Crack Sealing Adhesive

HM-9 crack sealing adhesive is solvent-free, two-component, high thixotropic modified epoxy resin adhesive.
It is mainly used for concrete substrate repair and crack sealing.

▲▲Product Characteristics

- →→ Does not shrink after curing, it has high strength, and high modulus.
- →→ Good thixotropic properties, which makes it easy to apply on concrete surfaces.
- →→ It does no flow in over-head top and vertical side surface applications.
- →→ Clear color difference from A and B parts, easy to mix and control quality.

▲▲Application Range

Mainly used for concrete substrate surface treatment/repair and crack sealing.

▲▲Transportation and Storage

- →→ Store this product in a dry and clean space at ambient temperature -5℃～30℃.
  It should not be piled up outdoor under direct air, sunlight and/or rain. Do not damage the package containers.
  Components A and B should be kept separately to avoid accidental mixing up.
- →→ From the date of production, storage period is 12 months.
- →→ This material is not dangerous product. It could be transported as a general chemical building material.
  Do not damage the package, do not expose to air or rain, and do not tilt or turn upside-down during transportation.

▲▲Technical Parameters

Description	Performance	Qualified Standard（GB50728-2011）
Physical Performance	Appearance	Part A：Stringy paste Part B：Stringy paste
	Weight Ratio	A：B=2：1
	Density（g/cm³）	1.65±0.1
Adhesive Performance	Tensile Strength（MPa）	⩾30
	Tensile Modulus（MPa）	⩾1.5×10³
	Elongation at Break（%）	⩾1.5
	Bending Strength（MPa）	⩾40
	Compressive Strength（MPa）	⩾70
	Distortion Temperature（℃）	⩾60
Bonding Performance	Steel-steel Shear Bonding Strength（MPa）	⩾10
	Steel-steel Normal Bonding Strength（MPa）	⩾32
	Steel-C45 Pulling Bonding Strength（MPa）	⩾2.5，Concrete cohesion failure
	Steel-steel T Impact Stripping Length（mm）	⩽35
Non-volatile Matter Content（%）		⩾99

▲▲Operation Process

→→ Prepare the substrate: The concrete surface should be kept clean and free of oil and dust.

→→ Mix the adhesive: Prepare adhesive according to the required proportion, in a clean container.

→→ Use a low speed electric drill to mix the adhesive (speed should be less than 400rpm), so to avoid introducing air bubble.

→→ Mix the adhesive for 2-3 minutes until achieving a uniform grey color mixture.

→→ Construction: Use putty knives or other similar tools for pasting the adhesive to the substrate.
Alternatively, hand application is permitted, while wearing protective gloves.

▲▲Points for Attention

Use this product at -5℃ ～ 40℃ ambient temperature.

▲▲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.

Crack Injection Adhesive

HM-120L crack injection adhesive is a two-component modified epoxy resin adhesive, low viscosity, flexible ratio, releases less heat, long application period, simple injection process.

▲▲ Advantages

- →→ The density is close to that of water, which could save adhesive material by 10%.
- →→ Low viscosity, good flowability, low permeability, non-shrinkable, can quickly and fully fill cracks infiltration-way.
- →→ It has long pot life (long application time), which is helpful to fill deep and fine cracks, and ensure the quality of the filling.
- →→ Good bond strength, high ductility, ensures long-term adhesion effect of cracks.
- →→ Low sensitivity to humidity ensures good bond effects under any site complex environmental conditions.
- →→ The product has passed several standard tests, including but not limited to the Safety appraisal test, the environmental protection non-toxic detection, the two-amine detection examination, and the acute through the mouth toxicity test.

▲▲ Application Range

This product is widely used in concrete bridges, housing, water conservancy, road and other projects for crack grouting repair, as well as concrete internal honeycomb, loose and other defects such as the reinforcement of plastic injection repair, FRP strengthening of corroded structures, structural surface coating anti-corrosion construction. It is suitable for concrete members, brick and tile member's crevice to restore strength across the cracks through high bond properties.

▲▲ Product Characteristics

→→ Very strong penetration, low viscosity.

→→ Durable, acid and alkali corrosion resistance, good water resistance.

→→ Does not contain any volatile solvent, does not shrink when hardening.

→→ After curing, it has excellent toughness and shock resistance.

