

### Duplex Stainless Steel Super Duplex 2507 (UNS S32750)

#### Application

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**

#### Typical manufacturing specifications

**ASTM A789, ASTM A790**

**Also individual customer specifications.**

#### Industries predominantly using this grade

**Subsea control lines, Offshore platforms,**

**Injection & Ballast water systems etc.**

#### Maximum Coil Length per Dimension (Unit : meter)

		Wall thickness (mm)					
		0.51	0.71	0.89	1.24	1.65	2.11
Outside diameter r (mm)	3.175	-	-	-	-	-	-
	6.35	-	-	336	258	211	-
	9.53	-	-	212	159	126	104
	12.7	-	-	-	115	90	<b>73</b>
	19.05	-	-	-	74	57	46
	25.4	-	-	-	-	42	33

can provide longer length according to customer requirement

#### Technical Data

#### Chemical composition(% by weight)

Element	C	Mn	P	S	Si	Ni	Cr	Mo	N	Cu	-	-
Minimum	-	-	-	-	-	6.0	24.0	3.0	0.24	-	-	-
Maximum	0.030	1.20	0.035	0.020	0.80	8.0	26.0	5.0	0.32	0.50	-	-
Aiming	0.01	0.8	0.03	0.002	0.3	6.8	25	3.75	0.27	0.2	-	-

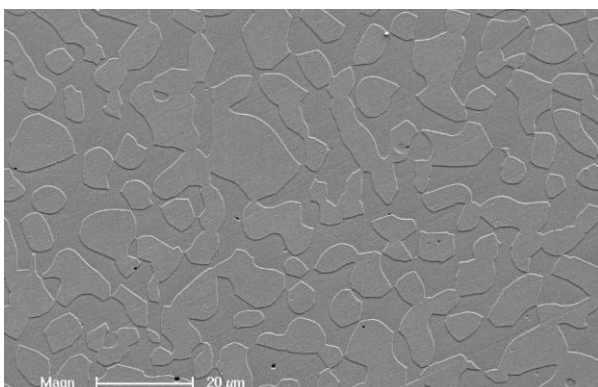
#### Mechanical Properties

	Specifications(Tubing, Annealed)		Actual data	
Tensile Rm	116	ksi (min.)	123~137	ksi
Tensile Rm	800	MPa (min.)	850~950	MPa
Yield (R.p. 0.2%)	80	ksi (min.)	91~101	ksi
Yield (R.p. 0.2%)	550	MPa (min.)	630~700	MPa
Elongation	15	% (min.)	28~35	%

#### Physical Properties(Room Temperature)

Specific Heat (0-100°C)	490	J.kg <sup>-1</sup> .°K <sup>-1</sup>
Thermal Conductivity	14	W.m <sup>-1</sup> .°K <sup>-1</sup>
Thermal Expansion	13.5	mm/m.°C
Modulus Elasticity	200	GPa
Electrical Resistivity	83	μohm.cm
Density	7.8	g/cm <sup>3</sup>

#### Microstructure



#### Maximum allowable pressure (Unit : BAR)

		Wall thickness (mm)						
		0.89	1.24	1.65	2.11	2.77	3.96	4.78
Outside diameter r (mm)	6.35	748	1087	1489	-	-	-	-
	9.53	480	689	949	1249	-	-	-
	12.7	-	504	688	906	-	-	-
	19.05	-	328	443	578	779	-	-
	25.4	-	-	327	424	568	-	-
	31.8	-	-	259	334	446	656	-
	38.1	-	-	-	-	-	-	-
	50.8	-	-	-	-	-	-	-

\* We follow customer requested dimensions.

\* Select tubes according to design pressure