



MORCEMREST® EF 50

High-strength one-component repair mortar reinforced with fiber, for thick layers of up to 50 mm



DESCRIPTION

High resistance monocomponent R4 repair mortar for large thicknesses.

TECHNICAL CHARACTERISTICS

Product based on special cements, selected aggregates and additives, reinforced with fibres.

ADVANTAGES AND USES

- Repair mortar class R4 according to EN-1504-3.
- High adherence to concrete and high modulus.
- Thixotropic, without sagging in ceiling applications.
- Water vapour permeable.
- Good chloride resistance.
- Resistant to freeze-thaw cycles.
- Joint filling between concrete sections, prefabricated elements and expansion joints.
- Shrinkage compensated to minimize risk of cracking.
- High resistance to carbonation.
- Weatherproof.
- Indoor and outdoor application.
- Repairs of structural elements such as columns, bridge girders, water treatment plants, tunnels, pillars with large load transfer.
- Concrete regeneration.

SUITABLE SUBSTRATES

- The substrate must be sound, clean, and free of grease, oil, dust and badly-bonded parts (minimum tensile strength of 1.5 MPa).
- If necessary, prepare the same preferably using mechanical means and leave the new concrete uncovered.
- The absorbent substrates should be previously wetted until they are saturated, preventing waterlogging, apply MORCEMREST EF 50 once the surface has a matt appearance.
- If there are reinforcements, they should be clean of rust, grease, oil and other badly-bonded particles.
- If they are rusty, they must be sandblasted or metal brushed. Protect from corrosion with IMPLAREST C.
- In vertical and horizontal wall joints, widen the joint by cutting it up to about 10 mm wide with a radial saw, removing the cut material afterwards.

CONCRETE REPAIR

MORCEMREST® EF 50

APPLICATION PROCEDURE

Mortar mix:

- Add the prepared 2/3 parts water and progressively mix all of the powder while stirring. Then add the remaining water and mix for another 2 minutes. Do not prepare more material than what you are going to use for 30 minutes. (a +20°C).

Application:

- Apply MORCEMREST EF 50 with a trowel or projected with a gun, applying pressure to assure bonding and compact the material firmly.
- MORCEMREST EF 50 can be applied in a few layers, the minimum layer thickness being 5 mm. Applications of up to 50 mm can be made on vertical surfaces without the help of formworks. The maximum thickness for horizontal surfaces is 100 mm.
- Fill the joints completely

Curing:

- Protect from the wind, frost and sun during hardening. To prevent excessive drying out, it is recommended to cover the surface with wet hessians or plastic during curing.
- Observe protection procedures after application.

RECOMMENDATIONS

- Do not add more than the recommended amount of water and do not re-knead.
- Do not apply below 5°C nor above 30°C
- Do not add cement, sand or any other substance which will alter the product properties.
- Instruments and tools should be cleaned with water immediately after use to prevent material hardening, which has to be eliminated by mechanical means.
- Contact the Technical Department for any application not specified in this datasheet.
- For any information regarding the safe handling, transport, storage and use of the product please refer to the updated version of the Product Safety Datasheet.
- If applied manually ensure the coats are strongly compacted; in areas of difficult compaction it is recommended its mechanical application.
- For further information on how to prepare concrete or steel framework; consult the recommendations given by the UNE-EN-1504-10 guideline.
- When applying the repair mortar without a bonding bridge, the foundation of concrete must be rough, clean and well moistened before, but the surface must be free of water at the time of application, that is, the foundation must not be waterlogged. The repair mortar must be applied making it penetrate into the foundation previously prepared and must be compacted avoiding the inclusion of air in order to obtain the required strength, and to protect the reinforcement from corrosion.

PACKAGING AND STORAGE

MORCEMREST EF 50 comes in bags of 25 Kg of powder.

Shelf life: 1 year in sealed original packaging, sheltered from weather conditions and humidity.

