HORSE CONSTRUCTION

HM-30
Unidirectional Carbon Fiber Fabric For Strengthening

Description

HM-30 is a high strength, high modulus unidirectional carbon fiber fabric. It is laminated with epoxy resin adhesive to form a carbon fiber reinforced polymer lamination (CFRP) used in structural strengthening.

Application Range

Load Increase

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

Seismic Reinforcement

- Concrete column wrapping, beam strengthening, wall strengthening, slab strengthening
- Masonry walls reinforcement

Damage to Structural Parts

- Aging of construction materials
- Vehicle impact
- Fire
- Blast impact

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

- Approved by GB50367-2013/GB50728-2011/GB50550-2010
- High strength, high toughness, high modulus
- Soft and flexible, light self weight, easy to install
- Long shelf life and aging resistance
- High temperature resistance
- Acid, alkali & salt resistance
- Can be used for shear strengthening, confinement strengthening, flexural strengthening
- Alkali Resistant

Horse Advantage

Aviation Grade Yarn

- Imported aviation grade raw material, excellent quality and stable performance

World Leading Production Line

- No damage to the yarn during the weaving process.
- Germany imported intelligent production line, point to point active weft insertion
- Ecellent flatness enable epoxy easy to penetrate.

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Horse Advantage

Patented Tension Controling System

- Our own developed whole process tension controling system
- It ensures the constant tension, low dispersion

Large production capacity

- 5 million square meters annual output.
- 100 thousand square meters regular daily stock

Package

This product packed by carton package

When the width is 100mm, 200mm, 300mm, the total area of carbon fiber per case is 60sqm

when the width is 250mm, 500mm, the total area of carbon fiber per case is 50sqm

Basic Information

Model	HM-30 (300gsm)
Appreance	Black fabric
Length	100m
Width	Regular width is 100mm, 150mm, 200mm, 250mm, 300mm, 500mm other width can be customized.
Shelf Life	10 years
Storage Conditions	Store in dry conditions at 40°F to 95°F (4°C to 35°C)
Braiding	0° (Unidirectional)
Areal Weight	8.76 oz/sq.yd. (300g/m²)

Typical Fiber Properties

Dry Fiber Typical Properities

Stand Value of Tensile Strength	7.8×10^5 psi (5400 MPa)
Tensile Elastic Modulus	3.4×10^7 psi (235000 MPa)
Elongation	1.70%

Laminated Fiber Typical Properties

Stand Value of Tensile Strength	6.52×10^5 psi (4500 MPa)
Tensile Elastic Modulus	3.4×10^7 psi (235000 MPa)
Elongation	1.70%
Bending Strength	1.01×10^5 psi (700MPa)
Interlaminar Shear Strength	6525 psi (45MPa)
Bonding Strength to RC	≥2.5Mpa, concrete cohesion failure
Density	0.065lbs/in³ (1.8g/cm³)
Fiber Thickness	0.0066in.(0.167mm)

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HM-30 UD CARBON FIBER FABRIC

Construction Process

1, Surface Treatment

2, Apply Primer

3, Levelling

4, impregnated adhesive

5. Cutting CF cloth

6. Pasting CF cloth

7. Adhesive again

8. Curing

1. Surface Preparing:

Remove the coating of concrete surface with grinder. Polishing the Surface. If there is angular, grinder it into round.

2. Setting out:

Get the concrete surface clean and keep it dry, then setting out.

3. Apply Primer:

Apply primer adhesive onto the surface of the concrete.

4. Apply Putty/Leveling:

Apply putty for repairing and leveling if needed

5. Fabric Cutting:

Cut carbon fiber fabric into sizes as designed.

6. Preparing the impregnation adhesive:

Weight and mixing adhesive according to ratio. Stirring the adhesive until the color is even. Avoid air bubble in this process.

7.Applying Impregnation Adhesive:

Apply impregnation adhesive when primer adhesive is touch dry.

8. Apply carbon fiber fabric:

Apply carbon fiber fabric onto the concrete surface as designed. Leveling the surface from one end to another.

9. Check Gap or Bubble:

Apply impregnation carbon fiber adhesive again. Make sure the adhesive impregnate fully into the fabric. The surface flat and no air bubble. Repeat above process from cutting carbon fiber if applying two or more layers

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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