



STELCAR[®] JET KOTE[®] 125 PREMIUM QUALITY HVOF COATING

JK[®]125 is a thermal spray powder developed specifically for the deposition of high quality HVOF coatings. This HVOF powder contains mixed (W,Cr)C and WC carbides in a nickel matrix. When deposited correctly using the Jet Kote[®] HVOF system, JK[®]125 coatings are equivalent to Praxair D-Gun[®] LW-5 coatings.

Typical Applications

JK[®]125 HVOF coatings have improved corrosion resistance in some environments compared to WC/Co coatings, because of the nickel matrix. They have excellent resistance to salt, sea water and amine environments, and good resistance to sulphuric acid. They are not recommended for nitric or hydrochloric acid environments. JK[®]125 coatings are also recommended for wear applications where oxidation resistance superior to WC/Co is required. They are used for wear resistance in oxidizing atmospheres up to 650°C (1200°F) or higher, for example on seals and bearings for process fluid pumps and on cutters for food processing. Sub-sea and process plant valves are other typical applications. As it contains no cobalt, JK[®]125 may also be considered for nuclear applications.

Application Example

JK[®]125 is routinely deposited by Stellite Coatings Inc. in the United States on Inconel[®]625 nuclear pump plungers as a fully OEM-qualified substitute for Praxair D-Gun[®] LW-5. The coating properties such as bond strength, porosity, hardness and microstructure have all been verified as equivalent to those of Praxair D-Gun[®] LW-5 coating.

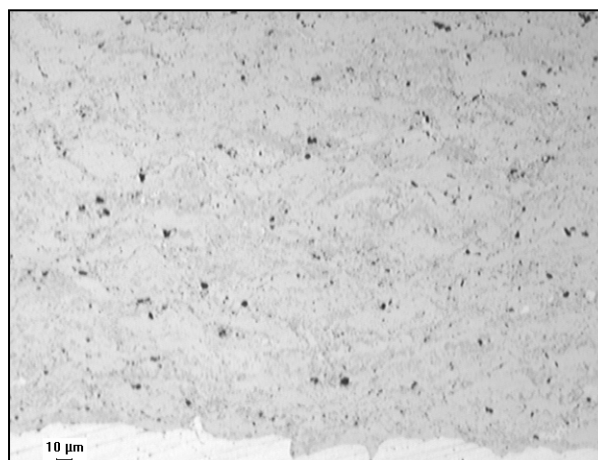
Nominal Powder Properties

Mass composition:	A mixed carbide with nickel 70%(W,Cr) _x C _y 25%WC 6%Ni
Nominal size:	-53+10µm (-270 mesh+10µm)
Production method:	Agglomerated, sintered & densified

Similar Powder Products

- Deloro Stellite GmbH JK[®]7176
- TAFE Praxair 1356VM.

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Above: Typical coating microstructure

Coating Properties

Microhardness	900-1100 DPH[300g]
Macrohardness	89-92 R15N
Bond strength (ASTM C633)	> 69 MPa (10 ksi) ¹
Porosity	≤ 1.5%
Oxides	≤1%
Density	10 g/cm ³
Max. coating thickness	450 µm (0.018")
Typical surface finish (as-sprayed)	2.5 - 3.8 µm (100-150 µ-inch) RMS
Surface finish (ground/lapped)	< 0.025 µm (< 1 µ-inch) RMS
Max. service temp.	Approx. 650 °C (1200°F)

Finishing of JK[®]125 HVOF Coatings

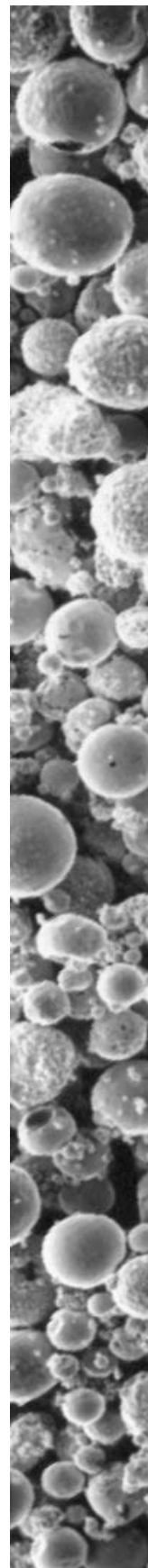
JK[®]125 coatings are typically finished to 8 - 16 µ-inches by wet grinding with open friable diamond wheels. They can also be super finished to below 1 µ-inch (0.025µm) if required. Spray and grinding parameters for JK[®]125 are available on request.

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