

Stainless steel

Alloys 6Mo

(UNS S31254)

Application

6Mo (UNS S31254) is a super austenitic stainless steel with a high level of molybdenum and nitrogen, providing high resistance to pitting and crevice corrosion as well as high strength compared with conventional austenitic stainless steels such as 316L.

The alloy can provide excellent resistance to stress corrosion cracking allowing tube cold forming and may be used without the necessity to re-anneal at testing up to 120°C.

Available tube product forms

STRAIGHT || **COILED** || **SEAMLESS** || **WELDED**

Typical manufacturing specifications

ASTM A213, ASTM A269, ASTM A312

Also individual customer specifications.

Industries predominantly using this grade

Chemical processes, Seawater handling systems

Control and instrumentation, Oil and Gas 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 (mm)	3.175	1318	1023	881	-	-	-
	6.35	601	447	368	283	-	-
	9.53	389	286	233	174	138	114
	12.7	-	210	170	126	98	80
	19.05	-	-	111	81	62	50
	25.4	-	-	-	60	46	36

* We 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	-	-	-	-	-	17.5	19.5	6.00	0.18	0.5	-	-
Maximum	0.020	1.00	0.030	0.010	0.80	18.5	20.5	6.50	0.22	1.00	-	-

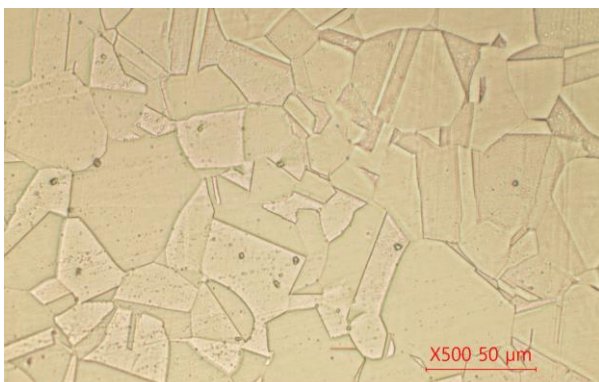
Mechanical Properties

	Specifications(Tubing, Annealed) WT ≤5mm		Specifications(Tubing, Annealed) WT >5mm	
Tensile Rm	98	ksi (min.)	95	ksi (min.)
Tensile Rm	675	MPa (min.)	655	MPa (min.)
Yield (R.p. 0.2%)	45	ksi (min.)	45	ksi (min.)
Yield (R.p. 0.2%)	310	MPa (min.)	310	MPa (min.)
Elongation	35	% (min.)	35	% (min.)

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	500	J.kg ⁻¹ .°K ⁻¹
Thermal Conductivity	14	W.m ⁻¹ .°K ⁻¹
Thermal Expansion	16.5	mm/m/°C
Modulus Elasticity	196	GPa
Electrical Resistivity	85	μohm.cm
Density	8.0	g/cm ³

Microstructure



Maximum allowable pressure (Unit : BAR)

		Wall thickness (mm)						
		0.89	1.24	1.65	2.18	2.77	3.96	4.78
Outside diameter (mm)	6.35	520	757	1036	1382	-	-	-
	9.53	334	479	660	901	1168	-	-
	12.7	246	351	478	654	855	-	-
	19.05	-	228	308	416	542	-	-
	25.4	-	169	228	305	395	586	726
	31.8	-	-	180	241	310	457	563
	38.1	-	-	149	199	256	375	460
	50.8	-	-	111	148	189	276	337

* Please let us know your design pressure, we can produce requested tube size

* The table above is for your reference