

# Stainless Steel Selection Guide (Ref. ASTM-A240)

TYPE	DESCRIPTION	TYPICAL COMPOSITION %	FORM	TYPICAL MECHANICAL PROPERTIES				WELD- ABILITY	RELATIVE COST
				Annealed at Room Temperature					
				Tensile	Yield (0.2% Offset)	Elongation (% in 2")	Hardness		
<b>Austenitic</b> (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	84,000	42,000	55	80 Rb	A	100
			plates	82,000	35,000	60	149 Bhn		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	81,000	39,000	55	79 Rb	A	111
			plates	79,000	33,000	60	143 Bhn		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	84,000	42,000	50	79 Rb	A	148
			plates	82,000	36,000	55	149 Bhn		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	81,000	42,000	50	79 Rb	A	159
			plates	81,000	34,000	55	146 Bhn		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	90,000	35,000	45	80 Rb	A	130
			plates	85,000	30,000	55	160 Bhn		128