### HM-CFG
**CARBON FIBER POLYMER GRID**

**Description**
HM-CFG is net alike strengthening fabric which made of carbon fiber tow. As the substitutes of steel mesh, it can be used together with epoxy mortar to seal and control the crack, and improve the load capacity of the original structurers.

**Application Range**
- Increased live loads in warehouses
- Increased traffic volumes on bridges
- Vibrating structures
- Changes of building utilization

**Load Increase**

**Improve Usability**
- Control structural deformations
- Seal the crack and prevent crack again

**Structural strengthening**
- Improve capacity of openning slab, wall hole
- Deflection reinforcement of structural members

**Change in Structural Parts**
- Removing of wall or columns
- Removal of slab section for openings

**Design or Construction Defects**
- Insufficient reinforcements
- Insufficient structural depth

**Advantages**
- Light weight, only 1/5 of steel mesh, easier apply.
- High strength, single fiber strength is 5-7 times than normal steel
- Good toughness, suitable for unsmoothly or masonry surface
- Can apply in moisture surface
- Acid, alkali & salt resistance
- Can be used for shear strengthening, confinement strengthening, flexural strengthening
- Alkali Resistant

**Horse Advantage**

**Aviation Grade Yarn**
- Select the international high-quality aviation grade yarn, over 5000meters.

**World Leading Production Line**
- No damage to the yarn during the weaving process.
- Good compatiblity performance with any mortar
- Various size for selects, and can be customized as per requests

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**HORSE CONSTRUCTION**

**Horse Advantage**

- Patented Tension Controlling System
  - Our own independent developed whole process tension controlling system
- Large production capacity
  - 20 thousands square meters annual production capacity
  - 10 thousand square meters regular daily stock

**Package**

This product packed by carton package

1 roll in 50sqm pack as 1 carton. Regular with: 1m, length: 50m

**Basic Information**

<table>
<thead>
<tr>
<th>Model</th>
<th>HM-CFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appreance</td>
<td>Black fabric</td>
</tr>
<tr>
<td>Length</td>
<td>50m</td>
</tr>
<tr>
<td>Width</td>
<td>Regular width is 1000mm, other width can be customized.</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>10 years</td>
</tr>
<tr>
<td>Storage Conditions</td>
<td>Store in dry conditions at 40°F to 95°F (4°C to 35°C)</td>
</tr>
<tr>
<td>Braiding</td>
<td>0° (Unidirectional)</td>
</tr>
<tr>
<td>Areal Weight</td>
<td>200g/m²</td>
</tr>
</tbody>
</table>

**Typical Fiber Properties**

**Dry Fiber Typical Properties**

<table>
<thead>
<tr>
<th>Stand Value of Tensile Strength</th>
<th>4900MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Elastic Modulus</td>
<td>234GPa</td>
</tr>
<tr>
<td>Elongation</td>
<td>1.70%</td>
</tr>
</tbody>
</table>

**Carbon fiber grid performance**

<table>
<thead>
<tr>
<th>Tensile strength of the warp per unit of width</th>
<th>31KN/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength of the weft per unit of width</td>
<td>31KN/m</td>
</tr>
<tr>
<td>Elongation of the warp tow</td>
<td>≥4%</td>
</tr>
<tr>
<td>Elongation of the weft tow</td>
<td>≥4%</td>
</tr>
<tr>
<td>Interlaminar Shear Strength</td>
<td>45MPa</td>
</tr>
<tr>
<td>Density</td>
<td>1.82g/cm³</td>
</tr>
<tr>
<td>Fiber Thickness</td>
<td>0.047mm</td>
</tr>
</tbody>
</table>
---Technical Data Sheet---

HORSE CONSTRUCTION

Construction Process

1. Surface Preparing:
Remove the coating of concrete surface with grinder. Polishing the Surface. If there is angular, grinder it into round, radius is around 25mm

2. Setting out:
After setting out, cut the HM carbon fiber grid based on request

3. Blending Motar
Blending the epoxy or polymer mortar, mix it evenly.

4. Interface coating
Spraying HM mortar to the surface of structurer evenly, thickness should be around 5-10mm

5. CFG fixing
Stick the carbon fiber grid into the lay out area, the gap is not allowed between the substrate and CFG

6. Impregnated coating
Coating the HM mortar on the carbon fiber grid, thickness around 15mm-30mm

7. Applying Impregnation Adhesive:
Apply impregnation adhesive when primer adhesive is touch dry.

8. Maintenance
After the application, the maintain time not less than 72 hours

9. Check Gap or Bubble:
Check if any gap or bubble inside, if have need to repair it with additional mortar.

Points for Attention

The construction workers should take protective measures such as wearing masks, gloves, goggles etc.

Pay attention to fire prevention and maintain good ventilation on site.

Carbon fiber material is conductive, be careful to the electrical equipments around.

For more information, please visit our website at www.horseen.com

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