2205 Duplex Steel Pipe & Tube – UNS S32101/ WNR 1.4462

2205 is a duplex stainless steel which contains about 40 - 50% ferrite in the annealed condition.

It provides properties such as high mechanical strength and good corrosion resistance similar to that of other duplex steels.

It has been a practical solution to chloride stress corrosion cracking problems experienced with stainless steel 304/304L or 316/316L.

It has high chromium, molybdenum and nitrogen contents offers corrosion resistance superior to stainless steel 316/316L and 317L stainless in most environments. It is not suggested for operating temperatures up to 600°F.

The design strength of 2205 is significantly higher than 316/316L which often permitting lighter wall construction.
It has good notch impact toughness down to temperatures below - 40°F.

2205 Duplex Stainless Steel Features

- High strength
- High resistance to chloride stress corrosion cracking
- Good general corrosion resistance
- Good sulfide stress corrosion resistance
- Chloride pitting and crevice corrosion resistance superior to 317L stainless

2205 Duplex Stainless Steel Application

- Food process equipment
- Oil field piping, heat exchangers
- Pulp mill digesters, bleach washers, chip presteaming vessels
- Chemical process vessels, piping, and heat exchangers

2205 Duplex Stainless Steel Physical Properties

Density: 0.278 lb/inch3
Melting Point: 2525- 2630°F
Poisson's Ratio: 0.3
Electrical Resistivity: 481 Ohm - circ mil/ft

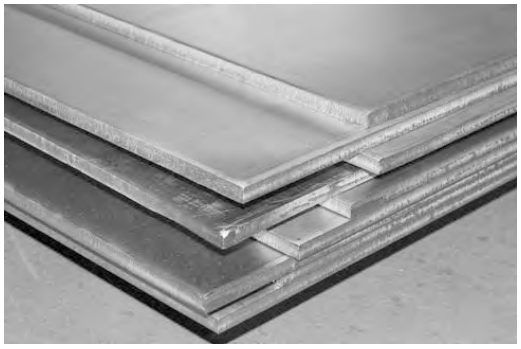
Temperature, °F	70	212	392	572
Coefficient* of Thermal Expansion, in/in°F x 10^{-6}	-	8	8	8
Thermal Conductivity Btu • ft/ft2 • hr • °F	8	9	10	11
Modulus of Elasticity, Dynamic psi x 10^{6}	28	26	25	24

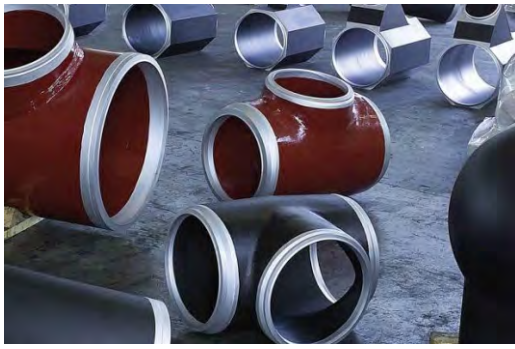
2205 Duplex Stainless Steel Mechanical Properties (Minimum Specified Properties)

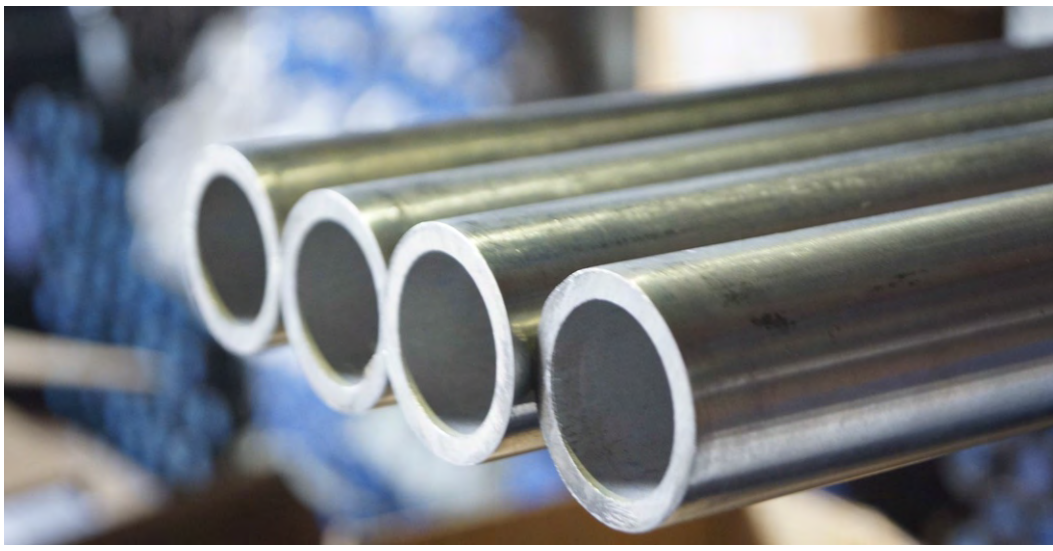
Ultimate Tensile Strength, ksi	95
0.2% Yield Strength, ksi	65
Elongation, %	25
Hardness MAX, Brinell	290

2205 Duplex Stainless Steel Chemical Composition

Element	%
Carbon	0.03max
Phosphorous	0.03max
Silicon	1.0max
Sulphur	0.02max
Manganese	2.0max
Chromium	22.0 - 23.0
Nickel	4.5 - 6.5
Molybdenum	3.0 - 3.5
Nitrogen	0.1 - 0.2
Iron	Balance







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