POLYGEM
polygem.com

Granite Flex™ Adhesive | FLEXIBLE EPOXY FOR TILE, COUNTERTOPS & CONSTRUCTION

Manufactured by Polygem, 5600 Lower Macungie Rd. | Macungie, PA 18062 | 630-231-5600 | Made in USA

STRUCTURAL BONDING - JOINT REPAIR - AGRICULTURAL & INDUSTRIAL APPLICATIONS

TB – TECHNICAL BULLETIN

PRODUCT DESCRIPTION

Granite Flex™ Epoxy Adhesive is a flexible adhesive, specially formulated to provide up to 40% elongation when cured. This flexibility allows for thermal expansion, vibration absorption, and substrate movement without bond failure, while maintaining durable and reliable adhesion performance.

Granite Flex™ is ideally suited for bonding ceramic tile, stone, and masonry in demanding industrial or agricultural environments, as well as for countertop assembly and structural joint repair. Its solvent-free, water-cleanable formulation makes it practical to apply and safe to use in enclosed spaces.

ADVANTAGES

- **Excellent Adhesion to Masonry, Stone, Metal & More**
- **Strong, Durable, Flexible Bonds**
- **Chemical & Solvent Resistant**
- **No VOCs or Solvents**
- **Easy Water Clean-up**

RECOMMENDED USES

For tile installation, seam bonding, crack and joint repair, and general adhesive applications.

- **Adhere Ceramic & Quarry Tiles**
- **Agricultural Wall & Chute Linings**
- **Countertop Bonding & Seam Repair**
- **Crack & Joint Repair**
- **General Purpose Bonding**

SURFACE PREPARATION

Proper surface preparation is critical to the performance of Granite Flex Adhesive. The substrate must be structurally sound, clean, dry, and free of all contaminants that could inhibit adhesion.

1. Clean the surface by removing all dirt, grease, oil, curing compounds, laitance, form release agents, and any loose or deteriorated material. Use industrial-grade degreasers for oil and grease. High-pressure water jetting may be used, but the surface must be allowed to dry completely before application.

2. Mechanically prepare the surface to create an anchor profile for maximum adhesion. For concrete, grind or shot blast to a Concrete Surface Profile (CSP) of 3-5. For steel, abrasive blast to a near-white metal finish (SSPC-SP10/NACE No. 2).

3. Vacuum the surface after mechanical profiling to remove all dust and debris. The final surface must be completely dry before applying the adhesive.

PACKAGING

Granite Flex Adhesive is available in **2 Gallon** and **6 Gallon Kits.**

STORAGE & HANDLING

For best results, purchase quantities suited to your project and use material soon after receipt. Store in temperatures between 60-80°F (16-22°C)
Storing above 85°F (29°C) will reduce the shelf life.
Keep from freezing.

LIMITATIONS

DO NOT apply over 1/4 in (6.35 mm) thick per layer. Additional thickness can be built up with multiple coats. Allow prior coat to harden before the application of the next layer.

Not for use on wet or oily surfaces.

During cool conditions epoxy will cure slower, protect finished work from wear and abrasion until fully cured.

CAUTIONS

Wear chemical goggles and NIOSH approved respirator. Wear proper protective clothing and gloves to prevent direct contact of resins. Consult Material Safety Data Sheet for full listing of protective requirements.

Granite Flex Adhesive may irritate eyes and skin.

Avoid contact with eyes or prolonged contact with skin.

For professional use only.

Keep out of reach of children.

TECHNICAL DATA

TYPICAL PROPERTIES | All values measured after 7 days at 73°F (23°C).

Mix Ratio:	1A to 1B
Pot Life: (100 g)	4 Hrs.
ASTM D-2471	
Full Cure Time:	16 hrs.
Tensile Strength:	823 psi.
ASTM D-638	
Elongation:	40%
ASTM D-638	
Specific Volume: (Mixed)	17.55 cu in/lb
ASTM D792	
Die C Tear Strength:	83 pli.
Shore D Hardness:	45D
ASTM D2240	
Viscosity:	Heavy Paste
Color:	Light Tan

Granite Flex™ Adhesive | FLEXIBLE EPOXY FOR TILE, COUNTERTOPS & CONSTRUCTION

Manufactured by Polygem, 5600 Lower Macungie Rd. | Macungie, PA 18062 | 630-231-5600 | Made in USA

MIXING

BEST PRACTICE: CONDUCT A SMALL-SCALE TEST.
Before mixing substantial amounts of epoxy, always conduct a small-scale test to ensure the planned material & process yields desired results.

