

Epicon Mortar



Nufins

General Purpose High Strength Epoxy Mortar

Description

Epicon Mortar has been designed to comply with the requirements of EN1504 Part 3 Class R3. It is an extremely versatile epoxy mortar suitable for a number of building and repair needs where characteristics of excellent adhesive bond, high strength, abrasion and chemical resistance are required. Epicon Mortar is a pre-weighed three component system of solvent free epoxy resin and hardener which, when blended with the graded aggregates, forms a high strength mortar.

Advantages

- High compressive, tensile and flexural strength.
- Excellent adhesion to concrete, stone, asphalt and metal.
- Provides a non-slip surface with excellent abrasion resistance.
- Ready for trafficking same day.
- Resistant to a wide range of chemicals.
- Tolerant to road salts and freeze-thaw.
- Tolerant to damp surfaces.
- Non-shrink and grey in colour.
- Stronger than concrete within 24 hours.

Applications

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

Technical Information

| | |
|----------------------|----------------------------------|
| Working Time: | 45 Minutes |
| Full cure | 7 Days |
| Coverage | 2.5m ² Per 25kg @ 5mm |
| Yield | 12.5 Litres |
| Minimum Thickness | 4mm |
| Compressive Strength | 75 MPa |
| Flexural Strength | 15 MPa |
| Tensile Strength | 8 MPa |

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EN 1504-3

Concrete repair product for structural repair
PC Mortar (Polymer mortar)

| | |
|----------------------------|--------------------|
| Compressive strength | Class R3 (>25 MPa) |
| Chloride ion content | <0.05% |
| Adhesive bond strength | >1.5 MPa |
| Adhesion after freeze/thaw | >1.5 MPa |
| Elastic modulus | >15 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.

A stronger repair will result if the edges are cut straight with a chisel, angle grinder or similar tool to avoid feather edging of the material.

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

Technical properties of Epicon Mortar.

| Properties | Standard | Performance Requirement | Declared Value |
|--|--------------------|---|--|
| Appearance | | | Grey Resinous Mortar |
| Chloride-ion content | EN1015-17 | ≤0.05% | <0.05% |
| Aggregate size | | | Max. 2mm |
| Layer thickness—minimum | | | 4mm |
| 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 | ≥ 25 MPa | 65 MPa @ 24 Hr 68 MPa @ 48 Hr 70 MPa @ 3 Days 75 MPa @ 7 Days |
| Compressive Strength @ 10°C | EN 12190 | | 35 MPa @ 24 Hr 64 MPa @ 48 Hr 65 MPa @ 3 Days 72 MPa @ 7 Days |
| Compressive Strength @ 5°C | EN 12190 | | 26 MPa @ 24 Hr 59 MPa @ 48 Hr 63 MPa @ 3 Days 65 MPa @ 7 Days |
| Tensile Strength | BS6319-7 | | 13 MPa |
| Flexural Strength | BS6319-3 | | 23 MPa |
| Modulus of Elasticity, In Flexure | BS6319-3 | | 20 GPa |
| Modulus of Elasticity, In Compression | EN13412 | ≥ 15 GPa | 18 GPa |
| Adhesion - concrete | EN1542 | ≥ 1.5 MPa | ≥ 2.0 MPa |
| Adhesion after freeze/thaw (50 cycles with salt) | EN13687-1 | ≥ 1.5 MPa | ≥ 2.0 MPa |
| Adhesion after thunder showers (30 cycles) | EN13687-2 | ≥ 1.5 MPa | ≥ 2.0 MPa |
| Adhesion after dry cycling (30 cycles) | EN13687-4 | ≥ 1.5 MPa | ≥ 2.0 MPa |
| Skid Resistance | EN13036-4 | | Class 1 |
| Carbonation resistance | EN13295 | $d_k \leq \text{ref. concrete}$ | Passes |
| 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.

1 N/mm² = 1 MPa

1 kN/mm² = 1 GPa



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Priming

Cleaned substrates should be primed with Epicon Tack Coat 'H.' Pour 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 Epicon Mortar between 15 minutes to 3 hours, whilst the primer is still tacky.

Epicon Tack Coat 'H' Technical Information

Working life: 30 Minutes
Coverage: 3-4 m²

Mixing

It is recommended that a suitable forced action mechanical mixer be used. The Epicon 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 the 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 Epicon Mortar 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. All tools and equipment should be cleaned immediately using Nuwash.

Packaging

Epicon Mortar is packed in 25kg units (12.5 litres).
Epicon Tack Coat 'H' is packed in 0.25kg, 0.5kg and 1.0kg units.

Storage

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

Health & Safety

Epicon 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 5°C. At low temperatures below it is necessary to aid curing by the use of tenting and warm air blowers. Minimum compacted thickness is 4mm.

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.



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