

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 :

- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Plates
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Pipes
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Round Bar
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Tube
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Flanges
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Wire
- 17-7 PH, WNR 1.4568, UNS S17700, AISI 631 Fittings

Fabrication and Heat Treatment Machinability

- The machinability of grade 17-7 stainless steel is rated as 75 compared to that of B1112 alloy.
- Slow speed and constant feeds are preferred to obtain best results.

Forming

- Grade 17-7 stainless steel has forming characteristics similar to that of 301 stainless steel.
- Intermediate annealing can be done for radical forming operations.

Welding

- Grade 17-7 stainless steel can be welded using arc and resistance welding techniques.
- Inert gas shielding is preferred during fusion welding in order to reduce oxidation of aluminum.
- It is not necessary to perform pre-heating and post-weld annealing processes.

Heat Treatment

- Solution treated material is heavily cold worked which results in condition C material.
- Condition C material is heated at 482°C [900°F] for 1 h in condition CH900 followed by cooling.
- Solution treated material is heated at 955°C [1750°F] for 10 min after fabrication in condition A1750 followed by rapidly cooling at room temperature.
- Within 1 h of treating to condition A1750, it is cooled at -73°C [-100°F] for 8 h in condition R100. It is then heated at 510°C [950°F] for 90 min in condition RH 950 followed by cooling.
- After fabrication, it is heated at 760°C [1400°F] for 90 min in condition T.
- Within 60 min of cooling, it is then cooled at 13°C [55°F] for 30 min. From condition T, it is heated at 565°C [1050°F] for 90 min in condition TH1050 followed by cooling.

Cold Working

- Grade 17-7 stainless steel can be easily cold worked using common methods in the condition A.

Annealing

- Grade 17-7 stainless steel is annealed at 1066°C [1950°F] for 3 min for 0.1 in. (2.5 mm) of thickness followed by air cooling.

Aging

- Aging of grade 17-7 stainless steel can be done at 1177°C [2150°F] for 4 h followed by cooling.
- This process is followed by heating at 1078°C [1975°F] for 4 h and cooling.
- It is again heated at 844°C [1550°F] for 24 h and cooled, and heated at 760°C [1400°F] for 16 h followed by cooling to complete precipitation hardening process.

Applications

- Grade 17-7 stainless steel is mostly found in washers and springs.
- It is used in applications which require high strength and corrosion resistance.
- It is also used in intricate parts due its low distortion on heat treatment.



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