

M-CHEM 100 – Chemical Resistant Epoxy Coating

Is a Surface Tolerant, Chemical Resistant Epoxy Coating designed for the long-term protection of steel and concrete structures?

The coating when cured has excellent resistance to wide variety of commonly used chemicals.

M-CHEM 100 – Chemical Resistant Epoxy Coating can be applied to manually prepared steel and it tolerant to damp and condensation. The material can be used for applications operating at temperatures from ranging from -20°C to $+60^{\circ}\text{C}$.

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 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 grit.
- Once blast cleaned, the surface must be degreased and cleaned using MEK or similar type of 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 of material.
- All surfaces must be repaired before gingering or oxidation occurs.

Surface Preparation - Concrete

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](#) dependant 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 dependant 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 20-25 minutes at 20°C.

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 250 microns.

- Once the basecoat has cured sufficiently, approximately 4 hours at 20°C, apply a topcoat at a minimum wet film thickness of 250 microns.

Technical Information

Appearance	Base Activator Mixed	Highly structured thixotropic liquid Amber liquid Thixotropic liquid
Mixing Ratio	By Weight By Volume	4:1 2.4:1
Density	Base Activator Mixed	1.78 1.05 1.56
Solids Content		100%
Sag Resistance	Nil at	400 microns
Usable Life	10°C 20°C 30°C	60 minutes 30 minutes 15 minutes
Coverage	Basecoat applied at a minimum target film thickness of 250 microns: Topcoat applied at a minimum target film thickness of 250 microns: Finished, minimum target film thickness of 500 microns:	4 sqm /ltr 4 sqm/ltr 2 sqm/ltr
Cure Times at 20°C	Minimum overcoating time Maximum overcoating time Water/ sea water immersion Chemical immersion	4 hours 36hours 3 days 5 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
Flexibility	(British Gas FW0028 Draft method) 3% Strain at 20°C – PASS 2% Strain at 5°C – PASS 1% Strain at 0°C	Pass Pass Pass
Flexural Strength	Tested to ASTM D790	522kg/cm ² 7400ps
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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Health & Safety

- Please ensure good practice is always observed during the mixing and application of this product.
- Protective gloves must be worn during the mixing and application of this product.
- Before mixing and applying the material please ensure you have read the fully detailed Material Safety Data Sheet.

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