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TECHNICAL DATA

(Statistical data obtained under standard conditions)

	R3 REQUIREMENTS	PRODUCT DATA
Aspect		GREY powder
Density of paste		Aprox. $2.0 \pm 0,1$ gr/cm ³
Granulometry		Dmax 2 mm
Coat thickness		5 mm min. 50 mm max.
Resistance to compression 28 days (EN 12190)	≥ 45 N/mm ²	≥ 50 N/mm ²
Chloride content (EN 1015)	$\leq 0,05\%$	$\leq 0,01\%$
Adhesion (EN 1542)	≥ 2 N/mm ²	≥ 2 N/mm ²
Resistance to carbonation (EN 13295)	dk $\leq$ concrete control type MC (0,45)	Pass
Module of elasticity (EN 13412)	≥ 20 GPa	≥ 20 GPa
Capillarity absorption (EN 13057)	≤ 0.5 kg / m ² x h ^{1/2}	≤ 0.2 kg / m ² x h ^{1/2}
Thermal compatibility part 1 (EN 13687-1)	≥ 2 N/mm ²	≥ 2 N/mm ²
Sudden cooling cycle after high temperatures (50 cycles) (EN 13687-2)	≥ 2 N/mm ²	≥ 2 N/mm ²
Thermal compatibility part 4: Dry thermal cycle (50 cycles) (EN 13687-4)	≥ 2 N/mm ²	≥ 2 N/mm ²
CURVE RESISTANCE		
Compression: (EN 12190)		
1 day		≥ 20 N/mm ²
7 days		≥ 35 N/mm ²
28 days		≥ 45 N/mm ²
Flexural strength (EN 12190)		
28 days		≥ 7 N/mm ²
Life of mixed product		20 - 30 minutes
Water content in mixture		15 $\pm$ 1%
Performance		2.2 kg./m ² / mm thick
Classification complies to EN 1504-3:2006		R4
Type		PCC

Rev. 25_01 - This revision cancels all previous ones. Please, obtain the latest version from our web site - www.grupopuma.com - (+34) 957 76 40 40

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CE MARK

	
GRUPO PUMA ESPAÑA SL Avd. Agrupación Córdoba, Núm.17 14014 (Córdoba) 23 Nº: 210306 0370-CPR-2578 EN-1504-3 MORCEMREST EF-50	
Product for structurally repairing concrete with PCC mortar. For vertical applications without formwork, it allows layers of 30 to 50 mm and , for horizontal applications, 10 to 100 mm (made with polymer-modified hydraulic cement)	
Resistance to compression	R4 Class
Chloride content	≤ 0.05%
Adherence	≥ 2 MPa
Resistance to carbonatation	Pass
Elasticity module	≥ 20 GPa
Thermal compatibility part 1	≥ 2 MPa
Capillary absorption	≤ 0.5 kg.m ² h ^{0.5}
Reaction to fire	A1

ENVIRONMENTAL PRODUCT DECLARATION (EPD)

Cement based mortar prepared with aggregates that are supplied close to the production center, which reduces the greenhouse gas emissions that would otherwise arise from their transport. Manufactured in production centers with an Environmental management certified system following ISO 14001 regulation, offering a firm promise of sustainability and respect for the environment.

Cement based mortar with type III ecological label (the most strict) Environmental Product Declaration verified externally by AENOR.

LEGAL DISCLAIMER

The instructions for use are given according to our tests and knowledge and do not imply any commitment by GRUPO PUMA nor free the consumer from the examination and verification of the products for their correct use. Claims must be accompanied by the original packaging to allow a proper traceability.

GRUPO PUMA is not responsible, in any case, for the application of its products or constructive solutions carried out by the application company or other parties involved in the process and / or execution of the work, limiting the responsibility of GRUPO PUMA exclusively to the damages directly attributable to the supplied products, individually or integrated in systems, due to failures in their manufacturing process.

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