

# SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304, ASTM 410, Grade 410, AFNOR Z 10 C 13

## Introduction :

Aesteiron continues to expand its product line in UNS S41000 to meet the emerging customer needs, and whereas Aesteiron Steels Pvt. Ltd. is ISO 9001 : 2008 Certified, ASPL has a great Projects in this grade in all parts of the world with renowned suppliers presenting the wide range of services. We pride ourselves in the quality of our products, our competitive pricing and our exceptional customer service. We have been recognized for our outstanding customer service in satisfaction surveys of top- ranked mills in india and all over the world. ASPL, with iron and steel as its main business, manufactures premium steel products with high technologies and a high added value and fosters three major product categories, namely carbon steel, stainless steel and special steel. Through our worldwide marketing network, these premium products not only satisfy the demand on the domestic market but are also exported to more than forty countries and regions in Asia, Africa, Europa and America, extensively applied to various. We are a highly qualified by our customers worldwide as a sustainable and trustworthy to meet their request and need at the right time and the right place. We strive and stand committed to maintain this respectable position by catering to the requirements of our customers in the best possible way leaving no room for complaints.

## Chemical Composition

	SS 410	TYPE 410	WNR 1.4006	UNS S41000	AISI 410	ASTM 410	GRADE 410	AFNOR Z 10 C 13
Carbon	0.15max	0.15max	0.15max	0.15max	0.15max	0.15max	0.15max	0.15max
Manganese	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max
Phosphorus	0.040 max	0.040 max	0.040 max	0.040 max	0.040 max	0.040 max	0.040 max	0.040 max
Sulfur	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max	0.030 max
Silicon	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max	1.00 max
Chromium	11.5-13.5	11.5-13.5	11.5-13.5	11.5-13.5	11.5-13.5	11.5-13.5	11.5-13.5	11.5-13.5

## Mechanical Properties

	SS 410	TYPE 410	WNR 1.4006	UNS S41000	AISI 410	ASTM 410	GRADE 410	AFNOR Z 10 C 13
UTS, ksi (Mpa)	75(517)	75(517)	75(517)	75(517)	75(517)	75(517)	75(517)	75(517)
0.2% YS, ksi (Mpa)	45(310)	45(310)	45(310)	45(310)	45(310)	45(310)	45(310)	45(310)
Elongation % in 2"(50.8mm)	25	25	25	25	25	25	25	25
Hardness, Rockwell B	80	80	80	80	80	80	80	80

## 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 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Plates
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Pipes
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Round Bar
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Tube
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Flanges
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Wire
- SS 410, Type 410, WNR 1.4006, UNS S41000, AISI 304 Fittings

## Corrosion Resistance

- Grade 410 stainless steels are resistant to hot gases, steam, food, mild acids and alkalies, fresh water and dry air.
- These steels obtain maximum corrosion and heat resistance through hardening.
- However, grade 410 steels are less corrosion resistant than austenitic grades and grade 430 ferritic alloys containing 17% chromium.
- Smooth surface finish offers improved performance of steels.

## Heat Resistance

- Grade 410 steels have good scaling resistance at temperatures of up to 650°C.
- However, the mechanical properties of the material will tend to reduce at temperatures ranging from 400 to 580°C.

"Aesteiron House", 107, Kika Street, 4th Floor, Gulalwadi, Mumbai - 400 004, India.  
 info@aesteiron.com      www.aesteiron.com

**copy any content (including images) without prior written consent. Manufacturer, Stockholder, Suppliers, Traders, Wholesaler, Dealer, Distributor, Importer, Exporter, Stockiest of Alloy Steel Pipe Tubes, Stainless Steel Pipe Tube & Carbon Steel Pipe Tube**



## Heat Treatment

### Annealing -

- Grade 410 steels can be fully annealed at temperatures from 815 to 900°C, followed by slow furnace cooling and air-cooling.
- Process annealing of grade 410 steels can be carried out at temperatures ranging from 650 to 760°C and air-cooled.

### Hardening –

- Hardening of grade 410 steels can be performed at 925 to 1010°C, followed by air and oil quenching.
- Heavy sections of grade 410 need to be oil quenched.
- Tempering, to enhance the mechanical properties and hardness of grade 410 steels, follows this process.
- It is not recommended to perform tempering at temperatures from 400 to 580°C.

## Welding

- Grade 410 steels can be welded using all conventional welding techniques, but the materials should pre-heated at 150 to 260°C followed by post-weld annealing treatment, to mitigate cracking.
- Grade 410 welding rods are recommended for tempering and post-hardening. In the "as welded" conditions, grade 309 filler rods can be used to achieve a ductile joint.
- According to AS 1554.6 standards, grade 309 electrodes or rods are preferred for welding 410 steels.

## Machining

- Grade 410 steels can be easily machined in highly tempered or annealed conditions.
- However, it is hard to machine grade 410 steels if they are hardened above 30HRC.
- Free machining grade 416 is the best alternative.

## Applications

- Bolts, screws, bushings and nuts
- Petroleum fractionating structures
- Shafts, pumps and valves
- Mine ladder rungs
- Gas turbines



"Aesteiron House", 107, Kika Street, 4th Floor, Gulawadi, Mumbai - 400 004, India.

[info@aesteiron.com](mailto:info@aesteiron.com)

[www.aesteiron.com](http://www.aesteiron.com)

**© 2016-17. The content on this website is owned by Registrant of domain [www.aesteiron.com](http://www.aesteiron.com) , Do not copy any content (including images) without prior written consent. Manufacturer, Stockholder, Suppliers, Traders, Wholesaler, Dealer, Distributor, Importer, Exporter, Stockiest of Alloy Steel Pipe Tubes, Stainless Steel Pipe Tube & Carbon Steel Pipe Tube**