Issue No: 1/2013

Epicon F.S. Mortar

Nufins

Fast Setting High Strength Epoxy Mortar

Description

Epicon F.S. Mortar has been designed to comply with the requirements of EN1504 Part 3 Class R4 . It is a fast curing, heavy duty epoxy mortar which has been formulated to enable the rapid repair of concrete surfaces. Epicon F.S. Mortar is a pre-weighed three component system of solvent free epoxy resin and hardener which, when blended with the aggregate provided, forms a high strength mortar with outstanding adhesive properties.

Advantages

- High early strength development.
- 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.
- No need for a primer.
- Cures in cold damp conditions.
- Non-shrink and grey in colour.
- Ready for trafficking in a few hours.

Applications

- Repair of worn and damaged concrete floors.
- Restoration of worn stairs and steps.
- Repair of spalled expansion joints.
- Repair of concrete roads and runways.

CE

0086

Nufins, Kingston House,
3 Walton Road, Pattinson North, District 15,
Washington, Tyne & Wear. NE38 8QA
13
0086-CPD-594215

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

Technical Information

Working Time	45 Minutes
Full cure	7 Days
Coverage	2.5m^2 Per 25kg @ 5mm 0.5m^2 Per 5kg @ 5mm
Minimum Layer Thickness	3mm
Minimum cure prior to stress	4 Hours (@23^{o}C)

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.

Although Epicon F.S. Mortar may be feather edged a stronger repair will result if the edges are cut straight with a chisel, angle grinder or similar tool.

Steel should be grit blasted or mechanically abraded to a clean bright finish.

Technical properties of Epicon F.S. Mortar.

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey Resinous Mortar
Chloride-ion content	EN1015-17	≤0.05%	<0.05%
Aggregate size			Max. 1mm
Layer thickness			3 to 25mm
Working time (@ 23°C)			45-60 Minutes
Hardening Time (@ 23°C)			60-90 Minutes
Density			1950-2100 kg/m^3
Temperature for application			5°C to 35°C
Compressive Strength @ 23°C	EN 12190	≥ 45 MPa	50 MPa @ 4 Hr 60 MPa @ 6 Hr 75 MPa @ 24 Hr 87 MPa @ 3 Days 90 MPa @ 7 Days
Compressive Strength @ 10°C	EN 12190		2.5 MPa @ 4 Hr 9 MPa @ 6 Hr 56 MPa @ 24Hr 87 MPa @ 3 Days 88 MPa @ 7 Days
Tensile Strength	BS6319-7		13 MPa
Flexural Strength	BS6319-3		26 MPa
Modulus of Elasticity, In Flexure	BS6319-3		20 GPa
Modulus of Elasticity, In Compression	EN13412	≥ 20 GPa	20 GPa
Adhesion - concrete	EN1542	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN13687-1	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after thunder showers (30 cycles)	EN13687-2	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after dry cycling (30 cycles)	EN13687-4	≥ 2.0 MPa	≥ 2.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	d_k ≤ ref. concrete	Passes
Capillary absorption	EN13057	≤ 0.5 kg/m^2/$h^{-0.5}$	≤ 0.5 kg/m^2/$h^{-0.5}$
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.
1 N/mm^2 = 1 MPa
1 kN/mm^2 = 1 GPa

Nufins

FM11022

Kingston House, 3 Walton Road, Pattinson North, Washington, Tyne & Wear, NE38 8QA, United Kingdom
T: +44(0) 191 416 8360 F: +44(0) 191 415 5966 W: www.nufins.com E: info@usluk.com

Mixing

This may be carried out by hand using a trowel for the 5kg pack, but for the 25kg pack size it is recommended that a suitable forced action mechanical mixer such as a Creteangle or Danes be used. The Epicon F.S. Mortar base and hardener components should be thoroughly mixed in the base container. In cold conditions it will greatly aid mixing if the materials are stored in warm conditions.

Once the base and hardener are thoroughly mixed they should be transferred to a bucket/mechanical mixer (depending upon pack size) 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 Epicon F.S. should be applied by either a steel trowel or float, working the mortar into the substrate to ensure maximum distribution of the resin/ hardener. 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. All tools and equipment should be cleaned immediately using Nuwash.

Packaging

Epicon F.S. Mortar is packed in 25kg units (12.5 litres) and 5kg units (2.5 litres).

Storage

Epicon F.S. Mortar should be stored in cool dry conditions. Epicon F.S. mortar should be stored away from foodstuffs and out of the reach of children.

Health & Safety

Epicon F.S. Mortar, like similar products, is capable of irritating unprotected skin. We therefore recommend the use of a suitable barrier cream and that gloves be worn.

Limitations

Do not apply below 2^{o}C. At low temperatures below it is necessary to aid curing by the use of tenting and warm air blowers.
Please refer to our technical department.

Technical Support

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

Nufins

FM11022

Kingston House, 3 Walton Road, Pattinson North, Washington, Tyne & Wear, NE38 8QA, United Kingdom
T: +44(0) 191 416 8360 F: +44(0) 191 415 5966 W: www.nufins.com E: info@usluk.com