STAINLESS STEEL

ALLOYS 304 / 304L

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TUBING APPLICATIONS

Alloys 304 / 304L (UNS S30400 / S30403)

Alloys 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
SEAM WELDED AND COLD REDRAWN
SEAM WELDED, COLD REDRAWN AND ANNEALED

TYPICAL MANUFACTURING SPECIFICATIONS		
AMS 5566	ASTM A213	NFA 49-117
AMS 5569	ASTM A269	NFA 49-217
AMS5647	ASTM A312	Mil-T 8504
AMS 6845	ASTM A632	Mil-T 8606
BS 10216 Pt 5	BS 3605 Pt 1	
Also individual customer specifications.		

TYPICAL APPLICATIONS
MOISTURE SEPERATOR REHEATERS
HEAT EXCHANGERS
FEEDWATER TUBES
STATOR BARS

INDUSTRIES PREDOMINANTLY USING THIS GRADE
NUCLEAR AND POWER
GENERAL ENGINEERING

Technical Data

MECHANICAL PROPERTIES				
Temper	304		304L	
Tensile Rm	76	ksi (min)	70	ksi (min)
Tensile Rm	517	MPa (min)	485	MPa (min)
R.p. 0.2% Yield	31	ksi (min)	25	ksi(min)
R.p. 0.2% Yield	207	MPa (min)	170	MPa (min)
Elongation (2" or 4D gl)	40	% (min)	40	% (min)

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	mm/m/°C
Modulus Elasticity	19.3	GPa
Electrical Resistivity	7.23	µohm/cm
Density	8.00	g/cm3

CHEMICAL COMPOSITION (% by weight)				
	304		304L	
Element	Min	Max	Min	Max
C	-	0.08	-	0.08
Mn	-	2	-	2
Ni	8	10.50	8	12.00
Cr	18	20	18	20
S	-	0.03	-	0.03
N	-	0.1	-	0.1
Si	-	0.75	-	0.75
P	-	0.045	-	0.045

AMETEK® SPECIALTY METAL PRODUCTS