

CRACKBOND[®] 2100 MV

Medium Viscosity Bonding Agents



Product Description

CRACKBOND[®] 2100 MV (Medium Viscosity) and **2100 MV-LPL** (Long Pot Life) products are two-component, high-strength epoxy adhesives that are ideal for bonding fresh to hardened concrete or perfect for use in a variety of repair projects. **CRACKBOND 2100 MV** may be used in temperatures between 40 °F and 100 °F (4 °C and 38 °C), while **CRACKBOND 2100 MV-LPL**, with its slower cure rate, may be used in temperatures between 60 °F and 110 °F (16 °C and 43 °C).

General Uses & Applications

- Bonding hardened concrete to hardened concrete
- Bonding fresh concrete to hardened concrete and steel
- Coating and sealing interior or exterior slabs
- Durable, chemical resistant industrial coating and adhesive
- Mortar repair for concrete and spalls when mixed with dried silica sand or aggregate
- Gravity feed medium to large horizontal cracks

Advantages & Features

2100 MV & 2100 MV-LPL:

- Moisture insensitive allowing installation and curing in damp environments
- High modulus, self-leveling, medium viscosity
- Acceptable for use in USDA inspected facilities

2100 MV:

- NSF/ANSI 61 & 372 Drinking Water System Components
- Available packaging in cartridges and bulk; red basecoat available in 4 gallon kits only

2100 MV-LPL:

- Extended working time with new higher strength formula

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.

STANDARDS & APPROVALS

ASTM C881-20 / AASHTO M235

CRACKBOND 2100 MV
Type I, II, IV & V Grade 2 Class B* & C
Drinking Water System Components
NSF/ANSI 61 & 372

CRACKBOND 2100 MV-LPL
Type I, II, IV & V Grade 2 Class C
(See ATC website for Department of Transportation
approvals throughout the United States)

*With the exception of tensile strength for Class B Types I, IV & V

Color & Ratio: Part A (Resin) Clear; Part B (Hardener) Gray, Mixed Ratio: 1:1 by volume, Mixed Color - Gray. **CRACKBOND 2100 MV** Red basecoat available in 4 gallon kits only.

Storage & Shelf Life: 24 months when stored unopened in dry conditions. Store between 40 °F (4 °C) and 95 °F (35 °C).

Installation & Coverage: See Installation Instructions (II) available within this Technical Data Sheet (TDS). Due to occasional updates and revisions, always verify that you are using the most current version of the II. In order to achieve maximum results, proper installation is imperative. Bonding Agent - 1 gallon covers approximately 80 ft² (7.4 m²) at a thickness of 20 mils. Adhesive - 1 gallon yields 231 in³ (3.8 L). Grout/Mortar Repair - 1 gallon mixed with one equal part dried silica sand yields approximately 450 in³ (7.4 L) of grout. **NOTE:** Coverage may vary slightly according to surface temperature, surface texture and sand gradation.

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:

- Do not thin with solvents, as this may affect cure
- Not recommended for any anchoring and doweling application where there may be a sustained tensile load, including overhead applications

Safety: Please refer to the Safety Data Sheet (SDS) for **CRACKBOND 2100 MV** family products published on our website or call ATC for more information at 1-800-892-1880.

Specification: The bonding agent shall be a two-component, 1:1 mix ratio epoxy system supplied in premeasured containers. **CRACKBOND 2100 MV**, when cured 7 days and at a minimum temperature of 75 °F (24 °C), shall have a minimum compressive yield strength of 15,960 psi (110 MPa) and a minimum compressive modulus of 397,600 psi (2,741 MPa) per ASTM D695. **CRACKBOND 2100 MV-LPL**, when cured 7 days and at a minimum temperature of 75 °F (24 °C), shall have a minimum compressive yield strength of 12,850 psi (88.6 MPa) and a minimum compressive modulus of 580,900 psi (4,005 MPa) per ASTM D695. The bonding agent shall be **CRACKBOND 2100 MV** or **CRACKBOND 2100 MV-LPL** from Adhesives Technology Corp., Pompano Beach, Florida.

