



Mining machinery tapered roller bearings

Technical datasheet

Stellite 3

Major specifications

AWS A5.13/A5.21 UNS R30001/ R30103

Available product forms

Castings: Investment castings, cast bars/plates/sheets, PTA powder
 Powder Metallurgy: PM pre-alloyed powder, PM/HIP consolidated components
 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 3 is a cobalt-chromium-tungsten superalloy offering an excellent balance of high hardness and practical wear resistance, typically ranging from 48 to 63 HRC, with good high-temperature stability 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 recommended for impact or structural applications. Typically applied as castings, powder metallurgy parts, or hardfacing deposits for valve seats, pump sleeves, bearings, and cutting tools in power generation, chemical, steel mill, and mining services.

Chemical properties

Composition - limits in % (ASTM A732+ASTM A842)

Co	Cr	W	C	Others
Base	max.30.5	max.12.5	max.2.3	Ni,Fe,Si

Physical and thermal properties

Density	8.60-8.70 g/cm ³
Melting temperature	1250-1290°C
Electrical Resistivity	0.98 μΩ·m
Hardness	HRC 48-63

Typical mechanical properties (room temperature)

Ultimate Tensile Strength	min.490 MPa
Elongation	<1%

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

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