▲▲ Technical Parameters

Physical Parameters

Model		HM-120L Crack Injection Adhesive
Appearance		Part A: Transparent
		Part B: Yellow liquid
Density (g/cm³)		1.1±0.1
Mix Ratio (By Weight)		A:B=3:1
Viscosity (mPa · s)		≤300
Pot Life (min)	Spring&Autumn (23℃)	≤50
	Summer (30℃)	≤40
	Winter (10℃)	≤190
Shelf Life (month)		12

Performance Parameters

Description	Test items	Test Conditions	Test Result
Adhesive Performance	Tensile Strength (MPa)	ASTM D638	45
	Tensile Elastic Modulus (MPa)		2700
	Elongation at Break (%)		3.5
	Flexural Strength (MPa)	ASTM D790	90
	Compressive Strength (MPa)	ASTM D695	60
	Unconstrained Linear Shrinkage Rate (%)	7 days after pouring, tested under (23±2) ℃ conditions	≤0.3
Bonding Performance	Steel-steel Shear Bonding Strength (MPa)	7 days after pouring, tested under (23±2) ℃, (50±5)% RH conditions	≥15
	Steel-steel Normal Bonding Strength (MPa)		≥20
	Pulling Bonding Strength of Steel to Dry-state Concrete (MPa)		≥2.5, Concrete cohesion Failure
	Pulling Bonding Strength of Steel to Wet-state Concrete (MPa)		≥1.8, Concrete cohesion Failure

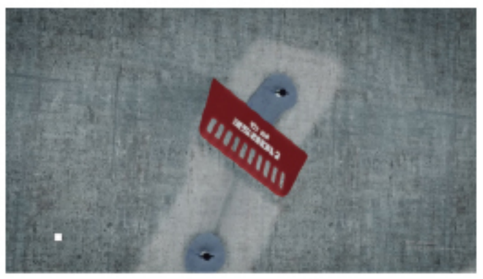
▲▲ Operation Process

Please scan the QR code to watch the video

surface treatment

crack treatment

setting nozzles

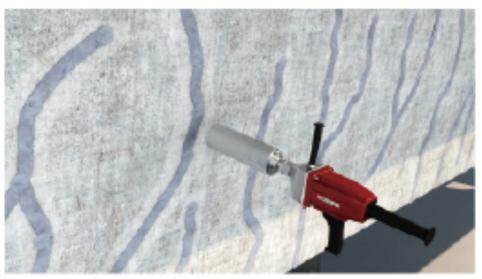


sealing crack

sealing inspection

mixing adhesive

injecting



final test

▲▲ 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 15kg/container and Group B is 5kg/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.

Structural Repair (levelling) Adhesive

HM-120ML Structural repair (levelling) adhesive is a two-component modified epoxy resin adhesive.
It is mainly used for creating dams for pouring liquid crack adhesive,
sealing fractured concrete surface, and pasting adhesive injection nozzle.
It could also be used for concrete surface repair and levelling,
and applied prior to application of CFRP systems.

▲▲Advantages

→→ Uses advanced nano material technology, multi-dimensional mesh structure allows it to achieve good thixotropic properties.
Whether vertical-side application or ceiling overhead application, it does not sag.

→→ Having good thixotropic properties, the static stack height can be 5cm, which could be customized by needed.
The most static stack height could be 10cm. It is available for various concrete repair jobs that have different defect depths.

→→ The curing time is moderate, adequate operation life, no need to rush application, and more flexibility in application

→→ Advanced high speed dual planetary power mixing equipment, the raw materials are easily mixed evenly.
Meanwhile using vacuum treatment produces no air bubbles, and results in product that has more stable performance, and longer shelf life.

→→ High solid content, lower density, usage could be reduced by at least 30% than other similar products.

→→ This product passed several safety tests, including but not limited to safety tests, non-toxic test, horizontal firing test,
non-ethanediamine test, and acute oral toxicity test.

▲▲Application Range

HM-120M pouring adhesive and HM-120L leveling crack adhesive could be coupled for sealing and injecting concrete cracks,
sealing fracture surfaces and pasting grouting nozzles.
HM-120L could also be used for sealing the edges of steel jackets/plates prior to the injection operation, restore defective concrete surface,
and leveling prior to application of CFRP systems.

