

DAMMON ENGINEERING INC

Date: 1.6.10 Project: Stennis ROF  
Reviewed: \_\_\_\_\_  
Reviewed as Noted: X  
Revise and Resubmit: \_\_\_\_\_  
Rejected: \_\_\_\_\_  
Other: \_\_\_\_\_

Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with requirements of the drawings and specifications. This check is only for review of the general conformance with the design concept of the project and general compliance with the information given in the contract documents. This contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction; coordinating his or her work with that of all other trades and performing all in a safe and satisfactory manner.

Submittal Item: Paving Sealant  
Comments

Install in strict accordance with  
Manufacturer's Recommendations.

**Product Data Sheet**  
 Edition 10.29.2008  
 Identification no. 432  
 Sikaflex-1CSL

# Sikaflex®-1c SL

High performance, self-leveling,  
 1-part polyurethane sealant

<b>Description</b>	Sikaflex-1C SL is a single component, self-leveling, premium-grade polyurethane sealant with an accelerated curing capacity. Meets Federal Specification TT-S-00230C, Type 1, Class A. Meets ASTM C-920, Type S, Grade P, Class 25, use T, NT, M, O, G, I.
<b>Where to Use</b>	Sikaflex-1C SL is used to seal horizontal expansion joints in concrete and cementitious slabs such as: <ul style="list-style-type: none"> <li>■ Sidewalks</li> <li>■ Balconies</li> <li>■ Pavements</li> <li>■ Terraces</li> <li>■ Warehouses</li> <li>■ Factories</li> <li>■ Civil Structures</li> <li>■ Plazas</li> <li>■ Pitch Pans</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>■ 1-component, no mixing</li> <li>■ Self-leveling, pourable</li> <li>■ Accelerated curing</li> <li>■ Permanently elastic</li> <li>■ High durability</li> <li>■ Resists aging, weathering</li> <li>■ Excellent adhesion</li> <li>■ Convenient, easy-to-use packaging</li> <li>■ Jet fuel resistant</li> </ul>
<b>Coverage</b>	10.1 fl. oz. cartridge seals 12 lineal ft. of 1/2 x 1/4 in. joint. 30 fl. oz. cartridge seals 36 lineal ft. of 1/2 x 1/4 in. joint.
<b>Packaging</b>	10.1 fl. oz. moisture-proof composite cartridges, 24/case. 30 oz. moisture-proof composite cartridges, 12/case. Available on special order: 5 gallon pails.

**Typical Data (Material and curing conditions 73°F (23°C) and 50% R.H.)**

<b>Shelf Life</b>	10.1 oz. cartridge	1 year in original unopened packaging.
	29 oz. cartridge	1 year in original unopened packaging.
	5 gallon pail	6 months.
	55 gallon drum	6 months.
<b>Storage Conditions</b>	Store at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
<b>Color</b>	Limestone	
<b>Application Temperature</b>	40°-100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.	
<b>Service Range</b>	-40° to 170°F.	
<b>Curing Rate</b>	Tack-free Time: 1 to 2 hours. Final Cure: 3 to 5 days	
<b>Recovery</b>	>90%	
<b>Shore 'A' Hardness (ASTM D-2240)</b>	21 Day	50 ± 5
<b>Tensile Properties (ASTM D-412)</b>	21 Day	
	Tensile Strength:	300 psi
	Elongation @ Break:	500%
	Modulus of Elasticity 100%:	200 psi
<b>Adhesion in Peel (ASTM C-794)</b>	Substrate Peel Strength Adhesion Loss	
	Mortar	> 15 pli 0% Adhesion Loss
	Aluminum	> 15 pli 0% Adhesion Loss
<b>Joint Movement</b>	± 25%	
<b>Weathering Resistance</b>	Excellent	



## How to Use

**Surface Preparation** Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. Install bond breaker tape or backer rod to prevent bond at base of joint.

**Priming** Priming is not usually necessary. Substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

**Application** Recommended application temperatures: 40°-100°F. Pre-conditioned sealant to approximately 70°F is necessary when working at extremes. For best performance, Sikaflex-1CSL should be poured into joint when joint slot is at mid-point of its designed expansion and contraction. Pour sealant into joint slot in one direction and allow sealant to flow and level out as necessary. Tool as required, although minimum tooling is necessary. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio. Always use bond breaker tape or closed cell backer rod for support on horizontal joints.

**Limitations**

- Allow 1 week cure at standard conditions when using Sikaflex-1CSL in total water immersion situations.
- Maximum exposure level of chlorine is 5 ppm.
- In joints subject to movement - maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Minimum depth of sealant for horizontal joints subject to traffic is 1/2 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened uni-pac sausages the same day.
- The ultimate performance of Sikaflex-1C SL depends on good joint design and proper application with joint surfaces properly prepared.

## Caution

**Irritant** **Sensitizer; Combustible Liquid** - Contains xylenes, ethyl benzene, isocyanate prepolymer. Can cause skin and/or respiratory sensitization after prolonged or repeated exposure. Skin, eye, respiratory irritant. Avoid skin contact. Use only with adequate ventilation. Use of safety goggles and chemical resistant gloves is recommended. In case of exceedance of PELs, use an appropriate, properly fitted NIOSH approved respirator. Remove contaminated clothing. Keep away from sparks, open flames and high heat.

**First Aid** In case of skin contact, wash immediately and thoroughly with soap and water. If symptoms persist, consult physician. For eye contact, flush immediately with plenty of water for at least 15 minutes; contact a physician. For respiratory problems, remove person to fresh air; if symptoms persist, consult physician. In case of ingestion, dilute with water and consult physician. Remove contaminated clothing.

