

Alloy 347 Stainless Steel

UNS N34700
W. Nr 1.4550

Applicable Specifications

Strip and Foil | AMS 5512, ASTM A240, MIL-S-23196

Description: Type 347 is a stabilized austenitic stainless steel, similar to type 304, but alloyed with Niobium (Columbium) for use in applications involving continuous or intermittent service at 800-1500°F (427-816°C). 347 stainless has excellent resistance to oxidation, even surpassing that of 321 in strong oxidizing conditions. The alloy maintains resistance to intergranular corrosion, while also possessing good creep strength compared to other 300 series stainless steels. The alloy is strengthened only through cold work and can be fabricated, machined, and welded via most conventional processes.

Applications include: Annealing covers, High-temperature tempering equipment, Diesel and heavy-duty automotive exhaust, Firewalls, Stack liners, Boiler casings, Welded pressure vessels, Aircraft components, Bellows, Oil refinery equipment, Springs

Industries supplied include: Aerospace, Oil & Gas, Chemical Processing, Food Processing, Waste Treatment

Nominal Composition

	C	Mn	P	S	Si	Ni	Cr	Nb (Cb)	N	Fe
min	-	-	-	-	-	9.00	17.00	10*C	-	Bal
max	0.08	2.00	0.045	0.030	1.00	12.00	19.00	1.00	0.10	-

Physical Properties

	At 70°F	At 20°C
Density	0.288 lb/in ³	7.96 g/cm ³
Modulus of Elasticity (E)	28.0 x 10 ³ ksi	193 GPa
Modulus of Rigidity (G)	11.2 x 10 ³ ksi	78 GPa
Coefficient of Expansion	11.4 μin/in-°F (32-1500°F)	20.5 μm/m-°C (0-871°C)
Electrical Resistivity	28.4 μohm-in	72 μohm-cm
Thermal Conductivity	113 Btu-in/ft ² -hr-°F (212°F)	16.3 W/m-°C (100°C)

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1750-2150°F (954-1175°C)	90-110 ksi (620-760 MPa)	Up to 1500°F (816°C)

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