Alleima® F1537
Bar
Datasheet

Alleima® 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

Chemical composition

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

Applications

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

Forms of supply

Finishes and dimensions

Alleima® 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.

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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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