

Duplex Stainless Steels

Super Duplex (UNS S32750)

Super Duplex stainless like S32750, is a mixed microstructure of austenite and ferrite (50/50) which has improved strength over ferritic and austenitic steel grades. The main difference is that Super Duplex has a higher molybdenum and chromium content which gives the material greater corrosion resistance than standard duplex grades.

The balanced dual phase microstructure combines high strength with cost effective corrosion resistance particularly in high chloride environments.

Super Duplex has the same benefits as its counterpart – it has lower alloying costs when compared with similar ferritic and austenitic grades with equipment corrosion resistance in chloride containing environments due to the material's increased tensile and yield strength. In many cases this gives the purchaser the welcomed option of purchasing smaller thicknesses without the need to compromise on quality and performance.

Available tube product forms

- STRAIGHT
- COILED
- SEAMLESS
- SEAM WELDED AND COLD REDRAWN
- SEAM WELDED, COLD REDRAWN AND ANNEALED

Typical Applications

- SUBSEA CONTROL LINES
- HEAT EXCHANGERS
- OFFSHORE PLATFORMS
- FIRE-FIGHTING SYSTEMS
- INJECTION & BALLAST WATER SYSTEMS

Typical manufacturing specifications

- ASTM A789
- ASME SA-789
- ASME SA-790

Also individual customer specifications.

Industries predominantly using this grade

- OIL & GAS
- CHEMICAL PROCESSES

Technical Data

Mechanical Properties		
Temper	Annealed	
Tensile Rm	115	ksi (min)
Tensile Rm	800	MPa (min)
R.p. 0.2% Yield	80	ksi (min)
R.p. 0.2% Yield	550	MPa (min)
Elongation (2" or 4D gl)	15	% (min)

Physical Properties (Room Temperature)		
Specific Heat (0-100°C)	500	J.kg ⁻¹ .°K ⁻¹
Thermal Conductivity	15	W.m ⁻¹ .°K ⁻¹
Thermal Expansion	11	mm/m/°C
Modulus Elasticity	200	GPa
Electrical Resistivity	8.12	μohm/cm
Density	7.80	g/cm ³

Chemical Composition (% by weight)		
Element	Min	Max
C	-	0.030
Cr	24	26
Cu	0.50	1
Mn	-	2
Mo	3	5
N	0.24	0.35
Ni	6	8
P	-	0.35
S	-	0.015
Si	-	1