

# DUPLEX STEEL

## UNS 31803 - 1.4462



### UNS 31803 - 1.4410

UNS 31803 is a type of Duplex stainless steel that has a balanced microstructure of 50% austenite and 50% ferrite. Also known as F51 or 2205, this grade is a successful alternative to the normal 300 series austenitic stainless steels, where its higher strength and resistance to stress corrosion cracking is required in critical applications.

### KEY FEATURES

- High corrosion resistance
- High strength
- Good mechanical strength
- Good weldability

### CHEMICAL PROPERTIES

Chromium (Cr)	Nickel (Ni)	Molybdenum (Mo)	Manganese (Mn)	Silicone (Si)	Copper (Cu)	Nitrogen (N)	Phosphorus (P)	Carbon (C)	Sulphur (S)
21-23%	4.5-6.5%	2.5-3.5%	2%	1%	0.5-1%	0.15%	0.035%	0.03%	0.02%

### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	650-880
Yield strength (N/mm <sup>2</sup> )	450
Elongation (% in 4D)	25
Hardness - Rockwell (HRB) max	105
Hardness - Brinell (HB) max	270

### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	7800	
Modulus of elasticity (Gpa)	200	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	13.0
	0-350°C (µm/m/°C)	13.4
	0-538°C (µm/m/°C)	14.1
Thermal conductivity	at 100°C (W/m.K)	15.0
	at 500°C (W/m.K)	20.2
Specific Heat 0-100°C (J/kg.K)	500	
Electrical resistivity (nΩ.m)	800	
Melting point (°C)	1450	

### MARKET SECTORS



#### Marine Equipment

Ship hulls, propeller shafts, fasteners



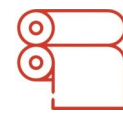
#### Chemical Processing

Plant equipment, reactors, columns, vessels



#### Oil & Gas Industry

Pumps, valves, chokes, piping systems



#### Pulp & Paper Industry

Digesters, bleaching tanks, piping systems



#### Power Generation

Bolts, fasteners, connectors



#### Petrochemical Industry

Heat exchangers, tanks, piping equipment

