# CRACKBOND® EPOXY REPAIR PASTE

## Hi-Mod Structural Epoxy


CLASSIFIED UL US WATER QUALITY

DOT STATE DOT LISTED

### Product Description

CRACKBOND® EPOXY REPAIR PASTE is a two-component, moisture insensitive, high modulus, high strength, structural epoxy available in cartridge and bulk systems. Its non-sag properties are specifically formulated for large overhead and vertical repairs. It may be used in temperatures between 40 °F and 110 °F (4 °C and 43 °C).

### General Uses & Applications

- General adhesive/filler for overhead and vertical repairs
- High-build, non-sag patching material for non-moving cracks and spalls
- Pick-proof sealant in schools, prisons, hospitals and other security applications
- Ideal as a bonding agent for building materials including, concrete, block, stone, steel and other substrates
- Used for grouting dowels, pins and bolts
- Capping paste and injection port adhesive for pressure injection

### Advantages & Features

- Better workability, easier to trowel
- Hi-mod formula cures stronger than concrete
- Superior hardness for tamper resistance
- Moisture insensitive
- UL Certified - Drinking Water System Components (NSF/ANSI 61) Joining and Sealing
- Acceptable for use in USDA inspected facilities
- Available in cartridges and bulk units
- Easy mix formula in a 1:1 ratio by weight and volume
- Proudly made in the USA

**Availability:** Adhesives Technology Corp. (ATC) products are available online and through select distributors providing all your construction needs. Please contact ATC for a distributor near you or visit www.atcepoxy.com to search for a distributor by zip code.

## STANDARDS & APPROVALS

**ASTM C881-15 / AASHTO M235**
**Type I, II, IV & V Grade 3 Class B & C**

**(See ATC website for current Department of Transportation approvals throughout the United States)**

**Color & Ratio:** Part A (Resin): White, Part B (Hardener): Dark Gray, Mix Ratio: 1:1 by volume, Mixed Color - Light Gray

**Storage & Shelf Life:** For best results, store between 40 °F (4 °C) and 90 °F (32 °C). Shelf life is 24 months when stored in unopened containers in dry conditions.

**Installation & Estimation:** Installation Instructions are available within this Technical Data Sheet (TDS). Due to occasional updates, always obtain the most current revision. In order to achieve maximum results, proper installation is imperative. An estimating guide for product usage may be found at www.atcepoxy.com.

**Clean-Up:** Always wear appropriate personal protective equipment such as safety glasses and gloves. Clean uncured materials from tools and equipment using a mild solvent, such as a citrus based product. Cured material can only be removed mechanically using a sander or grinder.

**Limitations & Warnings:**

- Do not thin with solvents, as this will prevent cure
- Once cured it may be sanded, coated or painted to meet desired appearance; see MPII
- New concrete should be a minimum of 21 days old
- Not intended for repairing cracks subject to movement; repairs should be made to the cracked element to eliminate the cause of the cracking prior to usage
- Before placing a topcoat on EPOXY REPAIR PASTE, it is recommended to check with the coating manufacturer for compatibility with epoxy based products
- Sanding before coating will help with adhesion; Use of solvent based coatings should be avoided; Coating a small test area is recommended prior to completing entire project

**Safety:** Please refer to the Safety Data Sheet (SDS) for CRACKBOND EPOXY REPAIR PASTE published on ATC's website or call for more information at 1-800-892-1880.

**Specification:** The concrete repair adhesive shall be a two-component, 1:1 mix ratio epoxy system supplied in premeasured containers. When cured 7 days and at a minimum temperature of 75 °F (24 °C), shall have a minimum compressive yield strength of 13,100 psi (90.3 MPa) per ASTM D695. The concrete repair adhesive shall be CRACKBOND EPOXY REPAIR PASTE from Adhesives Technology Corp., Pompano Beach, Florida.

# EPOXY REPAIR PASTE

## Hi-Mod Structural Epoxy

## Ordering Information

**TABLE 1:** CRACKBOND EPOXY REPAIR PASTE Adhesive Packaging, Dispensing Tools and Mixing Nozzles

| Package Size | 21.2 fl. oz. (627 ml) Cartridge[1] | 102 fl. oz. (3.0 L) Bulk Unit Gallon | 3 Gallon (11.0 L) Kit |
|---|---|---|---|
| Part # | A22-CBERPN | BUG-CBERP | B1.5G-CBERP-A<br>B1.5G-CBERP-B |
| Recommended Mixing Nozzle | T12 | N/A | |
| Alternate Mixing Nozzle | T34HF | | |
| Manual Dispensing Tool | TM22HD | N/A | |
| Pneumatic Dispensing Tool | TA22HD-A | | |
| Case/Kit Qty. | 12 | 1 | 1 |
| Pallet Qty. | 432 | 75 kits | 30 kits |
| Pallet Weight (lb.) | 1,180 | 948 | 1,376 |

