

# MX-PBO CONCRETE

## Inorganic matrix for strengthening reinforced concrete structures

### FIELDS OF APPLICATION

- Adapting and upgrading the static and anti-seismic behaviour of reinforced concrete buildings.
- Adapting and upgrading the static and anti-seismic behaviour of reinforced concrete infrastructure.
- Flexural strengthening to beams.
- Flexural strengthening to hollowcore composite slabs.
- Combined axial and bending forces strengthening to columns.
- Structurally strengthening reinforced concrete beams, slabs, columns, and nodes.
- Confinement of reinforced concrete columns subject to combined axial and bending forces.

### ADVANTAGES AND PROPERTIES OF THE SYSTEM

- Inorganic matrix with very good adhesion to the concrete support.
- Simple and reliable placement of the inorganic matrix, which is laid in the same way as a traditional premixed bagged cementitious mortar.
- The system can also be applied to damp supports without any need for special protection.

### METHOD OF USE

#### PREPARATION OF THE MX-PBO CONCRETE MATRIX

- A planetary mixer can be used to prepare the mixture but should not be loaded to more than 60% of its nominal capacity for the indicated mixing times.
- A rotary mixer can be used to prepare the mixture, but should not be loaded to more than 60% of its nominal capacity for the indicated mixing times.
- Manual mixing can be carried out by mixing part of the contents of the bag in a bucket using a drill fitted with a paddle mixer, and adding the required amount of water in relation to the contents of the bag.
- Use the whole bag of pre-mixed **MX-PBO CONCRETE**, once the contents have been opened.

Preparation using a planetary mixer (or a rotary mixer, or a drill fitted with a mixer):

1. Open the 25 kg bag of mortar.
2. Pour the contents of the bag of premixed **MX-PBO CONCRETE** into the mixer and add approximately 90% of the prescribed water (6.5 - 7.0 litres of clean water).
3. Mix continuously (without stopping to prevent clumping) for 3 - 4 minutes (4 - 5 minutes for a rotary mixer). Then add the remaining 10% of clean water and finish mixing continuously for approx. one more minute.
4. Leave the mix to rest for approx. 1 - 2 minutes before application.
5. Apply the material, if necessary, giving it a final mix.

## TECHNICAL CHARACTERISTICS

PROPERTIES OF MX-PBO CONCRETE INORGANIC MATRIX	
Density	approx. 1800 kg/m <sup>3</sup>
Application time	After 10-15 minutes densification begins. Mix again and use within no more than approx. 45 minutes
Application temperature	from +5°C to +35°C
Compressive strength at 28 days	≥ 40 MPa
Flexural strength at 28 days	≥ 4 MPa
Young's modulus of elasticity at 28 days	≥ 15 GPa
Consumption	1.41 kg/m <sup>2</sup> per mm of application thickness 5.64 kg/m <sup>2</sup> per 4 mm of application thickness
Reaction to fire (EN 13501-1)	Euroclass A2
Packaging	Disposable wooden pallets each with 40 no. 25 Kg bags, equivalent to 1000 kg of the loose product
Storage conditions	In original packaging, under cover, in a cool, dry, unventilated place
Shelf life (European Directive 2003/53/EC)	Not more than twenty-four (24) months from packing date
Safety data sheet	Available from <a href="http://www.ruregold.com">www.ruregold.com</a>
CE marking	EN 1504 – 3

### GENERAL NOTES/GUIDANCE

Apply the **MX-PBO CONCRETE** inorganic matrix as directed by the Designer. Any support preparation work, if required, should be carried out with particular care.

Store the material under cover in a dry place well away from substances that could compromise the integrity and adhesion of the selected matrix. Wear the appropriate site PPE for the installation phases.

For further technical information, contact Ruregold Technical Support on +39 02.48011962 – [info@ruregold.it](mailto:info@ruregold.it).

### SPECIFICATION ITEM

Supply and application of Ruregold **MX-PBO CONCRETE** inorganic matrix specific for concrete supports, compressive strength ≥ 40 MPa, flexural

strength at ≥ 4 MPa, and Young's modulus of elasticity ≥ 15 GPa. Coupled with PBO meshes in reinforced concrete systems to increase resistance to bending, shear, and confinement of columns; for resistance to bending and shear in beams and composite slab joists, and for locally strengthening beam-column nodes. Increased ductility of one-dimensional elements of type reinforced concrete beams and columns. The system meets the requirements of CNR-DT 215/2018 (Guide for the Design and Construction of Externally Bonded Fibre Reinforced Inorganic Matrix Systems for Strengthening Existing Structures, issued by Italian national research council CNR - Advisory committee on technical recommendations for construction). Fire reaction classification of the system meets the requirements of EN 13501-1: A2 – s1, d0. Preparation of the surfaces and installation of the system must follow the manufacturer's instructions.

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*This technical data sheet is not a specification.*

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