

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-weighted 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 and tensile strengths
- Excellent adhesion to concrete, stone, asphalt and metal
- Provides a non-slip surface with excellent abrasion resistance
- Resistant to a wide range of chemicals
- Tolerant to road salts and freeze-thaw
- Tolerant to damp surfaces and will cure even in adverse conditions
- Cures fully at temperatures above 5°C
- Non-shrink

Applications

- Production of bridge bearing pads
- Production/repair of load bearing plinths

Technical Information

Working Time	45 mins
Yield	8.7 Litres / 18kg Pack
Coverage	0.8m ² Per 18kg @ 10mm
Minimum Thickness	5mm

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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 clean, free from oil, grease and chemical contamination, free standing water, old paint and loose debris. Oil and grease should be removed using *Desolve*.

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 Requirement	Declared Value
Appearance			Resinous Mortar
Chloride-ion content	EN1015-17	≤0.05%	<0.00%
Aggregate size			Max. 2mm
Layer thickness - minimum			5mm
Working time (@ 23°C)			45-60 Minutes
Hardening Time (@ 23°C)			60-150 Minutes
Density			1950-2100 kg/m ³
Temperature for application			5°C to 35°C
Compressive Strength @ 23°C	EN 12190	≥ 45 MPa	62 MPa@ 24 Hour 68 MPa@ 3 Days 72 MPa@ 7 Days 80 MPa@ 28 Days
Compressive Strength @ 5°C	EN 12190		25 MPa@ 24 Hour 59 MPa@ 3 Days 62 MPa@ 7 Days 67 MPa@ 28 Days
Tensile Strength	BS6319-7		>10 N/mm ²
Flexural Strength	BS6319-3		>15 N/mm ²
Flexural Elastic Modulus	BS6319-3		>15 GPa
Elastic modulus	EN13412	≥ 20 GPa	20.8 GPa
Adhesion - concrete	EN1542	≥ 2 MPa	≥ 2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN13687-1	≥ 2 MPa	≥ 2.0 MPa
Adhesion after thunder showers (30 cycles)	EN13687-2	≥ 2 MPa	≥ 2.0 MPa
Adhesion after dry cycling (30 cycles)	EN13687-4	≥ 2 MPa	≥ 2.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	$d_k \leq \text{ref. concrete}$	$d_k < \text{ref. concrete}$
Capillary absorption	EN13057	$\leq 0.5 \text{ kg/m}^2/\text{h}^{-0.5}$	$\leq 0.5 \text{ kg/m}^2/\text{h}^{-0.5}$
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.

Priming

Adhesion to clean concrete when used in conjunction with Epicon Tack Coat H exceeds the strength of the concrete.

Mix the contents of the hardener tin into the tin of base and mix thoroughly. The mixed material should be brushed onto the substrate. On very porous surfaces, where the first coat is absorbed, a second coat should be applied. The primed surface should be covered with Epibear between 15 minutes to 3 hours, whilst the primer is still tacky.

Epicon Tack Coat 'H' Technical Information

Working Time	30 mins
Coverage	3-4 m ² per kg

Mixing

Epibear base and hardener components should be mechanically mixed in the base container. In cold conditions the materials should be stored between 10°C and 20°C in order to aid mixing

Once the base and hardener are mixed they should be transferred to a suitable forced action mechanical mixer and the aggregate added slowly. Once all the aggregate is added mix thoroughly for 3-4 minutes until a homogenous mix 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 Epibear should be applied by either a steel trowel or float, working the mortar into the primed substrate whilst the primer is still tacky. The surface can then be brought to the required finish using a steel float after the mortar has been well compacted. Finishing is simplified by wiping of the trowel face using a cloth dampened with Nuwash. On thicker sections the material should be compacted in layers, not exceeding 25mm. It is not necessary to allow the compacted layer to cure before proceeding with the next layer. Scoring of the previous layer will assist cohesion between layers. All tools and equipment should be cleaned immediately using Nuwash.

Packaging

Epibear is packed in 18kg units (8.7 litres).

Epicon Tack Coat 'H' is packed in 0.25kg, 0.5kg and 1.0kg units.

Storage

The shelf life 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. At low temperatures it is necessary to aid curing by the use of tenting and warm air blowers.

Minimum compacted thickness is 5mm.

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.