

Aluminum Oxide Powder

MetaCeram® 25010



COATING

- Good resistance to abrasive wear and erosion at high temperatures
- Good thermal and electrical insulation
- May be used with a variety of thermal spray systems
- Non-Wetting to most molten metals and slags
- Low Coefficient of Friction / Highly resistant to Adhesive wear



DESCRIPTION:

MetaCeram 25010 is a 99% + aluminum oxide coating with a particle size distribution tailored for use with high energy combustion spray systems like the TeroDyn 2000, TeroDyn 3000 and the CDS 8000. The powder is also suitable for use with conventional plasma non-transferred arc coating systems.

Coatings of MetaCeram 25010 are hard, dense and well suited for applications where good thermal and/or electrical insulating properties are required. Coatings are also resistant to most high temperature corrosion environments including resistance to molten metals and slags.

A bond Coat is required prior to applying 25010 to ensure the best possible adhesion. Bond coat materials should be selected based on substrate type and service temperature. The use of Proxon 21031 is recommended for high temperature service or where corrosion is a concern. For room temperature service 50000 may be used as the bond coating. The sealer also improves the dielectric resistance of the coating system.

TYPICAL APPLICATIONS:

- Pump Sleeves
- Soldering Tips
- Pyrometer Probes
- Electrical Insulation
- Pouring Troughs
- Thermal Insulation

RECOMMENDED COATING & SPRAY PARAMETERS:

BOND COAT MUST BE USED

TD 2000*	
Nozzle	RL 210 or RL 210-W
Module Adaptor	Aqua
RotoJet	RPA 3@40psi air
Oxygen	50 psi / 35 flow
Acetylene	12 psi / 75 flow
T-Valve Setting	6 clicks
Coating Rate	3.0 lbs/hr
Spray Distance	4-6 inches

TD 3000*	
Nozzle	RL 3310
RotoJet	none
Oxygen	50 psi / 36 flow
Acetylene	12 psi / 60 flow
Terometer	50
Coating Rate	2.5 lbs/hr
Spray Distance	3.5-4 inches

CDS 8000*	
Spray Module	SSM 30
Flame Setting	Neutral
Powder Module	1-2
Torch Air	45 psi
Vc Rotation	130 SFPM
Spray Distance	4"
Advance	0.2 in./Rev

* All parameters are for Acetylene, please contact Eutectic Technical Services for information on parameters for Propylene.

TECHNICAL DATA:

Coating Properties:

Typical macro-hardness: HRC 50 (15N converted)
Typical density: 3.4 g/cc
Thickness limit: 0.020 inch
Max. service temperature: 3,000°F (1650°C)
Typical micro hardness: DPH 860
Porosity: <10%
Dielectric Resistance: 150-400 volts/mil

Powder Properties:

Carney flow rate: 14 seconds
Bulk density: 1.8 g/cc
Powder coverage: 0.021 lbs/ft² @0.001"
Typical melting point: 3720°F (2050°C)

PROCEDURE FOR USE:

Coating Procedure: Pre-heat the bond-coated part to 300°F and maintain in the 300 – 400°F temperature range during coating. Rotational speed should be 150 to 200 sfpm and traverse speed should be fast enough to apply about 0.001" coating thickness per pass. Coatings applied at to low a temperature will be soft. Coatings applied at to high a temperature will tend to crack or delaminate during cooling. Exact pre-heat temperature and the torch to work-piece speed will depend heavily on the geometry of the part.

Finishing Procedure: Coatings of 25010 should be rough ground with 120 grit silicon carbide or 150 grit diamond wheels. Finish grind using 400-grit silicon carbide or diamond. When using coolant it is important to consider sealing the coating prior to grinding.

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