



## 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 301, WNR 1.4310, UNS S30100, AISI 301 Plates
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Pipes
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Round Bar
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Tube
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Flanges
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Wire
- SS 301, WNR 1.4310, UNS S30100, AISI 301 Fittings

## Corrosion Resistance

- The resistance to corrosion offered by stainless steel grade 301 is similar to that offered by 304.
- This grade exhibits good resistance to corrosion in mildly corrosive environments at ambient temperatures.

## Heat Resistance

- Grade 301 exhibits good oxidation resistance for intermittent services up to 840°C and for continuous service up to 900°C.

## Heat Treatment

- Stainless steel grade 301 is subjected to solution treatment annealing in temperatures ranging from 1010°C to 1120°C followed by rapid cooling.
- For intermediate annealing a low temperature range is chosen. Thermal hardening does not suit this grade of stainless steel.

## Cold Working

- Stainless steel grade 301 and low carbon variants of this grade are predominantly used as high strength stainless steel.
- The work hardening rates of these grades are very high, in the range of a 14MPa increase per 1% reduction in area of cold work.
- As a result of this characteristic high strength can be achieved from cold rolling and roll forming operations.
- Through such forming methods strain hardened austenite may be partially transformed to martensite.
- In spite of achieving such high strengths, the residual ductility in the alloy is capable of causing severe cold deformation.
- The alloy is non-magnetic in the annealed condition, but shows strong magnetism when cold worked.

## Welding

- Stainless steel grade 301 is suitable for all forms of standard welding methods.
- The use of grade 308L as filler metal is recommended.
- Welded parts in grade 301 must be subjected to annealing in order to attain maximum corrosion resistance.
- For grades 301L and 301LN annealing is not necessary after welding.
- The purpose of welding followed by annealing is to remove the high strength brought about by cold rolling.
- The process of spot welding is used to assemble the cold rolled 301 components; this rapid welding technique does not hamper the overall strength of the component.

## Applications

Some of the typical applications of grade 301 stainless steels are listed below:

- Making rail car structural components
- Air frame sections
- Highway trailer components
- Automotive wheel covers
- Wiper blade clips and holders
- Stove element clips
- Screen frames
- Toaster springs
- Curtain walls



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