1. Each cartridge is packaged with one mixing nozzle.

**T12**



**T34HF**


**TM22HD**

**TM22HD-A**


**A22-CBERPN**


**BUG-CBERP**


**B1.5G-CBERP-A B1.5G-CBERP-B**

## Material Specifications

**TABLE 2:** CRACKBOND EPOXY REPAIR PASTE performance to **ASTM C881-15**[1,2]

| Property | Cure Time | ASTM Standard | Units | Sample Conditioning Temperature | | |
|---|---|---|---|---|---|---|
| | | | | 40 °F (4 °C) | 55 °F (13 °C) | 75 °F (24 °C) |
| Gel Time - 60 Gram Mass | ---- | C881 | min | 63 | 47 | 32 |
| Pot Life[3,4] | ---- | ---- | min | 14 | | |
| Tack-Free or Open Time[3] @ 75 °F (24 °C) | ---- | D2377 | hr | 2 - 3 | | |
| Consistency or Viscosity | ---- | C881 | ---- | Non-sag paste | | |
| Compressive Yield Strength | 7 day | D695 | psi (MPa) | 12,020 (82.9) | 11,580 (79.8) | 13,100 (90.3) |
| Compressive Modulus | | | psi (MPa) | 253,700 (1,749) | 415,300 (2,863) | 748,100 (5,158) |
| Tensile Strength[5] | | D638 | psi (MPa) | 5,480 (38) | | |
| Tensile Elongation[5] | | | % | 1.4 | | |
| Shore D Hardness[3] | 1 day | D2240 | ---- | 84 | | |
| Bond Strength Hardened to Hardened Concrete | 2 day | C882 | psi (MPa) | 3,200 (22.1) | 3,260 (22.5) | 3,180 (21.9) |
| | 14 day | | | 3,560 (24.5) | 3,500 (24.1) | 3,980 (27.4) |
| Bond Strength Fresh to Hardened Concrete | | | | 2,080 (14.3) | | |
| Bond Strength Fresh Concrete to Steel | | | | 1,970 (13.6) | | |
| Heat Deflection Temperature | 7 day | D648 | °F (°C) | 127 (53) | | |
| Water Absorption | 14 day | D570 | % | 0.82 | | |
| Linear Coefficient of Shrinkage | ---- | D2566 | | 0.0002 | | |

1. Results based on testing conducted on a representative lot(s) of product. Average results will vary according to the tolerances of the given property.
2. Results may vary due to environmental factors such as temperature, moisture and type of substrate.
3. Property not referenced in ASTM C881.
4. Pot Life is measured as the workable and applicable time of 102 fl. oz. (3.0 L) when mixed at 75 °F (24 °C). Pot Life lengthens to 18 minutes when hand mixed or when mixed in a 500 gram mass (12.5 fl. oz.) @ 75 °F (24 °C).
5. Tensile & Elongation are optional requirements for ASTM C881 Grade 3.

**TABLE 3**: CRACKBOND EPOXY REPAIR PASTE **NSF/ANSI** Certifications[1]

| ANSI Certification | Description | Application | Water Contact Temperature | Surface Area to Volume Ratio |
|---|---|---|---|---|
| NSF 61 | Drinking Water System Components - Health Effects | Joining and Sealing Materials | Cold 73 ± 4 °F (23 ± 2 °C) | 5 sq. cm/L |

1. CRACKBOND EPOXY REPAIR PASTE is certified as a joining and sealing material. It is certified for repair of cracks up to 1% of 5 gallon tanks and greater, not exceeding 5 $cm^2$/L with Final Cure 3 days at 75 °F. Mix Ratio: Part A (Resin): Part B (Hardener) = 1:1 by volume.

**TABLE 4:** CRACKBOND EPOXY REPAIR PASTE **CURE SCHEDULE**[1,2,3,4]

| Base Material Temperature °F (°C) | Nozzle Working Time | Port Adhesion Time | Full Cure Time |
|---|---|---|---|
| 75 (24) | 45 min | 3 hr | 24 hr |

1. Working and full cure times are approximate and are based on cartridge/nozzle system performance.
2. Port Adhesion Time is based on the amount of time it takes to be able to maintain adhesion during epoxy injection.
3. Application Temperature: Substrate and ambient air temperature should be from 40 - 110 °F (4 - 43 °C).
4. When ambient or base material temperature falls below 70 °F (21 °C), condition the adhesive to 70 - 75 °F (21 - 24 °C) prior to use.

