

Shanghai Horse Construction
Product Data Sheet
Edition 1st, Oct. 2019

HM-180

Primer Adhesive



Description	Primer HM-180, used for improving the properties of the concrete surface, which is in direct contact with the carbon fiber system.
Product Characteristics	■ Low viscosity: Strong penetration ability, can well infiltrate and bond the cracks and defects on the concrete surface. ■ Compatibility: Good compatibility with carbon fibers. ■ Anti-corrosion: Excellent durable performance, corrosion resistance, humidity and moisture resistance, and chemical corrosion resistance. ■ High property: After curing, it has good physical properties, good toughness and elastic properties.
Horse Advantage	■ Nano Material: Use of the advanced nano material technology to improve the product's overall performance, and ensure the thixotropic and other properties are better so fibers could be easily coated. ■ Modified Epoxy: Use of low viscosity two components A style modified epoxy resin, and adjusted polarity of the functional group to improve penetrability. ■ Improved Formula: Adoption of very advanced formula, which makes the adhesive coupling-reaction takes place with different substrates, the bond strength improved by at least 18%, along with achieving higher durability. ■ Less Usage: No organic volatile, no filler, good suitability. Compared with other products, it saves at least 15% in usage. ■ Production Equipment: Advanced high speed dual planetary power mixing equipment, which results in the raw materials being mixed evenly. Meanwhile, the use vacuum treatment ensures no air bubble created, which extends the shelf life of the product and improves the stability of its performance. ■ Test Reports: Product passed several safety tests, e.g. Non-toxic testing, Horizontal firing test, Non ethanediamine test, Acute oral toxicity test etc.

Primer HM-180 Technical Information

Appearance	Component A: transparent viscous liquid	Operable time (min)	40
	Component B: brown viscous liquid	Touch dry time (25°C, h)	1~2
Viscosity	≤600 mPa·s	Mixture ratio	A:B=2:1
Tensile Strength (ASTM D638)		50 MPa	
Shear Strength (ASTM D732)		45 Mpa	
Bonding strength with concrete (ASTM C882)		≥20 Mpa	

Long-term performance

Long-term performance	Wet and heat ageing	Compared with the short-term results at room temperature, the decrease rate of shear strength: ≤12%
	Heat aging resistance	Compared with the short-term results at same temperature 10min, the decrease rate of shear strength: ≤5%
	Freezing and thawing	Compared with room temperature, short-term results, the shear strength decrease rate is not greater than 5%
	Fatigue stress	After 2×10 ⁶ times continuous sine wave fatigue loads, specimen does not destroy
	Resistance to stress	Steel - steel tensile shear specimens does not destroy, and creep deformation value is less than 0.4 mm
Resistance to corrosion medium	Resistance to salt	Compared with the control group, the strength decrease rate: ≤5%, and shall not have cracks or come unglued
	Alkaline medium	Compared with the control group, the strength does not decrease, and as the concrete damage, and shall not have cracks or come unglued
	Acid medium	Concrete damage, and shall not have cracks or degumming

Construction Process

Please scan the QR code to watch the video



Surface Treatment



Apply Primer



Leveling



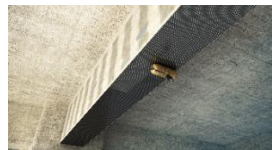
Applying epoxy resin adhesive



Cutting carbon fiber cloth



Pasting carbon fiber cloth



Applying adhesive again



Curing and protecting

1. Surface Preparing: Remove the coating of concrete surface with grinder. Polishing the Surface. If there is angular, grinder it into round.

2. Setting out: Get the concrete surface clean and keep it dry, then setting out.

3. Apply Primer: Apply primer adhesive onto the surface of the concrete.

4. Apply Putty/Leveling: Apply putty for repairing and leveling if needed.

5. Fabric Cutting: Cut carbon fiber fabric into sizes as designed.

6. Preparing the impregnation adhesive: Weight and mixing adhesive according to ratio. Stirring the adhesive until the color is even. Avoid air bubble in this process.

7. Applying Impregnation Adhesive: Apply impregnation adhesive when primer adhesive is touch dry. (If primer is not required, impregnated adhesive can be applied directly.)

8. Apply carbon fiber fabric: Apply carbon fiber fabric onto the concrete surface as designed. Leveling the surface from one end to another.

9. Check Gap or Bubble: Apply impregnation carbon fiber adhesive again. Make sure the adhesive impregnate fully into the fabric. The surface flat and no air bubble. Repeat above process from cutting carbon fiber if applying two or more layers.

Packing	The A and B components of this product are packed in separate metal containers. Group A is 20kg/container and Group B is 10kg/container.
Shelf Life	When stored correctly, the shelf life will be at least 18 months from the date of manufacture.
Transportation and Storage	This product should be kept sealed and stored in a dry and clean storage space of ambient temperature between -5 °C and 40 °C. In order to prevent damage, do not store outdoor under direct sunlight or under direct rain. A & B components should be kept separately. Storage period is 12 months at room temperature (25 °C); if it is stored for more than 12 months, it should be tested. If the physical and mechanical properties after 12 months meet the standard requirements, then it could be used; These products are not inflammable, explosive, toxic, or dangerous cargoes. They could be transported with general transportation cargo. The epoxy containers should not be damaged, exposed to direct sunlight or rain, and should not be tilted or stored upside-down during transportation.
Points for Attention	Mix proper amount of adhesive at one time, use up within the applicable period, do not use the adhesive if it is beyond the applicable period; If components A and B of the adhesive are not used up, they should be covered and sealed. They should not be exposed to air for a long time; The construction workers should take all necessary safety measures (such as wearing masks, gloves, goggles, etc.), and maintain fire prevention measures, as well as keeping the site clean; If the adhesive accidentally got in touch the skin and cloths, acetone can be used to wipe it at once, followed by a great deal of clear water; If accidentally swallowed or splashed into the eyes, please seek immediate medical service.

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