# Horse HM-1.2T

## Unidirectional Carbon Fiber Laminate For Strengthening

**Description**

HM-1.2T 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.

**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<br>■ Soft and flexible, light self weight, easy to install<br>■ Long shelf life and aging resistance<br>■ High temperature resistance<br>■ Acid, alkali & salt resistance<br>■ Seismic resistance<br>■ Environmental-friendly<br>■ Can be used for shear strengthening, confinement strengthening, flexural strengthening |
| **Horse Advantage** | ■ **Aviation Grade Yarn**<br>Japan imported aviation grade raw material, excellent quality and stable performance.<br><br>■ **World Leading Production Line**<br>Germany imported intelligent production line. Point to point active weft insertion. No damage to the yarn during the weaving process.<br>excellent flatness enable epoxy easy to penetrate, hence high bonding strength can be achieved<br><br>■ **Patented Tension Controling System**<br>Our own developed whole process tension controling system. It ensures the constant tension, low dispersion.<br><br>■ **Large output and Timely Delivery**<br>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. Each roll is 100 meters length.<br>When the laminate width is 50mm, two rolls will be put into one carbon box;<br>When the width is 100mm, one roll in one carbon box; |

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## Basic Information

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| **Model** | HM-1.2T |
| **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 4°C to 35°C |
| **Braiding** | 0° (Unidirectional) |

## 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**

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| **Tensile Strength (ASTM D3039)** | 2743 Mpa |
| **Tensile Modulus (ASTM D3039)** | 171 Gpa |
| **Elongation at Break (ASTM D3039)** | 0.015 |
| **Flexural Strength (ASTM D7264)** | 2164 Mpa |
| **Thickness** | 1.2mm |
| **Temperature Resistance** | ＞150°C |
| **Fiber Content** | ≥68% |
| **Density** | 1.6g/cm³ |

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## 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.<br>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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