

Stainless Steel Selection Guide (Ref. ASTM-A240)

TYPE	DESCRIPTION	TYPICAL COMPOSITION %	FORM	TYPICAL MECHANICAL PROPERTIES Annealed at Room Temperature				WELD- ABILITY	RELATIVE COST
				Tensile	Yield (0.2% Offset)	Elongation (% in 2")	Hardness		
Austenitic (Hardenable by cold working only)									
304 (S30400)	Low-carbon modification of type 302 for restriction of carbide precipitation during welding. Chemical and food processing equipment; brewing equipment; cryogenic vessels; gutters; downspouts; flashings.	18-20 Cr, 8-10.50 Ni, 0.08 C, 2.0 Mn, 1.0 Si, 0.045 P, 0.030 S	sheets plates	84,000 82,000	42,000 35,000	55 60	80 Rb 149 Bhn	A	100 100
304L (S30403)	Extra-low-carbon modification of type 304 for further restriction of carbide precipitation during welding. Coal hopper linings; tanks for liquid fertilizer and tomato paste.	18-20 Cr, 8-12 Ni, 0.03 C, 2.0 Mn, 1.0 Si, 0.045 P, 0.030 S	sheets plates	81,000 79,000	39,000 33,000	55 60	79 Rb 143 Bhn	A	111 109
316 (S31600)	Higher corrosion resistance than types 302 and 304; high creep strength. Chemical and pulp handling equipment; photographic equipment; brandy vats; fertilizer parts; ketchup cooking kettles; yeast tubs.	16-18 Cr, 10-14 Ni, 0.08 C, 2.0 Mn, 1.0 Si 0.045 P, 0.030 S, 2.0-3.0 Mo	sheets plates	84,000 82,000	42,000 36,000	50 55	79 Rb 149 Bhn	A	148 140
316L (S31603)	Extra-low-carbon modification of type 316 Welded construction where intergranular carbide precipitation must be avoided. Type 316 application requiring extensive welding.	16-18 Cr, 10-14 Ni 0.03 C, 2.0 Mn, 1.0 Si 0.045 P, 0.030 S, 2.0-3.0 Mo	sheets plates	81,000 81,000	42,000 34,000	50 55	79 Rb 146 Bhn	A	159 149
321 (S32100)	Stabilized for weldments subject to severe corrosive conditions, and for service from 800 to 1600 F. Aircraft exhaust manifolds; boiler shells; process equipment; expansion joints; cabin heaters; fire walls; flexible couplings, pressure vessels.	17-19 Cr, 9-12 Ni, 0.08 C, 2.0 Mn, 1.0 Si, 0.045 P, 0.030 S (Ti, 5 X C min)	sheets plates	90,000 85,000	35,000 30,000	45 55	80 Rb 160 Bhn	A	130 128