



## Metaceram 23005

Rotofuse Powder For wear-resistant coatings

### Description:

Metaceram 23005 is a Nickel based alloy containing additional carbides; deposits exhibit an even distribution of these carbides in a tough wear resistant matrix. Designed for resistance to wear by particle abrasion both in dry and wet form.

### Technical data:

Hardness Matrix (HRC): 58-62  
 Hardness Tungsten carbide particles: 80-90 Ra  
 Fusion Range (°C): 980-1150  
 Working temperature(°C): 1030  
 Max. Service temperature (°C): 700  
 Deposit (mm): max. 2

### Applications:

Ideal for mixer paddies, plungers, screw conveyors where sand, cement and ceramics are the media.  
 Procedure for use

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#### Preparation:

All areas to be overlaid must be free from oxides, oil, grease, etc., and worn or damaged base material. Parts may be prepared by grit-blasting or by rough machining, once the preparation has been achieved; protect against contamination (finger marks, grease, etc.). Where sharp edges or corners exist, prepare to 30° angle to avoid melting of the base material.

#### Preheating:

Preheating will depend upon type and size of base material. As a general rule, preheating between 100-300°C will be required.

For stainless steels and steels containing tungsten, molybdenum, aluminium or titanium, there will be a tendency for oxides to form during heating operations. This in time may impair the quality of the overlaid deposit. Therefore care should be taken during heating.

It is recommended that cylindrical parts be rotated in a lathe for preheating and coating. Preheating should be applied by allowing for soaking throughout the component to be coated. Preheating may be applied using Oxy-Acet multi-hole nozzle.

#### Spraying Parameters for Metaceram 23005

\* Only use to cool the work piece.

\*\* Air-jets set parallel.

**Coating rate:** 10Kg/Hr Normal.

**Coating rate:** 5.5Kg/Hr Extender

**Coverage Speed:** 8500 cm<sup>2</sup>/Hr Normal

**Coverage Speed:** 4675 cm<sup>2</sup>/Hr Extender.

**Deposit Efficiency:** 90%

### RotoTec 80:

Oxygen: 4 bar (58 lbf/in<sup>2</sup>).

Acetylene: 0.7 bar (10 lbf/in<sup>2</sup>)

Torch control setting: A = N.

Lathe rotation speed: 20 m/sec.

Spray a layer of Metaceram 23005 alloy to the overlay area, maximum thickness/pass 0.2 mm. Maintain a spraying distance of 200 mm (about 8") between torch tip and work piece.

### Fusion:

Fusion of the pre-sprayed alloy should be performed using Oxy-Acet 3X flame with a multi-hole extension neck. Commence heating approximately 30 mm from one end of the component, and progress outwards towards the end; begin again at the original start and progress in the opposite direction. Fusion of Metaceram 23005 will result in shiny appearance. Once this is achieved, steady progression is made along the component. Continue spraying and fusing, layer by layer, until the required depth of deposit has been reached.

Due to possible shrinkage effects of the base material, allowances should be made in order to obtain the required finish thickness. When fusing overlays on tapered components, progress from the smaller end towards the larger end.

### Cooling:

Ensure that completed components are allowed to cool slowly to room temperature by immersing the part in vermiculite, warm dry sand etc. Avoid chilling effects and draughts.

### Machining:

Metaceram 23005 deposits reveal a fine smooth finish. However, if final machining is required, this can only be achieved by grinding.

Grinder:

Abrasive =Carborundum (C)

Grain/Particle size =Medium (80)

Grade =Soft

Structure =Medium

Binder =Vitrified (V)

Grinding speed = 24-32 m/sec

Use lubricant with grinding operation.

TERODYN 2000	NORMAL	EXTENDER
Nozzle	RL200	RL200
Module Adaptor	Red/Yellow	Red/Yellow
Air-Jet Pressure (KPa)	RPA-2 @ 210 *	TEK200 @ 210 *
Oxygen Pressure	350 KPa	350 KPa
Acetylene Pressure	85 KPa	85 KPa
Oxygen Flow	30	35
Acetylene Flow	48	48
T Valve	22-24	40
Spray Distance (mm)	175-225	115-140

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