

**DIVISION 3 - CONCRETE
Section 03930 - Control Joint Sealers**

Part 1 - General

1.01 Summary

- A. This specification describes the sealing of saw-cut, control, and construction joints in concrete with a semi-rigid flexible epoxy resin adhesive sealant.

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 sealant.

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 51 SL**, as manufactured by Sika Corporation, 1682 Williamsport Road, Marion, OH, 43302 is considered to conform to the requirements of this specification.

2.02 Materials

- A. Epoxy control joint resin:
1. Component "A" shall be modified epoxy resin of diglycidylether of bisphenol A containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
 2. Component "B" shall be primarily a blend of aliphatic amines containing a suitable flexibilizing agent.
 3. The ratio of Component A:Component B shall be 1:1 volume.

2.03 Performance Criteria

- A. Properties of the mixed epoxy resin adhesive sealant:

Sikadur 51 SL:

1. Potlife: 20-min. to 25 minutes.(1 gallon mass) / 40 minutes (8 fl. Oz.)
2. Consistency: Self-leveling
3. Color: Concrete Gray
4. Tack-Free Time: 7- 8 hours

- B. Properties of the cured epoxy resin adhesive sealant:

Sikadur 51 SL:

1. Tensile Properties (ASTM D-638) at 14 days
 - a. Tensile Strength: 570 psi (3.9 MPa)
 - b. Tensile Elongation at break: 90%
 - c. Modulus of Elasticity: 2,800 psi (19.3 MPa)

Tensile stress at % elongation

2.5% Elongation	70 psi (0.48MPa)
5 % Elongation	110 psi (0.75 MPa)
10% Elongation	160 psi (1.10 MPa)

2. Shore D Hardness (ASTM D-2240) at 28 days
 - a. 50-55 (Shore D)
3. Tear Strength (ASTM D-624) at 14 days
 - a. Tear Strength 170 lb./in. (29.8 N/MM)
4. Bond Strength (ASTM C-882)
Hardened Concrete to Hardened Concrete
 - a. 2 days (dry cure) Bond Strength 1,100 psi (7.5 MPa)
 - b. 14 days (moist cure) Bond Strength 400 psi (2.7 MPa)
5. Water Absorption (ASTM D-570)
7 days Total Water absorption (24 Hr.) 1.86%

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

Part 3 - Execution

3.01 Surface Preparation

- A. The joint and adjacent substrate must be clean, sound and free of surface contaminants. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, i.e. – sandblasting, etc., as approved by the Engineer. Blow joint free of dust using compressed air line equipped with an oil trap.

3.02 Mixing and Application

- A. Mixing of the epoxy resin adhesive: Premix each component. Portion 1 part of Component “A” to 1 part of Component “B” by volume into a clean, dry mixing pail. Mix thoroughly for 3 minutes with a jiffy paddle on a low-speed (400-600 rpm) drill. Mix only the quantity of material that can be used within its pot life.
- B. Joints shall be masked to prevent discoloration or application on unwanted areas, as directed by the Engineer. If masking tape is used, it shall not be removed before tooling, yet must be removed before the initial cure of the sealant. Do not apply the masking tape until just prior to the epoxy construction/control joint resin application.
- C. Placement Procedure:
 - 1. Self-leveling consistency: Pour or use low-pressure extrusion equipment in one direction and allow the material to flow and self-level. Strike-off level and remove any excess material, where required, before it hardens.
- D. Adhere to all limitations and cautions for the epoxy resin adhesive sealant as stated in the manufacturer's printed literature.

3.03 Cleaning

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

SC-072A Sikadur 51 SL

Construction / Control Joints

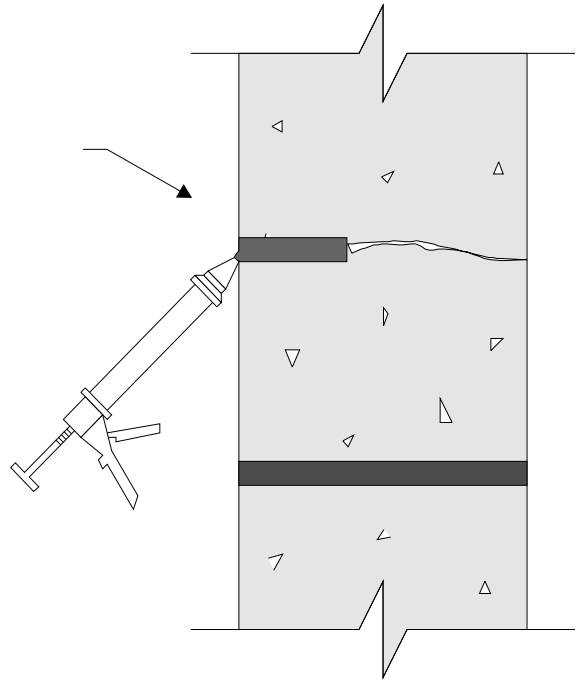
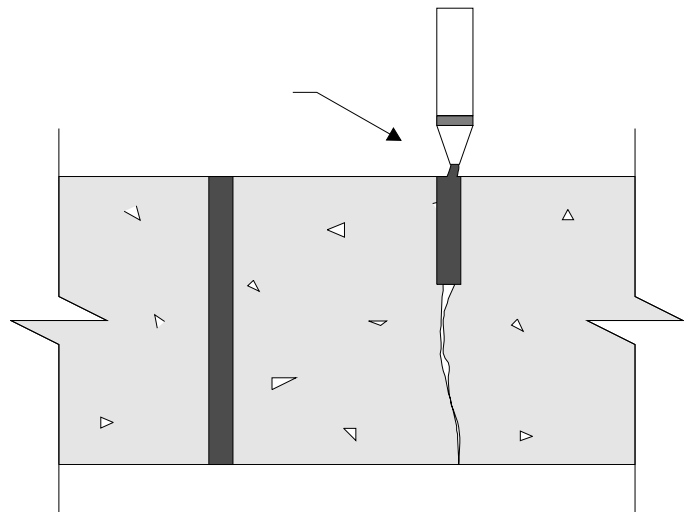


Figure 2 - Sikadur 51 SL (self-leveling)

1. Pour Sikadur 51 SL into prepared joint, allow to flow and level as necessary.
2. Tool as required to properly fill joint.



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