

M-CHEM 101 – CHEMICAL RESISTANT EPOXY COATING – EXTENDED CURE

M-CHEM 101 – Chemical Resistant Epoxy Coating - Extended Cure

Is a surface tolerant, chemical resistant epoxy coating with an extended pot life.

The coating when cured has excellent resistance to wide range of commonly used chemicals and is typically used to protect concrete or steel structures.

M-CHEM 101 – Chemical Resistant Epoxy Coating – Extended Cure can be applied to manually prepared steel and is tolerant to damp and environments subject to condensation.

This two-component product is highly resistant to marine and industrial environments, buried conditions, ground water, effluents, salt water and a wide range of oils and chemicals.

Typical Uses

- As an Internal Pipe Lining
- lining for Fuel Storage Tanks
- Chemical Resistant Lining for Storage Tanks
- As a Chemical Resistant Floor Coating
- To Protect Bunds & Containment Area's from Chemical Attack

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

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.



Surface Preparation - Manual

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- 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.

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.
- 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 and 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 and 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.

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- Once mixing is complete, use the mixed paste as soon possible.

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Use all mixed material within 20-25 minutes at 20°C.

Product Application

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 250 microns.
- Once the basecoat has cured sufficiently, approximately 10 hours at 20°C, apply a topcoat at a minimum wet film thickness of 250 microns.

Application – Spray

- Spray application should be carried out by airless spray using a 60:1 ratio pump with an attached hot water pump to heat the spray lines.
- The temperature of the spray lines should be kept around 25-35°C.
- Spray pressure of 3600psi and a tip size of 19-23 thou should be used.
- Use as short a line as possible to maintain product temperature (maximum 8 meters).
- Circulate the product for a short time to achieve a consistent temperature.
- Apply a basecoat to all surfaces at a minimum 250 microns wet film thickness.
- Once the basecoat has cured sufficiently, approximately 10 hours at 20°C. apply a topcoat to all surfaces at a minimum 250 microns wet film thickness.

Technical Information

| | | |
|----------------|----------------------------|---|
| Appearance | Base Activator Mixed | Highly structured thixotropic liquid Amber liquid Thixotropic liquid |
| Mixing Ratio | By Weight By Volume | 3.5:1 2:1 |
| Density | Base Activator Mixed | 1.754 1.03 1.52 |
| Solids Content | | 100% |
| Sag Resistance | Nil at | 400 microns |

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| Usable Life | 10°C | 120 minutes |
| | 20°C | 60 minutes |
| | 30°C | 30 minutes |
| Coverage | Basecoat applied at a minimum target film thickness of 250 microns: | 4 sqm /ltr 4 sqm/ltr |
| | Topcoat applied at a minimum target film thickness of 250 microns: | 2 sqm/ltr |
| | Finished, minimum target film thickness of 500 microns: | |
| | | |
| Cure Times at 20°C | Minimum overcoating time | 10 hours |
| | Maximum overcoating time | 36 hours |
| | Water/ sea water immersion | 3 days |
| | Chemical immersion | 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 |
| | | 0.22cc loss/1000 cycles |
| Adhesion | Tensile Shear to ASTM D1002 on abrasive blasted mild steel with 75-micron profile | 194kg/cm ² 2750psi |
| Impact Resistance | Tested to ASTM G14 | 2.0 Joules |
| Cathodic Disbondment | Tested to ISO 21809-3:2016 28 days, 1.5v, 3% NaCl | 23°C 2.3mm |
| | | 65°C 5.1mm |
| | | 95°C 7.7mm |
| Compressive Strength | Tested to ASTM D 695 | 694kg/ cm ² 9200psi |
| Corrosion Resistance | Tested to ASTM B117 | 5000 hours |
| Flexural Strength | Tested to ASTM D790 | 522kg/cm ² 7400psi |

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| 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

Chemical Test Data

| Chemicals & Concentrations | Test Temperature | Chemicals & Concentrations | Test Temperature |
|-----------------------------|------------------|----------------------------|------------------|
| Ammonia | 20°C | Naphtha | 40°C |
| Brine | 40°C | Nitrus Acid up to 10% | 20°C |
| Crude Oil | 40°C | Phosphoric Acid up to 30% | 40°C |
| De-ionised Water | 30°C | Sodium Hydroxide up to 50% | 40°C |
| Diesel | 40°C | Sulphuric acid up to 20% | |
| Ethanol | 20°C | | |
| Hydrochloric Acid up to 20% | 40°C | | |

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Data Sheets

[M-CHEM 101 Application Guide](#)

[M-CHEM 101 BASE MSDS](#)

[M-CHEM 101 ACTIVATOR MSDS](#)

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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