

# Epoxy Resin Anchoring Adhesive



HM-500 Epoxy Resin Anchoring Adhesive is a two-component modified epoxy resin adhesive. It is recommended for chemical planting of bar, bolt anchorage, crack repair, all kinds of concrete structure reinforcement, and widely used in construction, highway repair, repair engineering, and seismic retrofit.

## ▲▲ Product Advantages

- The modification of epoxy resin not only keeps the synthetic superiority of colloid, but also shortens the curing time at low temperature.
- The colloid is full of elastic reactive spherical body, which improves the strength, toughness, tearing resistance and impact resistance of the adhesive.
- Successful grafting of hydrophilic groups and hydrophobic groups on molecular structure to maintain superior performance in dry or moist environment.
- Advanced high-speed dual-planetary power mixing equipment, materials dispersed mixed evenly without dead ends, with vacuum treatment eliminates air bubbles, more stable performance, longer storage time. Cured colloid is denser, and its mechanical properties are more superior.
- The use of nano-material technology, its multidimensional network structure helps achieving good thixotropic effects, whether vertical side construction, overhead top construction, without sagging/dripping adhesive glue.
- The product has passed several standard tests, including but not limited to the Safety appraisal test, the environmental protection non-toxic detection, the horizontal combustion detection, the two-amine detection inspection, the acute mouth toxicity test, the welding resistance test (bar embedment bond test), and the acute through mouth toxicity test.

## ▲▲ Application Range

The reinforcement planting and anchor bolt anchoring in various building structures, strengthening of engineered buildings, anchorage of various equipment foundations, anchorage of roadway roof and wall panels, anchorage of railway and railroad rails, anchoring of rails, installation and anchorage of curtain wall, installation and anchorage of chemical equipment, pipelines, billboards, etc., water conservancy facilities, docks, highways, bridges and other works of various anchorage.

## ▲▲ Product Characteristics

- Modified epoxy resin, strong bond strength, acid and alkali corrosion resistance, very good durability.
- Cures at normal temperature, and easy to apply.
- Wide range of applications: It can be bonded concrete, stone, metal, etc..
- Volumetrically stable, no expansion after curing, no shrinkage, and does not cause any damage to substrate.
- Environmentally friendly, non-toxic, does not contain any volatile solvents.

## ▲▲ Technical Parameters

### Physical parameters

Model	HM-500 Epoxy Resin Anchoring Adhesive				
Appearance	Part A: Brown paste				
	Part B: Brown paste				
Density (g/cm <sup>3</sup> )	1.60±0.10				
Mix Ratio	A:B=2:1				
Temperature (°C)	-5	0	10	20	≥30
Time of Operate (min)	60	45	30	25	20
Cure Time (h)	72	48	24	12	6
Shelf Life (month)	12				

### Performance Parameters

Description	Test Item	Test Conditions		Qualified Standards (GB50728-2011)
Adhesive Performance	Splitting Tensile Strength (MPa)	In (23±2) °C, (50±5)% RH conditions, with the addition of 2mm/min speed to test		≥8.5
	Bending Strength (MPa)			≥50
	Compressive Strength (MPa)			≥60
Bonding Performance	Steel-steel Shear Bonding Strength (MPa)	(23±2) °C, (50±5) % RH		≥10
	Bonding Strength Between Deformed Bars and Concrete Under Restrained Pulling (MPa)	(23±2) °C, (50±5) % RH	C30 φ25l=150	≥11
			C60 φ25l=125	≥17
	Steel to Steel T Impact Stripping Length (mm)	(23±2) °C, (50±5) % RH		≤25
Deformation Temperature (°C)	B method using 0.45MPa bending stress		≥65	
Nonvolatile matter Content (%)	(105±2) °C, (180±5) min		≥99	

Test Item		Test Conditions	Qualified Standard (GB50728-2011)
Conditions Resistance	Wet and Heat Ageing Resistance	Under 50℃、95% RH conditions, ageing 90 days, testing at ambient temperature by steel-steel tensile shear strength	Compared with the short-term results at roomtemperature, shear strength loss: ≤ 12%
	Heat Aging Resistance	Under (80±2) ℃ conditions, ageing 30 days, testing as the same temperature by steel-steel tensile shear strength	Compared with the short-term results at same temperature 10min, shear strength loss: ≤ 5%
	Freezing and Thawing Resistance	Under-25℃-35℃ 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±2) ℃, (50±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 2×10 <sup>6</sup> times continuous sine wave fatigue loads, specimen does not fail

### ▲▲ Operation Process

- Location: Mark the location of rebar-planting drilling holes as per specifications, and according to the design requirements. Avoid rebars inside concrete structures.
- Hole drilling: suitably use electric hammer or pneumatic drill to drill holes according to the designed diameter and depth.
- Hole cleaning: blow out or vacuum the dust in the holes with blower after completing drilling holes, brush the wall of the holes with brush or cotton cloth, this process should be repeated as many times as needed until there is no dust in the holes.
- Adhesive Preparation: anchor adhesive should be mixed adequately according to the ratio requirements strictly until component A and B are mixed completely and uniformly.
- Bar Planting: inject the anchor adhesive into the inner of the holes using adhesive gun-dispenser, avoid trapping air at the bottom of the hole, and then insert the steel bar whole the way into the end of the hole, in rotational way.
- Curing: Curing depends on the ambient temperature, loading installation can be implemented after complete curing.

### ▲▲ 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.

### ▲▲ Package

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

### ▲▲ Points for Attention

- The mixed Components A & B adhesive shall not be used beyond its pot life (application period).
- Unused A & B components of the adhesive, please seal the containers well, don't 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.