Acropak HB40 Mortar

Lightweight Cementitious Mortar

Description

A pre-blended polymer modified fibre-reinforced cementitious mortar which only requires the addition of clean water. The product is characterised by its excellent bond strength and high abrasion resistant surface which makes it ideal as a high-build mortar and rendering mortar. Can be applied to a thickness of up to 50mm in a single application on a vertical surface and up to 30mm overhead. Complies with DTp specification BD27/86 clause 6 and various specifications worldwide. Acropak HB40 Mortar has been specially formulated to achieve and surpass the performance requirements of EN1504 Part 3 Class R3.

Advantages

- High compressive strength.
- Excellent adhesion to dense concrete and steel.
- Excellent workability and finishing properties
- Good resistance to water, frost and salt permeation.
- Can be laid in sections from 10mm upwards.
- Only requires the addition of water.
- Based on shrinkage compensated Portland Cements.
- Low chromate (CR VI <2ppm).
- Contains no chlorides.
- Aggregate is non-Alkali Silica reactive in accordance with ASTM C289.
- Complies with BD 27/86, clause 6.

Applications

- Repair of concrete damaged by reinforcement corrosion or fire damage.
- Repairs to spalled columns, beams and soffits.
- Suitable for use in harsh environments, such as tidal/marine and water treatment works.
- Waterproof pointing mortar.
- Waterproof render to concrete, brickwork and block work.

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EN 1504-3

Concrete repair product for structural repair

PCC Mortar (polymer modified hydraulic cement)

Compressive strength	Class R3 (>25 MPa)
Chloride Ion content	≤0.05 %
Adhesive bond strength	>1.5 MPa
Adhesion after freeze/thaw (50 cycles with salt)	>1.5 MPa
Carbonation resistance	Passes
Elastic modulus	>15 GPa
Dangerous substances	Complies with 5.4

Technical Properties of Acropak HB40 Mortar.

Properties	Standard	Performance Requirements	Declared Value
Appearance			Grey Powder
Chloride-ion Content	EN1015-17	≤ 0.05%	≤ 0.05%
Maximum Aggregate Size			2mm
Cement content			> 400 kg/m^3
Minimum Layer Thickness Maximum Layer Thickness			10mm 50mm*
Working time			20-45 Minutes
Initial Set			2-4 Hours
Final Set			4-6 Hours
Application temperature			5°C to 30°C
Density			1750-1900 kg/m^3
Compressive strength	EN12190	> 25 MPa	14 MPa @ 24 Hrs 33 MPa @ 7 Days 45 MPa @ 28 Days
Flexural strength	BS6319-3		6 MPa
Modulus of elasticity, in flexure	BS6319-3		15 GPa
Modulus of elasticity, in compression	EN13412	≥ 15 GPa	16 GPa
Direct tensile strength	BS6319-7		3.2 MPa
Adhesion to concrete	EN1542	≥ 1.5 MPa	≥ 2.0 MPa
Adhesion after: freeze/thaw thunder/shower Dry cycling	 EN13687-1 EN13687 -2 EN13687 -4	 ≥ 1.5 MPa ≥ 1.5 MPa ≥ 1.5 MPa	 ≥ 1.5 MPa ≥ 1.5 MPa ≥ 1.5 MPa
Carbonation resistance	EN13295	d_k ≤ ref. Concrete	Passes
Capillary absorption	EN13057	≤ 0.5 kg/m^2/$Hr^{0.5}$	≤ 0.5 kg/m^2/$Hr^{0.5}$
Cracking tendency	Coutinho ring		No crack after 180 days

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

Tolerances are those described in appropriate performance standards.

*- When rendered over large area. For sections greater than 50mm please contact Nufins technical department.

Surface Preparation

Substrate must be clean and sound. All grease, oil, paint, plaster and laitance must be removed. Grit blasting, steam cleaning or water jetting are the preferred methods. If surface has been contaminated with moss or lichen then the surface should be treated with Nufins *Fungicidal Wash*.

Mechanically remove any damaged concrete and expose reinforcement around its full circumference and beyond its corrosion length. Break out to achieve a sound surface, minimum depth 10mm, the edge of the repair must be recessed to avoid feather edging.

All rust and scale should be removed from any exposed steel preferably by blast cleaning. If the reinforcement bar has corroded reducing the bar diameter, then consideration should be given to replacing it.

Priming

For concrete repairs the prepared concrete surface should be thoroughly dampened with water and any excess removed before brushing on Nucem Emulsion Primer.

Coverage of Nucem Emulsion Primer is 5 - 8m^2 per Litre.

For repairs with poor substrates or exposed reinforcement Nucem Primer should be used.

The prepared surface and cleaned reinforcement steel should be coated with the Nucem Primer using a stiff brush ensuring it is thoroughly worked into the surface. When using Nucem Primer it is not necessary to saturate the substrate with water as it may be applied to either dry or damp surfaces. Whilst the primer is still tacky, normally within 3 hours, apply Acropak HB40 Mortar.

Coverage of Nucem Primer is 3 - 5 m^2 per kg.

Usable life 2 - 3 hours.

Mixing

The Acropak HB40 Mortar can be mixed using a forced action mixer. Water content should be typically 4 litres per bag, up to a maximum of 4.2 litres.

Application Instructions

Whilst the primer is still tacky apply the mixed material. If the primer dries before application of the Acropak HB40 Mortar the area should be re-primed. Depending on the area to be repaired, material should be applied by hand or trowel ensuring material is thoroughly compacted on to the primed substrate and around the reinforcement.

Acropak HB40 Mortar may require building up in layers and the final layer should be finished with either a wood or steel float. When building up in layers it is preferable to "score" the surface to produce a physical key and to re-prime to ensure maximum adhesion.

Curing

Acropak HB40 Mortar should be protected from rapid drying out by using normal methods of curing and precautions taken to avoid frost damage. UV degradable resin based curing agents, e.g. Chemcure R90, should not be used if the surface is to receive subsequent treatments.

Overcoating

Acropak HB40 Mortar is extremely durable and provides excellent protection to the embedded steel reinforcement. However, areas which have not been repaired will benefit from the application of a protective decorative coating, such as *Covercrete*.

Packaging

Acropak HB40 Mortar is available in 22 kg packs (yield 14 litres approximately).

Nucem Primer is available in 0.5 kg and 1.0 kg units

(coverage 3 - 5 m^2 per kg).

Nucem Emulsion Primer is available in 5 and 25 litre units.

Storage

The shelf life is 6 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 very 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

Excessive water additions will reduce strengths. Application should not be carried out when the temperature is below 5^{o}C.

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.