

Carbon Fiber Plate Adhesive

HM-120CP is a two-component epoxy based adhesive. It has high bond strength, shear strength, and very durable. It is designed for use with carbon fiber plate reinforcement system.



▲▲ Product Advantage

- Good thixotropic properties, the static stack height can reach 2-3 cm, non-sagging, easy to apply, lower hollow area, minimal to no waste and need for reapplication.
- Unique structural toughness properties, superior bonding strength, good fatigue resistance. No stripping or tearing damage.
- Moderate curing time, allows for longer application time, no rush application.
- Advanced high speed dual planetary power mixing equipment. The raw material is mixed evenly. With vacuum treatment, there are no bubbles introduced. More stable property, longer shelf life.
- High percentage of effective ingredient, low density, saves at least 30% of glue usage needed.
- HM-120CP has passed safety tests, non-toxic test, horizontal flame test, non-ethane diamine test, acute oral toxicity test, etc..

▲▲ Product Characteristics

- Dual Component bisphenol - A modified epoxy resin based adhesive, high bonding strength.
- Application in wide temperature range.
- Good performance, easy application on construction site.
- Excellent acid/alkali resistance and durability, excellent long-term performance.
- Low moisture sensitivity.

▲▲ Application Range

Use together with HM carbon fiber plate, HM pre-stress carbon fiber plate, used as reinforcement for existing structures.

▲▲ Technical Parameters

Mechanical Properties

Model	HM-120CP Carbon Fiber Plate Adhesive	
Appearance	Part A : White Paste	
	Part B : Grey Paste	
Operable Time (25°C, min)	< 40	
Density After Curing (g/cm ³)	1.6	
Mixture Ratio (By Weight)	A:B=2:1	
Thixotropic Index	≥4.0	
25°C Sagging Mobility (mm)	≤2.0	
Application Time (min)	In Spring and Autumn (23°C)	≤60
	In Summer (30°C)	≤50
	In Winter (10°C)	≤190
Shelf Life (month)	12	

Performance Parameter

Description	Test Item	Test Conditions	Test Result
Adhesive Performance	Tensile Strength (MPa)	ASTM D638	45
	Tensile Elastic Modulus (MPa)		4500
	Elongation at Break (%)		2
	Flexural Strength (MPa)	ASTM D790	70
	Compressive Strength (MPa)	ASTM D695	100
Bonding Performance	Steel-steel Shear Bonding Strength (MPa)	(23±2) °C , (50±5) % RH	≥ 14
	Steel-steel Normal Bonding Strength (MPa)	Under (23±2) °C , (50±5) % RH conditions, testing as the inspection standard loading speed	≥ 40
	Steel-steel T Impact Stripping Length (mm)		≤ 20
	Steel-C45 Pulling Bonding Strength (MPa)		≥ 2.5, concrete cohesive failure
HDT(Heat Deflection Temperature) (°C)	Use 0.45MPa option B of bending stress		≥ 65
	Nonvolatile matter Content (%)	(105±2) °C , (180±5) min	≥ 99

▲▲ 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. Shelf life is 12 months at room temperature (25 °C). Product should be tested if exceeded the shelf life. 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.

▲▲ Operation Process

- Mark out location of CFRP plates according to design drawings.
- Grind the concrete surface to remove paint off the surface, blow out or vacuum the concrete dust produced by the grinding operation.
- Prepare epoxy adhesive: mix components A and B evenly in supplied containers, by weighting at a ratio of A:B=2:1.
- Applying adhesive: apply the above mixed epoxy adhesive onto the surface of carbon fiber plate evenly along the length of the CFRP plate (transversely, more adhesive near the center of the plate), please avoid bubbles.
- Installation: attach the carbon fiber plate to the concrete surface, and hold with steel strip, remove excessive glue compounds around, and fix with steel framework.
- Curing: curing time should not be less than 24 hours at room temperature.

▲▲ Package

The A and B components of this product are all packed in barrels. Group A is 20kg/barrel and Group B is 10kg/barrel.

▲▲ 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 A, B components are not used up, they should be covered and sealed, do not expose to the air for a long period of time.

▲▲ Safety Measures

- The construction workers should take 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.
- When unrolling the CFRP plate out of the package, extra attention should be exercised, as it is rolled under pressure.
- Carbon fiber is conductive, safety measures should be taken to prevent electric shocks, particularly near electric equipment.

