

Nupatch Mortar

Fast Setting Repair Mortar

Description


A pre-packed polymer modified, rapid setting, fibre reinforced cementitious repair mortar designed to give rapid strength development even under adverse conditions. The product contains a specially selected latex bonding and waterproofing gauging liquid. Nupatch Mortar has been specially formulated to achieve and surpass the performance requirements of EN1504 Part 3 Class R3.

Advantages

- Pack contains everything required including gauging liquid
- Guaranteed low water/cement ratio
- Can be laid in sections from 10mm to 30mm in one layer
- Rapid setting enabling successive layers to be built up with minimum delay
- Excellent adhesion to dense concrete and steel etc
- Contains no chloride containing additives
- Aggregate is non-Alkali Silica reactive in accordance with ASTM C289
- Excellent workability and finishing properties.
- Good resistance to water, frost and salt permeation

Applications

- Repair of damaged concrete both in-situ and pre-cast
- Repairs to columns and beams using formwork
- Repairs of damaged floors and roads
- Screeding where abrasion and/or water resistance is required
- Repair of concrete in tidal situations

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| 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 PCC Mortar (based on 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 |
| Elastic modulus | >15GPa |
| Dangerous substances | Complies with 5.4 |

Surface Preparation

Substrate must be clean and sound, and free from all grease, oil, paint, plaster and laitance must be removed. Oil and grease should be removed by using Desolve and laitance should be removed by scarifying. The edges of the repair must be recessed at least 20mm. Where spalling is caused by reinforcement corrosion all steel must be exposed and cleaned to remove all loose scale and rust, preferably by grit blasting. If the reinforcement bar has corroded reducing the bar diameter, then consideration should be given to replacing it.



Technical Datasheet

Technical properties of Nupatch Mortar.



| Properties | Standard | Performance Requirements | Declared Value |
|--|---------------|--|--|
| Appearance | | | Grey Powder & White Liquid |
| Chloride-ion Content | EN1015-17 | ≤ 0.05% | ≤ 0.05% |
| Maximum Aggregate Size | | | 4mm |
| Maximum water/cement ratio | | | 0.4 |
| Cement content | | | > 400 kg/m ³ |
| Minimum Layer Thickness | | | 10mm |
| Maximum Layer Thickness | | | 30mm* |
| Working time | | | 20-30 Minutes |
| Temperature for application | | | 5°C to 30°C |
| Density | | | 2200-2300 kg/m ³ |
| Compressive strength | EN12190 | > 25 MPa | 15 MPa @ 4 Hrs 33 MPa @ 24 Hrs 45 MPa @ 7 Days 55 MPa @ 28 Days |
| Modulus of elasticity, in compression | EN13412 | ≥15 GPa | 17.8 GPa |
| Tensile strength | BS6319-7 | | >4.0 MPa |
| Adhesion to concrete | EN1542 | ≥ 1.5 MPa | > 2.0 MPa |
| Adhesion after: freeze/thaw | EN13687-1 | ≥ 1.5 MPa | > 2.0 MPa |
| thunder/shower | EN13687 -2 | ≥ 1.5 MPa | > 2.0 MPa |
| Dry cycling | EN13687 -4 | ≥ 1.5 MPa | > 2.0 MPa |
| CO ₂ Diffusion coefficient | | | 2.1 x 10 ⁻⁵ cm ² /sec |
| u value | | | 7100 |
| R value | | | 140 m |
| Sc @ 20mm | | | 350 mm |
| Sorptivity | | | 0.01 mm min ^{-½} |
| Cl-Diffusion coefficient | | | 1 x 10 ⁻¹⁰ cm ² /sec |
| Coefficient of thermal expansion | EN1770 | | 7.8 x 10 ⁻⁶ |
| Water permeability coefficient | 28 days | | <0.01 ml/m ² /sec |
| 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 applying over large area. For sections greater than 30mm please contact Nufins technical department.

$$1 \text{ N/mm}^2 = 1 \text{ MPa}$$

$$1 \text{ kN/mm}^2 = 1 \text{ GPa}$$

Priming

Saturate the substrate and ensure all free standing water has been removed before priming with Nupatch Primer. Failure to dampen down the substrate will cause the Nupatch Primer to dry out too quickly. Mix the primer by adding the entire contents of the powder to the gauging liquid, mix into a slurry. Apply by brushing thoroughly into the prepared surface, including the exposed reinforcement. The Nupatch Mortar must be applied to the repair area while the primer remains tacky. If the primer dries before the mortar is placed then the primer should be removed and the substrate re-primed.

Coverage of Nupatch Primer is 2.5 - 3.5 m² per pack.

Mixing

The use of a forced action pan mixer will ensure thorough mixing. Wet the bowl and drain. Add two thirds of the gauging liquid to the mixer then all the powder component and mix for 30-60 seconds. Add all or part of the remaining gauging liquid to bring to the required consistency. Do not over mix.

Application Instructions

Whilst the primer is still tacky apply the mixed Nupatch Mortar. Compact the mortar to ensure maximum durability and finish as per normal concrete. Application to vertical surfaces will require the use of a shutter. All equipment should be cleaned immediately after use by washing with water.

Curing

Normal methods of curing should be adhered to and precautions taken to avoid frost attack. UV degradable resin based curing agents should not be used if the surface is to receive subsequent treatments.

Packaging

Nupatch Mortar is available in 25kg packs (yield 11litres).

Nupatch Primer is available in 3.8kg units (coverage 2.5-3.5m² per pack).

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

Minimum application temperature is 5°C, if applying below 5°C please contact Nufins technical department.

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.