Type 304 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 SuperDuplex | UNS S32760 SuperDuplex

2.One of the most common stainless steels, Type 304 can be used in a variety of applications. One of the most versatile and commonly used stainless steels on the market, Grade 304 stainless steel is the most standard used alloy of this type. Essentially, Grade 304 is an austenitic chromium alloy which is also known as an "18/8" stainless as the make-up of the steel is 18% chromium and 8% nickel.

3.The chromium content promotes the our's considerable resistance to the effects of corrosion and oxidation. The stainless steel alloy resists most oxidizing acids and will withstand ordinary rusting though this does not mean that the steel will not tarnish over time. The steel needs to be cold worked to generate higher tensile strength. For stainless steel sections which are welded heavily, post-weld annealing may be necessary to provide maximum corrosive resistance.

4.Type 304 Stainless Steel has excellent welding and deep drawing characteristics - it is easy to fabricate, easy to clean and aesthetically pleasing to the eye.

5.Applications of Grade 304 Stainless Steel

The steel is common throughout industry particularly in food processing as the material is not susceptible to corrosion from acids found in common foodstuffs. As a consequence, such steel is ideal for items such as sinks, work surfaces, preparation areas and refrigerators. It is also a perfect material for use in the pharmaceutical industry for environments such as clean rooms.

6.Grade 304 can also be found in heat exchangers, chemical containers, pipelines and throughout the brewing industry. It can be used as a fabricated material where high temperature petroleum gases or steam production gases are stored such as pressure vessels. It can even be found extensively in the construction industry where the material is used for cosmetic purposes such as a building fascias. 304 & 304L plate and pipes have similar properties and in certain cases are stocked with Dual Certification, where it is concluded that each item has properties and a composition which comply with both steel types. Grade 304H cannot be included in this equation due to the steel's higher carbon content which is intended for use in elevated temperature applications.

7.Chemical Composition

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UNS No | Grade | C | Si | Mn | P | S | Cr | Mo | Ni | N |
| S30400 | 304 | 0.07 | 0.75 | 2.00 | 0.045 | 0.030 | 17.50/19.50 | – | 8.00/10.50 | 0.10 |

8.Mechanical Properties

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| UNS No | Grade | Proof Stress 0.2% (MPa) | Tensile Strength (MPa) | Elongation A5(%) | Hardness Max | |
| HB | HRB |
| S30400 | 304 | 205 | 515 | 40 | 201 | 92 |