

ALLOYS 304 / 304L



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 MiLT 8504

AMS 6845 ASTM A632 MiLT 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	
	ksi (min)	MPa (min)	ksi (min)	MPa (min)
Tensile Rm	76	517	70	485
Tensile Rm	ksi (min)	MPa (min)	ksi (min)	MPa (min)
R.p. 0.2% Yield	31	207	25	170
R.p. 0.2% Yield	ksi (min)	MPa (min)	ksi (min)	MPa (min)
Elongation (2" or 4D gl)	40	40	40	40
Elongation (2" or 4D gl)	% (min)	% (min)	% (min)	% (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)

Element	304		304L	
	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