

METZ 5EN-COATING EPOXY NOVOLAC



DESCRIPTION:

Metz 5EN-Coating is a high solids, sprayable, epoxy novolac 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 5EN-Coating can be applied by brush, roller or airless spray. Metz 5EN-Coating is also available in a glass flake reinforced version, Metz 5EN-GF.

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.
- **High Build** - Can be applied up to 250 micron dry film thickness per coat.
- **Rapid Cure** - Fast setting, minimises downtime
- **Cures under Adverse Conditions** - Cures at low temperatures and high humidity
- **Abrasion Resistance** - Excellent abrasion resistance.
- **Excellent Adhesion** - Bonds to many substrates, including properly prepared concrete, mild steel and 304 and 316 stainless steels.
- **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 and steel against chemical and mechanical attack in:

- Chemical Plants
- Industrial Facilities
- Oil refineries
- Water treatment and sewerage plant infrastructure
- Steel Mills
- C.I.P. rooms in food and beverage plants
- Food processing plants

Note: for critical corrosive situations Metz 5EN-GF should be used

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)

Density g/cm ³ :	1.6 - 1.7
Solids Content:	By weight 90% By volume 83%
Adhesion to concrete (ASTM D7234):	>1.5MPa (Concrete failure)
Max. Continuous Service Temp.:	120°C
Abrasion (both standard and glass flake versions):	220mg/1000 cycles CS-17 wheels (Taber Abrasion 1000gm load/wheel)
Adhesion:	107kg/cm ² (AS 1580.408.5)
Water Vapour Transmission (ASTM E96) 5EN-GF:	0.63g/m ² /24h
Water Vapour Transmission (ASTM E96) 5EN:	1.38g/m ² /24h

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

COVERAGE:

Theoretical quantities (allow for wastage)

Concrete Primer: Metz Epoxy Primer: 0.2-0.3kg per sq.m, depending on absorbency of surface.
0.3-0.4kg per sq. metre when incorporating Metz Fabric Reinforcement.

Metal Primer: Metz Metal Primer 0.18lts per sq.m for 180 micron wet film (125 micron dry film) coat.

Top coat: Metz 5EN-Coating: 0.46kg per sq. metre at 0.25mm (250 micron) dry film thickness per coat.

Note: when applying immediately after abrasive blasting of steel no primer is required. If not immediately overcoating Metz Metal Primer is required.



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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 1/2 minimum for all other conditions, with a minimum blast profile of 50 microns. Check surfaces for soluble salt contamination. If not immediately overcoating apply Metz Metal Primer. Metz Metal Primer should 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. High speed mixers should not be used.

b) Mixing Proportions

	By Weight	By Volume
Metz Epoxy Primer		
Liquid	1.85	1.6
Hardener	1	1
Metz 5EN Coating		
Liquid	5.75	3.4
Hardener	1	1

Note: The liquid to hardener ratio must not be altered under any circumstances.

c) **Mixing Procedure** - Remix liquid prior to use. For Metz Epoxy Primer, mix liquid and hardener together thoroughly for 1 - 2 minutes. For Metz 5EN Coating, 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 5EN-Coating
at 20°C	70 minutes	70 minutes
at 30°C	40 minutes	30 minutes
at 40°C	30 minutes	20 minutes

Note: Increase in temperature will decrease pot life, as will leaving mixed material in a large mass.

Changes in colour and gloss can occur as the product reaches the end of its pot life. Ensure material is applied well before the end of its pot life (eg within 40mins 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 latest data sheet version.

4. Installation

(i) **Metz Epoxy Primer** - Apply to prepared surface, 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 5EN as a membrane, a special fabric reinforcement should be incorporated into the primer. The fabric is rolled onto the wet primer and flattened out to ensure that no voids exist in the coating.

(ii) **Metz Metal Primer** - Refer to data sheet

(iii) **Metz 5EN Coating/5EN-GF** - Can be applied by brush, roller or spray.

Brush/Roller: Apply in even thickness with brush or short nap roller. Apply a maximum of 300 microns wet film thickness per coat.

Airless Spray: Recommended spray equipment is Graco Xtreme 55:1 with a fluid tip of 19 thou (0.48 mm) with inlet air pressure of 50 - 60 psi (resulting in fluid pressure of 2750 - 3300 psi). Thinning is not normally required. Apply a maximum of 300 microns wet film thickness per coat.

Recoat times at 20°C

Minimum: 2 hours

Maximum: 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

- 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.
- If the customer has a claim against Metz in respect of any product supplied to the customer by Metz whether due to a fault in the product or the negligence or breach of contract by Metz or for any other reason:
 - Metz shall not be liable for any loss or damage including consequential loss or damage or loss of profits arising thereby;
 - 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.

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METZ SPECIALTY MATERIALS PTY LTD

A.C.N. 140 636 639

15A Stanton Road, Seven Hills NSW 2147
Facsimile: (02) 9671 4292 Phone: (02) 9671 1311

6 University Place, Clayton North, VIC 3168
Facsimile: (03) 9561 6944 Phone: (03) 9561 6144

Unit 16, 42 Smith Street, Capalaba QLD 4157
Facsimile: (07) 3823 5552 Phone: (07) 3823 5555

Distributor