

Tie Hole Filler

Polymer Modified Fast Setting Repair Mortar

Description

A simple to use shrinkage compensated, polymer modified cement based mortar. Tie Hole Filler is formulated to comply with the requirements of EN1504 Part 3 Class R2. It is specially designed to develop high early age strength for the repair of both insitu and pre-cast concrete tie-bar holes

Advantages


- Only requires the addition of water.
- Excellent adhesion to dense concrete and steel etc.
- Rapid strength development.
- Non-reactive aggregates in accordance with DTP Specification for Highway Works Clause 1704-6.
- Chloride free.
- Excellent workability and finishing properties.
- Good resistance to water, frost & salt penetration.
- Ideal for use under cold damp conditions.
- Manufactured under BSI QA Scheme, ISO 9001, EN 29001.

Applications

- In fill of tie-bar holes.
- Repair of damaged insitu concrete.
- Repair of damaged precast concrete units.

Technical Information

Water addition	9-12%, by weight
Full cure	Within 28 days @ 20°C.
Compressive strength	35-45 MPa
Yield	3.8 Litres per 7.5 kg pack 12.8 Litres per 25 kg pack
Non-reactive aggregates with regard to Alkali-silica reaction, complying with the requirements of DTP Clause 1704.	

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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 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 and compressive strength development with temperature.

	Usable Life	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



Technical properties of Tie Hole Filler.

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey Powder
Chloride-ion content	EN1015-17	$\leq 0.05\%$	$\leq 0.05\%$
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,	EN13412		12 GPa
Flexural strength	BS6319-3		8 MPa
Modulus of elasticity,	BS6319-3		14 GPa
Tensile Strength	BS6319-7		6 MPa
Adhesion - concrete	EN1542	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after freeze/thaw	EN13687-1	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after thunder	EN13687-2	≥ 0.8 MPa	≥ 1.0 MPa
Adhesion after dry cycling	EN13687-4	≥ 0.8 MPa	≥ 1.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	$d_k \leq \text{ref. concrete}$	Passes
Capillary absorption	EN13057	$\leq 0.5 \text{ kg.m}^{-2}.\text{h}^{-0.5}$	$\leq 0.5 \text{ kg.m}^{-2}.\text{h}^{-0.5}$
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.

Surface Preparation

The substrate must be clean and sound, hence all grease, oil, dust and laitance must be removed. The edges of repairs must be recessed at least 5mm, avoid feather edging.

Thoroughly dampen the surface/hole, ensuring no standing water remains.

Priming

Tie Hole Filler may be applied directly onto the prepared concrete. However it is advisable for repairs to coat the prepared surface with a thin layer of slurry mix (1:4 water to powder by volume). This can then be immediately followed with Tie Hole Filler mixed to a mortar consistency.

Mixing

Tie Hole Filler should be mixed with clean water in clean container at a rate of 9-12% water by weight, adding the powder to the water until the desired consistency is reached.

Application Instructions

Apply mixed Tie Hole Filler to the prepared substrate. Only mix sufficient material as can be used within the working life of the material, refer to table 4 below. Tie Hole Filler can be finished using a moistened steel float or trowel.

All equipment should be cleaned immediately after use with clean water.

Storage

Material should be stored unopened in dry conditions. The shelf life of Tie Hole Filler is 12 months.

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

Application should not be carried out when the temperature is below 5°C.

Packaging

Tie Hole Filler is available in 7.5 kg units and 25 kg units (yield approx. 3.8 litres and 12.8 litres respectively).

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.