Repair Pro – Dr. Fixit Polymer Mortar HB

HIGH STRENGTH , HIGH BUILD, DUAL SHRINKAGE COMPENSATED REPAIR MORTAR CONFORMING TO EN1504 -3 CLASS R4

Description

Dr. Fixit Polymer Mortar HB is a ready-to-use dimensionally stable cementitious fibre reinforced structural grade repair mortar. It produces a dense, high strength repair mortar, with excellent bond characteristics to steel and concrete.

Typical Application

Used commonly for general repairs in industry, infrastructure, residential and commercial segment.

- Repairs to reinforced or pre-stressed slabs, beams 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 tunnels, bridges, overpasses, retaining walls, beams columns , building facades, ceilings, balconies and more.

Features & Benefits

- Dual Shrinkage compensated: fibrous rich polymer which reduces cracking tendencies
- Durability : Complies to the requirements for the performance characteristics of class R4 mortar of EN 1504-part 3 hence durability of the structure enhances
- Excellent adhesion to both old concrete (≥ 2 MPa) in accordance to EN1504 - 3.
- User friendly - specifically developed to provide an easy to-apply product, suitable for local conditions and can be applied 30mm in each layer
- Fast and easy placing - reduced time for repairs.

Application thickness

- Minimum applied thickness : 10 mm
- Overhead : 40 mm in two layers
- Vertical : 30 mm in single layer

Method of Application

1 SURFACE PREPARATION

- All damaged concrete should be removed.
- Ensure that substrates are structurally sound, stable and solid & all damaged concrete should be removed.
- Thoroughly clean the surface of substances that could affect bond strength of Dr. Fixit Polymer Mortar HB, including dirt, paint, wax, oil, grease, form release agents, laitance, loose toppings, foreign substances.
- Mechanically profile and prepare concrete surfaces by abrasive blasting, waterjetting or other engineerapproved methods.
- Ensure that the concrete substrate and ambient temperatures are between (10°C and 35°C) before application.
- Before application of Dr. Fixit Polymer mortar HB, saturate surface-dry (SSD) and scrubcoat to ensure a secure bond. Use reinforcement bars for added strength as needed.

2 PRE-WETTING THE SUBSTRATE

- The Prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before application of Dr. Fixit Polymer Mortar HB.
- The surface must be saturated surface dry, but without standing water.
- Corroded steel/ Rebars to be exposed around its circumference completely.
- Saw/disc cut edges of repair to 5 mm depth.

- Replace totally corroded rebars.
- Surface should be prepared thoroughly to provide heavy profile key

3 MIXING

- Dr. Fixit Polymer Mortar HB must be mixed mechanically. For this, heavy-duty slow speed drill with spiral mixing paddle or forced action mixer can be used.
- Add 4.25 litres of water into the mixer. Start the mixer and add the Polymer Mortar HB powder rapidly and continuously. Mix for 3 to 5 minutes until mortar is homogeneous and lump free along with it.
- Under no circumstances should excess water be added. Little extra water may be required in hot climatic conditions.
- The quantity water required will generally be between 4.25 litres and 4.50 litres per 25 kg bag of Dr. Fixit Polymer mortar HB
- 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 35 degree C. Mix only as much material as can be applied within 45 minutes.

4 APPLICATION

- Clean any exposed steel reinforcement and coat with Dr. Fixit Zinc Rich Primer to protect against corrosion.
- After mixing, Dr. Fixit Polymer Mortar HB can be applied by trowel on vertical and overhead surfaces.
- When applying by hand Dr. Fixit Polymer Mortar HB 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 upto 20 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 Polymer Mortar HB to the desired layer thickness of 20 to max 40 mm (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.

5 CURING

- During curing, protect Dr. Fixit Polymer Mortar HB 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

- Strictly follow water-powder ratio as specified.
- Ensure full circumference exposure of reinforced steel
- 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.
- Curing is not advised by means of waterponding.
- Remove curring compound completely after 28 days before the subsequent finish..

Technical Information

PROPERTIES	SPECIFICATION	RESULTS
Appearance		Free flowing Powder
Colour		Grey
Water : Product ratio by weight		0.17 - 0.18
Fresh Wet density. kg / m^3		2200 ± 100
Compressive strength @ 30 deg C, 1 day - N/mm2	BS : 6319 : part 2	15 N/mm^2 (Min.)
7 days - N/mm^2	BS : 6319 : part 2	35 N/mm^2 (Min.)
28 DAY - N/MM^2	BS : 6319 : part 2	45 N/mm^2 (Min.)
Flexural strength, 28 days - N/mm^2	BS : 6319 : part 3	8 N/mm^2 (Min.)
Tensile strength, 28 days - N/mm^2	BS : 6319 : part 7	4.5 N/mm^2 (Min.)
Bond Strength, 28 days - N/mm^2	EN 1542-1999	≥ 2

Performance requirements for Cementitious Structural Repair Mortar Dr. Fixit Polymer Mortar HB -Conforming to EN 1504-3 Class R4 and following results were obtained at water : powder ratio of 0.18			
Performance characteristics	Test method	Structural Repair Class R4	
		Requirement in (EN 1504, part 3)	Test Results for Polymer Mortar HB
Compressive Strength, Mpa (At 28 days)	EN 12190-1998	≥45	46.29
Chloride content, % by mass	EN 1504-3: 2005	≤0.05	0.01 %
Adhesive Bond Test, Mpa	EN 1542	≥2	Without primer 2.44
Shrinkage/Expansion Dry Condition Adhesive Bond test, Mpa	EN 12617 -4	≥2	2.22
Shrinkage/Expansion Wet Condition Adhesive Bond test, Mpa	EN 12617- 4	≥2	2.12
Thermal Compatibility Adhesive Bond test, Mpa	EN 13687- 4	≥2	2.23
Coefficient of Linear Thermal Expansion, mm/mm0c	EN 1770-1998	-	2.68x10-5
Capillary Absorption, kg/m2h1/2	EN 13057	≤0.5	≤0.31

Theoretical Coverage

- 1.4 m^2 per 25 Kg pack at 10 mm thickness
- Yield - 14 ltrs. at W/P ratio of 0.18

Packaging

25 Kg Unit

Shelf Life

- Shelf life is 6 months from date of manufacturing in unopen condition.
- Store at cool and dry place away from moisture.

Health & Safety

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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