

SALOMON'S METALEN B.V.

CoNiFer

CoNiFer is a non-magnetic Cobalt-Chromium-Nickel-Molybdenum alloy having a unique combination of very high strength, excellent corrosion resistance and high fatigue strength. CoNiFer is highly resistant to sulfide stress corrosion cracking and as a result is the alloy of choice in the most demanding sour well environments.

In seawater CoNiFer is virtually immune to crevice and stress corrosion and pitting even at the highest strength levels and can operate at cryogenic temperatures up to 454°C. Applications include springs, torsion bars, seals, medical devices & implants and orthodontic wire.

Industries supplied include: Oil & Gas Extraction, Medical & Dental, Aerospace, Defense and Space Exploration.

Nominal Composition

	Co	Cr	Ni	Mo	Mn	Fe	Si	C	Be	P	S
min	39	19	14	6	1.5						
max	41	21	16	8	2.5	balance	1.2	0.15	0.1	0.015	0.015

Physical Properties

	At 20°C
Density	8.30 g/cm ³
Modulus of Elasticity (E)	190 GPa
Modulus of Rigidity (G)	77.2 GPa
Coefficient of Expansion	15.2 x μm/m-°C (20-300°C)
Electrical Resistivity	99.6 μ ohm.cm
Thermal Conductivity	12.5 W/m-K

Applicable Specifications

Wire & Bar	AMS 5833, AMS 5834, ASTM F1058, NACE MR0175 (ISO 15156-3), ISO 5832-7.
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Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1120°C	830-1035 MPa	-184°C to 454°C
Spring Temper		1515-2000 MPa	-184°C to 454°C
Spring Temper + Aged	After spring coiling. Age: 527°C for 5 hours.	1790-2275 MPa	-184°C to 454°C