

# Steel Bonding Structural Adhesive



HM-120 Steel bonding structural adhesive is two-component epoxy product. It has high bond strength, and cures at room temperature. It is very durable, has high shock resistance properties, excellent self-adhesion and bond to steel and concrete, with high shear rate. It could be used for planting rebars in structures located in seismic regions.

## ▲▲ Advantages

- Good thixotropic properties, the static stack height can reach 2-3 cm, non-sagging, easy to apply, eliminates waste and need for reapplication.
- Unique structural toughness properties, superior bonding strength, good fatigue resistance. No stripping or tearing damage.
- Successful grafting of hydrophilic groups and hydrophobic groups in the molecular structure. Superior performance in both dry and humid conditions.
- Moderate curing time, longer application time, no need to rush application.
- Advanced high speed dual planetary power mixing equipment. The raw material is mixed uniformly. And by vacuum treatment, there are no bubbles introduced. More stable property, and longer shelf life.
- High percentage of effective ingredient, low density, save at least 30% glue needed.
- HM-120 has passed safety reports, non-toxic test, horizontal flame test, non-ethanediamine test, acute oral toxicity test etc.

## ▲▲ Excellent Product Characteristics

- Two-component bisphenol-A type modified epoxy resin, non-hydrophilic product, with superior adhesion, excellent synthetic mechanical properties, waterproof, corrosion, and environmentally friendly.
- Construction application in wide temperature range, no dripping, simple construction, excellent performance.
- Durable and has good acid-alkali resistance, low sensitivity to moisture, waterproof, anti-corrosion, environmentally friendly.
- Good thixotropic properties, non-sagging when applied on vertical -side or overhead surfaces.
- Suitable for almost all building/structure substrates.

## ▲▲ Application Range

- All kinds of building structure reinforcement, wall floor, beam-columns and other steel-bonded reinforcement.
- The steel planting and anchor bolt anchoring of various building and highway projects.

## ▲▲ Technical Parameters

Description	Test Item	Test Conditions	Test Result
Adhesive Performance	Tensile Strength (MPa)	ASTM D638	55
	Tensile Elastic Modulus (MPa)		4500
	Elongation at Break (%)		1.5
	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	≥ 15
	Steel-steel Normal Bonding Strength (MPa)	Under (23±2) °C , (50±5) % RH conditions, testing as the inspection standard loading speed	≥ 33
	Steel-steel T Impact Stripping Length (mm)		≤ 25
	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

Model	HM-120 Steel Bonding Adhesive	
Performance	Part A: Grey Paste	
	Part B: Brown Paste	
Operable Time (25°C, min)	< 40	
Density (g/cm <sup>3</sup> )	1.8±0.1	
Mix Ratio (By Weight)	A:B=2:1	
Thixotropic Index	≥ 4.0	
25°C Sagging Mobility (mm)	≤ 2.0	
Pot Life (min)	Spring&Autumn (23°C)	≤ 60
	Summer (30°C)	≤ 50
	Winter (10°C)	≤ 190
Shelf Life (month)	12	



Test Item		Test Conditions	Qualified Standard (GB50728-2011)
Conditions Resistance	Wet And Heat Ageing Resistance	Under 50°C、95% RH conditions, ageing 90days, testing at ambient temperature by steel-steel tensile shear strength	Compared with the short-term results at roomtemperature, shear strength loss: $\leq 12\%$
	Heat Aging Resistance	Under $(80 \pm 2)$ °C conditions, ageing 30day, testing as the same temperature by steel-steel tensile shear strength	Compared with the short-term results at same temperature 10min, shear strength loss: $\leq 5\%$
	Freezing And Thawing Resistance	Under -25°C-35°C freezing circulating temperature, circulate 8h every time, after 50 times, testing at ambient temperature by steel-steel tensile shear strength	Compared with room temperature, short-term results, shear strength loss is not greater than 5%
Stress Resistance	Performance Under Sustained Load	Under $(23 \pm 2)$ °C, $(50 \pm 5)$ % RH conditions, undertake 4.0MPa shear strength continuous to 210d	Steel - steel tensile shear specimens does not fail, and creep deformation value is less than 0.4 mm
	Fatigue Performance	Under ambient temperature, as frequency 5Hz, stress ratio 5:1.5, max stress 4.0MPa fatigue load testing by steel-steel tensile shear strength	After $2 \times 10^6$ times continuous sine wave fatigue loads, specimen does not fail



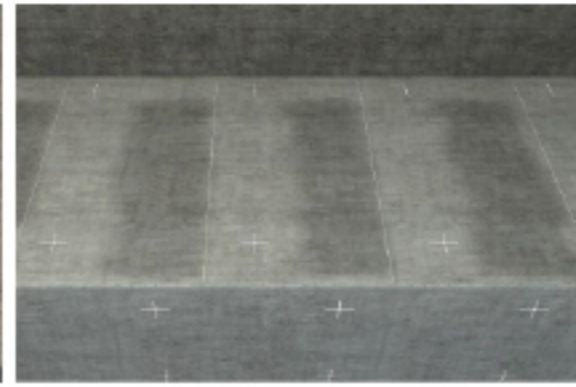


### ▲▲ Operation Process

To watch 3D video, please scan the QR Code



surface treatment



setting out



anchoring

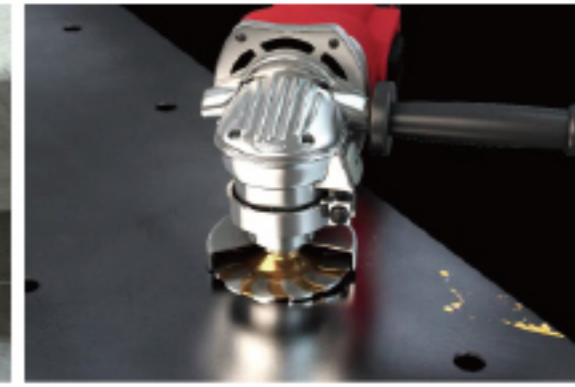


plate surface preparing



pasting plates



maintainance



inspection



protection coating

### ▲▲ Transportation and Storage

- This product should be sealed and stored in dry and clean space at ambient temperature  $-5\text{ }^{\circ}\text{C} \sim 40\text{ }^{\circ}\text{C}$ , do not pile up in open air under direct sunlight and/or rain.
- A and B components should be kept separate to avoid accidental mixing up. Shelf life is limited to 12 months at room temperature ( $25\text{ }^{\circ}\text{C}$ ).
- This product is not inflammable, explosive, toxic, or dangerous product. It can be transported with general transportation products. The package should not be damaged, exposed to rain, stored tilted or upside-down during transportation.

### ▲▲ Package

The A and B components of this product are all packed in containers. Component A is 20kg/container and Component B is 10kg/container.

### ▲▲ Points for Attention

- Mix as the quantity requested, use up within pot-life period.
- Un-used portions of each component should be stored in sealed containers. Do not expose to air for a long period of time.

### ▲▲ Safety Measures

- Construction personnel should take safety protection measures (such as wearing masks, gloves, goggles, etc.), on-site attention to fire prevention measures, and maintenance well-ventilated work space.
- If accidentally got in touch with skin or clothing, immediately wipe clean with acetone and rinse with a large amount of water.
- If accidentally swallowed or splashed onto eye, please seek immediate medical attention.