



Division 3 – Concrete
Section – 03550 Concrete Toppings
03920 Concrete Resurfacing
03930 Concrete Rehabilitation

Part 1 - General

1.01 Summary

- A. This specification describes the patching or overlay of interior horizontal surfaces with an epoxy resin mortar kit.

1.02 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001/9002 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Install materials in accordance with all safety and weather conditions required by the manufacturer, or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified product.

1.05 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 – Products

2.01 Manufacturer

- A. Sikadur 43, Patch-Pak, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio 43302 is considered to conform to the requirements of this specification.

2.02 Materials

- A. Epoxy resin adhesive binder:
 - 1. Component “A” shall be a modified epoxy resin of the epichlorohydrin bisphenol A type containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
 - 2. Component “B” shall be primarily a reaction product of a selected amine blend with epoxy resin of the epichlorohydrin bisphenol A type containing suitable viscosity control agents and accelerators.
 - 3. Component “C” shall be a blend of silica sands and pigments.
- B.. The material shall be supplied in factory proportioned kits of 0.5 cu ft.. The system shall not contain asbestos.

2.03 Performance Criteria

- A. Properties of the mixed epoxy resin mortar kit:
 - 1. Working Life: 35-50 minutes
 - 2. Traffic Time (light foot): 2.5-4.0 hours
 - 3. Consistency: trowel-grade mortar
 - 4. Color: Concrete gray
- B. Properties of the cured epoxy resin mortar kit:
 - 1. Compressive Properties (ASTM D-695), min.
 - a. Compressive Strength at 8 hours: 3,600 psi (24.8 MPa)
 - b. Compressive Strength at 28 days: 13,800 psi (95.2 MPa)
 - c. Compressive Modulus at 28 days: 1,100,000 psi (7,584 MPa)
 - 2. Tensile Properties (ASTM D-638) at 14 days
 - a. Tensile Strength: 2,100 psi (14.4 MPa)
 - b. Elongation at Break: 0.70%
 - c. Modulus of Elasticity: 970,000 psi min
 - 3. Flexural Properties (ASTM D-790) at 14 days
 - a. Flexural Strength (Modulus of Rupture): 3,500 psi (24.1 MPa)
 - b. Tangent Modulus of Elasticity in Bending: 1,600,000 psi (11,032 MPa)
 - 4. Shear Strength (ASTM D-732) at 14 days: 4,100 psi (28.2 MPa)
 - 5. The epoxy resin mortar kit shall be approved by the United States Department of Agriculture.

Part 3 - Execution

3.01 Surface Preparation

- A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16” (CSP 4 or greater as per ICRI Guidelines) with a new exposed aggregate surface.

- B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust.

3.02 Mixing and Application

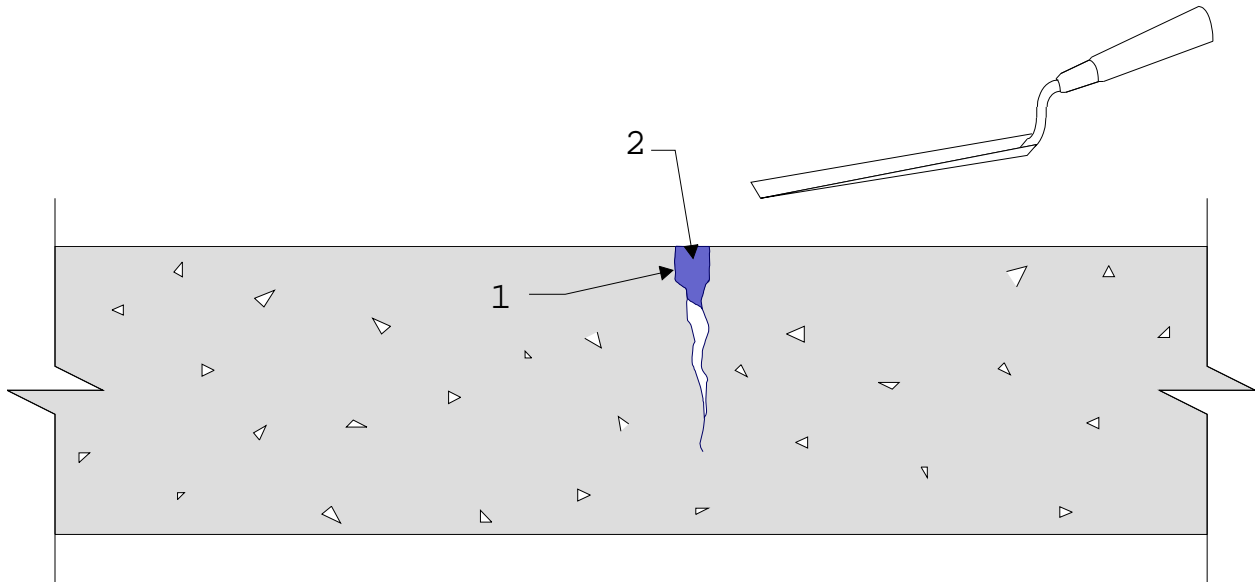
- A. Mixing the epoxy resin mortar kit: Empty the entire contents of the Component “B” into the Component “A”. Mix thoroughly for 3 minutes min. with a jiffy paddle on a low-speed (400-600 rpm) drill. Remove 18 fl oz. of the mixed epoxy resin. Hold for priming. Pour the remainder of the mixed epoxy resin into a mortar mixer or into a clean, dry pail of sufficient size to accommodate the 0.5 cu. ft volume. Slowly add Component “C” and mix with the drill and paddle or mortar mixer until the Component “C” is uniformly blended.
- B. Placement Procedure: Prime the prepared substrate with the mixed epoxy resin withheld with brushes, rollers, or brooms. Do not over prime or puddle.
- C. Apply the epoxy resin mortar while the primer is still tacky. For patching, work the mortar against the side walls of the area to be repaired, slowly working to the center and finally filling the whole cavity to excess. Strike off and level with a screed. Finish with a finishing trowel. Occasionally wipe the trowel with a rag dampened with water. For an overlay, use permanent or temporary screeds or hand trowel to gage thickness. Strike off and level with screed. Finish with a finishing trowel. Occasionally wipe the trowel with a rag dampened with water.
- D. Adhere to all limitations and cautions for the epoxy resin mortar kit in the manufacturers current printed literature.

3.03 Cleaning

- A. The uncured epoxy resin mortar can be cleaned from tools with an approved solvent. The cured epoxy resin mortar can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

Note: Tests were performed with material and curing conditions at 71-75 F and 45-55% relative humidity.

SC-008 Sikadur[®] 43, Patch-Pak Crack Filler (Horizontal)



1. Prime prepared substrate with neat Sikadur 43, Patch-Pak epoxy resin.
2. While primer is still tacky fill cavity with Sikadur 43, Patch-Pak epoxy resin mortar. Strike off and level, finishing with a trowel.
3. Seal cured epoxy resin mortar with neat epoxy resin adhesive binder to provide additional moisture and chemical protection.

Note: Maximum application thickness of epoxy resin mortar on interior substrates not to exceed 1 ½" per lift.

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