

Epibear

Epoxy Bearing Mortar

Description

Epibear has been designed to comply with the requirements of EN1504 Part 3 Class R4. Epibear is a three component mortar system consisting of epoxy resin, hardener and specially blended aggregates in pre-weighed quantities ready for site use. Epibear quickly cures, even at low temperatures, to form an exceptionally strong bearing for bridge bearing pad levelling plinths and other load bearing applications.

Advantages


- Rapid strength development
- High compressive, flexural & tensile strengths
- Excellent adhesion to concrete, stone, asphalt & metal
- Excellent abrasion resistance
- Suitable for depths up to 100mm
- Resistant to a wide range of chemicals
- Tolerant to road salts & freeze-thaw
- Tolerant to damp surfaces & will cure in adverse conditions
- Cures fully at temperatures above 5°C
- Non-shrink

Applications

- Production of highway & rail bridge bearing pads
- Production/repair of load bearing plinths

Technical Information

Working time	Approx 45 mins
Yield	8.7 litres per 18 kg pack
Coverage	0.8 m ² @ 10 mm per 18 kg
Minimum thickness	5 mm

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EN 1504-3 Concrete repair product for structural repair PC Mortar (Polymer mortar)	
Compressive strength	Class R4 (≥45 MPa)
Chloride ion content	≤0.05%
Adhesive bond strength	≥2.0 MPa
Adhesion after freeze/thaw	≥2.0 MPa
Elastic modulus	≥20 GPa
Dangerous substances	Complies with 5.4

Surface preparation

All surfaces should be sound, clean, free from oil, grease and chemical contamination, old paint and loose debris. They should be free of standing water and be preferably dry.

Concrete surfaces should be free from laitance, this should be removed by either scarifying or etching. Steel surfaces should be cleaned by grit blasting or grinding to remove all loose scale and rust. Once clean, Epicon Tack Coat H should be applied immediately.



Technical properties of Epibear

Properties	Standard	Performance Requirements	Declared Value
Appearance			Resinous Mortar
Chloride-ion content	EN 1015-17	≤0.05 %	<0.05 %
Aggregate size			Max. 2 mm
Layer thickness - min / max			5mm to 100mm
Working time @ 23°C			45-60 minutes
Hardening time @ 23°C			60-150 minutes
Density			1950-2100 kg/m ³
Application temperature			5°C to 35°C
Compressive strength @ 23°C	EN 12190	≥45 MPa	62 MPa @ 24 hours 68 MPa @ 3 days 72 MPa @ 7 days 80 MPa @ 28 days
Compressive strength @ 5°C	EN 12190		25 MPa @ 24 hours 59 MPa @ 3 days 62 MPa @ 7 days 67 MPa @ 28 days
Tensile strength	BS 6319-7		>10 N/mm ²
Flexural strength	BS 6319-3		>15 N/mm ²
Flexural elastic modulus	BS 6319-3		>15 GPa
Elastic modulus	EN 13412	≥20 GPa	20.8 GPa
Adhesion - concrete	EN 1542	≥2.0 MPa	≥2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN 13687-1	≥2.0 MPa	≥2.0 MPa
Adhesion after thunder showers (30 cycles)	EN 13687-2	≥2.0 MPa	≥2.0 MPa
Adhesion after dry cycling (30 cycles)	EN 13687-4	≥2.0 MPa	≥2.0 MPa
Slip resistance	EN 13036-4		Class 1
Carbonation resistance	EN 13295	$d_k \leq \text{ref. concrete}$	$d_k < \text{ref. concrete}$
Capillary absorption	EN 13057	$\leq 0.5 \text{ kg/m}^2 \cdot \text{h}^{0.5}$	$\leq 0.5 \text{ kg/m}^2 \cdot \text{h}^{0.5}$
Cracking tendency	Coutinho Ring Test		No cracking after 180 days

Technical data shown are statistical results and do not correspond to guaranteed minima.

Tolerances are those described in appropriate performance standards.

All testing was conducted at 23°C under laboratory conditions, unless otherwise stated.

Priming

Prepared substrates should be primed with Epicon Tack Coat H. Pour the contents of the Hardener into Base container and mix thoroughly by spatula or mechanically. The mixed material should be applied by brush, worked into the surface. Primer tack life is 15 mins to 3 hours.

Mixing

Mixing will require a slow speed drill fitted with an appropriate 80mm paddle, as well as a suitable forced action mechanical mixer.

In low temperatures, the materials should be stored between 10°C and 20°C in order to assist mixing and application.

Pour all the Hardener component of Epibear into the Base container and mix thoroughly by drill and 80mm paddle. Once Hardener and Base have been thoroughly mixed they should be transferred to the mixer drum and the supplied bag of aggregate added slowly whilst the drum is rotating. Once all the aggregate is included, continue mixing for 3-4 minutes till a homogenous mortar is obtained.

Application Instructions

If formwork or shuttering is used a suitable silicone or wax release agent should be used to avoid the sticking of the mortar.

Once mixed the mortar should be applied by wood or plastic float, while the primer remains tacky. Press firmly to force mortar onto the primed substrate, ensuring maximum distribution of resin/hardener at the primed interface. It is vital to ensure full compaction is achieved throughout the full depth of the mortar. Bring to level with the required finish using a steel float after the mortar has been well compacted. Finishing is simplified by wiping of the float face using a cloth dampened with Nuwash.

For thicker sections the material should be fully compacted in layers not exceeding 25mm. It is not necessary to allow the compacted layer to cure before proceeding with the next layer laid wet on wet. Heavy scoring of the previous layer will assist cohesion between layers.

Cleaning

Mixing equipment and tools should be cleaned immediately after use and frequently throughout the day using Nuwash.

Packaging

Epibear is available in 18kg units (yield approximately 8.7 litres or 0.8m² @ 10mm depth per unit).

Epicon Tack Coat 'H' is available in 0.5kg & 1kg units (3-4m² cover per kg).

Storage

The shelf life of Epibear and Epicon Tack Coat is 12 months when stored unopened in dry, normal conditions and away from direct sunlight. Protect from frost.

Health & Safety

Product Safety Data Sheets (SDS) are available from Nufins. SDS sheets are provided to help customers satisfy their safe handling, use and disposal needs as well as assist with any conformance requirements made locally by health and safety regulations.

SDS are continually updated to provide the latest information to our customers. We therefore recommend contacting our head office to obtain the most recent and accurate SDS before handling and using any product.

Limitations

Do not apply below 5°C. In low temperatures, the materials should be stored between 10°C and 20°C in order to assist mixing and application. In temperatures below 5°C it is necessary to assist curing by the use of tenting and warm air blowers. Please refer to Nufins technical department for further advice.

Minimum compacted thickness is 5 mm.

Disclaimer

The information contained herein is to the best of our knowledge true and accurate and is given in good faith but without warranty. The user will be deemed to have satisfied themselves independently as to the suitability of our products for their own particular purpose. In no event shall Nufins be liable for consequential or incidental damages.

Users must always refer to the most recent issue of the Technical Datasheets, copies of which will be supplied on request.

Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical contacts are available to provide further information and arrange demonstrations.