Type 321 Stainless Steel

1.Stainless Steel Plate

Type 304 | Type 304L | Type 304H | Type 316 | Type 316L | Type 316H | Type 321 | Type 347

Type 410 | UNS S32205 Duplex | UNS S32750 Super Duplex | UNS S32760 Super Duplex

2.A great choice for elevated temperatures, Type 321 stainless has added Titanium which combats the effects of intergranular corrosion. Type 321 is a standard austenitic 18/8 chromium nickel alloy with the addition of Titanium making it an excellent choice in elevated temperature environments.

3.The titanium stabilizes the material removing its susceptibility to the effects of intergranular corrosion. 321 is therefore the stainless steel material of choice for applications in working environments up to 900° C.

4.A drawback of Type 321 is that the titanium does not transfer well across a high temperature arc, so it is not recommended as a welding consumable.

5.In such instances, 347 is the preferred choice as the Niobium performs the same function as Titanium but can be still transferred across a high temperature arc. Type 347 is therefore the consumable of choice for welding Grade 321.

6.The steel has excellent forming and welding qualities and excellent toughness even at cryogenic temperatures. If you are looking for a stainless steel to provide resistance to intergranular corrosion, 304L is the normal choice as it is a more commonly used and supplied steel.

7.However, 321 is a much better option in operating temperature environments in excess of 500° C and therefore has its own merits.

Note that Type 321 does not polish well so it is not practical to use this material as cosmetic architectural feature.

8.Chemical Composition

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UNS No | Grade | C | Si | Mn | P | S | Cr | Mo | Ni | N | Other |
| S32100 | 321 | 0.08 | 0.75 | 2.00 | 0.045 | 0.030 | 17.00/19.00 | – | 9.00/12.00 | – | Ti:5x(C+N)/0.70 |

9.Mechanical Properties

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| UNS No | Grade | Proof Stress 0.2% (MPa) | Tensile Strength (MPa) | Elongation A5(%) | Hardness Max | |
| HB | HRB |
| S32100 | 321 | 205 | 515 | 40 | 217 | 95 |

10.To find out more about 321 stainless steel, contact us today .