condition and parts should be passivated.

Applications

- Grade 302 stainless steel is widely used in the stamping, spinning and wire forming industry.
- This alloy is also used to form springs, washers, screens and cables.



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