# **Technical Datasheet**

# Nupatch Mortar

# Fast Setting Repair Mortar

# Description

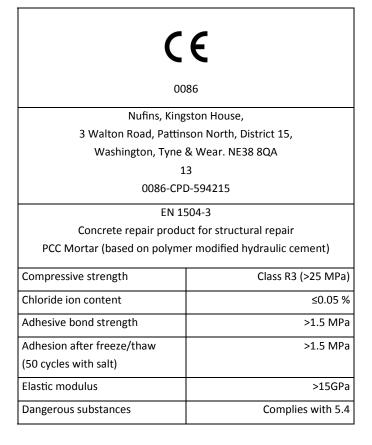
A pre-packed polymer modified, rapid setting, fibre reinforced cementitious repair mortar designed to give rapid strength development even under adverse conditions. The product contains a specially selected latex bonding and waterproofing gauging liquid. Nupatch Mortar has been specially formulated to 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

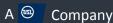
- Repair of damaged concrete both in-situ and pre-cast
- Repairs to columns and beams using formwork
- Repairs of damaged floors and roads
- Screeding where abrasion and/or water resistance is required
- Repair of concrete in tidal situations



### **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.





Head Office: Kingston House, 3 Walton Road, Pattinson North, Washington, Tyne & Wear, UK F: +44(0) 191 415 5966 W: www.nufins.com T: +44(0) 191 416 8360 E: info@usluk.com



# **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 <sup>3</sup>
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 <sup>3</sup>
Compressive strength	EN12190		15 MPa @ 4 Hrs
			33 MPa @ 24 Hrs
			45 MPa @ 7 Days
		> 25 MPa	55 MPa @ 28 Days
Modulus of elasticity,	EN13412	≥15 GPa	17.8 GPa
in compression			
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 <sub>2</sub> Diffusion coefficient			2.1 x 10 <sup>-5</sup> cm <sup>2</sup> /sec
u value			7100
R value			140 m
Sc @ 20mm			350 mm
Sorptivity			0.01 mm min <sup>-½</sup>
CI-Diffusion coefficient			1 x 10 <sup>-10</sup> cm <sup>2</sup> /sec
Coefficient of thermal expansion	EN1770		7.8 x 10 <sup>-6</sup>
Water permeability coefficient	28 days		<0.01 ml/m <sup>2</sup> /sec
Carbonation resistance	EN13295	d <sub>k</sub> ≤ ref. Concrete	Passes
Capillary absorption	EN13057	≤ 0.5 kg/m <sup>2</sup> /Hr <sup>0.5</sup>	≤ 0.5 kg/m <sup>2</sup> /Hr <sup>0.5</sup>
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.

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

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

A 🐵 Company

# **Technical Datasheet**



#### 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 dry's 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 m<sup>2</sup> 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 2.5-3.5m<sup>2</sup> 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.

# A 🐵 Company

Head Office: Kingston House, 3 Walton Road, Pattinson North, Washington, Tyne & Wear, UK Issue: 1/2019 T: +44(0) 191 416 8360 F: +44(0) 191