

Epoxy DPM

Damp Tolerable Epoxy DPM

 Revision: 3.8 - 22nd June 2023
 Code: 810

INTRODUCTION

Newton Epoxy DPM is a two-part, solvent-free, damp-tolerable and epoxy-based damp-proof membrane that suppresses residual construction moisture and rising dampness in concrete and sand/cement screeds and can be used in situations where the relative humidity level is above 85%. The cured coating features extremely high resistance to capillary moisture and water vapour and is suitable as a gas barrier for both carbon dioxide and methane to the requirements of BS 8485. It is applied by brush or roller in two coats and can be applied just 7 days after concrete placement. Where the concrete surface is very open, or where the screed is dusting slightly, apply one coat of the lower viscosity [Newton Epoxy Primer](#) to reduce suction and consolidate the surface.

The high quality, low viscosity formulation is suitable for application to damp substrates, allowing for speedy application of flooring, coatings, membranes, levelling compounds and screeds. Epoxy DPM is quick and simple to use as it is applied by brush or roller in one or two coats, dependent on substrate relative humidity, and is a key component of the [Newton NewCoat System](#) for delivering a hard-wearing and waterproof coating for internal flooring applications.

APPLICATION



PROPERTIES

H - Hardness and Durability; E - Elasticity and Flexibility; V - Vapour Resistivity; C - Curing and Drying; W - Working Time

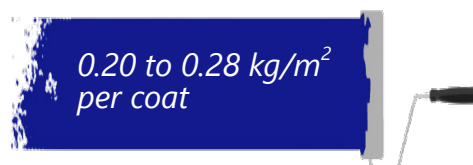


PACKAGING



A & B components -
within two containers

COVERAGE



KEY BENEFITS

- Very damp tolerable
- Can be applied to concrete and screed 7 days after placement
- Solvent-free
- Excellent vapour barrier
- High-bond DPM that provides a barrier to vapour and prevents osmotic blistering
- Excellent resistance to carbon dioxide and methane gasses

METHOD OF APPLICATION

- Brush
- Short hair roller
- Squeegee (application only, not finishing)

SPECIALIST TOOLS REQUIRED

No specialist tools required.

SUITABLE SUBSTRATE

Correctly formed, compacted and prepared:

- Concrete of at least 7 days old
- Screed of at least 7 days old
- Internal or fully covered areas only

TYPICAL APPLICATIONS

Priming of damp, non-porous concrete and screed to provide a DPM and vapour barrier, prior to the application of moisture-sensitive flooring, coatings, membranes, levelling compounds and screed:

- Covered car parks
- Warehousing and storage
- Garages
- Plant rooms

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TECHNICAL DATA

| Features | Result | Units |
|---|---------------------------|-------------------|
| Form – Two component | Low viscosity epoxy resin | |
| Colour | Black | |
| Specific gravity | 1.10 | |
| Product weight | 5.0 / 10.0 | kg |
| Packaged weight | 5.2 / 10.2 | kg |
| Yield per kg | 0.9 | litres |
| Application rate - First coat | 0.25 to 0.28* | kg/m ² |
| Application rate - Further coats or over Epoxy Primer | 0.20 | kg/m ² |
| Shelf life | 12 | Months |
| Pot life @ 20°C & RH of 40% | 20 | Minutes |
| Minimum application temperature - Substrate | +8 (and rising) | °C |
| Maximum application temperature - Air & Substrate | +30 | °C |
| Service temperature | -15 to +50 | °C |
| Odour | Ammonia smell when mixing | |
| VOC content | < 100 | g/litre |

| Drying*** | 8°C | 10°C | 15°C | 20°C | 25°C | Units |
|----------------------------------|-------|-------|-------|-------|------|-------|
| Inter-coat adhesion window | 15-48 | 13-40 | 12-30 | 11-28 | 9-24 | Hours |
| Ready for temporary foot traffic | 16 | 14 | 14 | 12 | 10 | Hours |

| Cured Performance | Result | Units | Test Method |
|--|--------|--------------------------|-------------------------|
| Colour | Black | | |
| Membrane thickness - First coat | 0.23 | mm | |
| Membrane thickness - Further coats | 0.23 | mm | |
| Adhesion to concrete (>B2.0) | 3.5 | MPa | BS EN 13892-8 |
| Water vapour transmission rate – UK Perm | 0.097 | g/m ² /24 hrs | EN 1504-2 |
| Water vapour diffusion resistance – Sd value | 147.58 | m | Calculated from UK Perm |
| Water vapour diffusion resistance – μ value | 451656 | μ | Calculated from UK Perm |
| Water vapour diffusion resistance | 737.90 | MNs/g | Calculated from UK Perm |
| Methane permeability | 1.02** | ml/m ² /d | ISO 15105-1 |
| CO ₂ permeability | 1.35** | ml/m ² /d | ISO 15105-1 |
| Reaction to fire classification – Not determined | F | | Euroclass |

The above data, even if carried out according to regulated tests are indicative and they may change when specific site conditions vary. *Depending on substrate porosity.

