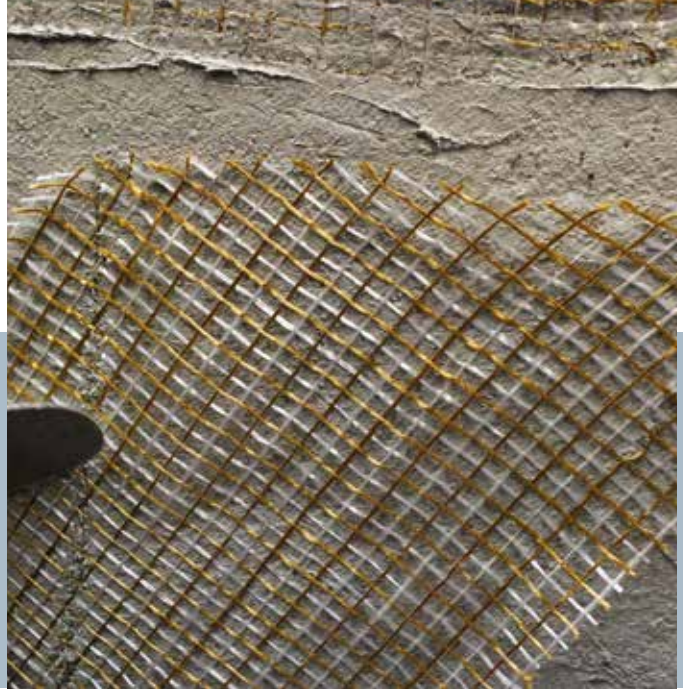
FRCM STRENGTHENING SYSTEM WITH PBO FIBER

PBO-MESH 10/10

fka Ruregold XA



Bi-directional 10+10 g/m²
PBO mesh for FRCM strengthening system with inorganic matrix

PBO-MESH 10/10 is an FRCM structural strengthening system with bidirectional PBO mesh and a stabilized inorganic matrix for reinforced masonry structures. The limited weight makes it suitable to prevent overturning and for the reinforcement of non structural components, often with the use of PBO connectors.

This strengthening system does not use epoxy resins and its performance equals that of traditional FRP with carbon fibers and epoxy binder.

- Ecological
- Wet supports
- Vapor permeable
- Passive protection
- Reversible
- Compatible with masonry

THE SYSTEM IS MADE UP OF:

PBO-MESH 10/10

Bi-directional 10 g/m² in warp and 10 g/m² in weft PBO fiber mesh available in two heights:
- 50 cm (roll length 15 m)
- 100 cm (roll length 15 m).

MX-PBO Masonry

Stabilized pozzolanic inorganic matrix in compliance with the EN 998-2 Standard.

PBO-JOINT

Connection element made of PBO fiber, Ø 3 and 6 mm, 10 m long.

MX-PBO JOINT

Stabilized inorganic matrix for the application of PBO-JOINT.

PROPERTIES OF THE SYSTEM

- It eliminates the risk of triggering local collapse mechanisms due to the overturning of infill walls, thanks also to the connector that is inserted between the wall and the beam/slab;
- Increases the shear strength of masonry panels, the bearing capacity of columns and pillars, and the elimination of the formation of hinges on arches and vaults, favoring the redistribution of tensions within the structure;
- Significant increase in the ductility of the reinforced structural element, high energy dissipation capacity and high reliability of the system, even if subjected to cyclical overloads (e.g., earthquake).

TECHNICAL CHARACTERISTICS

PROPERTIES OF PBO FIBERS	
Tensile strength	5,8 GPa
Elastic modulus	270 GPa
Fiber density	1,56 g/cm^3
Elongation at rupture	2,5 %

REACTION TO FIRE CLASSIFICATION (EN 13501-1)
A_2 - no contribution to fire
s_1 - low smoke emission
d_0 - no flaming droplets/particles

PROPERTIES OF THE BIDIRECTIONAL MESH	PBO-MESH 10/10
Weight of PBO fibers in the mesh	20 g/m^2
Thickness for the calculation of the PBO section at 0° and 90°	0,0064 mm
SPECIFICATIONS FOR THE SUPPLY	
Package	15 m^2 rolls (15 linear meters, 100 cm height) 7,5 m^2 rolls (15 linear meters, 50 cm height)
Consumption	Calculate an overlap of the sheets by about 10 cm at the junctions.

PROPERTIES OF THE CONNECTOR	PBO-JOINT	
Diameter	3 mm	6 mm
Tensile strength	2413 MPa	1860 MPa
SPECIFICATIONS FOR THE SUPPLY		
Package	Dispenser with 10 m, Ø 3 mm / Dispenser with 10 m, Ø 6 mm	
Consumption	In addition to the length required for the hole itself calculate an additional 15 cm for each end.	

PROPERTIES OF THE INORGANIC MATRIX	MX-PBO Masonry	MX-PBO JOINT
Water per 100 kg of dry premix	26 – 28 liters	-
Water for 5 kg of dry premix mortar	-	1,0 - 1,05 liters
Consistency of the mortar (EN13395-1)	170 +/- 10 mm	190 +/- 10 mm
Specific weight of fresh mortar (EN 1015-6)	1,65 ± 0,05 g/cc	1,80 ± 0,05 g/cc
Volume of fresh mortar for 100 kg of dry premix	approx. 77 liters	
Volume of fresh mortar for 5 kg of dry premix	-	approx. 3,4 liters
Compression resistance at 28 days (EN12190)	> 20 MPa	> 40 MPa
Bending resistance at 28 days (EN 196-1)	> 3,5 MPa	> 3 MPa
Elastic modulus at 28 days (EN 13412)	> 7,5 GPa	> 18,5 GPa
SPECIFICATIONS FOR THE SUPPLY		
Package	25 kg bags	5 kg bags
Consumption of dry premixed mortar	1,3 Kg/m^2/mm	8 - 10 kg for 10 m connector

FIELDS OF APPLICATION

- Light interventions on load-bearing masonry structures and on infill walls;
- The replacement of regular reinforced slabs with slabs reinforced with fiber glass, synthetic materials, or welded wire mesh;
- Creation of an anti-overturning system for vertical non-bearing infill structures, limiting cracks that can lead to collapse or overturning of the infill wall itself.