



# HMG Powder Coatings Limited

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## Eposeal Barrier Primer

### Product Description

A zinc-free epoxy powder coating primer designed to provide a water and air barrier between the environment and the substrate, so providing an excellent corrosion protective film. The coating has inherent degassing properties and will significantly reduce crater defects caused by outgassing in problematic surfaces, in particular cast steel and aluminium, hot-dip galvanised (HDG) and zinc-metal sprayed substrates. In addition, the coating offers good corner covering protection and is particularly useful for covering surface imperfections commonly created during the HDG process.

This primer can be used in conjunction with a zinc-rich epoxy primer such as Epozinc 1000 as part of a multi-layered protective system for very harsh environments as defined by ISO 12944.

### Key Benefits

- Very good corrosion resistance
- Excellent chemical resistance
- Excellent surface wetting
- Excellent adhesion to substrate
- Excellent overcoatability and intercoat adhesion
- Very good outgassing resistance
- Good corner-covering (edge covering) properties
- Can be used as a holding primer for solvent-based liquid paints

### Powder Properties

|                         |  |
|-------------------------|--|
| Chemistry               | A thermosetting epoxy resin system.  |
| Application             | Corona electrostatic spray.  |
| Coating Thickness (DFT) | General recommendation is 60-100 microns ( $\mu\text{m}$ ), with a minimum thickness of 60 $\mu\text{m}$ . |
| Gloss (ISO 2813)        | 40% $\pm$ 5 on a 60 degree head  |
| Specific Gravity        | 1.50 $\pm$ 0.1 g/cm <sup>3</sup>   |
| Theoretical Coverage    | Approximately 11 m <sup>2</sup> /kg at 60 microns film thickness.  |
| Storage & Shelf Life    | When stored in a cool (<20°C), dry environment: 12 months.   |
| Curing Schedule         | 10 minutes at 180 Celsius (object temperature)<br>*see recommendations for use.                            |

### Pretreatment

To ensure maximum adhesion the substrate must be thoroughly clean, free from grease, oil, rust, mill scale or any other contaminant. Recommended surface preparation is by solvent or chemical degreasing, followed by grit blasting (recommended blast profile: R<sub>z</sub> 35-65 $\mu\text{m}$ , R<sub>a</sub> 6-10 $\mu\text{m}$ , minimum cleanliness: SA2.5); however the substrate may instead be chemically cleaned and treated (typically a zinc phosphate system) prior to powder coating. If using a chemical treatment, discuss the performance requirements with the treatment chemical supplier.

### Mechanical Tests

Unless otherwise specified, all tests were carried out under laboratory conditions on 0.8mm degreased and zinc phosphated steel panels. A powder coating DFT of 60-70 microns was used, followed by a second coat of RAL 9010 827 Architectural Polyester to 60-70 microns.

|                       |                                |              |
|-----------------------|--------------------------------|--------------|
| Hardness (Eposeal)    | ISO 2815 Buchholtz Indentation | >80          |
| Flexibility (Eposeal) | ISO 1519 Cylindrical Mandrel   | Pass >5mm    |
| Adhesion              | ISO 2409 2mm Crosshatch        | Pass Gt0     |
| Cupping (Eposeal)     | ISO 1520 Erichsen              | Pass >5mm    |
| Impact (Eposeal)      | BS 3900: Part E7               | >25kg cm (N) |
| Intercoat Adhesion    | Hoffman Scratch Test           | >2000g       |

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# Eposeal Barrier Primer

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|---|--|--|---|
| <b>Corrosion and Durability</b>                         | Neutral Salt Fog   | ASTM B117 (1000 hours)<br>a) Steel, iron phosphate with final rinse<br>b) Steel, zinc phosphate<br><br>c) Steel, grit-blasted as per recommendations | Corrosion creep <2mm from scratch<br>Adhesion – Gt0<br>Corrosion creep <2mm from scratch<br>Adhesion – Gt0<br>Corrosion creep <2mm from scratch<br>Adhesion – Gt0 |
|   | Boiling Water  | 2 hours boiling water  | No defects or detachments   |
|   | Humidity   | BS 3900 Part F2  | More than 1000 hours without effect   |
|   | <b>Colour Availability</b> A mid grey colour.  |  |   |
| <b>Recommendations for Use</b>                          | <p>Select a pre-treatment regime appropriate to the substrate and the desired performance. Where a chemical pre-treatment such as a phosphate system is used, seek advice from the pre-treatment chemical supplier. Care should be taken not to contaminate the surface before applying a second coat; over-curing the primer or handling the surface without gloves can compromise the intercoat adhesion.</p> <ul style="list-style-type: none"> <li>• Apply Eposeal to a dry film thickness of at least 60 microns, ensuring all corners and recesses are covered.</li> <li>• Cure the primer, but do not overbake. Out-gassing resistance is maximised at full cure. Oven settings and oven dwell time will depend on the gauge of metal being coated.</li> <li>• Apply and cure the top coat as soon as possible after applying primer. Discuss application parameters with the spray equipment supplier; generally reducing kV and <math>\mu</math>A to as low as possible will help penetration to difficult recesses. Handle only with gloves over-coating. The second coat may be applied whilst the primer is still warm.</li> </ul> <p>Should over-curing have occurred or where handling has been unavoidable, the primer may need to be slightly abraded.</p> |  |   |
| <b>Restriction of Hazardous Substances (RoHS/RoHS2)</b> | <p>This product conforms to the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS and RoHS2) Directive. It does not contain any compounds of lead, mercury, cadmium or hexavalent chromium; nor does it contain polybrominated biphenyls (PBBs) or polybrominated diphenyl ether (PBDE).</p> <p>Please refer to our statement on RoHS, available at <a href="http://www.hmgpowdercoatings.com">www.hmgpowdercoatings.com</a></p>   |  |   |
| <b>Health &amp; Safety</b>                              | <p>This product is intended for use only by professional applicators in industrial environments. Consult the relevant health and safety data sheet indicated in the box label before use.</p>  |  |   |



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