

**SUPER DUPLEX 2507Cu / UNS S32550/ DIN 1.4507**

Solid Solution Trenchthened Super Duplex Steel

32550 Data Sheet

**Introduction**

Alloy 32550 is a highly alloyed, superduplex (ferrite-austenite) solid solution trenchthened alloy, which provides high strength and wear resistance while offering superior corrosion resistance compared to 316 stainless steel. Hot and cold forming can be performed via traditional methods keeping in mind that the alloy is higher strength compared to 316 stainless steel.

**Chemical Composition ( Typical )**

Element	Limits	
	min	max
Carbon	0.000	0.040
Manganese	0.000	1.500
Silicon	0.000	1.000
Phosphorus	0.000	0.040
Sulphur	0.000	0.030
Chromium	24.000	27.000
Molybdenum	2.900	3.900
Nickel	4.500	6.500
Copper	1.500	2.500
Nitrogen	0.100	0.250
Iron	Remainder	

**Mechanical Properties ( typical )**

Parameter	Value
Yield 0.2 % ( ksi/Mpa), Min	550
Tensile (ksi/Mpa), Min	750
Elongation ( % in 50mm ), Min	25
Reduction in Area, %	55
Hardness (HB), Max	290

**Physical Properties**

Parameter	Value
Density ( Kg/m <sup>3</sup> )	7850
Elastic Modulus ( Gpa )	200
Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	14.5
Thermal Condc. (W/m.K)	19
Electric Resistivity (n $\Omega$ .m)	850

**Corrosion Data**

32550 has excellent general corrosion resistance, superior to virtually all other stainless steels. It has high resistance to intergranular corrosion. Because of its high strength it performs well in abrasion/corrosion conditions. The material has good pitting and crevice corrosion resistance to warm sea water and other high chloride environments; it is rated as more resistant than grade 904L.

## Equivalent Grade Designation

2507 Cu  
UNS S32550  
ALLOY 255  
DIN EN 1.4507  
X2CrNiMoCuN25-6-3  
FERRALIUM 255

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## Available Product Forms

Round, & Flat Bars  
Seamless / Welded Pipes  
Seamless / Welded Tubes  
Hot & Cold Rolled Plates & Sheets  
Forged Bars

## 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  
Marine Industry and Shipbuilding  
Pollution Control  
Pulp and Paper Industry  
Food Industry  
Civil Engineering

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