CRACKBOND® BRIDGE-GARD

Epoxy Concrete Overlay

Product Description

CRACKBOND® BRIDGE-GARD is multi-purpose epoxy polymer concrete overlay system designed for high-stress infrastructure applications. It may be successfully applied and cured at temperatures between 65 °F and 95 °F (18 °C and 35°C).

General Uses & Applications

- Extends deck life in bridges and parking structures
- Bridge nosing material for joint headers and edges
- Repairs concrete spalls
- Levels or corrects concrete grading or ruts
- Rehabilitates concrete flooring and loading docks

Advantages & Features

- All-in-one easy to use system in pre-measured containers
- Pave from 3/4 in. to 10 in. cross-sections
- Rapid cure - open to traffic in < 3 hours @ 75 °F (24 °C)
- High tensile strength coupled with high elongation for superior rutting resistance
- High early bond strength
- Non-shrink
- Moisture insensitive
- Excellent oil and chemical resistance
- No field chemistry required
- Made in the USA in accordance with CFR 49 section 50101

Availability: Adhesives Technology Corp. (ATC) products are available online and through select distributors serving 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.

Color & Ratio: Part A (Resin) Clear: Part B (Hardener) Dark Amber, Mix Ratio: 2:1 by Volume (Neat).

Storage & Shelf Life: For best results, store between 50 °F (10 °C) and 95 °F (35 °C). Shelf life is 24 months when stored in unopened containers in dry and dark conditions.

Installation & Coverage: 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. Coverage may vary according to the porosity of the concrete. 1.6 gallons (6.1 L) epoxy plus 113 lb. (51.3 kg) of aggregate yields approximately 1 $ft.^3$ (0.03 m^3).

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 CRACKBOND® INDUSTRIAL CITRUS CLEANER from Adhesives Technology Corp. Cured material may only be removed mechanically using a sander or grinder. Collect with absorbent material. Flush area with water. Dispose of in accordance with local, state and federal disposal regulations.

Limitations & Warnings:

- For professional use only
- Do not thin with solvents, as this may affect cure
- Concrete should be a minimum of 28 days old prior to applying as overlay
- Compressed air equipment must have an oil/air separator
- BRIDGE-GARD is a vapor barrier after curing
- For placements > 10 in. and/or structural applications, contact an ATC representative
- Consult ATC when mixing or placing outside of the temperature recommendations listed.

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

Specification: The epoxy overlay system shall be an epoxy system supplied in pre-measured containers. At 7 days and a temperature of 75 °F (24 °C), the neat epoxy shall have a tensile strength of 3,960 psi (27.3 MPa) and an elongation of 59.2 % per ASTM D638. The epoxy overlay shall be CRACKBOND BRIDGE-GARD from Adhesives Technology Corp., Pompano Beach, FL.

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TABLE 1: CRACKBOND BRIDGE-GARD Adhesive Packaging

Package Size	0.67 ft³ (19 L)	1.34 ft³ (38 L)
Part #	BG067[1]	BG134[2]
Pallet Qty.	72 units	72 units Part A 144 units Part B
Pallet Weight (lb.)	1,391	1,927

1. One 0.67 ft³ kit includes Part A and Part B in a case: part # B1G-BG, One 50 lb. bag of sand: part # AG-ECS50# and one 25 lb. bag of rock: Part # AG-ECR25#.
2. One 1.34 ft³ kit includes Part A: part # B1.3G-BG-A, Part B: part # B85-BG-B, two 50 lb. bags of sand: Part # AG-ECS50# and one 50 lb. bag of rock: part # AG-ECR50#.

BG067

BG134

TABLE 2: CRACKBOND BRIDGE-GARD performance to **ASTM Standards**[1,2]

Property	Cure Time	ASTM Standard	Units	Sample Conditioning Temperature 75 °F (24 °C)
Gel Time - 60 Gram Mass	----	C881	min	20
Consistency or Viscosity		D2556	cP	103
Compressive Strength[3]	24 hr	C39	psi (MPa)	4,750 (32.8)
Modulus of Elasticity[3]	7 day	C469	psi (MPa)	1,800,370 (12,413)
Tensile Strength (Neat)		D638	psi (MPa)	3,960 (27.3)
Tensile Elongation (Neat)				59.2
Tensile Bond Strength to Concrete[4]	24 hr	C1583	psi (MPa)	490 (3.4)
PPC Bond Strength[3]		CP-L4302	psi (Mpa)	575 (4.0)
Rebound Hammer[3]	4 hr	C805	psi (MPa)	3,750 (25.9)
Water Absorption	7 day	D570	%	0.68
Surface Abrasion Resistance[5]	----	CT 550	----	No Abrasion Loss

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 tested with aggregate (Extended).
4. Property tested with aggregate (Extended) - 100 % Substrate.
5. Six cylindrical samples (with topping sand and without) 100 mm diameter by 50 mm high test in accordance to California Test 550 - Surface Abrasion Resistance Testing.

