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Sandvik Bioline F1537

(Bar)

Sandvik Bioline F1537 is a cobalt-chromium-molybdenum (CoCrMo) alloy, available with low and high carbon (C) content. Both alloys are characterized by high strength, wear resistance and corrosion resistance.

STANDARDS

- ASTM F1537, F799
- UNS R31537, R31538
- ISO 5832-12

APPLICATIONS

CoCrMo alloys are used by customers for joint replacement (hip, knee, shoulder) and fixation devices.

CHEMICAL COMPOSITION

Grade	C	Cr	Mo	Ni max	Fe max	Si max	Mn max	N max	Co
Sandvik Bioline F1537 (Alloy 1, UNS R31537)	≤ 0.14	26–30	5–7	1	0.75	1	1	0.25	Bal
Sandvik Bioline F1537 (Alloy 2, UNS R31538)	0.15–0.35	26–30	5–7	1	0.75	1	1	0.25	Bal

FORMS OF SUPPLY

Finishes and dimensions
Sandvik Bioline F1537 bar is offered in a comprehensive range of standard sizes from 10-80 mm diameter. The bar is supplied in the annealed, hot worked and warm worked conditions with a peeled or ground surface finish.

Lengths
Bar is delivered in 3.0-3.5 m straight lengths. Shorter lengths are available on request.

TOLERANCE

Diameter, mm	Standard tolerance, mm
10	+/- 0.05
>10–50.8	+/- 0.065
>50.8–80	+/- 0.125

Alternative tolerances are available on request.

MECHANICAL PROPERTIES

Product form	Condition	Tensile strength R_m		Proof strength $R_{p0,2}$		Elongation A,%	Hardness HRC
		MPa min	ksi min	MPa min	ksi min	typical	typical
Bar	Annealed	897	130	517	75	20	25
Bar	Hot worked	1000	145	700	101	12	28
Bar	Warm worked	1172	170	827	120	12	35

PHYSICAL PROPERTIES

Property		
Density (20 °C)	8.25 g/cm^3	0.29 lb/in^3
Modulus of elasticity, x10^3 (20°C)	240 MPa	35 ksi
Specific heat capacity (20°C)	452 J/(kg °C)	0.11 Btu/(lb°F)
Thermal conductivity (20°C)	13W/(m°C)	7.5 Btu/(ft h °F)

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