

PRODUCT DATA SHEET

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FRCM PBO MESH MORTAR

FIBER-REINFORCED INORGANIC MORTAR FOR PBO MESH FRCM SYSTEM

DESCRIPTION

The PBO MESH MOTAR is fiber-reinforced inorganic matrix of PBO MESH FRCM system for strengthening solutions on concrete structures.

USES

PBO MESH MOTAR as part of FRCM system is suitable for:

- Structural strengthening of reinforced concrete and masonry elements.
- Increasing the load-bearing capacity of beams, slabs, walls, columns.
- Increasing existing components' flexural, shear and axial load-bearing capacities.
- Seismic strengthening of existing structures.
- Repairing and strengthening aging structures.
- Correcting structural design and construction defects.

FRCM SYSTEM ADVANTAGES

- High strength with low weight.
- High elongation can increase components' ductility.
- Flexible and can be wrapped around complex shapes.
- Good heat resistance capacity.
- Non-corrosive and alkali-resistant.
- Low aesthetic impact.

PRODUCT INFORMATION

Package	25kg/bag
Mixing Water	17%~19% weight of cement
Grain Size of Aggregates	0-4mm
Density	1800kg/m ³ (dry cement)
Storage	Store in a dry, cool, indoor place
Shelf Life	12 months

TECHNICAL INFORMATION

Properties of PBO MESH MORTAR

Properties	Value
Compressive strength (28 days)	50 MPa
Flexural strength (7 days)	6.4 MPa
Adhesion bond (28 days)	2.0MPa

Properties of PBO MESH FRCC System(MESH+MORTAR)

Properties	Value
Thickness of FRCC System (2 layers of mortar)	6-8mm
Ultimate Tensile Strength	1535 MPa (ACI 549.4R-20/AC434)
Ultimate Strain	1.65% (elastic phase 1.2%) (ACI 549.4R-20/AC434)
Tensile Elastic Modulus of Cracked Phase	130 GPa (ACI 549.4R-20/AC434)

APPLICATION INSTRUCTIONS

Substrate Surface Preparation

Remove Deteriorated Material:

- Remove the deteriorated concrete cover, for example, by hydro-demolition.
- Continue to strip the concrete until a compact, non-carbonated layer of good quality concrete is exposed.

Defect Repair:

- For large-area depressions, holes, and other defects, use mortar for repair.

Chamfering/Rounding of Corners:

- Before applying the FRCC system, round off the sharp edges of the structural element's cross-section.

Substrate Wetting:

- Before applying the strengthening material, thoroughly wet the concrete substrate to ensure it is in a saturated surface-dry (SSD) condition (fully absorbed water but not dripping).

PBO MESH MORTAR Preparation

Mixing Equipment Requirements:

- A planetary mixer, rotary mixer, or an electric drill with a mixing paddle can be used for manual mixing.
- The loading capacity of all equipment must not exceed 60% of its rated capacity.

Mixing Steps:

1. Open the 25 kg bag of PBO MESH MORTAR pre-mixed mortar.
 - Pour the entire bag of cement into the mixer and add approximately 90% of the required water. Mix continuously (avoiding lumps): Planetary mixer: 3 – 4 minutes. Rotary mixer: 4 – 5 minutes.
2. Add the remaining 10% of clean water and continue continuous mixing for approximately 1 minute.

3. Allow the mixture to rest for about 1 – 2 minutes before use.
4. A final stirring may be performed before application, if necessary.

FRCM System Application

Structural strengthening using the PBO MESH 18/70 in conjunction with the PBO MESH MORTAR is carried out in the following stages:

Apply the First Layer of Mortar:

- Apply the first layer of PBO MESH MORTAR.
- Thickness requirement: Minimum 3 mm, maximum 4 mm.

Embed the PBO MESH:

- Cut the PBO MESH to the design size using specialized scissors.
- Manually embed the PBO-MESH 70/18 into the still-wet first layer of mortar.
- Use a smooth steel trowel or metal float to press the grid down until a "see-through effect" is achieved (the grid is visible through the mortar).

Apply the Second Layer of Mortar:

- Apply the second layer of PBO MESH MORTAR onto the still-wet first layer of mortar.
- Thickness requirement: Minimum 3 mm, maximum 4 mm.
- Apply sufficient pressure to ensure the mortar penetrates through the grid, achieving optimal bonding between the first and second matrix layers.

Application of Subsequent Layers (if required):

- If multiple layers of strengthening are required, subsequent layers of grid and mortar should also be applied using the "wet-on-wet" method.

LIMITATIONS

- Design calculations must be certified by an independent licensed professional engineer.
- Minimum radius for application around corners must be over 20 mm.
- Overlapping of the mesh should be at least 300 mm.

HEALTH & SAFETY INFORMATION

- Refer to the most recent Safety Data Sheet for safe handling, storage, and disposal of the product.

LEGAL NOTES

- The Information and recommendations relating to the application and end-use of FIDSTRONG products, are given in good faith based on our current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.fidstrong.com.