



DIVISION 7 – Thermal and Moisture Protection
Section 07190 - Water Repellents

Part 1 - General

1.01 Summary

- A. This specification describes the grouting of cracks/sealing of concrete by topical treatment with a 100% solids epoxy resin.

1.02 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 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 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 Manufacturers

- A. **Sikadur 55 SLV**, 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 shall be **Sikadur 55 SLV**:
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 an aliphatic diamine containing suitable viscosity control agents and accelerators.
 3. The ratio of component "A": Component "B" shall be 2 : 1 by Volume.

2.03 Performance Criteria

- A. Properties of the mixed epoxy resin adhesive:
1. Pot Life: min. 25 minutes (60 gram mass) @ 73° F
 2. Tack-Free Time: 20 mins
40F (4C) 60F(15C) 73F(23C) 90F(32C)
> 11 hrs. 11 hrs. 6 hrs. 2.5 hrs.
 3. Color: Clear, Amber
 4. Viscosity: 105 cps.
- B. Properties of the cured epoxy resin adhesive:
1. Compressive Strength (ASTM D-695) .min.
 - a. 1 day: 1,100 psi (7.6 MPa)
 - b. 7 day: 10,900 psi (75.1 MPa)
 - c. 28 day: 12,000 psi (82.7 MPa)Compressive Modulus, PSI : .min.
 - a. 7 day 300,000 psi (2,068 MPa)
 2. Shear Strength (ASTM D-732)
 - a. 7 days: 5,800 psi (40 MPa)
 3. Flexural Strength (ASTM D-790) min.
 - a. 7 days: 8,500 psi (58.6 MPa)Tangent Modulus of Elasticity in Bending .min.
 - b. 7 days: 320,000 psi
 4. Bond Strength ASTM C-882
14 days (moist cure) .min.
 - a. Hardened Concrete to Hardened Concrete 2,500 psi (17.2 Mpa)
 - b. Hardened Concrete to Steel 1,600 psi (11 Mpa)
 5. Water Absorption (ASTM D-570) .max.
 - a. 24 hour immersion 0.60%
 6. Tensile properties (ASTM D-638) .min.
 - a. 7 day Tensile Strength 7,100psi (48.9 Mpa)
Elongation at Break 10%

Note: Tests above were performed with material and curing conditions at 73°F and 45-55% relative humidity.

Part 3 - Execution

3.01 Mixing and Application

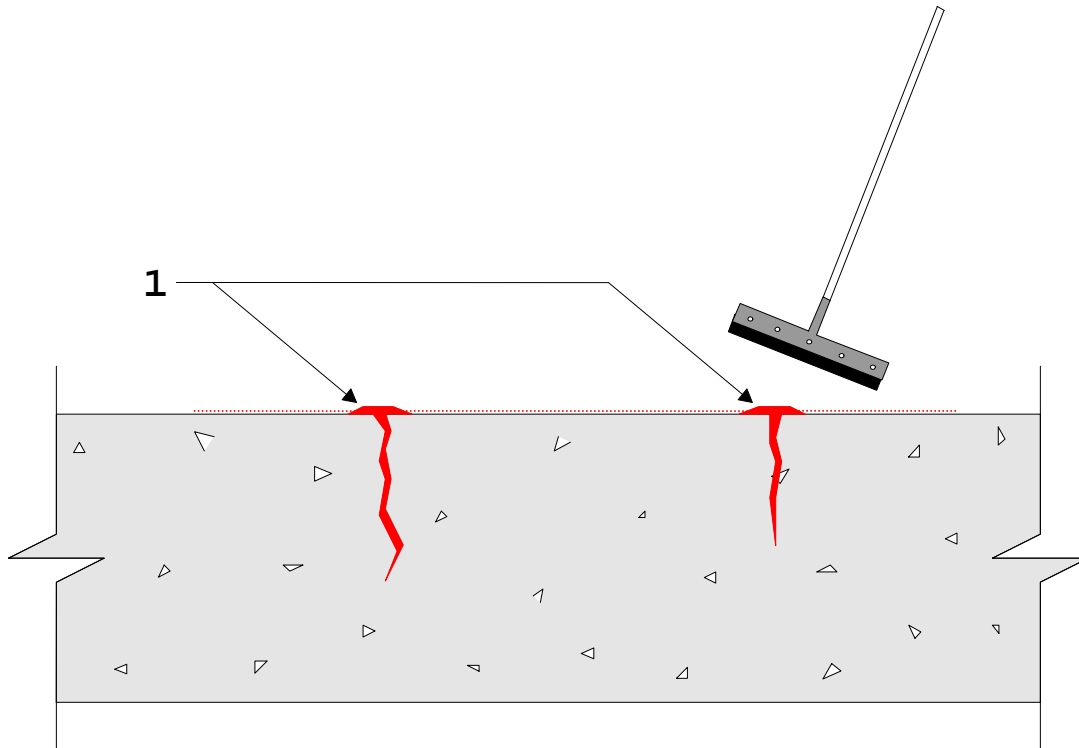
- A. Mixing the epoxy adhesive dbinder: Proportion 1 (one) part Component 'B' to 2 (two) parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with a low-speed drill (400-600 rpm) drill with Jiffy mixer until uniformly blended. Mix only that quantity which can be used within its pot life.
- B. Placement procedure:
 - 1. Large cracks can be prefilled with oven dry sand and must be filled prior to the application. Pour mixed epoxy resin over all visible cracks for 5 – 10 minutes. Repeat the ponding procedure until the cracks are sealed. Care must be taken not to allow the epoxy resin to stiffen in these ponded areas. Spread material out over the substrate before it sets. Fill the cracks when widest (during the coolest part of the day) to maximize flow and material fill. If needed, seal cracks from underside, when accessible, to prevent leakage.
 - 2. After the visible cracks have been sealed, if needed commence sealing the entire prepared surface. Pour the mixed epoxy resin onto the substrate. Spread material using rubber squeegee and rollers. Allow material to penetratethe pores of the substrates. Continue to apply until the substrate is sealed. The finished appearance of the substrate should be wet looking with no visible surface film. After 30 minutes and within 2 hours cover treated area with a light broadcast of a 8/20 or similar oven dry sand. Distribute evenly over surface at a rate of 15 to 20 lbs./ per 100 sq. ft.. Allow material to cure before removal of any loose sand and then open to traffic.
- B. Adhere to all limitations and cautions for the epoxy resin adhesive in the manufacturers current printed literature

