

# Horse HM-1.4T

## Unidirectional Carbon Fiber Laminate For Strengthening

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**Description** HM-1.4T is a high strength, 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.

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**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 Characteristic**
- 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

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**Horse Advantage**

■ **Aviation Grade Yarn**

Japan 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 Controlling System**

Our own developed whole process tension controlling 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.

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**Package**

This product is rolled into a ring and uses a belt to bind. Each roll is 100 meters length.

When the laminate width is 50mm, two rolls will be put into one carbon box;

When the width is 100mm, one roll in one carbon box;

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**Basic Information**

<b>Model</b>	HM-1.4T
<b>Appearance</b>	Black laminate
<b>Length</b>	100m
<b>Width</b>	Regular width is 50mm, 100mm, other width can be customized.
<b>Shelf Life</b>	50 years
<b>Storage Conditions</b>	Store in dry conditions at 4°C to 35°C
<b>Braiding</b>	0° (Unidirectional)

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**Performance Indexes**

The results are tested by Syracuse University USA according to ASTM standards. Original test reports available.

For more about ASTM (American Society for Testing Materials), please refer to <https://www.astm.org>

<b>Tensile Strength (ASTM D3039)</b>	3044 Mpa
<b>Tensile Modulus (ASTM D3039)</b>	158 Gpa
<b>Elongation at Break(ASTM D3039)</b>	0.0177
<b>Flexural Strength (ASTM D7264)</b>	2122 Mpa
<b>Thickness</b>	1.4mm
<b>Temperature Resistance</b>	> 150°C
<b>Fiber Content</b>	≥ 65%
<b>Density</b>	1.6g/cm <sup>3</sup>

## Construction Process

1. Setting out according to design;
2. Remove painting of the concrete surface and polish, blow out the floating dust with compressed air;
3. Prepare adhesive: Mix component A and B evenly in bucket. Mix ratio by weight A: B = 2:1 ;
4. Installing: Paste the epoxy 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 extra epoxy near the plate, and fix with steel framework;
6. Maintenance: Waiting for the epoxy to cure, curing time should be no less than 24 hours at room temperature.

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### 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  
<https://www.horseen.com>



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