

Shanghai Horse Construction

Technical Data Sheet

Edition 1st Apr.2024

HORSE HM-1.2T



Unidirectional Carbon Fiber Laminate For Strengthening

Description

■ **HM-1.2T is a high strength, high modulus unidirectional carbon fiber laminate. It is bonded onto the structure as external reinforcement using HM-120CP epoxy resin as the adhesive.**

Application Range

- **Load Increase:** Increase in loads in commercial buildings; Increase in traffic weight and volume on bridges; Installation of heavy equipment in industrial facilities; Increase of vibration in structures
- **Improve Structural Condition:** Reduce deformations; Reduce stresses in existing structural elements; Limit or arrest crack propagation
- **Seismic Retrofitting:** Columns wrapping reinforcement for improving ductility and shear strength; Masonry walls reinforcement for improving out-of-plane bending and in-plane shear strengths; Beam and slab reinforcement
- **Change Structural System (Structural Alterations):** Removal of walls or columns; Removal of slab sections for openings
- **Aging and Damaged Structures:** Aging of old deteriorated construction materials; Corrosion of steel bars in concrete; Vehicles collision impact on structures (impact damage)
- **Design or Construction Errors:** Lack of adequate well-detailed reinforcing bars; Inadequate member cross section; Substandard concrete material strength

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

Technical Parameters

Model	Strength Grade	Regular Width	Thickness
HM-1.2T	Grade I	50mm, 80mm, 100mm and 120mm	1.2mm
HM-1.4T	Grade I	50mm, 80mm, 100mm and 120mm	1.4mm
HM-2.0T	Grade I	50mm and 100mm	2.0mm
HM-3.0T	Grade I	20mm and 50mm	3.0mm

Model HM-1.2T

Appearance Black laminate

Length 100m

Width Regular width is 50mm and 100mm, 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)

Package This product uses carton package. When the width is 50mm, two rolls in one carton; when the width is 100mm, one roll in one carton.

Technical Performance

Tensile Strength (ASTM D3039)	2850 N/mm ²
Tensile Modulus (ASTM D3039)	171 000 N/mm ²
Elongation at Break (ASTM D3039)	1.77%
Breaking strength (ASTM D7264)	3100 N/mm ²

Cross Section Area	63 mm ²
Thickness	1.2 mm
Temperature Resistance	> 150°C
Fiber Content	≥ 70%
Density	1.65 g/cm ³

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.

Transportation and Storage

■ This product should be stored in a dry, cool and well-ventilated environment. It should not be exposed to rain, or subjected to impact by sharp objects. During transportation and storage, carbon fiber materials shall not be squeezed or compressed, so as to avoid carbon fiber damage, and shall not be exposed to direct sunlight and/or rain.

Safety Measures

■ The construction workers should take all necessary protective measures (such as wearing masks, gloves, goggles, etc.). Safety measures should be taken on site to keep the site clean and prevent fire hazards. Carbon fiber is conductive, safety measures should be taken to prevent electric shocks. Carbon fiber sheets should not be bent during transportation, handling, and cutting process.

HEAD OFFICE

Shanghai Horse Construction Co., Ltd.

Address: 501, No. 10, Lane 1228 Jiangchang Rd, Shanghai, China

Postcode: 200072

Email: info@shhorse.com

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



INTERNATIONAL
CONCRETE REPAIR
INSTITUTE