

## Epicon F.S. Mortar

### Fast Setting High Strength Epoxy Mortar

#### Description

Epicon F.S. Mortar has been designed to comply with the requirements of EN 1504 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. Ideal for reactive maintenance in locations of heavy use, such as car parks, rail stations and goods yards.

#### Advantages


- High early strength development
- Excellent adhesion to concrete, stone, asphalt & metal
- Provides an anti-slip surface, with excellent abrasion resistance
- Resistant to a wide range of chemicals
- Tolerant to road salts & freeze-thaw
- No need for a primer
- Cures in cold damp conditions
- Suitable for depths up to 150mm
- Non-shrink & Grey in colour
- Ready for trafficking in a few hours

#### Applications

- Repair of worn & damaged concrete floors
- Restoration of worn stairs & steps
- Repair of spalled expansion joints
- Repair of concrete roads, bridge decks & runways

#### Technical Information

Working time	45 minutes
Full cure	7 days
Coverage	0.5m <sup>2</sup> per 5 kg @ 5 mm 2 m <sup>2</sup> per 20 kg @ 5 mm
Minimum layer thickness	1 mm
Minimum cure prior to stress	4 hours @ 23°C

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

Although Epicon F.S. Mortar may be feather edged, a stronger repair will result if the perimeter edges of defects are cut square 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 Requirements	Declared Value
Appearance			Grey Resinous Mortar
Chloride-ion content	EN 1015-17	≤0.05 %	<0.05 %
Aggregate size			Max. 1 mm
Layer thickness			1mm to 150mm
Working time @ 23°C			45-60 minutes
Hardening time @ 23°C			60-90 minutes
Density			1950-2100 kg/m <sup>3</sup>
Application temperature			5°C to 35°C
Compressive strength @ 23°C	EN 12190	≥45 MPa	50 MPa @ 4 hours 60 MPa @ 6 hours 75 MPa @ 24 hours 87 MPa @ 3 days 90 MPa @ 7 days
Compressive strength @ 10°C	EN 12190		2.5 MPa @ 4 hours 9 MPa @ 6 hours 56 MPa @ 24 hours 87 MPa @ 3 days 88 MPa @ 7 days
Tensile strength	BS 6319-7		13 MPa
Flexural strength	BS 6319-3		26 MPa
Modulus of elasticity, In Flexure	BS 6319-3		20 GPa
Modulus of elasticity, In Compression	EN 13412	≥20 GPa	20 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	$d_k \leq \text{ref. concrete}$	Passes
Capillary absorption	EN 13057	≤0.5 kg/m <sup>2</sup> .h <sup>0.5</sup>	≤0.5 kg/m <sup>2</sup> .h <sup>0.5</sup>
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

No primer is required with Epicon F.S. Mortar.

## Mixing

Mixing 5kg packs will require a slow speed drill with an appropriate 80mm paddle. Mixing 20kg packs 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 the entire Hardener component of Epicon F.S. Mortar 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 a suitable mixing vessel, or mechanical mixer drum (depending upon pack size), and the supplied bag of aggregate added slowly whilst blending into the resin. Once all the aggregate is included, continue mixing for 3-4 minutes until 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 Epicon F.S. Mortar should be applied by wood or plastic float, pressing firmly to force the mortar onto the substrate, ensuring maximum distribution of resin/hardener at the substrate interface. It is vital to ensure that thorough compaction is achieved throughout the full depth of the mortar.

After the mortar has been well compacted and brought to the required level, the surface can then be finished as required using a steel or wood/plastic float. Finishing and closing the surface is simplified by wiping of the float face using a cloth dampened with Nuwash. Nuwash should not be applied to the float by sponge, nor poured directly onto the mortar.

## Slurry Applications

It is permissible for the material to be used as an epoxy slurry coat when levelling a rough surface prior to the application of subsequent coatings. When used in this fashion please refer to Nufins technical department for further advice.

## Cleaning

Mixing equipment and tools should be cleaned immediately after use and frequently through the day to avoid product build up, using Nuwash.

## Packaging

Epicon F.S. Mortar is available in 20kg units (10 litres) and 5kg units (2.5 litres).

## 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. 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.

## 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.