

M-CERAMIC 700 - Polyurethane Impact Resistant Coating

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Is a flexible high build solvent-free Polyurethane Impact Resistant Coating designed for applications subject to impact, wear and abrasion from slurries and aggregates ect....

The material is designed to be applied as a multi coat system, with a minimum cured coating thickness of 1.0mm. This can be achieved by using a brush, roller or squeegee typically 2 x 500 micron coats is achievable on horizontal surface. For vertical surfaces 3 coats may be required.

Typical Uses

Protect Pump parts from Erosion
Impact Resistant Coating for Chutes and Hoppers
Internal Wear Resistant Lining for Tanks and Mixers

Application Guide

Surface Preparation - Grit-Blast

All oil and grease must be removed from the surface using an appropriate cleaner such 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.

Surface Preparation - Manual

All oil and grease must be removed from the surface using an appropriate cleaner such as MEK.

All surfaces must be mechanically abraded using handheld grinders to ISO 8501/4 ST3 (SSPC SP3 ST3).

Once abraded, the surface must be degreased and cleaned using MEK or similar type material.

All surfaces must be repaired before gingering or oxidation occurs.

Environmental Checks

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

Transfer the contents of the Activator unit into the Base container.

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Using a slow speed electric paddle mixer, mix the 2 components together until the material is streak free.

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Once mixing is complete, use the mixed coating as soon possible after mixing. Use all mixed material within 15 minutes at 20°C.

Product Application

Pour the mixed material into a paint kettle or paint tray (this will maximise the usable life)

Using a 50mm synthetic brush, stripe coat all edges, joints & corners.

Once the stripe coat has cured sufficiently and is capable of being overcoated, apply the basecoat to all surfaces at minimum 350 microns.

Once the basecoat of material has cured sufficiently, approximately 6-8 hours at 20°C, apply the intermediate coat to all surfaces at a minimum 350 microns.

Once the intermediate coat has cured sufficiently, approximately 6-8 hours at 20°C, apply the topcoat to all surfaces at a minimum 350 microns.

Minimum finished coating thickness needs to be in excess of 1000 microns.

Technical Information

Appearance Base

Activator

Mixed Blue or light grey thixotropic liquid

Amber liquid

Blue or light grey Thixotropic liquid

Mixing Ratio By Weight

By Volume 3.25:1

3:1

Density Base

Activator

Mixed 1.31

1.22

1.29

Solids Content 100%

Sag Resistance Nil at: 400microns

Usable Life 10°C

20°C

30°C

25-35 minutes

15-20 minutes

8-10 minutes

Coverage The material should be applied by target thickness of 350 microns per coat

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2.85 sqm/ ltr

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Cure Times Movement without load or immersion:

Light loading:

Full loading/water immersion:

Chemical Contact: 2 hours

8 hours

3 days

14 days

Storage Life Unopened and stored in dry conditions (15-30°C) 2 years

Adhesion Tensile Shear to ASTM D1002 on abrasive blasted mild steel with 75 micron profile
169kg/cm² 2400psi

Corrosion Resistance Tested to ASTM B117 5000 hours

Flexibility (British Gas FW0028 Draft method)

3% Strain at 20°C

3% Strain at 5°C

3% Strain at 0°C ASTM D522 Pass

Pass

Pass

Pass

Hardness Shore D to ASTM D2240 80

Impact Resistance (British Gas CW6) 15 Joules (BS EN 10290)

23°C 8.6 Joules

5°C 6.1 Joules

Adhesion – Resistance to Removal (BS EN 10290)

23°C rating 1

60°C rating 2

Adhesion – Pull Off Test (BS EN 10290)

23°C 175kg/ cm²

60°C 73kg/ cm²

(ASTM D4541) 214kg/ cm²

Electrical Insulation

Resistance (BS EN 10290) 8.4 X 10⁹

Indentation Resistance (BS EN 10290) 23°C 0.1mm

60°C approx. 15%

Flexibility (BS EN 10290) Pass

Elongation (BS EN 10290) 14.5%

Abrasion Resistance (ASTM D4060) 90mgm weight loss per 1000 cycles

1kg load – CS17 wheel

Heat Resistance Suitable for use in immersed conditions at temperatures up to:

Suitable for use in dry conditions at temperatures up to dependant on load: 70°C

120°C

Chemical Resistance At 20°C product resists attack by a wide variety of inorganic acids, alkalis, salts and organic media Acetic Acid 10%

Benzoic Acid 15%

Caster Oil

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Cyclohexane
Ethyl Alcohol 50%
Formic Acid 10%
Fuel Oil
Glycerine
Hydrochloric Acid 20%
Isopropanol
Lactic Acid 20%
Mineral Oil
Nitric Acid 10%
Phosphoric Acid 50%
Potassium Hydroxide 10%
Sodium Carbonate 10%
Sodium Hydroxide 10%
Sulphuric Acid 50%
White Spirit

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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.

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