# EPOXY REPAIR PASTE

## Hi-Mod Structural Epoxy

## Installation Instructions

### Surface Preparation

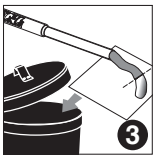
Old concrete must be clean and profiled or textured. Remove all dirt, oil, debris, wax grease or dust. New concrete should be a minimum of 21 days old. Prepare the surface by rough-grinding, scarifying, bush hammering or by using other equipment that will give a roughened profile. A roughened surface is imperative for good adhesion. Always be sure the bonding surfaces are prepared in advance before mixing product. Mix only enough CRACKBOND EPOXY REPAIR PASTE that can be used within the workable time or pot life (see Table 2). When bonding two surfaces together, make sure to completely fill all the gaps between the mating surfaces. **CAUTION:** Always wear proper personal protective equipment, such as safety goggles, dust mask/respirator and gloves while sanding or grinding (see Safety Data Sheet).

### Cartridge Preparation

When the work environment or substrate falls below 70 °F (21 °C) condition the product to 70 - 75 °F (21 - 24 °C) prior to use. Cold product may become too thick. Product that is too warm will react much faster than normal.


**CAUTION:** Check the expiration date on the cartridge to ensure it is not expired. **Do not use expired product!** Remove the protective cap from the adhesive cartridge and insert the cartridge into the recommended dispensing tool. Before attaching mixing nozzle, balance the cartridge by dispensing a small amount of material until both components are flowing evenly. For a cleaner environment, hand mix the two components and allow waste to cure prior to disposal in accordance with local regulations.


After the cartridge has been balanced, confirm the internal mixing element is in place and screw on the proper Adhesives Technology mixing nozzle to the cartridge (see Table 1). Do not modify mixing nozzle prior to dispensing adhesive.

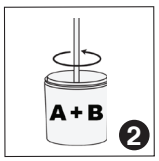



Dispense the initial amount of material from the mixing nozzle into a disposable container according to local regulations.The product should be a uniform light gray color with no streaks. NOTE: The adhesive must be properly mixed in order to perform as published. **CAUTION:** When changing cartridges, never re-use nozzles. A new nozzle should be used with each new cartridge and steps 1 - 3 should be repeated accordingly.

### Bulk Mixing Instructions


When the work environment or substrate falls below 70 °F (21 °C) condition the product to 70 - 75 °F (21 - 24 °C prior to use. Thoroughly stir Part B with a Jiffy Mixer paddle or similar before mixing Parts A and B together NOTE: Cold product may become too thick. Product that is too warm will react much faster than normal.

Place the total contents of Part B (Hardener) into Part A pail (Resin) OR proportion equal parts by volume of both Part A and Part B into a clean pail. Be sure that the components are mixed at an exact 1:1 ratio by volume.




Mix thoroughly with a low speed drill (400 – 600 rpm) with a Jiffy Mixer paddle or similar. Carefully scrape the sides and the bottom of the container while mixing. Keep the paddle below the surface of the material to avoid entrapping air. Proper mixing will take at least 3 minutes and when well mixed the material will be free of streaks or lumps. Mix only the amount of material that can be used before the Pot Life expires (see Table 2).

### Spall Repair Preparation

Cut into the sound concrete using a grinder with a diamond blade or tuck point diamond grinding wheel and prepare the area to be repaired as noted above under Surface Preparation. Place the mixed neat EPOXY REPAIR PASTE into the repair area and smooth out with a trowel to create a smooth surface.

## Installation Instructions

### Capping Paste for Structural Crack Injection

1. Place and secure injection ports or port bases with the EPOXY REPAIR PASTE taking care not to leave any pinholes, noting that the port spacing should be approximately 6 - 12 in. (152 – 305 mm) apart. NOTE: Do not allow the epoxy to block the passage between the port and the crack face.
2. Place additional EPOXY REPAIR PASTE between the ports making sure the entire crack is sealed off anywhere it is visible and accessible and make sure the ports are securely fastened to the concrete so they will not leak when injected under pressure.
3. Allow the EPOXY REPAIR PASTE to cure a minimum of 3 hours at 75 °F (24 °C) before injecting the crack with an ATC crack injection adhesive such as CRACKBOND LR-321 LV.

### Pick-Proof Sealant

Surface or void must be clean and sound prior to application. Remove all dirt, oil, debris, grease, loose paint or dust. Use sandpaper or a wire brush to roughen any smooth bonding surface. Apply an applicable size bead of material around the area to be sealed. A rounded edge spatula should be used for tooling when used in cracks or joints. For filling voids, dispense into deepest area first filling from the back to front until entire void is filled. In thinner cracks it may be necessary to use an additional flat mixing tool such as a putty knife to aid in working the adhesive deeper into the area to be repaired.

### Painting or Coating

Before placing a topcoat on EPOXY REPAIR PASTE, it is recommended to check with the coating manufacturer for compatibility with epoxy based products. Sanding before coating will help adhesion. Use of solvent based coatings should be avoided. Coating in a small test area is recommended prior to completing entire project.