**Clean Up** In case of spills or leaks, wear suitable protection equipment, contain spill, collect with absorbent material, and transfer to a suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, applicable local, state and federal regulations.

## Linear Feet of Sealant per Gallon

Inches	Depth					
	¼	½	¾	1	1¼	1½
¼	308.0					
½	154.0	77.0				
¾	102.7	51.3	34.2			
1	77.0	38.5	25.7	19.3		
1¼	61.6	30.8	20.5	15.4	12.3	
1½	51.3	25.7	17.1	12.8	10.3	8.6

Width



**KEEP CONTAINER TIGHTLY CLOSED - KEEP OUT OF REACH OF CHILDREN - NOT FOR INTERNAL CONSUMPTION - FOR INDUSTRIAL USE ONLY**

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**DIVISION 7 - THERMAL AND MOISTURE PROTECTION**  
**Section 07900 Joint Sealers**  
**Elastomeric and non-Elastomeric Sealant**

**Part 1 - General**

**1.01 Summary**

- A. This specification describes the sealing of joints and cracks with a one-component, self-leveling, elastomeric polyurethane sealant.

**1.02 Quality Assurance**

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 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. **Sikaflex-1CSL**, as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071 is considered to conform to the requirements of this specification.

### 2.02 Materials

- A. Polyurethane sealant:
  - 1. The joint sealant shall be a one-component, self-leveling, polyurethane-base material. It shall be applicable in horizontal joints. The sealant shall principally cure under the influence of atmospheric moisture to form an elastomeric substance.
- B. Backer rod or bond breaker tape as approved by engineer.

### 2.03 Performance Criteria

- A. Properties of the uncured polyurethane sealant:
  - 1. Initial Cure (Tack-Free Time): 1-2 hours
  - 2. Consistency: self-leveling
  - 3. Color: Limestone Gray
- B. Properties of the cured polyurethane sealant:
  - 1. Tensile Properties (ASTM D-412) at 21 days 

a. Tensile Strength at break: minimum	<u>Self-Leveling</u> 300 psi
b. Tensile Elongation: minimum	500%
c. Modulus of Elasticity - 100% Elongation	200 psi, min.
  - 2. Shore A Hardness (ASTM D-2240) at 21 days:
    - a. Self-leveling: 45 +/-5
  - 3. Adhesion in Peel (ASTM C-794)
    - a) Mortar: >15-pli            0% Adhesion Loss
    - b) Aluminum: >15-pli        0% Adhesion Loss
  - 4. Service Range: -40° to 170°F (-40° to 77°C)
  - 5. The sealant shall conform to Federal Specification TT-S-00230C, Type I, Class A.
  - 6. The sealant shall conform to ASTM C-920, Type S, Grade P, Class 25.
  - 7. The sealant shall be capable of ± 25% of the average joint width when tested in accordance to the durability bond test of Federal Specification TT-S-00230C and ASTM C-719.
  - 8. The sealant shall be non-staining.
  - 9. Final Cure: 3 to 5 days.

**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, dry, sound and free of surface contaminants. Remove all traces of the old sealant, 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. Joints:**

1. Install approved backer rod or bond breaker tape in all joints subject to thermal movement to prevent three-sided bonding and to set the depth of the sealant at a maximum of 1/2 in., measured at the center point of the joint width. Approval of the backer rod or bond breaker tape shall be made by the Engineer.
2. 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 sealant application.
3. Install sealant into prepared joints when the joint is at mid-point of its expansion and contraction cycle. Self-leveling sealant: Pour or extrude the sealant into the prepared joint in one direction and allow it to flow and level as necessary. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the joint.
4. Adhere to all limitations and cautions for the polyurethane sealant in the manufacturer's printed literature.

#### **B. Cracks:**

1. Pour or extrude the sealant into the prepared crack in one direction and allow it to flow and level as necessary. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the crack.
2. Adhere to all limitations and cautions for the polyurethane sealant as stated in the manufacturers printed literature.

### **3.03 Cleaning**

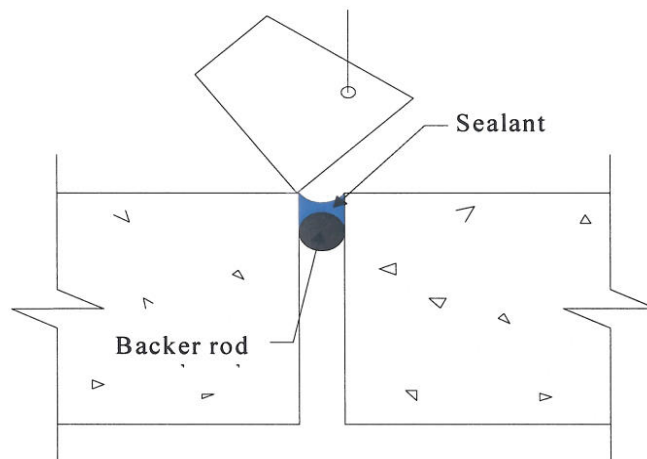
- A. The uncured polyurethane sealant can be cleaned with an approved solvent. The cured polyurethane sealant can only be removed mechanically.
- B. Leave work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

# SC-074

## Sikaflex® 1CSL Expansion Joint Filler

Figure 1 - Sikaflex-1CSL(self-leveling)

1. Pour Sikaflex-1CSL into prepared joint, allow to flow and level as necessary. Minimum depth 1/4" to maximum depth 1/2" for working joint.



Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071