



High-pressure mud pump

Technical datasheet

Stellite 1

Major specifications

ASME BPVC IIC SFA 5.21/5.13 ERCCoCr-C AWS A5.13/A5.21 UNS R30001

Available product forms

Cobalt bar Diameter: $\Phi 4\text{mm}$ - $\Phi 600\text{mm}$
 Cobalt wire rod Diameter: $\Phi 0.01\text{mm}$ - $\Phi 6\text{mm}$
 The current stock range can be found on www.lorkalloy.com.
 Further dimensions available upon request.
 Use our Service Centre to have the available sizes cut to your desired dimensions.

Key features

Stellite 1 is a cobalt-chromium-tungsten superalloy offering the highest hardness of any cobalt-based alloy, up to 63 HRC, with exceptional wear resistance at temperatures up to 870°C. Its high carbon content forms hard carbides that resist abrasion, galling, and erosion. It provides good corrosion and oxidation resistance, but has low ductility and is not suitable for impact or structural use. Typically applied as castings or hardfacing deposits for valve seats, pump sleeves, bearings, extrusion dies, and knife blades in power generation, chemical, steel mill, and mining services.

Chemical properties

Composition - limits in %

Co	Cr	W	C	Others
Base	max.32.0	max.13.0	max.3.0	Ni,Fe,Si,Mn,Mo

Physical and thermal properties

Density	8.69 g/cm ³
Melting temperature	1190-1375°C
Electrical Resistivity	0.85-0.90 $\mu\Omega\cdot\text{m}$
Hardness	HRC 50-58

Typical mechanical properties (room temperature)

Ultimate Tensile Strength	min.700 MPa
Yield strength	min.500 MPa
Elongation	min.1%

Typical mechanical properties (typical values, depending on specific shape and process)

*This data comes from <https://www.lorkalloy.com/>