

Nupatch Concrete

Fast Setting Repair Concrete

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 Concrete 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 25mm and above
- 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	>15
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 Concrete.

Properties	Standard	Performance Requirements	Declared Value
Appearance			Grey Powder & White Liquid
Chloride-ion Content	EN1015-17	≤ 0.05%	≤ 0.05%
Maximum Aggregate Size			6mm
Maximum water/cement ratio			0.4
Cement content			> 400 kg/m ³
Minimum Layer Thickness			20mm
Working time			20-30 Minutes
Temperature for application			5°C to 30°C
Density			2350 kg/m ³
Compressive strength	EN12190	> 25 MPa	15 MPa @ 4 Hrs 35 MPa @ 24 Hrs 45 MPa @ 7 Days 55 MPa @ 28 Days
Modulus of elasticity, in compression	EN13412	≥15 GPa	18 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
Skid resistance	EN13036-4		Class 1
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.

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

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

Priming

Saturate the substrate then remove free standing water before priming with Nupatch Primer. Dampening the substrate is essential to prevent the Nupatch Primer from drying too quickly. Add 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 Concrete must be applied to the repair area while the primer is tacky. Dry primer must be removed from the substrate and re-primed before the concrete is placed

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 Concrete. Compact the concrete 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.

Storage

The shelf life is 12 months when stored unopened in dry, normal conditions and away from direct sunlight. Protect from frost.

Packaging

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

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

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.