1. **Measure & Mix–** After pre-mixing Parts A and B, measure out 1 Part A to 1 Part B (1A:1B) by volume. Combine and mix either by hand or with a drill mixer at slow speed. Mix material thoroughly until an even color is achieved. While mixing try not to whip air into the mixture and be sure to scrape both the sides and bottom of the mixing container.

   DO NOT mix more than can be applied within the working time of 45 minutes @ 73°F (23°C). Higher temperatures will shorten the pot life.

APPLICATION INSTRUCTIONS

How Granite Flex is applied depends on the intended use and substrate. Material must be thoroughly mixed before proceeding to application.

Ceramic Tile Adhesion (Floors, Walls & Industrial Areas)

1. Using the flat side of a v-notch or square-notch trowel, apply a thin "bond coat" of the mixed adhesive to the substrate to wet out the surface.
2. Immediately apply additional material and use the notched side of the trowel to achieve a uniform bed thickness, typically 1/8 in. (3.17 mm).
3. Press tiles firmly into the wet adhesive with a slight twisting motion to ensure full transfer and coverage. For large format tiles (over 12"x12") or in high-stress areas, "back-buttering" the tile is recommended to guarantee 100% coverage.
4. Ensure consistent joint spacing and alignment as work progresses.

Crack & Joint Repair
(Concrete Floors, Expansion Joints & Pads)

1. For non-moving cracks or control joints, chase the crack with an angle grinder and a diamond blade to create a "V" groove that is a minimum of 1/4 in. (6.35 mm) deep and wide.
2. Clean all dust and debris from the prepared groove. Force the mixed epoxy into the groove using a margin trowel or putty knife, ensuring the material fills the entire void.
3. Slightly overfill the groove and then strike it off flush with the surrounding surface.

Patching, Resurfacing & Filleting

1. For cracked or chipped concrete and voids, apply the mixed adhesive with a trowel, pressing firmly to compact the material and ensure a strong bond. For deep repairs (greater than 1/2 in. or 13 mm), apply in multiple lifts.
2. To create a reinforcement cove at inside corners, apply a bead of adhesive and tool it into a smooth, uniform radius using a cove tool or rounded trowel.

   Note: For a smooth finish, lightly tool the uncured epoxy with a water-dampened trowel.

Countertop & Seam Bonding
(Kitchens, Labs & Industrial Surfaces)

1. Mask seam edges or surrounding areas where appearance is critical.
2. Apply Granite Flex™ evenly to the bonding surface or directly into the seam using a margin trowel or spatula.
3. Bring pieces together with firm, even pressure. Clamp or weight as needed to maintain alignment while curing.
4. Tool away excess adhesive immediately with a damp cloth or sponge. For wide seams, finish smooth using a solvent-dampened tool.
5. Allow adhesive to fully cure before applying heavy loads, machining, or finishing edges.

Agricultural Wall & Chute Linings
(Silos, Hoppers & Material Handling Chutes)

1. Prepare substrate by grinding, abrasive blasting, or scarifying to remove laitance, dust, or contaminants. Ensure a clean, open profile.
2. Trowel Granite Flex™ adhesive directly onto the prepared surface, applying a uniform, continuous layer.
3. Press ceramic or protective tiles into the adhesive bed with firm, even pressure. Use a slight sliding or twisting motion to ensure full contact and eliminate voids beneath each tile.
4. For vertical or overhead applications, work in small sections to prevent sagging and ensure tiles remain in place during cure.
5. Protect newly bonded linings from vibration, impact, or material flow until adhesive has fully cured.

General Purpose Bonding:

1. Apply a thin, even layer of the mixed adhesive to both surfaces to be bonded.
2. Mate the surfaces and apply firm, consistent pressure. Clamp or brace the assembly as required to prevent movement until the adhesive has set.

CURING

Allow the material to cure according to the following schedule, based on conditions of 77°F (25°C) and 50% Relative Humidity. Lower temperatures will extend cure times.

Full Cure & Max Resistance: 7 days. Allow a full 7-day cure before exposing the material to harsh chemicals or its maximum service temperature of 400°F (204°C).

CLEAN-UP

Uncured Material: Remove excess uncured adhesive with a scraper followed by a water rinse. Clean tools and spills immediately with water.

Cured Material: Cured epoxy must be removed by Mechanical means (e.g., grinding, sanding, or chipping).

POLYGEM

Manufactured by Polygem, 5600 Lower Macungie Rd. | Macungie, PA 18062 | 630-231-5600 | Made in USA