

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.

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 ISO9001:2008 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 and sewerage plant infrastructure
- Steel Mills
- C.I.P. rooms in food and 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/cm³: 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.



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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 10%.
- 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

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	By Weight	By Volume
Liquid	1.85	1.6
Hardener	1	1
Metz 4HB-EN	By Weight	By Volume
Liquid	4.2	3
Hardener	1	1

Note: 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.

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 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. The second coat should be applied before the first coat has fully set (see table below)

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 Material Safety Data Sheets for all components.

Always ensure you have the latest data sheet version, refer 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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