

# METZ 4HB-EN

## EPOXY NOVOLAC CORROSION RESISTANT COATING



### DESCRIPTION:

Metz 4HB Epoxy Novolac is a 100% solids industrial coating, based on special resins and hardeners which impart outstanding chemical resistance, especially against concentrated inorganic acids. It also cures rapidly even at low ambient temperatures, thus minimising downtime. Metz 4HB Epoxy Novolac can be used as a membrane beneath many Metz corrosion resistant systems. The abbreviation Metz 4HB-EN is used in places on this data sheet.

A slip resistant surface can be produced by the use of Metz Slip Resistant Additive.

### FEATURES AND BENEFITS:

- Outstanding Chemical Resistance  
Resistant to a wide range of concentrated acids and alkalis, solvents oils and fats. Resistant to spillages of concentrated sulphuric, hydrochloric and phosphoric acids at normal temperatures. Refer to Metz Chemical Resistance Chart.
- High Temperature Resistance  
Resistant to temperatures up to 120°C.
- Solventless  
100% solids formulation.
- Rapid Cure  
Fast setting, minimises downtime
- Low Temperature Cure  
Cures at temperatures down to 0°C.
- Excellent Adhesion  
Bonds to many substrates, including properly prepared concrete, mild steel and 304 and 316 stainless steel.
- Quality Accreditation  
The management system governing the development and manufacture of this product is proudly ISO9001:2015 certified.

### RECOMMENDED:

As a membrane or coating to protect concrete against chemical and mechanical attack in:

- Secondary containment linings
- Acid plants
- Fertiliser plants
- Oil refineries
- Water treatment & sewerage plant infrastructure
- Steel Mills
- C.I.P. rooms in food & beverage plants
- Food processing plants
- Meat and Poultry plants

### NOT RECOMMENDED:

For exposure to some strong organic acids and solvents. Refer Metz Chemical Resistant Chart.

For immersion in concentrated sulphuric acid use a higher build Metz material. Refer Metz for recommendations.

Note: Colour changes may occur upon ageing or exposure to strong chemicals. This product will change colour when exposed to UV light, darker colours are less susceptible.

### PHYSICAL PROPERTIES: (Typical Values)

|                                    |   |
|------------------------------------|---|
| Abrasion:                          | 280mg/1000 cycles CS-17 wheels (Taber Abrasion 1000gm load/wheel) |
| Density g/cm <sup>3</sup> :        | 1.5 - 1.6   |
| Adhesion to concrete (ASTM D7234): | >1.5MPa (Concrete failure)  |
| Max. Continuous Service Temp.:     | 120°C   |

Note: For continuous temperatures over 100°C contact Metz re special primer required.

### COVERAGE:

Theoretical quantities (allow for wastage)

Primer: Metz Epoxy Primer: 0.2 - 0.3 kg per sq. metre, depending on absorbency of surface.  
0.3-0.4kg per sq. metre when incorporating Metz Fabric Reinforcement.  
Metz Fabric Reinforcement is recommended when using as a membrane.

Coating: Metz 4HB-EN: 0.4 kg per sq. metre at 0.25 mm (250 micron) thickness per coat.  
Metz 4HB-EN: 0.8 kg per sq. metre when sealing 18/40 mesh sand broadcast into previous layer

### APPLICATION TEMPERATURE:

For optimum results, maintain a temperature of 5 - 40°C on air and substrate and components during mixing, application and curing.

Note: Materials should be kept as cool as possible. Reducing material temperature will increase pot life.

### INSTRUCTIONS FOR USE

#### 1. Temperature of Working Area

For optimum results, maintain a temperature of 5 - 40°C on air, substrate and components during application and curing. The surface temperature of the substrate must be at least 3°C above the dew point. At temperatures below 5°C, the application becomes more difficult and curing is retarded. At temperatures above 40°C the working time decreases. Application in direct sunlight and rising surface temperatures may result in blistering of the coating due to expansion of entrapped air or moisture in the substrate. Note: Materials should be kept as cool as possible. Reducing material temperature will increase pot life.

#### 2. Surface Preparation

All surfaces must be clean and free from all contaminants which may inhibit bond. For best results, surfaces should be dry. Concrete on grade should utilise a waterproof barrier beneath the slab.

- i) New Concrete - New concrete should have attained a compressive strength of 20 MPa minimum. Surface must be free from form oils, curing compounds and any other contaminants. The surface should be a fine wood float finish and be 28 days old. Light abrasive blast, high pressure waterblast or grind to remove laitance and provide uniform textured surface. Surface moisture content should be less than 1.0%.
- ii) Old Concrete - Concrete must be sound. Remove laitance, loose deposits, old paints, protective coatings and attacked or deteriorated concrete. Chemically clean surface to remove any contaminants. All structural cracks should be repaired, all slopes re-established and all voids filled. Smaller voids can be repaired with Metz 33EN-Plaster.
- iii) Metal - Abrasive blast to AS1627.4 Class 3 for immersion conditions and to Class 2 ½ for all other conditions with a minimum blast profile of 50 microns. Check surface for soluble salt contamination. If not immediately overcoating apply Metz Metal Primer. Metz Metal Primer must also be applied for immersion conditions.

