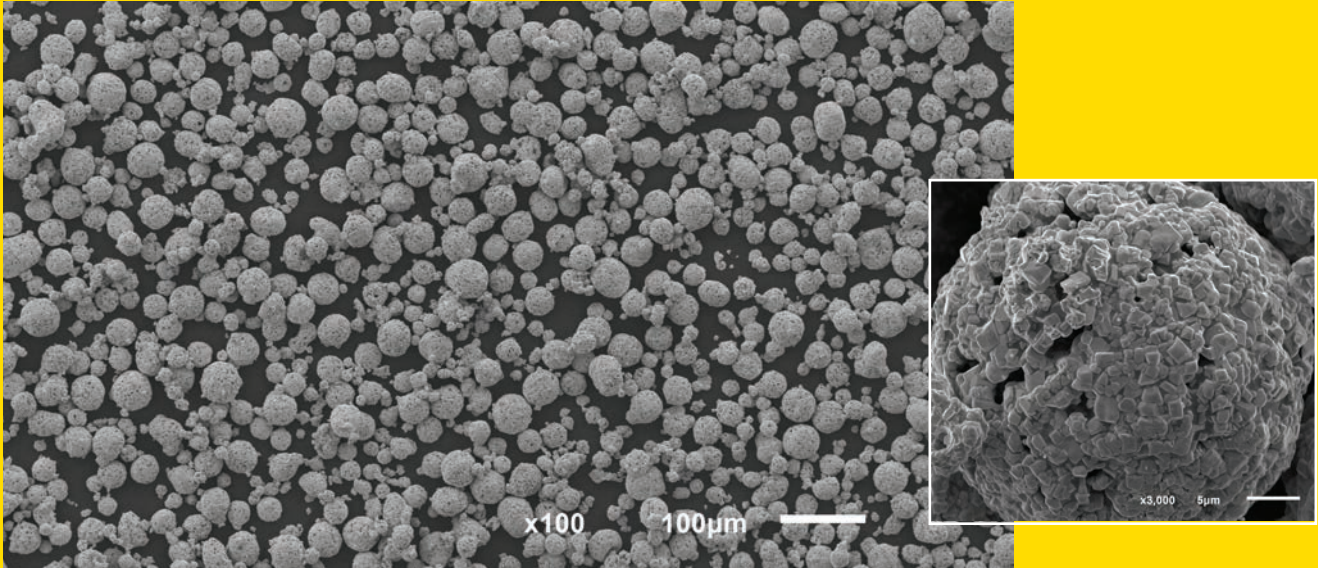


# CastoJet® HVOF Powder

## 55583C

Tungsten carbide - 17% cobalt



- Tough coatings with excellent wear resistance to abrasion and fretting
- Developed for use with the CastoJet CJK5 HVOF system
- Compatible with other HVOF systems
- Excellent bond strength on most metals
- Withstands service temperature up to 500°C

COATING



## Description

55583C is a spherical powder manufactured by agglomerating and sintering a formulation of 83% tungsten carbide with 17% cobalt by weight. It has been developed for spraying with the CastoJet CJK5 system which is a High Pressure HVOF using kerosene as liquid fuel. 55583C powder is also suitable for other HVOF systems or plasma spraying.

55583C sprayed coatings are hard and dense with high bond strengths on a wide variety of metallic substrates. They are tougher with a better fretting and impact resistance than WC-12Co coatings. They resist exceptionally well to low stress abrasion, fretting wear and hard particle erosion for service temperatures up to 500°C.

## Technical Data

### Typical Coating Properties

Micro hardness: ~1230 HV0.3

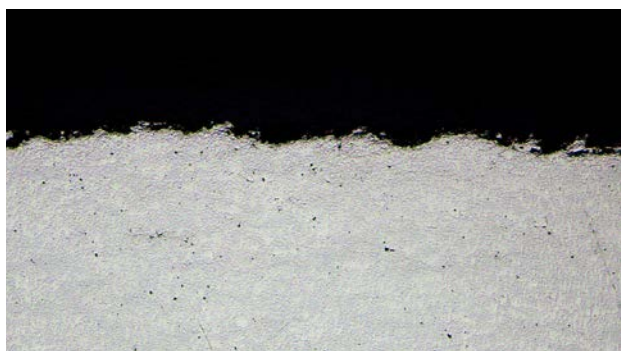
Service temperature: max 500°C (930°F)

Bond strength (EN 582:1994): >70 MPa (>10,000 psi)

Deposition efficiency (EN ISO 17836:2004): ~47%

Porosity (image analysis): <0.5%

The above values depend on the spraying system and parameters used. Therefore measured coating properties may vary from above values.



### Powder Properties

Nominal composition (weight %):

83% tungsten carbide, 17% cobalt

Nominal size distribution: -45 +15 microns

Apparent density: ~4.6 g/cm<sup>3</sup>

## Typical Applications

- Compressor shaft
- Down hole oil and gas extraction parts
- Pump seals
- Hydraulic cylinders
- Induced draft fan blades
- Pulverizer
- Mixer blades
- Hard chrome plating replacement

## Procedures for use

### Preparation

The substrate surface must be perfectly clean and free from all traces of residues or contaminants before being grit blasted.

### Spray parameters

Typical spray parameters for the CastoJet® CJK5 that can be further optimised depending on the specific application:

- Gun barrel length:	150 mm
- Kerosene flow rate:	435 ml/min
- Oxygen flow rate:	900 Nl/min
- Powder carrier gas flow rate:	9.3 Nl/min of nitrogen
- Powder feed rate:	70.2 g/min (13.9 rpm)
- Chamber pressure:	7 bar
- Spray distance:	350 mm

For other HVOF and plasma systems, the spray parameters must be adapted according to the system used. Contact your Castolin Eutectic specialist.

### Finishing Procedure

Due to high hardness characteristics, 55583C coatings are usually used as-sprayed without post machining. However grinding the coating to required surface finish specifications is possible using diamond wheels or belts with flood coolant. Follow the tool manufacturer's recommendations for speeds and feeds.

## Packaging and Storage

55583C powder is packed in sealed 5 kg wide neck MegaPak containers for optimum storage protection (order n°/ESC code 757475).

MegaPak should be stored in a dry location and thoroughly shaken before use to homogenise the powder contents from possible sedimentary effects

## Health & Safety

Use the powder in accordance with its Material Safety Data Sheet (MSDS) instructions. MSDS for 55588C is available from the Castolin web site at [www.castolin.com](http://www.castolin.com).

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