



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
--------------	---

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.

Phone: 1.888.843.2350

Elgiloy Specialty Metals - Strip
Products
1565 Fleetwood Dr.
Elgin, IL 60123 USA

WWW.ELGILOY.COM

LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY:

The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.

Applications may be discussed, however, Elgiloy Specialty Metals does not recommend or endorse any material for any particular end use or application.

The data included in this data sheet are typical values and may vary.

Elgiloy Specialty Metals makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.

In no event will Elgiloy Specialty Metals be liable for any damages whatsoever arising from the use of the information included in the data sheets.