** At normal thickness of 0.5mm. ***Figures are influenced by humidity also and so are indicative.

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ANCILLARY PRODUCTS

Dusting or very porous surfaces should be first sealed with a single coat of Newton Epoxy Primer.

SYSTEMS

Epoxy DPM is a component of:

The [Newton NewCoat System](#) for the sealing, coating and protection of screed and concrete surfaces that are subject to mechanical and chemical wearing agents from above, and from dampness below.

Equally suitable as both a damp-tolerable primer and a damp-tolerable DPM.

SPECIFICATION

Newton Waterproofing Systems work in partnership with RIBA NBS and [NBS Source](#), which integrates into project workflows, providing all product data from Newton's NBS BIM Objects, NBS Plus Clauses and RIBA Product Selector into one single source of product information.

NBS Source also hosts a large selection of Newton [case studies](#), as well as product [literature and certifications](#). A wide range of drawings are available [on our website](#).

LIFE EXPECTANCY & PROTECTION

Life expectancy is equal to that of the surface it is applied to or the coating applied above. If used as a DPM and fully protected, the product has a life expectancy equal to the substrate it is applied to.

If the wear expectations are high, one or two protective coats of [Newton Epoxy Primer](#) is recommended and we suggest the O&M manual requests inspection at appropriate intervals. Please speak with the installing contractor or our Technical Team for advice.

TRAINING AND COMPETENCY OF THE USER

Epoxy DPM should only be used by those with an understanding and experience in the use of two-part resins applied to floors.

PACKAGING

The product consists of two parts, A and B, both of which are measured and ready to be mixed:

5KG PACKAGING

- Part A (tin of resin) 3.19 kg
- Part B (tin of hardener) 1.81 kg

10KG PACKAGING

- Part A (Tin of resin) 6.38 kg
- Part B (Tin of hardener) 3.62 kg

APPLICATION RATE

To a thickness of 0.23 mm (230 microns) per coat, which requires an application rate of 0.20 to 0.28 kg/m² depending on surface porosity.

COVERAGE

To grit blasted and textured surfaces, approximately 3.5 m² per kg per coat for the first coat and up to 5 m² per kg per coat for the second coat or where applied over Newton Epoxy Primer. Coverage will vary according to the texture, porosity and evenness of the surface on which the DPM is being applied.

NUMBER OF COATS REQUIRED

Two coats of Epoxy DPM are required where the relative humidity level of the screed is higher than 85%. For RH levels between 75% and 85%, use one coat of Epoxy DPM. For applications requiring ground gas performance, two coats to a total dry-film thickness of 0.5mm are required (minimum of 0.55 kg/m²).

CONSTRUCTION

The construction should conform with current Building Regulations, British Standards and relevant Codes of Practice. New concrete/screed must be at least 7 days old.

SURFACE PREPARATION - CONCRETE FLOORS

With both new and existing concrete surfaces, the surface should be ground with floor grinding/grit blasting machines to remove laitance.

Vacuum clean after grinding.

Surface cracks and shallow damage should be filled. Hairline cracks will be filled by the product. In all cases the surface must be clean, and free from dust, laitance, oils, paints or other forms of contamination.

Large holes and deeper surface damage should be cut out and filled with [HydroCoat 203-RM](#).

SURFACE PREPARATION - SCREEDS

Remove surface laitance by light sanding with a suitable pad or disc. All dust must be removed by vacuum.

Epoxy DPM may be applied to screeds with a moisture level of less than 87% RH. If the moisture level in the screed is above this, further drying must be carried out according to the manufacturer's instructions.

SURFACE PREPARATION - METAL

Surfaces should be cleaned and abraded to give a mechanical key.

Ferrous metals should be free from rust and primed with an anti-oxidation primer.

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MIXING

Newton Waterproofing supply the full range of [Collomix Mixing Equipment](#) that includes Hand Mixers, Stirrers, Mixing Stands, Buckets, Transport Carts and the Mixer Clean mixing bucket.

Epoxy DPM can be mixed with the LX 90 stirrers, matched to the Xo 1 Hand Mixers. A low-speed drill can also be used. **DO NOT HAND MIX.**

- Place the hardener (Part B) into the resin (Part A). Scrape the bottom and sides so that all of the hardener is mixed into the resin
- Mix for two minutes using the LX 90 stirrer

Ensure that the bottom and sides are thoroughly scraped, transfer the entire contents of the hardener container into the resin container.

APPLICATION

Once mixing is complete, transfer the mixed Epoxy DPM into a roller tray and, using a medium-pile simulated sheepskin roller, apply it evenly over the surface

For best results, pour the mixed product onto the substrate in small quantities and quickly roller it out.

Alternatively, a squeegee can be used to place the product.