Medium Viscosity Bonding Agent

- Moisture insensitive allowing installation and curing in damp environments
- High modulus, self-leveling, medium viscosity
- Acceptable for use in USDA inspected facilities
- NSF/ANSI 61 & 372 Drinking Water System Components
- Available packaging in cartridges and bulk; red basecoat available in 4 gallon kits only

TABLE 1: CRACKBOND 2100 MV Adhesive Packaging, Dispensing Tools and Nozzles^{1,2}

Package Size		8.6 fl. oz. (254 ml) Cartridge	102 fl. oz. (3.0 L) Kit	2 Gallon (7.6 L) Kit	4 Gallon (15 L) Kit
Part #	Gray	A9-2100HN	BUG-2100	B2G-2100	B2G-2100-A B2G-2100-B
	Red ³	----	----	----	B2G-2100R-A B2G-2100R-B
Manual Dispensing Tool		TM9HD	N/A		
Recommended Mixing Nozzle		T12	N/A		
Case / Kit Qty.		12	1 Kit / Carton 51 oz. A 51 oz. B	1 Kit / Carton 1 Gallon A 1 Gallon B	1 Kit (loose) 2 Gallon A 2 Gallon B
Pallet Qty.		1,116	75		(30) 2 Gallon A (30) 2 Gallon B
Pallet Weight (lb.)		1,402	719	1,448	1,307

1. For bulk dispensing pumps, contact ATC for recommended manufacturers.

2. Each cartridge is packaged with one mixing nozzle.

3. Non-stocked item; may require additional lead time.



Revision 12.0

Medium Viscosity Bonding Agent

TABLE 2: CRACKBOND 2100 MV performance to ASTM C881-20^{1,2,3}

Property	Cure Time	ASTM Standard	Units	Sample Conditioning Temperature	
				Class B	Class C ⁴
				40 °F (4 °C)	≥ 75 °F (≥ 24 °C)
Gel Time - 60 Gram Mass	----	C881	min	200	55
Consistency or Viscosity			cP	19,200	6,300
Pot Life (1 Gallon) ^{5,6}		----	min	37	
Tack-Free Time		D2377	----	7 hr 10 min	3 hr 30 min
Compressive Yield Strength	7 day	D695	psi (MPa)	14,750 (102)	15,960 (110)
Compressive Modulus				377,300 (2,601)	397,600 (2,741)
Tensile Strength		D638	%	3,990 (27.5)	7,240 (49.9)
Tensile Elongation				1.2	2.2
Bond Strength Hardened to Hardened Concrete	2 day	C882	psi (MPa)	2,040 (14.1)	2,120 (14.6)
	14 day			2,750 (19.0)	2,810 (19.4)
Bond Strength Fresh to Hardened Concrete				2,130 (14.7)	
Bond Strength Fresh Concrete to Steel	14 day	C882	psi (MPa)	----	2,350 (16.2)
Heat Deflection Temperature	7 day	D648	°F (°C)	132 (55.6)	
Water Absorption	14 day	D570	%	0.10	
Linear Coefficient of Shrinkage	----	D2566		0.00070	

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. Full cure is listed above to obtain the given properties for each product characteristic.
3. Results may vary due to environmental factors such as temperature, moisture and type of substrate.
4. For CRACKBOND 2100 MV, Class C is applicable from temperatures of 75 °F (24 °C) to 100 °F (38 °C).
5. Property not referenced in ASTM C881.
6. Pot life is measured as the workable and applicable time of 1.0 gallon (3.8 L) when mixed at 75 °F (24 °C).

TABLE 3: CRACKBOND 2100 MV NSF/ANSI Certifications^{1,2}

ANSI Certification	Description	Application	Water Contact Temperature	Surface Area to Volume Ratio
NSF 61	Drinking Water System Components - Health Effects	Barrier Materials	Cold 73 ± 4 °F (23 ± 2 °C)	40 cm ² /L
		Joining and Sealing Materials		
NSF 372 ³	Lead Free U.S. Safe Drinking Water Act	Barrier Materials		
		Joining and Sealing Materials		

1. CRACKBOND 2100 MV is certified in both gray and red mixed color.
2. CRACKBOND 2100 MV is certified as a barrier material and joining and sealing material for use with tanks greater than or equal to 900 gallons. Mix Ratio: Part A (Resin): Part B (Hardener) = 1:1 by volume. Application Method: Brush and roller. Maximum number of coats: 2. Max Dry Film Thickness (DFT): 110 mils. Final Cure Time: 72 hours at 75 °F (24 °C).
3. CRACKBOND 2100 MV is certified to NSF/ANSI 372 and conforms to the lead content requirements for "lead free" plumbing as defined by California, Louisiana, Maryland and Vermont state law, and the U.S. Safe Drinking Water Act.