▲▲Product Characteristics

→→ Belong to modified epoxy resin, high initial adhesive force.

→→ Curing at room temperature, fast curing speed and can be adjusted according to users' requirements.

→→ High strength, good aging resistance and chemical resistance properties.

→→ Not shrink basically when curing, good thixotropic property.

→→ Very strong thixotropic property and easy scraping.

→→ Wide proportion of preparing glue, easy to control operational time.

▲▲ Technical Parameters

Physical Properties

Model		HM-120ML Structural Repairing Adhesive
Performance		Part A: Grey Paste
		Part B: Brown Paste
Mix Ratio （By Weight）		A:B=2:1
Thixotropic Index		⩾3.0
25℃ Sagging Mobility （mm）		⩽2.0
Pot Life （min）	Spring&Autumn （23℃）	⩽60
	Summer （30℃）	⩽45
	Winter （10℃）	⩽190
Shelf Life （month）		12

Performance Parameter

Description	Test Item	Test Conditions	Test Result
Adhesive Performance	Tensile Strength （MPa）	ASTM D638	50
	Tensile Elastic Modulus （MPa）		4000
	Elongation at Break （%）		1.8
	Flexural Strength （MPa）	ASTM D790	80
	Compressive Strength （MPa）	ASTM D695	70
Bonding Performance	Steel-steel Shear Bonding Strength （MPa）	（23±2） ℃，（50±5） % RH	⩾14
	Steel-steel Normal Bonding Strength （MPa）	Under （23±2） ℃，（50±5） % RH conditions，testing as the inspection standard loading speed	⩾40
	Steel-steel T Impact Stripping Length （mm）		⩽25
	Steel-C45 Pulling Bonding Strength （MPa）		⩾2.5，concrete cohesive failure
	HDT(Heat Deflection Temperature) （℃）	Use 0.45MPa option B of bending stress	⩾65
	Nonvolatile matter Content （%）	（105±2） ℃，（180±5） min	⩾99

▲▲ Application Process

→→ Clean the surface which requires coating. The surface should be kept dry, and free of oil and dust.

→→ Prepare the adhesive according to recommended proportion, mix components A and B at a ratio of 2:1 by weight,
the application time is about 45 to 60 minutes. Mix only quantities of the adhesive that could be applied within the allowable application time.

→→ Using a putty knife or other special tools, mix the components A & B to a uniform consistency and color.

→→ For crack injection operation, putty knives are used to coat the cracks and evenly coat a layer of HM-120ML of a thickness of 1 ~ 2 cm,
and width of 2 ~ 3 cm, so to prevent small air bubbles, sands, etc. from entering the crack and cause leaky seal.
When pasting glue injection nozzles, attention should be paid to avoid clogging glue injection holes.

→→ When used in steel plate/jackets applications,
HM-120L should be used to seal the tip of the gaps between the existing member and the steel plates, bolts and grouting nozzles.

→→ The next step of construction, the injection process using HM-120M pouring adhesive,
could be carried out a day (if temperature is 25℃) after crack leveling adhesive seal has been applied.

▲▲ Transportation and Storage

→→ This product should be sealed and stored in dry and clean space at ambient temperature between -5℃ and 40℃ .
Adhesive containers should not be piled up outdoor under direct sunlight and/or rain, so to avoid damaging the adhesive and the containers.

→→ Component A & B should be kept separated to avoid accidental mixing up. Shelf life is limited to 12 months at room temperature (25℃).
Product should be tested if exceeded the shelf life.
If the physical and mechanical properties meet the reported properties, then it could be used.

→→ This product is not inflammable, explosive, toxic, or considered a dangerous cargoes. It could be transported with general transportation tools.
The packaging containers should not be damaged, exposed to direct sunlight and/or rain, tilted or stored upside down during storage and transportation.

▲▲Package

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

▲▲Points for Attention

→→ Mix quantities as needed, and use up the mixed adhesive within the specified pot life.

→→ 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.

