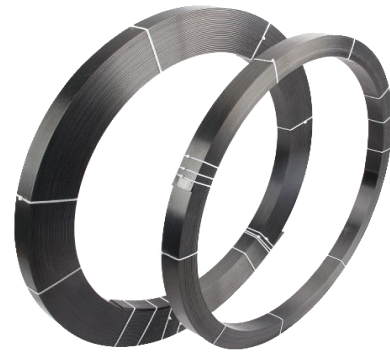


Shanghai Horse Construction

Product Data Sheet

Edition 1st Oct.2022

# Horse HM-3.0T



## Unidirectional Carbon Fiber Laminate For Strengthening

### Description

HM-3.0T 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 collusion 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	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-3.0T

**Appreance** 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)	2400 Mpa
Tensile Modulus (ASTM D3039)	165 Gpa
Elongation at Break (ASTM D3039)	0.016
Thickness	3.0mm
Temperature Resistance	> 150°C
Fiber Content	≥65%
Density	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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## 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

Fax: +86-21-36523017

Sales Hotline: +86-21-56505428-8108

Email: [info@shhorse.com](mailto:info@shhorse.com)

For more information, please visit our website at  
[www.horseen.com](http://www.horseen.com)



INTERNATIONAL  
CONCRETE REPAIR  
INSTITUTE

# COPWIN INTERNATIONAL GROUP CO.

Room501,10#Building , Lane 1228 Jiangshan Rd, Shanghai,China  
Tel:86-21-56505428·Fax:86-21-36523027

## PROFORMA INVOICE

To: Dr. Mohd. Yunus Bin Ishak

No.: H201804

Date: 09th Apr

Add: Johor Bahru skudai taman university melana  
apartment M1-04-044

Contact: Weo

Tel: +60 019 714 8238

Tel: 86 21 565

Fax: /

Fax: 86 21 365

Item	Goods Description	Specification	Unit Price USD	Unit	Quantity
1	HM-20 Carbon fiber fabric	300gsm 100mm width 100m length	10.8	sqm	10
2	HM-180C3P Impregnated epoxy resin		0	kg	6
3	Shipping cost	FedEx	3-4DAYS		
4	SAY TOTAL U.S.DOLLARS TWO HUNDRED AND FORTY SEVEN ONLY				

### Remark:

- 1, With Horse packing
  - 2, Shipping mark:
  - 3, Delivery time: 3 days after received the payment
  - 4, Incoterms: CIF Manila
  - 5, Payment term: 100% T/T in advanced
- Bank Information: **PAYPAL : [hs@shhorse.com](mailto:hs@shhorse.com)** OR
- Beneficiary A/C No.: 000000501511228646**
- Beneficiary A/C Name: COPWIN INTERNATIONAL GROUP CO., LTD**
- Beneficiary A/C Bank: Standard Chartered Bank(China) Limited Shanghai Branch**
- Beneficiary Bank Swift Code: SCBL CNSX SHA**
- Beneficiary Bank's Address: 22F Standard Chartered Tower, 201 Century Avenue, Pudong  
Shanghai 200120, China**
- Tel: 021-38518000**

, LTD

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Amount (USD)
108
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# HORSE CONSTRUCTION

Room501,10#Building , Lane 1228 Jiangshan Rd, Shanghai,China

Tel:86-21-56505428·Fax:86-21-36523027

## PACKING LIST

To: ABC Company

Attn:Mr.A

Add:\*\*\*\*\*

Tel:\*\*\*\*\*

Fax:\*\*\*\*\*

PI No.: 20170826001A

Date: 26th AUG 2017

Contact: Athena

Tel: 86 21 56505428

Fax: 86 21 36523027

Item	Goods Description	QTY	Unit	Packing	G.W (KG)	N.W (KG)	CBM
1	UD Carbon fiber wrap	300	m <sup>2</sup>	6 cartons	120	90	#VALUE!
2	UD Carbon fiber laminate	300	m	2 cartons	70	60	#VALUE!
3	Epoxy resin anchoring	300	pc	10 cartons	300	250	#VALUE!
4	SAY TOTAL ONE PALLET ONLY	900		1 PALLET	490	400	#VALUE!

### Remark:

1, With neutral packing

2, Shipping mark:\*\*\*\*\*

3, Delivery time: 3 days after received the payment

4, Incoterms: FOB SHANGHAI

Room501,10#Building , Lane 1228 Jiangshan Rd, Shanghai,China

Tel:86-21-56505428;Fax:86-21-36523027











# HORSE CONSTRUCTION

Room501,10#Building , Lane 1228 Jiangshan Rd, Shanghai,China

Tel:86-21-56505428;Fax:86-21-36523027

## SALES CONTRACT

PARTY A (The Seller):

Shanghai Horse Construction Co.,Ltd

Representative:Mr.HAN SONG

Position: General Manager

Add: Room501, 10#Building,

Lane 1228 Jiangchang Rd, Shanghai China

Tel: 0086-21-66078506

Fax: 0086-21-56505428

PARTY B ( The Buyer):