3.02 Cleaning

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

SC-006 Sikadur 55 SLV

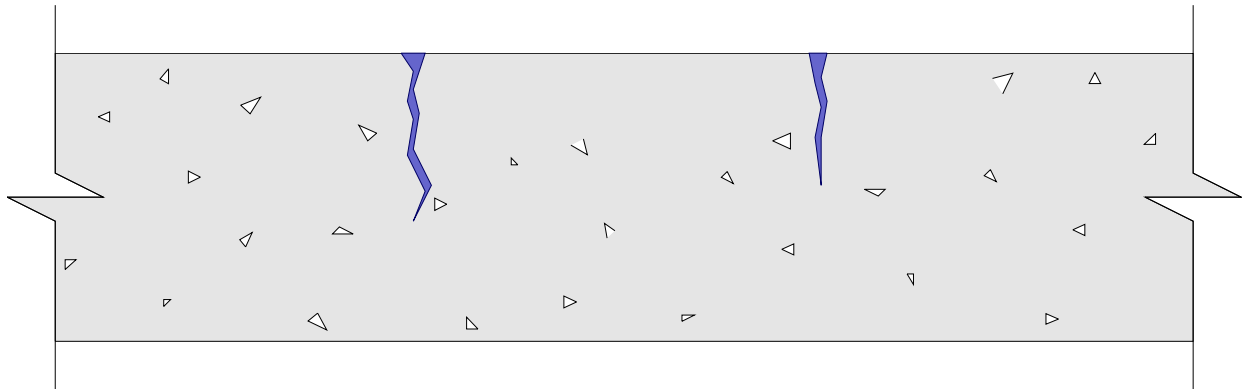
Crack Healer/Surface Sealer



1. Spread neat Sikadur 55 SLV with flat squeegee or roller allowing to pond over cracked areas.
2. Let material penetrate into cracks and surrounding substrate.
3. Remove excess leaving no visible surface film.

Note: For cracks greater than $\frac{1}{8}$ " wide, fill crack with oven-dried sand before applying Sikadur 55 SLV. Prior to filling seal underside of slab, when accessible, to prevent leakage.

SC-006 Sikadur® 55 SLV Crack Filler



1. Pour neat Sikadur 55 SLV epoxy resin adhesive into vee notched crack.
2. Continue placement until cracks are completely filled.

Note: Prior to filling, seal underside of slab if cracks reflect through.

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