Transparent Crack Repair Adhesive

This product is a transparent leveling adhesive.
It is intended for concrete crack repair and injection process,
where visual inspection of the crack injection process is possible,
during and after the repair process.
Typical crack repair adhesive is colored,
which makes it difficult to examine the repair and injection effects.
With "visible" technology, the size of crack is easy to examine. Using HM-120MLT,
it is easy to inspect the repair and injection effects by direct visual examination,
during and after the repair process.
HM-120MLT Crack Repair Adhesive (Transparent) is a two component modified epoxy resin adhesive.
It is mainly used for sealing fractured concrete surface, and pasting adhesive injection nozzle.
It could also be used for concrete surface repair and levelling.

▲▲Product Characteristics

→→ Transparent product It allows observing crack filling during the liquid epoxy adhesive injection process.
→→ Updated advanced new product formula. It is more durable, and has better sealing performance.
→→ Cures at room temperature, and the curing time could be customized.
→→ High strength, high durability, good chemical resistance, and does not peel off.
→→ Does not shrink when curing, good ductility, good deformation resistance.
→→ The initial thixotropic property is extremely high, easy to apply.
→→ Compared with similar products, it is cost-effective as smaller quantities of materials are needed.

▲▲Application Range

Suitable for concrete structure crack repair in expressways, viaduct bridges, and buildings etc.
Matches the use with HM-120L to seal cracks and paste injection nozzles.
Used to repair and leveling of concrete surface, with the capability to visually inspect the crack filling, width, and long-term performance.

▲▲Concrete Structure Crack Joint Sealing Seam Filling and Visualization Processing Technology

In order to overcome the uncertainty in crack sealing and ensuring quality control of crack filling/sealing,
the new technology of transparent adhesive has been developed. This new technology allows visual inspection of crack filling, better quality control,
and better inspection of the cracks during the service life of the structure.
This process through the existing market (or future market) provides a transparent adhesive for sealing crack surface.
When used along with color liquid epoxy adhesive for sealing cracks,
the new transparent surface adhesive allows visual observation of crack filling during the injection process.
This new technology can easily solve the crack filling and seaming treatment after fracture formation.

▲▲ Improve the Crack Sealing Technology

→→ Surface treatment: Polish the surface along the crack line, (about 10cm on either side of the crack).

→→ Slotting: Cut a slot groove along crack length and direction, as per required size and shape.

→→ Injection sealing adhesive: After cleaning and dry up, inject HM-120MLT to the cracks surface with special dispenser, make sure the adhesive is even and has no bubbles.

→→ Cleaning and Leveling: smoothing the adhesive, make sure no bubbles or dirt inside the adhesive, as to allow the adhesive to fill the crack completely.

→→ Other requirements: please refer to current international codes.

▲▲Performance Parameter

Description	Performance	Qualified Standard（GB50728-2011）
Physical Performance	Appearance	Part A：Stringy paste Part B：Stringy paste
	Weight Ratio	A : B=3 : 1
	Density（g/cm³）	1.2±0.1
Adhesive Performance	Tensile Strength（MPa）	⩾20
	Tensile Modulus（MPa）	⩾1.5×10³
	Bending Strength（MPa）	⩾30
	Compressive Strength（MPa）	⩾50
	Distortion Temperature（℃）	⩾60
	Steel-steel Shear Bonding Strength（MPa）	⩾10
	Non-volatile Matter Content（%）	⩾99
	Shelf Life（month）	12

▲▲Operation and Curing Time

Ambient Temperature（℃）	0	15	25	⩾30
Operable Time （min）	60	40	30	20
Curing Time （h）	24	12	8	5

▲▲Points of Attention

→→ Keep construction environment dry and well-ventilated. Keep concrete surface dry, clean, and free of oil and dust. Curing temperature should be above -5 ℃.

→→ Depending on the specific project needs, the curing time could be adjusted.

→→ Mix as needed quantities to be applied within the reported pot life.

▲▲Safety Measures

→→ Construction personnel should take the necessary 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.

▲▲Transportation and Storage

→→ This product should be kept sealed and stored in dry and clean space at ambient temperature between -5℃ and 40℃. Do not store outdoor under direct sunlight and/or rain, so not to damage the containers.

→→ This product could be stored for a period of 12 months from the date of production.

→→ This product is not inflammable, explosive, toxic, or considered a dangerous cargoes. It could be transported with general transportation equipment. The packaging containers should not be damaged, exposed to direct sunlight and/or rain, tilted or stored upside down during storage and transportation.