Shanghai Horse Construction
Product Data Sheet
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Horse HM-1.4TM

Unidirectional Carbon Fiber Laminate For Strengthening

Description

HM-1.4TM is a high modulus unidirectional carbon fiber reinforce polymer(CFRP) for structural strengthening. It is bonded onto the structure as external reinforcement using HM-120CP epoxy resin as the adhesive.

Application Range

■ **Load Increase**
Increased live loads in warehouses
Increased traffic volumes on bridges
Installation of heavy machinery in industrial buildings
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
Fire
Vehicle impact

■ **Change of Structural System**
Removal of walls or columns
Removal of slab sections for openings

■ **Design or Construction Defects**
Lack of reinforcing bars
Lack of member cross section

■ **Improve Structural State**
Reduce the deformation
Reduce the stress of the original structure
The crack reinforcement

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Product Characteris	■ 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 ■ Seismic resistance ■ Environmental-friendly ■ Can be used for shear strengthening, confinement strengthening, flexural strengthening
Horse Advantage	■ **Aviation Grade Yarn** Imported aviation grade raw material, excellent quality and stable performance. ■ **World Leading Production Line** Germany imported intelligent production line. Point to point active weft insertion. No damage to the yarn during the weaving process. excellent flatness enable epoxy easy to penetrate, hence high bonding strength can be achieved ■ **Patented Tension Controling System** Our own developed whole process tension controling system. It ensures the constant tension, low dispersion. ■ **Large output and Timely Delivery** 5 million square meters annual output. 100 thousand square meters regular daily stock.
Package	This product is rolled into a ring and uses a belt to bind. The length of the laminate is 100m, the width is 50mm /100/150mm, the thickness is 1.2mm and 1.4mm.

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Basic Information

Model	HM-1.4TM
Appreance	Black laminate
Length	100m
Width	Regular width is 50mm, 100mm, other width can be customized.
Shelf Life	50 years
Storage Conditions	Store in dry conditions at 40°F to 95°F (4°C to 35°C)
Braiding	0° (Unidirectional)

Performance indexes

Tensile Strength	
Mean Value	2500 MPa
Design Value	2200 MPa
Tensile Elastic Modulus	
Mean Value	250,000 MPa
Design Value	225,000 MPa
Interlaminar Shear Strength	50 MPa
FRP With Base Materials Bonding Strength	For concrete and masonry: ≥2.5Mpa, concrete cohesion damage
Elongation	> 0.8%
Thickness	1.4mm
Temperature Resistance	> 150°C
Fiber volume content	≥ 65%
Density	1.6g/cm3

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Construction Process

1. Setting out according to designing;

2. Polish the surface of concrete surface to remove painting of the surface, blow out the floating dust with compressed air;

3. Prepare ingredients: agitate component A and B evenly in packaging bucket by weighting in accordance with the weight ratio A: B =2:1;

4. Installing: Past the above mixed glue compounds onto the surface of carbon fiber plate evenly, please avoid bubbles;

5. Anchorage: paste the carbon fiber plate onto the concrete surface and fixed with steel strip, remove excessive glue compounds around, and fix With Steel framework;

6. Maintenance: conservation time should be no less than 24 hours at room temperature.

Points for Attention	The construction workers should take necessary 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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