ABC Company

Representative: Mr..A

Position: Director

Add: \*\*\*\*\*

\*\*\*\*\*

Tel: 0086-21-

66078506

Fax: 0086-21-56505428

**The undersigned Seller and Buyer have confirmed this contract in accordance with the term and confitions stipulated below:**

### 1, Goods Description

Item	Goods Description	Specification	Unit Price USD	Unit	Quantity	Amount
1	UD Carbon fiber wrap	300g/m2 500mm width 100m long	9.5	m <sup>2</sup>	300	2850
2	UD Carbon fiber laminate	1.4mm thick 50mm width 100m long	4	m	300	1200
3	Epoxy resin anchoring	A:B=3:1 390ml/pc Red 20pc/Carton	4	pc	300	1200
4	<b>SAY TOTAL U.S.DOLLARS FIVE THOUSAND TWO HUNDRED AND FIFTY ONLY</b>					<b>5250</b>

**2, Incoterms:**FOB SHANGHAI

**3,Country of Original and manufacturers:** Shanghai,China

**4,Package:**

**5,Dispatch:** All goods must be dispatched within 3 weeks after received the advenced payment.

- Port of Loading: Shanghai port,China
- Port of discharge:
- Transshipment: ALLOWED
- Partial shipment: NOT ALLOWED

Room501,10#Building , Lane 1228 Jiangshan Rd, Shanghai,China

Tel:86-21 -56505428;Fax:86-21-36523027

**Notice of shipment:** the Seller shall send the advice by e-mail to Buyer three (03) days prior to the shipment in order to inform that the equipment ready for shipment along with the details as follows:

- \* Description and Quantity of Goods
- \* Total value
- \* Date of shipment
- \* Number of cases: Total gross/net weight and measurement

**Consignee:**

**6. Shipment Time:** Within 3 weeks after received the advanced payment.

**7. Payment:** 30% in advance, and 70% balance after get the information of goods will arriving \*\*\* Port

**Beneficiary:**

**Address:**

**Bank:**

**Bank Address:**

**SWIFT:**

**Account No.:**

**Bank Code :**

**Branch Code :**

**8.Shipping Documents:**

The Seller undertakes to send the Buyer the original documents as follow:

- a. Bill of Landing
- b. Signed Commercial Invoice in 3 originals
- c. Detailed Packing List in 3 originals
- d. Certificated of Original and Certificate of Quality (CO & CQ) in original.

This contract is made in English, effective since being signed/seales (by fax/send) by both parties and realized by facsimile.

**PARTY A ( The Seller)**

Shanghai Horse Construction Co.,Ltd

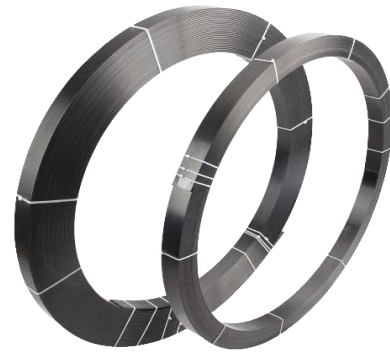
**PARTY B (The Buyer)**

Shanghai Horse Construction

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Edition 1st Oct.2022

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<b>Application Range</b>	<ul style="list-style-type: none"><li>■ <b>Load Increase:</b> 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</li><li>■ <b>Improve Structural Condition:</b> Reduce deformations; Reduce stresses in existing structural elements; Limit or arrest crack propagation</li><li>■ <b>Seismic Retrofitting:</b> 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</li><li>■ <b>Change Structural System (Structural Alterations):</b> Removal of walls or columns; Removal of slab sections for openings</li><li>■ <b>Aging and Damaged Structures:</b> Aging of old deteriorated construction materials; Corrosion of steel bars in concrete; Vehicles collusion impact on structures (impact damage)</li><li>■ <b>Design or Construction Errors:</b> Lack of adequate well-detailed reinforcing bars; Inadequate member cross section; Substandard concrete material strength</li></ul>
<b>Product Characteristic</b>	<ul style="list-style-type: none"><li>■ High strength, high toughness, high modulus</li><li>■ Soft and flexible, light self weight, easy to install</li><li>■ Long shelf life and aging resistance</li><li>■ High temperature resistance</li><li>■ Acid, alkali &amp; salt resistance</li><li>■ Seismic resistance</li><li>■ Environmental-friendly</li><li>■ Can be used for shear strengthening, confinement strengthening, flexural strengthening</li></ul>

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HM-3.0T	Grade I	20mm and 50mm	3.0mm

<b>Model</b>	HM-3.0T
<b>Appreance</b>	Black laminate
<b>Length</b>	100m
<b>Width</b>	Regular width is 50mm and 100mm, other width can be customized.
<b>Shelf Life</b>	10 years
<b>Storage Conditions</b>	Store in dry conditions at 40°F to 95°F (4°C to 35°C)
<b>Braiding</b>	0° (Unidirectional)
<b>Package</b>	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

<b>Tensile Strength (ASTM D3039)</b>	2400 Mpa
<b>Tensile Modulus (ASTM D3039)</b>	165 Gpa
<b>Elongation at Break (ASTM D3039)</b>	0.016
<b>Thickness</b>	3.0mm
<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;
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INSTITUTE