#### 3. Mixing

Mix liquid component with a slow speed drill for a minimum of 30 seconds and at least until all material is of consistent appearance.

##### a) Mixing Equipment

Mechanical mixing is recommended. A low speed mixer or a heavy duty drill with an appropriate mixing paddle are suitable.

##### b) Mixing Proportions

|                         |           |
|-------------------------|-----------|
| Metz Epoxy Primer (MEP) | By Weight |
| Liquid L1 Neutral       | 1.85      |
| MEP Hardener            | 1         |

|                 |           |
|-----------------|-----------|
| Metz 4HB-EN     | By Weight |
| 4HB-EN Liquid   | 4.2       |
| 4HB-EN Hardener | 1         |

Note: Decant materials directly into the mixing bucket on electric scale. Measuring by volume gives inconsistent results impacting product performance. The liquid to hardener ratio must not be altered under any circumstances.

- c) Mixing Procedure - Remix liquid components prior to use. For Metz Epoxy Primer, mix liquid and hardener together thoroughly for 1 - 2 minutes. For Metz 4HB-EN, mix liquid and hardener together thoroughly for 3 minutes. At end of the mixing period material should be uniform in colour. Material which has begun to set must be discarded. Do not add any solvent, additive or adulterant to any component, or to the mixed material.

If a slip resistant surface is required, Metz Antislip Additive can be added at the rate of 2% by weight of total mix (approx. 300ml per 4 lts of Metz 4HB-EN). Refer Metz Antislip Additive data sheet for full details, or use Metz Broadcast Aggregate in Metz Epoxy Primer over coated with Metz 4HB-EN.

#### d) Pot Life

|                   |            |             |            |
|-------------------|------------|-------------|------------|
| Metz Epoxy Primer |            | Metz 4HB-EN |            |
| at 20°C           | 70 minutes | at 20°C     | 40 minutes |
| at 30°C           | 40 minutes | at 30°C     | 30 minutes |
| at 40°C           | 30 minutes | at 40°C     | 20 minutes |

Note: Increase in temperature will decrease pot life, as will leaving mixed material in a large mass. Spread out material in a thin layer as soon as possible after mixing.

Changes in colour and gloss can occur as the product reaches the end of its pot life. Ensure material is applied well before end of pot life (eg: within 20 minutes at 20°C.)

- e) Clean Up - Mixing equipment, tools etc can be cleaned with Metz Cleaner, xylene, acetone or MEK prior to initial set.

Ensure you have the latest mixing instructions, refer [www.metz.net.au](http://www.metz.net.au) for most current data sheet version.

#### 4. Installation

- (i) Metz Epoxy Primer - Apply to prepared surface using squeegee then back-roll with short nap roller. Ensure total area is covered and surface is completely sealed. Apply more primer if necessary to seal surface. Allow primer to dry, then inspect surface for voids. Fill any voids with Metz 33EN-Plaster. When using Metz 4HB-EN as a membrane, a special fabric is rolled onto the wet primer and flattened out to ensure that no voids exist in the coating.

- (ii) Metz 4HB-EN - Spread mixed Metz 4HB-EN on primed surface using a squeegee. Finish by rolling with a short nap roller to obtain uniform coverage. Finished thickness should be 250 microns per coat. For vertical surface apply by roller to desired thickness.

When using Metz 4HB-EN as a membrane in critical areas, it is recommended that two full coats (finished thickness of 500 microns) be applied over the primer.

While the top coat is still wet, it should be evenly broadcast with Metz Broadcast Aggregate too provide a bonding surface for any subsequent topping. Prior to installing subsequent Metz materials ensure all loose aggregate particles, dust etc., are removed.

|                      |         |          |
|----------------------|---------|----------|
| Recoat times at 20°C | Minimum | Maximum  |
| Metz Epoxy Primer    | 6 hours | 18 hours |
| Metz 4HB-EN          | 2 hours | 6 hours  |

#### 5. Setting/Curing:

|                 |                |
|-----------------|----------------|
| Setting Time    | Full Cure      |
| at 20°C 6 hours | at 20°C 3 days |
| at 30°C 4 hours | at 30°C 2 days |
| at 40°C 3 hours | at 40°C 2 days |

Do not allow water, chemicals or traffic on the material surface for a minimum of 24 hours. For harsh chemical or physical environments ensure full cure occurs.

#### 6. Storage

Store in original sealed containers in cool dry place. Avoid storing at temperatures over 25°C for extended periods. Under these conditions, minimum shelf life is 12 months.

#### 7. Safety Precautions

Liquid and Hardener - use Chemical goggles, PVC gloves and barrier cream. Avoid contact with skin and eyes. For full safety precautions refer to Safety Data Sheets for all components.

**Always ensure you have the latest data sheet version, refer [www.metz.net.au](http://www.metz.net.au)**

1. The customer must comply strictly with the instructions contained in this product data sheet. Metz is not responsible for any advice or variations to this data sheet which are not confirmed in writing.
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  - b) Metz may at its option replace the defective product free of charge to the customer or refund all payments made to it by the buyer in respect of the defective product; and the maximum liability of Metz shall be the cost of replacing the defective product.