

### M-CERAMIC 500 – HIGH TEMPERATURE EPOXY CERAMIC COATING

#### M-CERAMIC 500 - High Temperature Epoxy Ceramic Coating

Is an erosion, corrosion and chemical resistant coating formulated using the latest solvent free epoxy novolac technology, enhanced further with the addition of several grades of high-quality silicon carbide ceramic fillers.

Designed for the long-term protection of fluid-flow and process equipment commonly found in the oil, gas, and chemical industries.

Once cured M-CERAMIC 500 – provides a hard-wearing sacrificial barrier, protecting the parent metal from erosion, corrosion, and wear at elevated temperatures up to 130°C continuous immersion dependant on the application.

The material is supplied as a 2-component product (Part A & Part B), that requires mixing before use. Once mixed the product can be applied directly to prepared metal surfaces by short-bristled brush, squeegee, or plastic applicator.

#### Typical Uses

- Lining for Pumping Systems & Valves
- Lining for Scrubber Units
- Protection for Corroded Heat Exchangers
- High Temperature Coating for Process Equipment
- Wear Resistant Coating for Fans & Fan Casings
- Internal lining for Pipework

#### Application Guide

##### Surface Preparation - Grit-Blast

- All oil and grease must be removed from the surface using an appropriate cleaner such as MEK or similar type solvent.
- All surfaces must be abrasive blasted to **ISO 8501/4 Standard SA2.5 (SSPC SP10/ NACE 2)** minimum blast profile of 75 microns using an angular.
- Once blast cleaned, the surface must be degreased and cleaned using MEK or similar type solvent.
- All surfaces must be coated before gingering or oxidation.

A: Tower Court, YO30  
4XL



T: 01904 809 773



E:  
info@maxkote.co.uk



W:  
www.maxkote.co.uk

## Environmental Checks

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Prior to mixing, please ensure the following:

- The base component is at a temperature between 15-25°C.
- Do not apply the material when the ambient or substrate temperature is below 10°C or less than 3°C above dew point.

## Mixing

- Mix both Part-A and part-B together in full units as supplied. For small quantities use a mixing ratio of **4:1 by volume or 10:1 by weight**
- When mixing both materials, it is particularly important to have a uniform colour that is streak free.
- Use the mixed coating as soon possible after mixing.

Use all mixed material within 30 minutes at 20°C.

## Product Application

- Stripe coat all edges and corners. Apply the coating at minimum 300 microns using a short bristle brush.
- Allow the stripe coat to cure for 4 hours at 20°C.
- The basecoat should be applied at a minimum thickness of 500 microns using a short-bristled brush.
- Ensure the coating is forced into the blast profile.
- Allow the basecoat to cure for approximately 4 hours at 20°C.
- Once the basecoat has cured hard enough apply the topcoat at a minimum thickness of 500 microns using a short-bristled brush.

## Technical Information

Appearance	Base	Grey paste
	Activator	Amber liquid
	Mixed	Grey Thixotropic liquid
Mixing Ratio	By Weight	10:1
	By Volume	4:1
Density	Base	2.48
	Activator	0.99
	Mixed	2.46

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Volume Capacity		459cc/kg
Solids Content		100%
Sag Resistance	Nil at	1000 microns
Usable Life	10°C 20°C 30°C	70 minutes 30 minutes 17 minutes
Coverage	In normal circumstance this product should be applied in 2 x 500-micron coats.	0.918m <sup>2</sup> at 500 microns 0.610m <sup>2</sup> at 750 microns 0.459m <sup>2</sup> at 1000 microns
Cure Times @ 20°C	Minimum overcoating time Maximum overcoating time Full cure	4 hours 24 hours 3 days
Storage Life	Unopened and stored in dry conditions (15-30°C)	5 years
Abrasion Resistance	Taber CS17 Wheels/1 Kg load	28mm <sup>3</sup> loss/1000 cycles
Adhesion	Pull off Adhesion tested to ASTM D4541 on abrasive blasted mild steel with 75-micron profile	348kg/ cm <sup>2</sup> (4950psi)
Adhesion	Tensile Shear tested to ASTM D1002 on abrasive blasted mild steel with 75-micron profile	245kg/ cm <sup>2</sup> (3480psi)
Compressive Strength	Tested to ASTM D695	1046kg/cm <sup>2</sup> (14880psi)
Corrosion Resistance	Tested to ASTM B117	5000 hours

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Flexural Strength	Tested to ASTM D790	614kg/cm <sup>2</sup> (8710psi)
Hardness	Shore D to ASTM D2240	20°C 82 100°C 87 150°C 86 200°C 82 240°C 78
Heat Distortion	Tested to ASTM D648 at 264psi fibre stress	20°C Cure 53°C 100°C Cure 141°C 150°C Cure 172°C
Heat Resistance	Full immersion tested water/ hydrocarbon immersion to 130°C Steam out tested at 220°C 100hrs exposure Dry heat tested to ASTM D2485	Pass (no blisters) Pass (no blisters) Pass 240°C
Impact Resistance	Tested to ASTM D256	32J/m
Chemical Resistance	The product resists attack by a wide variety of aqueous non-acidic solutions and hydrocarbon oils at elevated temperature and other media at lower temperatures.	

### Legal Notice

The data contained within this Technical Data Sheet is furnished for information only and is believed to be reliable at the time of issue. We cannot assume responsibility for results obtained by others over whose methods we have no control.

It is the responsibility of the customer to determine the products suitability for use.

Maxkote accepts no liability arising out of the use of this information or the product described herein.

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