Combined Metals of Chicago
Bellwood Service Center

Alloy 305 Stainless Steel

UNS: S30500
EN-DIN: 1.4303

Industries supplied include: appliances, kitchen utensils, tank covers, and other deep drawn parts. 305 grade stainless has similar corrosion resistance as 304 and has good oxidation resistance in air up to 1650 F (899 C). 305 can be readily formed and deep drawn into complex shapes due to its lower strength and work hardening rate and will remain nonmagnetic after cold work unlike 301 or 304. A caution is autogenous welds in 305 are more sensitive to hot cracking than 304 or 304L.

Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	N	Fe		
min	-	-	-	-	-	17.0	10.0	-	-		
max	.012	2.0	0.045	0.030	1.00	19.0	13.0	0.10	BAL		

Physical Properties

	At 70°F	At 20°C
Density	0.29 lb./in^3	7.99 g/cm^3
Modulus of Elasticity (E)	28.0 x 10^3 ksi in tension	193 x 10^{3}MPa in tension
Coefficient of Expansion	9.6 x 10^{-6} microinches/in.-°F (32-212°F)	17.3 µm/m-°C (0-100°C)
Electrical Resistivity	28.4 µ ohm.in	72 µ ohm.cm
Thermal Conductivity	9.4 Btu-in./ft.^{2}hr.-°F (100°C)	16.2 W/m-K (100°C)

Applicable Specifications

AMS 5514, ASTM A240

Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)	0.2% YS	Elongation% in 2" (50.8 mm)	Hardness Rockwell
Annealed	85 ksi (586 MPa)	35 ksi (241 MPa)	55	70 HRBW

Typical mechanical properties are based on AK source, ASTM A240

For further information email:
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