Nupatch Cosmetic

Fast Setting Repair Mortar

Description

A range of simple to use polymer modified cement based compounds which develop high strength at an early age for the repair of both insitu and precast concrete. The Nupatch Cosmetic range has all been designed to comply with the requirements of EN1504 Part 3 Class R2.

Grades Available: Grey, White & Special.

Advantages

- Only requires addition of clean water.
- Rapid setting characteristics.
- Excellent bond strengths.
- Rapid strength development.
- Chloride free.
- Good workability and finishing properties.
- Ideal for use in cold damp conditions.
- Grey and White versions easily blended to match most shades of concrete.
- Polymer modified.
- Ideal for all types of small concrete repairs.

Applications

- Repair of precast concrete units.
- Repair of damaged insitu 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

	Usable Life (minutes)	Average Compressive Strengths (MPa)					
		2 Hour	4 Hour	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

Usable life and compressive strength development with temperature.

Technical Datasheet

Technical properties of Nupatch Cosmetic.

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey or White Powder
Chloride-ion content	EN1015-17	≤ 0.05%	≤ 0.05%
Maximum aggregate size			<1mm
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
Temperature for application			0°C to 30°C
Compressive Strength 10% water @ 20°C	EN 12190	≥ 15 MPa	13 MPa @ 2 Hr 17 MPa @ 4 Hr 23 MPa @ 24 Hr 34 MPa @ 7 Day 42 MPa @ 28 Day
Modulus of Elasticity, In compression	EN13412		12 GPa
Flexural strength	BS6319-3		8 MPa
Modulus of elasticity, In flexure	BS6319-3		14 GPa
Tensile Strength	BS6319-7		6 MPa
Adhesion - concrete	EN1542	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN13687-1	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after thunder showers (30 cycles)	EN13687-2	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after dry cycling (30 cycles)	EN13687-4	≥ 0.8 MPa	≥ 1.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	d_k ≤ ref. concrete	Passes
Capillary absorption	EN13057	≤ 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 surface is clean, free from laitance, loose material, grease and oil. If necessary “hack out” until a clean, sound surface is obtained, preferably cutting the edges square to a depth of greater than 5mm rather than feather edging.
2. Thoroughly dampen surface but ensure no free standing water remains.

Priming

Nupatch Cosmetic may be applied directly onto the prepared concrete. However it is advisable to coat the prepared surface with a thin Nupatch Cosmetic slurry (4:1 by volume) and then followed on immediately with Nupatch Cosmetic mixed into a mortar consistency.

Mixing & Placement

1. Nupatch Cosmetic should be mixed with clean water in a clean container at a ratio of 9% to 12% by weight, adding the powder to the water until the desired consistency is obtained.
2. Place material within usable life, which depends on temperature (refer to table on page 3), after which time it may be finished as concrete using a dampened float or trowel.
3. Coarse or fine aggregate may be used to extend Nupatch Cosmetic up to a ratio of 1:1 by volume. This is particularly useful when filling larger voids or as a means of reducing costs. However in these circumstances the initial strength development will be delayed and the final strength will be reduced.
4. All equipment should be cleaned with water before material hardens.

Packaging

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

Storage

Nupatch Cosmetic should be stored in dry conditions and the lids replaced when not in use. The product has a shelf life of 12 months when unopened.

Limitations

Excessive water addition will reduce strength and possibly induce shrinkage cracking, as experienced with all cementitious compounds. Due to the fast setting nature of the product, strength development is very dependent on ambient and substrate temperatures.

Health & Safety

Nupatch Cosmetic does not present any undue hazard and is non-toxic. However, as it is alkaline, gloves should be worn and any material should be washed from the skin and eyes before it dries with clean water.

The normal standards of hygiene should be observed and the use of a barrier cream is advisable.

Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical representatives are available to provide further information and arrange demonstrations.

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