LORK GROUP
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ISO 9001 ISO 14001 ISO 45001

turbine blades

Technical datasheet

Stellite 31

Major specifications

UNS R30031	AMS 5382	ASTM A732 Gr.31

Available product forms

Plate: 0.3mm – 150.0mm (thickness)
Strip/Foil: 0.02mm – 16.0mm (thickness)
Pipe: 6mm – 1219mm (OD)
Bar: Φ4mm – Φ600mm (diameter)
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 31 is a cobalt-chromium-tungsten-nickel alloy, belonging to the cobalt-based superalloy series. Compared to Stellite 6, it exhibits superior high-temperature strength and creep resistance (up to 980℃), while maintaining good oxidation resistance and high-temperature corrosion resistance. The higher tungsten content contributes to solid solution strengthening, thereby increasing high-temperature hardness. It is commonly used in gas turbine blades and furnace tools. Its excellent weldability makes it suitable for surfacing, extending the service life of high-temperature components in power generation and aerospace industries.

Chemical properties

Composition - limits in %

Co	Cr	W	C	Ni	Others
Base	max.26.0	max.7.5	max.0.5	max.10.5	Mo, Fe, Si

Physical and thermal properties

Density	8.61 g/cm³
Melting temperature	1340-1395°C
Thermal Conductivity	13.0-16.3 W/(m·K) (at room temperature)
Hardness	HRC 25-35

Typical mechanical properties (room temperature)

Ultimate Tensile Strength(Castings)	~740 MPa
Yield Strength(Castings)	~430 MPa

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

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