



Specialty Metals – Strip Products

Haynes® alloy 188

UNS R30188
W. Nr 2.4683

Haynes® Alloy 188 is a cobalt-nickel-chromium-tungsten alloy with excellent high temperature tensile strength, sulfidation, and oxidation resistance up to 1095°C (2000°F) for long term exposures. Haynes® Alloy 188 is not age hardenable, but may be cold worked to achieve higher tensile and yield strength. Haynes® Alloy 188 responds well to conventional forming and welding techniques.

Applications include: Combustor liners and cans, furnace liners, flame hoods, gas turbine rotors, and nozzle diaphragm valves.

Industries supplied include: Military and Commercial Aerospace, Chemical Processing, Land-Based Gas Turbines, and Nuclear markets.

Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	Co	B	Fe	W	La
min	0.05				0.20	21.0	20.0	bal			13.0	0.03
max	0.15	1.25	0.02	0.015	0.50	23.0	24.0		0.015	3.000	15.0	0.15

Physical Properties

	At 70°F	At 20°C
Density	0.3251 lb/in ³	9 g/cm ³
Modulus of Elasticity (E)	34 x 10 ³ ksi	232 GPa
Modulus of Rigidity (G)	14 x 10 ³ ksi	93 GPa
Coefficient of Expansion	6.6 microinches/in.-°F (70-1000°F)	12 μm/m-°C (20-538°C)
Electrical Resistivity	0.0394 μ ohm.in	0.1 μ ohm.cm
Thermal Conductivity	73 Btu-in./ft. ² hr.-°F	10 W/m-K

Applicable Specifications

Strip & Foil	AMS 5608, GE B50A712, PWA 1042, Rolls Royce MSRR 7165
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Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	Per AMS 5608	130-160 ksi (900-1100 MPa)	-300°F to 2000°F (-185°C to 1095°C)
Spring Temper	None	Up to 250 ksi (1725 MPa)	-300°F to 2000°F (-185°C to 1095°C)

Haynes® is a registered trademark of Haynes International, Inc.

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Elgiloy Specialty Metals - Strip
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