

# CFM™

## Carbon Fiber Mesh



Building  
&  
Transportation



Oil, Gas  
&  
Industrial



Offshore  
&  
Onshore



Water  
&  
Wastewater



### PRODUCT DESCRIPTION

The CTech-LLC® Carbon Fiber Mesh (**CFM™**) is a bidirectional, high-strength, non-corrosive carbon mesh designed to be field installed with CTech-LLC® PCM™ cementitious matrix to create a Fabric-Reinforced Cementitious Matrix (FRCM) composite system for structural reinforcement applications. This product has been evaluated for concrete and unreinforced masonry strengthening using fabric-reinforced cementitious matrix (FRCM) and steel reinforced grout (SRG) composite systems.

### ADVANTAGES

- Ambient Cure.
- Non-corrosive.
- Molds to fit various shapes.
- Low aesthetic impact.
- Compatible with many finish coatings.
- Lightweight, flexible, high-strength fiber can be used in different surfaces like circular columns and other arched surfaces.
- Chemical and corrosion resistant.
- Compatible with different materials and standard adhesive resins.
- Easy to impregnate using wet or dry lay-up methods.
- Low aesthetic impact.

### TECHNICAL DATA

	Unit	CFM™130	CFM™505
Weight	g/m <sup>2</sup>	130	505
Weight of fibers	g/m <sup>2</sup>	80	187
Equivalent Dry Fabric Thickness	mm	0.044	0.105
Ultimate Tensile Strength	KN/m	138	450
Ultimate Tensile Strain	-	1.5%	1.8
Axial Stiffness by width unit	g/m <sup>2</sup>	9200	-
Area by width unit	mm <sup>2</sup> /m	44	105
Color	-	Gray	Gray
Lap Tensile Strength	MPa	786	986
Thickness per Layer	mm	13	13

### TYPICAL USES

CTech-LLC® CFM™ product may be used to strengthen or retrofit a wide range of concrete, steel and masonry structural elements including columns, beams, slabs, walls, pier caps, piles, etc.

- Strengthen for increasing load capacity.
- Address changes in structural system, like slab openings and walls, beams or columns removal.
- Retrofit for seismic, wind or blast.
- Restore strength of structural elements damaged by fire or vehicle impact.
- Restore strength to deteriorated and corroded members.
- Strengthen for design or construction defects.

### DESIGN

Design calculations shall be made and sealed by a licensed, independent engineer knowledgeable with the design of FRCM strengthening systems.

### INSTALLATION PROCEDURE

Installation of CTech-LLC® Carbon Fiber Mesh should be performed by licensed and specially trained groups of installers. The Installation must be compatible with existing relevant international codes. This section outlines the procedure to install CTech-LLC® CFM™ product.

### PREPARATION OF SUBSTRATE

Concrete shall be prepared to achieve minimum amplitude of 6 mm by means of sand blasting, shot blasting, or water blasting. Application surfaces shall be

clean, sound, and free of standing water at time of application. All dust, laitance, grease, curing compounds, and other foreign materials that may hinder the bond must be removed before installation. All corners to be covered with grid and matrix shall be rounded to 19 mm minimum radius using a grinder. Wet the substrate for at least 24 hours to a saturated surface dry condition prior to FRCM application.

#### **MIXING**

See product data sheet for the working time and set times of CTech-LLC® Polypropylene Cementitious Matrix (PCM™).

#### **APPLICATION**

CTech-LLC® CFM™ product installation shall only be performed by contractors and personnel that have been properly trained by CTech-LLC®. CTech-LLC® PCM™ product is pumped and projected with traditional shotcrete equipment. If required, PCM™ product may be used to patch voids and defects no deeper than 51 mm. Place 6–13 mm layer of PCM™ product, then immediately set CFM™ into wet polypropylene cementitious matrix (PCM™) layer. Follow with additional layers of CFM™, if required, set into 6–13 mm layers of PCM™. Finish with a final layer of PCM™ at 6–13 mm thick and screed/trowel to desired finish. If a layer of matrix is allowed to cure with more layers to follow, the first layer must be cleaned with water pressure before the next matrix layer can be applied.

#### **STORAGE & SHELF LIFE**

Store product in a dry area with no exposure to moisture.

#### **CAUTION**

Proper personal protection equipment shall be worn at all times. Avoid contact with skin and eyes. Particulate masks, rubber gloves, safety glasses, and coverall suits are recommended.

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#### **CTech-LLC®**

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#### **IMPORTANT NOTE:**

Before using any CTech-LLC® product, the user must review the most recent version of the product's technical data sheet, material safety data sheet and other applicable documents, available at [www.ctech-llc.com](http://www.ctech-llc.com).

#### **WARANTY:**

CTech-LLC® warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within one month of the 'date of purchase. CTech-LLC® shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory. The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before utilizing.