Medium Viscosity Bonding Agent with Long Pot Life

- Moisture insensitive allowing installation and curing in damp environments
- High modulus, self-leveling, medium viscosity
- Acceptable for use in USDA inspected facilities
- Extended working time with new higher strength formula

TABLE 4: CRACKBOND 2100 MV-LPL Adhesive Packaging, Dispensing Tools and Nozzles^{1,2}

Package Size	2 Gallon (7.6 L) Kit
Part #	B2G-2100LPL
Case / Kit Qty.	1 Kit / Carton 1 Gallon A 1 Gallon B
Pallet Qty.	75
Pallet Weight (lb.)	1,448



B2G-2100LPL

1. For bulk dispensing pumps, contact ATC for recommended manufacturers.
2. Packaged with two nozzles per cartridge.
3. Non-stocked item; may require additional lead time.

TABLE 5: CRACKBOND 2100 MV LPL performance to ASTM C881-20^{1,2,3}

Property	Cure Time	ASTM Standard	Units	Sample Conditioning Temperature	
				2100-LPL	
				Class C ⁴	
				≥ 75 °F (≥ 24 °C)	
Gel Time - 60 Gram Mass	----	C881	min	130	
Consistency or Viscosity			cP	4,760	
Pot Life (1 Gallon) ^{5,6}		----	min	52	
Tack-Free Time		D2377	----	6 hr 15 min	
Compressive Yield Strength	7 day	D695	psi (MPa)	12,850 (88.6)	
Compressive Modulus				580,900 (4,005)	
Tensile Strength		D638	%	7,310 (50.4)	
Tensile Elongation				1.5	
Bond Strength Hardened to Hardened Concrete	2 day	C882	psi (MPa)	2,170 (15.0)	
Bond Strength Fresh to Hardened Concrete	14 day			2,620 (18.1)	
Bond Strength Fresh Concrete to Steel	14 day			1,770 (12.2)	
Bond Strength Fresh Concrete to Steel	14 day	C882	psi (MPa)	2,300 (15.9)	
Heat Deflection Temperature	7 day	D648	°F (°C)	133 (56.1)	
Water Absorption	14 day	D570	%	0.10	
Linear Coefficient of Shrinkage	----	D2566	%	0.0001	

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. Full cure is listed above to obtain the given properties for each product characteristic.
3. Results may vary due to environmental factors such as temperature, moisture and type of substrate.
4. For CRACKBOND 2100 MV-LPL, Class C is applicable from temperatures of 75 °F (24 °C) to 110 °F (43 °C).
5. Property not referenced in ASTM C881.
6. Pot life is measured as the workable and applicable time of 1.0 gallon (3.8 L) when mixed at 75 °F (24 °C).

Medium Viscosity Bonding Agents

Installation Instructions

Surface Preparation

- To obtain optimum bonding, remove all dirt, oil, debris, wax, grease, dust, paint or coating, and any loose concrete or rocks from the surface area where the application of the bonding adhesive will be applied
- Concrete surface must be cleaned and profiled or roughened prior to application
- Mechanical Preparation - Use a scarifier, shotblaster, bushhammer or other equipment that will produce a profiled or roughened surface, then thoroughly remove all dust and debris produced
- Chemical Preparation (Acid Etching) - While wearing safety goggles, gloves and other recommended personal protective equipment (see Safety Data Sheet for chemicals used in etching process), use a strong acid mixture such as water/ammonia to etch into the concrete surface, followed by a clean water rinse to remove all chemical acid mixture as well as the debris obtained from etching
- Surface may be dry or damp however, there should be no standing water; suggest testing per ASTM D4263 Standard Test Method for Indicating Moisture in Concrete by Plastic Sheet Method prior to application

Cartridge Preparation

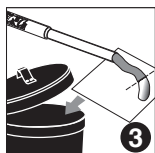
When the ambient temperature or substrate falls below 70 °F (21 °C), condition the product between 70 - 75 °F (21 - 24 °C) prior to use. Cold product may become too thick. Product that is too warm will react much faster than normal.



