

SUPER DUPLEX 2507 / UNS S32750/ DIN 1.4410

Exceptional Corrosion Resistance Super Duplex Steel

2507 Data Sheet

Introduction

2507 is a "super duplex" grade, combining high strength with exceptional corrosion resistance. Like other duplex grades the super duplex grades are not suitable for high or low temperature service. 2507 is not recommended for temperatures below -50°C or above +300°C, because of reduced toughness outside this range.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.030
Manganese	0.000	1.200
Silicon	0.000	0.800
Phosphorus	0.000	0.035
Sulphur	0.000	0.020
Chromium	24.000	26.000
Molybdenum	3.000	5.000
Nickel	6.000	8.000
Copper	0.000	0.500
Nitrogen	0.240	0.320
Iron	Remainder	

Mechanical Properties (typical)

Parameter	Value
Yield 0.2 % (ksi/Mpa), Min	550
Tensile (ksi/Mpa), Min	795
Elongation (% in 50mm), Min	15
Reduction in Area, %	48
Hardness (HB), Max	310

Physical Properties

Parameter	Value
Density (Kg/m ³)	7800
Elastic Modulus (Gpa)	200
Co-eff of Expansion ($\mu\text{m/m}^\circ\text{C}$)	14.5
Thermal Condc. (W/m.K)	14.2
Electric Resistivity (n Ω .m)	850

Corrosion Data

2507 has excellent general corrosion resistance, superior to virtually all other stainless steels. It has high resistance to intergranular corrosion and very high resistance to stress corrosion cracking in both chloride and sulphide environments. It is the grade of choice for severe high temperature marine environments and for chemical and petrochemical processing, even including some solutions of strong acids.

Equivalent Grade Designation

SAF 2507
UNS S32750
F53
DIN EN 1.4410
Z3 CND 25-06 Az
SS 2328
X2CrNiMoN25-7-4
STS 329J4L

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Available Product Forms

Round, Square, Hexagon & Flat Bars
Seamless / Welded Pipes
Seamless / Welded Tubes
Hot & Cold Rolled Plates & Sheets
Forged Bars
Buttweld Pipe Fittings
Forged Fittings
Ferrule Compression Fittings
Forged Flanges
Valves
Gauges

Common Manufacturing Specifications

ASTM A182, A240, A276, A479, A789, A790, A815, A928, A988
SAE J405

Alternate to Alloy

904L Better formability is needed, with similar corrosion resistance and lower strength.
2205 High corrosion resistance & strength not needed. More available & lower cost.
6%Mo Higher corrosion resistance required, but with lower strength & better formability.
316L High corrosion resistance & strength not needed. More available & lower cost.
Ni Alloys Corrosion resistance higher than 2507 is required, & higher cost is acceptable.

Applications & Industries

Oil and Gas industry equipment
Chemical process industries
Process and service water systems
Fire-fighting systems
Injection and ballast water systems
Heat exchangers
Power industry FGD systems

Excellence Inherent

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