

Incoloy® alloy A-286

UNS S66286
W.Nr 1.4980

Incoloy® alloy A-286 is an age-hardenable Iron-Nickel-Chromium alloy with high strength and corrosion resistance at elevated temperatures. Incoloy® A-286 can operate from cryogenic temperatures up to 750°F.

Applications include fasteners and springs.

Industries supplied include: Automotive and Aerospace.

Nominal Composition

	Ni	Cr	Ti	Mo	Mn	Si	Fe	Al	V	C	S
min	24	13.5	1.9	1.0					0.1		
max	27	16	2.35	1.5	2	1	balance	0.35	0.5	0.08	0.030

Physical Properties

	At 70°F	At 20°C
Density	0.287 lb/in ³	7.94 g/cm ³
Modulus of Elasticity (E)	28.8 x 10 ³ ksi	199 GPa
Modulus of Rigidity (G)	11.2 x 10 ³ ksi	77 GPa
Coefficient of Expansion	9.47 microinches/in.-°F (70-600°F)	17 μm/m-°C (20-300°C)
Electrical Resistivity	35.8 μ ohm.in	91 μ ohm.cm
Thermal Conductivity	88 Btu-in./ft. ² hr.-°F	12.7 W/m-K

Applicable Specifications

Wire & Bar	AMS 5726, AMS 5731, AMS 5732, AMS 5734, AMS 5737, AMS 5804, AMS 5805, AMS 5810, AMS 5853, ASTM A638, NACE MR0175 (ISO 15156-3).
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Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1800°F (980°C)	80 – 110 ksi (550 – 760 MPa)	-300°F to 750°F (-184°C to 400°C)
Annealed + Aged	After spring coiling. Age: 1300°F - 1400°F (704°C -760°C) for 16 hours.	160 – 190 ksi (1100 – 1310 MPa)	-300°F to 750°F (-184°C to 400°C)
Spring Temper		160 – 190 ksi (1100 – 1310 MPa)	-300°F to 750°F (-184°C to 400°C)
Spring Temper + Aged	After spring coiling. Age: 1300°F - 1400°F (704°C -760°C) for 8 hours.	200 – 240 ksi (1379 – 1655 MPa)	-300°F to 750°F (-184°C to 400°C)

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