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.



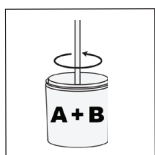
After the cartridge has been balanced, confirm the internal mixing element is in place and screw on the proper Adhesives Technology mixing nozzle to the cartridge (see Table 1). Do not modify mixing nozzle prior to dispensing adhesive.



Dispense the initial amount of material from the mixing nozzle into a disposable container according to local regulations. The product should be a uniform 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 ambient temperature or substrate falls below 70 °F (21 °C) condition the product between 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.



NOTE: Thoroughly stir each component separately with a Jiffy Mixer or similar before mixing Part A and Part B together.

1. Pour the total contents of Part B (Hardener) into the 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.
2. Mix thoroughly with a low speed drill (400 – 600 rpm) with a Jiffy Mixer 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.
3. Mix only the amount of material that can be used before the pot life expires (see Tables 2 and 5).
4. If aggregate is to be used, add the aggregate to the epoxy mix after part A and part B have been premixed together, then place immediately. **NOTE:** If mixing with sand, a 1:1 ratio is optimal. For grouting/mortar: Add up to 1-1/2 parts of kiln dried sand to 1 part mixed **CRACKBOND 2100 MV** or **2100 MV-LPL**. Maximum thickness 1.5 inches (38.1 mm) per lift.

Coating Application

To use **CRACKBOND 2100 MV** or **2100 MV-LPL** as a coating adhesive, apply the single first coat using a clean roller. If a second coating is desired, apply second coat while the first coat is still slightly tacky (refer to Tables 2 and 5 for Tack-Free Time). Silica sand, 20 to 50 mesh, may be used to create a slip-resistant surface. Broadcast the silica sand throughout the surface, then backroll into the surface to embed the sand.

Medium Viscosity Bonding Agents

Installation Instructions

Bonding Agent Application

Bonding Fresh Concrete to Hardened Concrete or Steel: Using a brush or roller, apply an even coat of the mixed **CRACKBOND 2100 MV** or **2100 MV-LPL** epoxy to the clean and prepared concrete or steel surface. While the epoxy is still tacky, place fresh concrete over the top of the mixed epoxy.

Bonding Hardened Concrete to Hardened Concrete: Using a brush or roller, apply an even coat of the mixed **CRACKBOND 2100 MV** or **2100 MV-LPL** epoxy to both concrete surfaces and be sure to fill all gaps between the connecting concrete surfaces.

Spall Repair: An extensive range of spall repairs may be made using **CRACKBOND 2100 MV** or **2100 MV-LPL**. **NOTE:** For spall repairs that are near a crack or expansion joint, it is recommended that a joint filler such as **CRACKBOND JF** or **CRACKBOND JF-82 FAST** be used to treat the joint prior to repairing the spall. To prepare the surface for spall repair, cut into the sound concrete using a grinder with a diamond blade or tuck point diamond grinding wheel. The entire spall depth should be consistent to avoid a feathered edge effect. Prepare the area to be repaired as noted above under Surface Preparation. **CRACKBOND 2100 MV** or **2100 MV-LPL** may be extended with the addition of silica sand. The recommended optimal ratio is 1:1 sand to **CRACKBOND 2100 MV** or **2100 MV-LPL** for optimum compressive strength (see Table 2). Other mix ratios may be used such as 1.5:1 and 2:1. However, it is recommended not to exceed a 2:1 mix ratio. After final cleaning, pour or dispense mixed neat or sand mixture of **CRACKBOND 2100 MV** or **2100 MV-LPL** into the repair area and smooth out with a trowel to create a smooth surface.

Gravity Feed Crack Repair for Horizontal Applications: **CRACKBOND 2100 MV** and **2100 MV-LPL** are formulated for medium cracks. For best results, cut a V shaped groove to open up the crack using an abrasive or diamond blade. Use wire brush to abrade and then blow out the crack to remove all dust, dirt, grease, wax, oil or any other contaminants. Pour or dispense the **CRACKBOND 2100 MV** or **2100 MV-LPL** into the crack and fill the entire area. Repeat application if necessary to completely fill crack.