

Nupatch Cosmetic

Rapid Setting Repair Mortar

Description

A range of simple to use fine-filled polymer modified cement based compounds, which develop high early age strength, for tie-hole filling, blow-holes, minor defects and patch repairs to all types of concrete. The Nupatch Cosmetic range has been designed to comply with the requirements of EN 1504 Part 3 Class R2.

Advantages


- Only requires addition of clean water
- Rapid setting characteristics
- Excellent bond strengths
- Rapid strength development
- Polymer modified & chloride free
- Good workability & finishing properties
- Ideal for use in cold damp conditions
- Grey & White grades easily blended on site to colour-match with insitu concrete
- Ideal for all types of minor & small concrete repair

Applications

- Filling of tie-bar holes
- Repair of precast concrete units
- Repair of damaged *in situ* concrete
- Repair of concrete pipes
- Repair to concrete floors, roads, kerbs & steps

Technical Information

Water addition	Approximately 9-12 % by weight
Full cure	Within 28 days @ 20°C
Ultimate compressive strength	35-45 MPa
Density	1900-2000 kg/m ³
Yield	3.8 litres per 7.5 kg pack 12.8 litres per 25 kg pack

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EN 1504-3 Concrete repair product for non-structural repair PCC Mortar (based on polymer modified hydraulic cement)	
Compressive strength	Class R2 (≥15 MPa)
Chloride ion content	≤0.05 %
Adhesive bond strength	≥0.8 MPa
Adhesion after freeze/thaw (50 cycles with salt)	≥0.8 MPa
Dangerous substances	Complies with 5.4

Compressive Strength development and usable life with temperature

	Usable life (minutes)	Average Compressive Strengths (MPa)					
		2 hours	4 hours	1 day	7 days	14 days	28 days
20°C	10	13.5	17.0	23.0	34.0	36.5	42.5
10°C	15	1.0	7.4	18.1	26.5	30.7	35.0
5°C	27	0.0	2.0	17.9	25.5	30.4	35.0



Technical properties of Nupatch Cosmetic

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey or white powder
Chloride-ion content	EN 1015-17	≤0.05 %	≤0.05 %
Maximum aggregate size			<1 mm
Working time			10-20 minutes
Initial set			5-20 minutes
Final set			10-60 minutes
Density			1900-2000 kg/m ³
Water addition, by weight. 7.5 kg pack 25 kg pack			9-12 % 0.675-0.9 litres 2.25-3.0 litres
Application temperature			0°C to 30°C
Compressive strength 10% water @ 20°C	EN 12190	≥15 MPa	13 MPa @ 2 hours 17 MPa @ 4 hours 23 MPa @ 24 hours 34 MPa @ 7 days 42 MPa @ 28 days
Modulus of elasticity, In compression	EN 13412		12 GPa
Flexural strength	BS 6319-3		8 MPa
Modulus of elasticity, In flexure	BS 6319-3		14 GPa
Tensile strength	BS 6319-7		6 MPa
Adhesion to concrete	EN 1542	≥0.8 MPa	≥1.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN 13687-1	≥0.8 MPa	≥1.0 MPa
Adhesion after thunder showers (30 cycles)	EN 13687-2	≥0.8 MPa	≥1.0 MPa
Adhesion after dry cycling (30 cycles)	EN 13687-4	≥0.8 MPa	≥1.0 MPa
Skid 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 ² .h ^{0.5}	≤0.5 kg.m ² .h ^{0.5}
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 20°C under laboratory conditions, unless otherwise stated.

Surface Preparation

1. Ensure the substrate is clean and free from any loose material, laitance, grease or oil. If necessary remove defective material until a clean, sound surface is obtained. Ideally surfaces can be roughened and saw-cut the perimeter edges square, to a depth of greater than 5mm.
2. Max dimensions for pocket defects 80mm x 80mm x 80mm
3. Max dimensions for area defects 300mm x 300mm x 5mm and build up in 5mm layers if required.

Priming

Nupatch Cosmetic is normally applied directly onto the prepared substrate. Surfaces must be wet down with clean water and any free standing water removed, maintaining a damp surface state.

If required, for poor surfaces, a thin Nupatch Cosmetic slurry tack coat can be prepared (4:1 by volume with clean water), followed on immediately with Nupatch Cosmetic mixed to a mortar consistency.

Mixing & Placement

1. Small quantities of Nupatch Cosmetic should be mixed with clean water in a clean container at a ratio of 9% to 12% by weight. Add the powder to the water and mix mechanically until the desired mortar consistency is obtained efficiently.
2. Colour-matching for aesthetic applications can be achieved on site, by blending of Nupatch Cosmetic White and Grey grades.
3. Work quickly to apply material within the usable life, which depends on temperature (refer to table on page 3), after which time it may be finished using a dampened float or trowel.

Cleaning

Mixing equipment and tools should be cleaned frequently through the day to avoid product build up, using clean water.

Packaging

Nupatch Cosmetic is available in 7.5kg tubs (3.8 litres) or 25kg tubs (12.8 litres).

Storage

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

Limitations

Excessive mixing water addition will reduce strength and possibly induce shrinkage cracking, as experienced with all cementitious compounds. Strength development is dependent on ambient and substrate temperatures.

Nupatch Cosmetic should not to be applied as a fairing coat, render or screed.

For defects larger than those stated, contact Nufins technical department.

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.

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.