

Stainless steel

Alloy 304/304L

(UNS S30400/S30403, EN 1.4301/1.4306)

Application

Alloy 304 (S30400) and 304L (S30403) stainless steels are variations of the 18 percent chromium – 8 percent nickel austenitic alloy, the most familiar and most frequently used alloy in the stainless steel family. High strength, excellent corrosion resistance and minimized carbon content make Alloy 304 and 304L Stainless Steels useful for applications where welding is required. Uses include architectural mouldings and trim, welded components of chemical, textile, paper, pharmaceutical and chemical industry processing equipment.

Other advantages are its resistance to oxidation, excellent formability, ease of fabrication and cleaning, excellent strength to weight ratio and good toughness at cryogenic temperatures. For severely corrosive environments, the lower content of Type 304L is preferred because of its greater immunity to intergranular corrosion.

Available tube product forms

STRAIGHT || COILED || SEAMLESS || WELDED

Typical manufacturing specifications

ASTM A213, ASTM A269, ASTM A312, ASTM A632

Also individual customer specifications.

Industries predominantly using this grade

Moisture separator reheaters,

Heat Exchangers, Feedwater tubes 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	2964	2302	1981	-	-	-
	6.35	1353	1006	829	636	-	-
	9.53	876	643	524	392	310	257
	12.7	-	473	383	284	221	180
	19.05	-	-	249	182	140	113
	25.4	-	-	-	134	103	82

* We can provide longer length according to customer requirement

Technical Data

Chemical composition(% by weight)

Element	C	Mn	P	S	Si	Ni	Cr	-	-	-	-	-
Minimum	-	-	-	-	-	8.0	18.0	-	-	-	-	-
Maximum	0.035	2.00	0.045	0.030	1.00	11.0	20.0	-	-	-	-	-
Aiming	0.01	1.6	0.03	0.003	0.5	9.1	18.2	-	-	-	-	-

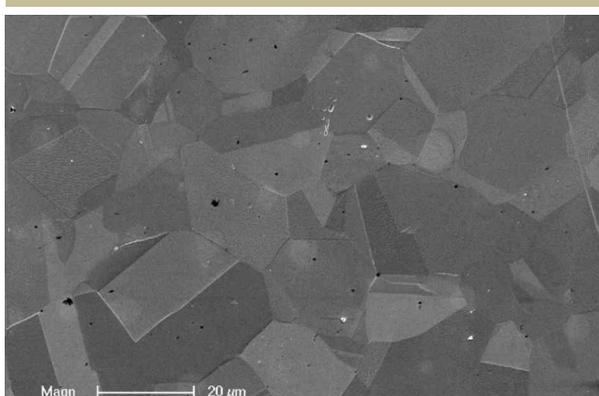
Mechanical Properties

	Specifications(Tubing, Annealed)		Actual data	
Tensile Rm	75	ksi (min.)	81~101	ksi
Tensile Rm	515	MPa (min.)	560~700	MPa
Yield (R.p. 0.2%)	30	ksi (min.)	36~50	ksi
Yield (R.p. 0.2%)	205	MPa (min.)	250~350	MPa
Elongation	35	% (min.)	45~55	%

Physical Properties(Room Temperature)

Specific Heat (0-100°C)	500	J.kg ⁻¹ .°K ⁻¹
Thermal Conductivity	16.2	W.m ⁻¹ .°K ⁻¹
Thermal Expansion	17.2	µm/m/°C
Modulus Elasticity	193	GPa
Electrical Resistivity	72	µohm·cm
Density	7.9	g/cm ³

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 (mm)	6.35	387	562	770	995	-	-	-
	9.53	249	356	491	646	868	-	-
	12.7	183	261	356	468	636	-	-
	19.05	-	170	229	299	403	-	-
	25.4	-	126	169	219	294	436	540
	31.8	-	-	134	173	231	340	418
	38.1	-	-	111	143	190	279	342
	50.8	-	-	83	106	141	205	251

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

* The table above is for your reference