Dr. Fixit Repair Polymer Mortar

FIBER REINFORCED DUAL SHRINKAGE COMPENSATED
TROWALABLE POLYMER REPAIR MORTAR

Description

Dr. Fixit Repair Polymer Mortar is a ready to use dimensionally stable fibrous reinforced cementitious reinforced structural grade Polymer Repair Mortar. It produces a dense, high strength Polymer Repair Mortar, with excellent bond characteristics to steel and concrete. Dr. Fixit Repair Polymer Mortar is suitable for 5mm to 25mm thickness.

Standard compliance / Specification

Dr. Fixit Repair Polymer Mortar is suitable for structural repair quality and conformity as per BS EN 1504 part 3 structural class R3 repair product

Areas of Application

Used commonly for general repairs and renovate/ resurfacing the concrete structure such as in industry, infrastructure, residential and commercial segment.

- Repairs to reinforced or pre-stressed slabs, beams, retaining wall or columns.
- Repair of structural members subjected to repetitive loading.
- Overhead and vertical applications to restore concrete cover.
- For renovating and resurfacing concrete structures such as beams columns, building facades, balconies and more.

Features & Benefits

- Easy to use: Ready to use, fiber reinforcement with uniform performance.
- Dual shrinkage compensated: It reduces the cracking tendency with plastic and drying shrinkage
- Long term durable: Provides excellent durability and strong structural repair
- High built: It can be applied up to 25mm thickness in single layer
- Designed mechanical properties: Excellent compressive strength, flexural strength and tensile strength.
- Excellent bond strength : It provide excellent bond adhesion with multiple surfaces like concrete and steel bars, retention of bond strength after ageing to drying and thunder showers
- Low capillary absorption : Reduces ingress of water and aggressive elements.
- High carbonation resistance: It reduces the risk if concrete expansion and cracking hence protect steel reinforcement.

Method of Application

1 SURFACE PREPARATION

- Concrete surface should be sound, stable, clean and free from laitance, paint, oil, grease, and any residual mould release agents and curing compounds. The Metal surfaces should be free from any rust, scaling, cleaning can be carried out with suitable methods like by using wire brush, water jetting, mopping, etc.
- Defective concrete surfaces must be cut back to a sound base and ensure to exposed key aggregates on surface
- Corroded reinforcing steel should be exposed around its full circumference and cleaned using Dr. Fixit Rust Remover to remove all loose scale and corrosion deposits. It is important to clean the steel to a bright condition.
- One coat of - Dr. Fixit Zinc Rich primer a single component zinc based epoxy coating should be applied on the reinforcing steel. If any discontinuity in the applied film is noticed, one more coat has to be applied.
- Ensure before casting the concrete surface is fully saturated and no standing water on surface..

2 MIXING

- Dr. Fixit Repair Polymer Mortar must be mixed mechanically. For this, heavy-duty slow speed drill with spiral mixing paddle or forced action mixer can be used.
- Mixing water needed 4.5 to 5.0 litres per 25kg bag of Dr. Fixit Repair Polymer Mortar.

- Add approximately 4.5Kg of portable water into the mixer. With continuous mixing add Dr. Fixit Repair Polymer Mortar.
- Based on water demand remaining water of 0.5Kg to be added to be added to meet desire consistency. Mix thoroughly for 3 to 5 minutes until mortar is homogeneous and lump free and desire consistency.
- If ambient temperature is more than 30 degree C, use chilled water for mixing and store unused product in shed. For better results maintain the mixed temperature of product at less than 35°C. Mix only as much material as can be applied within 45 minutes.

3 APPLICATION

- After mixing, Dr. Fixit Repair Polymer Mortar can be applied by trowel on vertical and overhead surfaces.
- When applying by hand Dr. Fixit Repair Polymer Mortar must be forced tightly into the substrate to ensure complete contact with the pre-wetted substrate. In situations where reinforcement steel is countered, the mixed material should be placed behind the bars tightly and then subsequent thickness should be built up in layers, each layer being up to 25 mm thick (wet on dry method).
- A thin scrape coat or contact layer before building up to the required thickness, wet on wet, will improve adhesion especially in case of hand application. If the concrete is pours apply one coat of Dr. Fixit Pidicrete MPB in the ratio of 1:1 (MPB:Cement) as a bond coat .
- Apply Dr. Fixit Repair Polymer Mortar to the desired layer thickness maximum up to 25mm (wet on dry method) and level using a screeding bar, trowel or wooden board. Can be applied in thicker layers in smaller patches or where additional reinforcement is present. Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen.

