

M-CHEM 500 – EROSION & CHEMICAL RESISTANT EPOXY COATING

M-CHEM 500 - Erosion & Chemical Resistant Epoxy Coating

Is a high build solvent-free epoxy coating with the addition of ceramic carbide fillers designed for the long-term protection of steel and concrete structures against abrasion and chemical attack.

The product is used as a protective coating and lining for effluent tanks, slurry tanks, marine structures. Due to the added silicon carbide filler, where a high solids content may be present.

Typical Uses

- Internal pipe surfaces
- Tank internal surfaces
- Chutes, Hoppers, and Sumps
- Turbine blades and housings
- Fans and fan housings

Please contact us to discuss your project before purchasing this material to confirm suitability.

Application Guide

Surface Preparation - Metal - 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.

Surface Preparation - Soluble Salts

PLEASE NOTE: Soluble salt contaminated surfaces the substrate must be pressure washed with clean water and checked for salt contamination this process may need to be repeated several times.,

Surface Preparation - Existing Concrete

- If the concrete surface is contaminated, pressure wash using clean water.
- Once the concrete is dry lightly abrasive blast or scarify taking care not to expose the aggregate.

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- Clean all dust and debris from the surface and take several moisture readings and prime with [M-PRIME 100 – Low Viscosity Epoxy Concrete Primer](#) or [M-PRIME 104 – Damp Tolerant Concrete Primer](#) dependent on the moisture readings obtained.
- Apply M-PRIME 100 or M-PRIME 104 at a target wet film of 150 microns, allow to cure before overcoating.
- For very porous surfaces a second coat of primer may be required.

New Concrete

- Allow new concrete to cure for a minimum of 21 days, lightly abrasive blast or scarify to remove any surface laitance.
- Clean all dust and debris from the surface and take several moisture readings and prime with M-PRIME 100 – Low Viscosity Epoxy Concrete Primer or M-PRIME 104 – Damp Tolerant Concrete Primer dependent on the moisture readings obtained.
- Apply M-PRIME 100 or M-PRIME 104 at a target wet film of 150 microns, allow to cure before overcoating.
- For very porous surfaces a second coat of primer may be required.

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 5°C.

Mixing

- Transfer the contents of the Activator unit into the Base container.
- Using a low-speed electric paddle mixer, mix the 2 components until a uniform material free of any streaks is achieved.
- Once mixing is complete use the mixed paste as soon possible after mixing.
- Use all mixed material within 60 minutes at 20°C.
- For applications that require additional pot life we suggest M-CHEM 101 – Chemical Resistant Epoxy Coating – Extended Cure.

Product Application

Brush & Roller

- Pour the mixed material into a paint kettle or paint tray (this will maximise the usable life).
- Stripe coat all edges, joints & corners.
- Once the stripe coat has cured and is capable of being overcoated, apply a basecoat at a minimum wet film thickness 400 microns.
- Once the basecoat has cured sufficiently, approximately 10 hours at 20°C, apply a topcoat at a minimum wet film thickness of 400 microns.

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Technical Information

APG-REV2- 2022

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| Appearance | Base Activator Mixed | Highly structured thixotropic liquid Amber liquid Thixotropic liquid |
| Mixing Ratio | By Weight By Volume | 3.5:1 2.4:1 |
| Density | Base Activator Mixed | 1.72 1.03 1.49 |
| Solids Content | | 100% |
| Sag Resistance | Nil at | 400 microns |
| Usable Life | 10°C 20°C 30°C | 60 minutes 30 minutes 15 minutes |
| Coverage | 2 coat system to properly prepared surfaces at 400 microns: | 2.5 sqm/ltr |
| Cure Times at 20°C | Minimum overcoating time Maximum overcoating time Water/ sea water immersion Chemical immersion | 10 hours 36 hours 3 days 7 days |
| Storage Life | Unopened and stored in dry conditions (15-30°C) | 5 years |
| Abrasion Resistance | Taber CS17 Wheels/1 Kg load | 138mg loss/1000 cycles 0.09cc loss/1000 cycles |
| Adhesion | Tensile Shear to ASTM D1002 on abrasive blasted mild steel with 75-micron profile | 190kg/cm ² 2700psi |
| Compressive Strength | Tested to ASTM D 695 | 680kg/ cm ² 9650psi |

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| Corrosion Resistance | Tested to ASTM B117 | 5000 hours |
| Immersion Testing | Tested to ISO 2182-2 – 50°C | No blistering or corrosion after 6 months |
| Flexural Strength | Tested to ASTM D790 | 518kg/cm ² 7350ps |
| Hardness | Shore D to ASTM D2240 | 80 |
| 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: | 60°C 200°C |

Chemical Resistance Guide

| | |
|-----------------------|------|
| Black Liquor | 40°C |
| Crude Oil | 30°C |
| Diesel | 40°C |
| Hydrochloric Acid 20% | 40°C |
| Hydrocarbons | 40°C |
| Phosphoric Acid 30% | 40°C |
| Sea Water | 40°C |
| Sodium Hydroxide 50% | 40°C |
| Sulphuric acid 20% | 40°C |
| White Liquor | 40°C |

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

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