

# Horse HM-120CP

## High Performance Carbon Fiber Plate Epoxy Adhesive

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### DESCRIPTION

HM-120CP carbon fiber plate adhesive is a double components epoxy based adhesive with strong bonding strength and shear strength.

Use together with HM carbon fiber plates and HM pre-stress (post-tensioning) carbon fiber plate system.

It is used for carbon fiber plate bonding in structural reinforcement.

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### WHERE TO USE

- Use together with HM carbon fiber plates
  - Increasing the load
  - Modification of structural system
  - Damage to structural parts
  - Improving structural state
  - Design or construction defects
  - Bridge and highway reinforcement
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### PERFORMANCE

#### FEATURES

- Good compatibility with carbon fiber
  - Double component bisphenol-A modified epoxy resin based adhesive
  - Environment friendly
  - Good thixotropic property, easy to apply
  - Excellent long-term performance
  - Excellent aging resistance and medium resistance, humidity resistance and chemical corrosion resistance
  - Good physical performance after curing, strong toughness and have certain degree of elasticity
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### SHELF LIFE

When stored at room temperature(25°C), the shelf life will be at least 12 months from the date of manufacture.

### STORAGE

#### CONDISTION

This product should be sealed and stored in dry and clean storehouse. Storage temperature is -5°C to 40°C.

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**GENERAL PROPERTIES**

<b>Appearance</b>	Component A: Grey	<b>Thixotropic Index</b>	4
	Component B: White	<b>Mixture ratio</b>	A:B=2:1
<b>Consumption</b>		6-7kg/sqm	
<b>Thixotropic Index</b>		$\geq 4.0$	
<b>25°C Sagging mobility</b>		$\leq 2.0$	
<b>Density after curing</b>		1.6g/cm <sup>3</sup>	
<b>Operable time</b>	In spring and autumn 23°C	50 minutes	
	In summer 30°C	40 minutes	
	In winter 10°C	50-180 minutes	

**PERFORMANCE PROPERTIES**

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>

<b>Tensile Strength (ASTM D638)</b>	62 Mpa
<b>Tensile Modulus (ASTM D638)</b>	7994 Mpa
<b>Elongation at Break (ASTM D638)</b>	0.0207
<b>Compressive Strength (ASTM D695)</b>	117 Mpa
<b>Flexural Strength (ASTM D790)</b>	115 Mpa
<b>Shear Strength (ASTM D732)</b>	56 Mpa
<b>Bonding Strength (ASTM C882)</b>	31 Mpa
<b>Deflection Temperature (ASTM D648)</b>	55 °C

Water Absorption (ASTM D470)	0.06%
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## LONGTERM PROPERTIES

Long-term performance	Wet and heat ageing	Compared with the short-term results at room temperature, the decrease rate of shear strength: $\leq 12\%$
	Heat aging resistance	Compared with the short-term results at same temperature 10min, the decrease rate of shear strength: $\leq 5\%$
	Freezing and thawing	Compared with room temperature, short-term results, the shear strength decrease rate is not greater than 5%
	Fatigue stress	After $2 \times 10^6$ 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: $\leq 5\%$ , 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

1. Setting out according to designing;
2. Polish the surface of concrete surface to remove painting of the surface, blow out the floating dust with compressed air;
3. Prepare ingredients: agitate component A and B evenly in packaging bucket by weighting in accordance with the weight ratio A: B =2:1;
4. Installing: Past the above mixed glue compounds 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 excessive glue compounds around, and fix With Steel framework;
6. Maintenance: conservation time should be no less than 24 hours at room temperature.

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### ATTENTIONS

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.

Carbon fiber material is conductive, be careful to the electrical equipments around.

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