Shanghai Horse Construction
Product Data Sheet
Edition 7.2.2022

Horse HM-RB

Unidirectional Carbon Fiber Rebar

Description

The Horse HM-RB Unidirectional Carbon Fiber Rebar is a product with excellent strength and modulus characteristics, designed for structural strengthening purposes. It is applied to the structure as external reinforcement and bonded using the 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 Members	* Aging of construction materials * Fire * Vehicle impact
Structural Changes:	* Removal of walls or columns * Removal of slab sections for openings
Structural Improvements	* Reduce the deformation * Reduce the stress of the original structure * The crack reinforcement
Design or Construction Defects	* Lack of reinforcing bars * Lack of member cross-section

Product Characteristics

* High strength, toughness, and modulus
* Flexible and lightweight for easy installation
* Long shelf life and resistance to aging
* High temperature resistance
* Resistant to acid, alkali, and salt
* Seismic resistance
* Environmentally friendly
* Suitable for shear, confinement, and flexural strengthening

Horse Manufacturer's Advantage

Aviation Grade Yarn	Utilizes imported, aviation grade raw materials for excellent quality and stable performance.
World-Class Production Line	Our production line features an intelligent machine system imported from Germany. Our machines utilize point-to-point, active, weft insertion to prevent damage to the yarn during weaving. This provides excellent "flatness," enabling easy epoxy penetration and achieving high bonding strength.
Patented Tension Controlling System	Our in-house tension controlling system ensures consistent tension throughout the entire process, minimizing dispersion.
Large Output and Timely Delivery	Our facility boasts an annual output of 100 thousand meters, ensuring ample supply and timely delivery.

Packaging Information

Product Design	* The rebar is rolled into a ring shape. * It utilizes a belt for binding.
Length Options	* Available lengths include 1m or 3m, or per specific sizing
Diameter Options	* Available in diameters of 8mm, 10mm, 12mm, and 16mm

Basic Product Information

Model Name	HM-RB
Appearance	Black Laminate
Length	1m, 3m or Customized
Diameter	8mm, 10mm, 12mm, 16mm, or 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

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Characteristic Tensile Strength		Cross-Sectional Yield Strength (kN)			
		8mm	10mm	12mm	16mm
Mean Value	3.19×10^5 psi (2200 MPa)	**111**	**173**	**249**	**442**
Design Value	2.90×10^5 psi (2000 MPa)	**101**	**157**	**226**	**402**
Characteristic Elastic Modulus					
Mean Value	2.39×10^7 psi (1.65×10^5 MPa)				
Design Value	2.32×10^7 psi (1.6×10^5 MPa)				
Elongation	1.80%				
Thickness	1.2mm				
Temperature Resistance	＞300°F (＞150°C)				
Fiber volume content	≥65%				
Density	0.058 lbs./in3 (1.6g/cm3)				

Construction Process

Setting Out:

* Follow the design specifications for proper positioning.

Surface Preparation:

* Polish the concrete surface to remove any paint and use compressed air to blow away any floating dust.

Ingredient Preparation:

* Thoroughly mix components A and B in the packaging bucket, ensuring a weight ratio of A:B = 2:1.

Installation:

* Apply the mixed glue compound evenly onto the surface of the carbon fiber rebar, taking care to avoid the formation of bubbles.

Anchoring:

* Place the carbon fiber rebar onto the concrete surface and secure it with a steel strip.
* Remove any excess glue compound and use a steel framework for additional reinforcement.

Maintenance:

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

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