- Pour mixed material evenly within marked bays
- Use a squeegee to evenly distribute the product material over the specified area. Check thickness with a wet film gauge
- Use a roller to ensure an even finish
- Brushes can be used for detailing

Wet film gauges are available from Newton Waterproofing Systems by request.

CLEANING

Wipe excess product from tools and equipment with a rag and then clean with xylene.

Hardened product can only be removed mechanically.

POT LIFE & WORKING TIME

At 20°C Epoxy DPM has a working time of 20 minutes but a pot life of 15-20 minutes. If the product is not used within 15 minutes, decant it into smaller tins.

WARNING: Mixing of the hardener with the resin results in an exothermic chemical reaction. Leaving too much product in the tin for too long will result in the product and the tin becoming very hot.

NOTE: Although the exothermic reaction is the main determinant of pot life, the ambient temperature will also have an effect, with the pot life reducing further in warmer and hotter conditions.

WARM CONDITIONS

If Epoxy DPM is to be applied in very warm or hot conditions, the application should be planned so as to minimise the effects of excessive air and substrate temperature. The main issue with warm working is pot and working life, although on very damp substrate, rising temperatures can run the risk of outgassing of the moisture within the substrate causing pin-holes in the freshly applied DPM:

- Do not apply when the air or surface temperature is at 30°C and rising
- Consider purchasing Epoxy DPM in white to reflect sunlight or use the clear Newton Epoxy Primer instead
- Start the application in the afternoon, as the temperatures are starting to fall to avoid outgassing issues
- Store in cool shaded areas and only bring out into the open as needed - consider site refrigeration
- Mix under shade - if possible, shade the working areas

OVER-COATING

Application of further coats of Epoxy DPM should be at 90° to the first coat and must be carried out within the inter-coat adhesion window shown on page 2.

If it is not possible to apply the Epoxy DPM within that window, a mechanical key is required. This can be achieved by lightly abrading the surface of the cured product. Please bear this in mind when planning the project.

Where Epoxy DPM is applied over a primer of Newton Epoxy Primer, this must also be applied within the inter-coat adhesion window. If this is not achieved, abrading or 100% broadcasting with sand, to create a mechanical key, will be required.

DRYING TIMES

For curing/drying times please see the Technical Data Table on page 2.

LIMITATIONS

Internal spaces may be space-heated to ensure the correct working temperature is achieved.

- Minimum substrate temperature must be of +8°C and rising
- Do not apply at air or substrate temperatures higher than +30°C
- Not UV stable
- Not suitable for uncovered, external application

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COLOUR

Black.

Other colours are available on request. Lead times will vary so please provide as much notice as possible.

Variable minimum order quantities will also apply, so please check with the Newton Sales Team.

Colours are based on the RAL colour pigment used, not the finished product. The exact colour is slightly lighter.

STORAGE

Store in dry conditions at temperatures between +5°C and +30°C with containers fully sealed. Do not expose to freezing conditions.

If these conditions are maintained and the product packaging is unopened, then a shelf life of up to 12 months can be expected.

GAS BARRIER TO BS 8485

Epoxy DPM also acts as a gas barrier in accordance with BS 8485 2019 Section 7, which states that a methane gas transmission rate of < 40.0 ml/day/m²/atm (average) for sheet and joints (tested in accordance with the manometric method in BS ISO 15105-1:2007) is usually considered sufficient.

At 0.5mm thickness the Epoxy DPM achieves a methane transmission rate of just 1.02 ml.mm/m².day.atm and a carbon dioxide transmission rate of 1.35 ml.mm/m².day.atm. The liquid-applied nature of the product means that there are no laps which require sealing on site and are often the cause of defects.

HEALTH & SAFETY



Product should only be used as directed. The Safety Data Sheet (SDS) should be carefully read prior to application of the material.

The SDS is available upon request from Newton Waterproofing or online via our website. Please see contact details below.

Use appropriate PPE for the environment the system is installed within. Use products only as stated within this Technical Data Sheet and the SDS.

WARNINGS

- Monitor the product in the tin to ensure it is not overheating
- Do not leave the tin upside down on the substrate

|  |  | Newton Waterproofing Systems Newton House 17-19 Sovereign Way Tonbridge Kent TN9 1RH | 810-DPM EN 13813:2002 Two component moisture tolerant epoxy resin primer. According to EN 13813: SR-B2.0 |
|---|---|--|--|
| Essential characteristics | Declared performance | Test standard | Harmonised Technical Standard |
| Release of corrosive substances | SR | (EN 13813, 5.3.5) | EN 13813:2002 |
| Water permeability | NPD | | |
| Wear resistance | NPD | EN 13892-4 | |
| Bond strength | >B2.0 | EN 13892-8 | |
| Impact resistance | >IR10 | EN ISO 6272 | |
| Reaction to fire | NPD | | |
| Sound absorption | NPD | | |
| Thermal resistance | NPD | | |
| Chemical resistance | NPD | | |

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