TABLE 3: CRACKBOND BRIDGE-GARD **CURE SCHEDULE**[1]

Temperature °F (°C)	Cure Time
62 (17)	4.5 hr
67 (19)	4 hr
72 (22)	3 hr
77 (25)	2.5 hr
82 (28)	2 hr
85 (29)	1.5 hr

1. Table 3 shows average temperature of material and substrate. Site conditions will dictate actual cure response for open to traffic time.

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Installation Instructions

Surface Preparation

Concrete or surface must be clean prior to application, structurally sound and free of laitance (poorly bonded materials) and delaminations. New concrete should be a minimum of 28 days old. All dirt, oil, debris, wax, grease or dust should be removed. The surface should be prepared mechanically using a scarifier, sandblast, shotblast, chipping, hydro-demolition or other cleaning processes which would provide proper surface preparation for a long-lasting polymer overlay and/or patching system. The final surface should be clean, free of oil, dirt, curing compounds, and other materials to create a surface profile of exposed sound aggregate that will provide a strong bond surface for the BRIDGE-GARD system. Unsound concrete areas should be located and removed until a sound concrete base is established. All metal surfaces in contact with BRIDGE-GARD should be sandblasted to white metal finish and wiped clean with solvent.

CAUTION: Check the expiration date on the container to ensure it is not expired. **Do not use expired product!** Epoxy materials may separate, which is normal and may be expected when stored over a period of time.

NOTE: Typical work time is 45 minutes, depending on temperature. BRIDGE-GARD is best used at temperatures between 65 °F and 95 °F (18 °C and 35 °C) - see Table 3. Trial batches are recommended to determine work times and set times based on anticipated application temperatures, conditions, and lane closure timing.

Mixing Pre-Measured Units

BRIDGE-GARD is supplied in pre-measured units. Mix these products ONLY in complete units. DO NOT THIN or add any solvents prior to mixing. Pour Part B (Hardener) and Part A (Resin) into an appropriate mixing vessel and mix thoroughly for 3 minutes with a Jiffy Mixer paddle or similar on low-speed (300 rpm) until material is a uniform consistency. **NOTE**: Keep mixer at bottom of mixing vessel to avoid introducing air. After liquid components are mixed, pour liquids into mortar mixer, making sure to remove all resins from sides and bottom of pail with spatula or similar tool. Slowly add Part C (Aggregate). Mix on low speed until all aggregate is wetted out, stop mixer. DO NOT OVER MIX!

Using BRIDGE-GARD with Primer (CRACKBOND V120 LO-MOD)

Clean surface as directed above. CRACKBOND V120 LO-MOD may be used as a primer before placing BRIDGE-GARD. IMPORTANT: carefully follow the mixing and installation instructions from the CRACKBOND V120 LO-MOD technical data sheet. Apply primer as recommended by ATC at 125 ft^2 - 150 ft^2 (11.6 m^2 - 14 m^2) per gallon. Distribute mixed resin with a flat squeegee, broom, roller or paint brush. Remove excess or puddled material. Begin placing BRIDGE-GARD while primer is tacky. Tack time will depend on temperature of the surface, application method and site-specific conditions. If primer gels or loses its tack prior to placement of BRIDGE-GARD, re-apply primer**.**

Patching Applications

Saw cut a minimum 3/4 in. depth shoulder around the edge of the prepared area, chip out and remove delaminated area. Blow off or sweep away dust from saw cutting operations. Prime the spall with CRACKBOND V120 LO-MOD as directed above. Mix BRIDGE-GARD. Immediately place patch. Set screeds or float to desired level, strike off, thoroughly compact and finish the surface. Broadcast finished surface with specified sand, broom or tine finish.

Overlay Applications

BRIDGE-GARD may be placed using a vibratory screed or a slip form paver. A mechanical tining device can be arranged on a slip form paving machine to achieve a uniform tined surface for superior skid resistance. Longitudinal tines or transverse tines are acceptable. BRIDGE-GARD should be mixed and vibrated to produce a polymer concrete material with a slight excess bleed resin coming to the surface, which may be addressed by broadcasting topical aggregates. Resin content may be adjusted to accommodate the proper amount of bleed resin.

Additional notes: BRIDGE-GARD may be placed at thicknesses of 3/4 in. - 10 in. (1.1 cm - 25.4 cm) in a single pass to account for grade adjustments necessary on rehabilitation projects. The mix design may be adjusted to handle super elevation and still remain placeable. Wood forms, steel pipe and slip form devices may be used to set final grade.