4 CURING

- During curing, protect Dr. Fixit Repair Polymer Mortar from excessive heat and draft conditions.
- Mist-spray the surface with water during the first 24 hours of wet curing. Alternatively, use damp burlap, or a suitable ASTM C309 water- based curing compound. Do not use a solvent-based curing compound.

Precautions & Limitations

- Dr. Fixit Repair Polymer Mortar should not be part mixed and water powder should be strictly follow
- Ensure full circumference exposure of reinforced steel and treated accordance the guideline.
- Consult structural engineer if the diameter of rebar is reduced by more than 20% of the original diameter.
- Replacement or provision of additional steel shall be done in consultation with structural consultant.
- The product during application should not be exposed to running water or prior to final setting.
- Dr. Fixit Repair Polymer Mortar should not be used if ambient temperature is less than 5°C.

Technical Information

PROPERTIES	SPECIFICATION	RESULTS
Appearance		Free flowing gray powder
Water : Product ratio by weight		0.18 to 0.20
Pot life		60 min
Maximum thickness can be applied vertically		25 mm
Compressive strength @ 30 deg C, 1 day - N/mm^2	BS : 6319 : part 2	>10 N/mm^2
7 days - N/mm^2	BS : 6319 : part 2	>20 N/mm^2
28 DAY - N/mm^2	BS : 6319 : part 2	>38 N/mm^2
Flexural strength, 28 days - N/mm^2	BS : 6319 : part 3	>5 N/mm^2

Tensile strength, 28 days - N/mm²	BS : 6319 : part 7	>2 N/mm²
Bond Strength, 28 days - N/mm²	EN 1542-1999	>1.5 N/mm²

Performance requirements for Cementitious Structural Repair Mortar Dr. Fixit Repair Polymer Mortar -Conforming to EN 1504-3 Class R3 and following results were obtained.			
Performance characteristics	Test method	Structural Repair Class R3	
		Requirement in (EN 1504, part 3)	Test Results for Dr. Fixit Repair Polymer Mortar
Compressive strength	EN 12190	≥ 25 MPa	41.9 MPa
Chloride ion Content	EN 1015-17	≤ 0.05%	0.0018 %
Adhesive bond	EN 1542	≥ 1.5MPa	1.68 MPa
Restrained shrinkage / expansion[bc]	EN 12617	≥ 1.5MPa	1.62 MPa
Carbonation ᶠResistance	EN 13295	dk ≤ control concrete {MC (0.45)}	57% lower than control concrete
Elastic modulus	EN 13412	≥ 15MPa	17.9 MPa
Thermal compatibility fʰ Part 4, Dry cycling	EN 13687-1	≥ 1.5MPa	1.55 MPa
Thermal compatibility fʰ Part 2, Thunder shower	EN 13687-2	≥ 1.5MPa	1.60 MPa
Thermal compatibility fʰ Part 4, Dry cycling	EN 13687-4	≥ 1.5MPa	1.58 MPa
Capillary Absorption	EN 13057	≤ 0.5 kg/ $m^{-2}.h^{-0.5}$	0.15 kg/$m^{-2}.h^{-0.5}$

Theoretical Coverage

- Yield - 13 Ltrs at W/P ratio of 0.195

Packaging

25 Kg Unit

Shelf Life & Storage

- Shelf life is 6 months from the date of manufacturing if stored in original and unopened packaging in a cool dry place away from direct sunlight and moisture.

Health & Safety Precautions

This product contains cement. And contact with skin may cause irritation. It should not be inhaled, and a quality certified PPE should be used whilst handling, pouring and mixing the powder. Avoid contact with the product by working carefully, using a barrier cream. If any contact does occur, wash thoroughly with soap and water. Avoid contact with eyes, if such contact occurs flush of water irrigate with water for 20 minutes and seek medical advice. If swallowed seek medical advise immediately- do not induce vomiting. See MSDS for further information

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