Part 3 - Scope: Product and Application

This specification describes the sealing of joints and cracks with a one-component, gun grade, elastomeric, polyurethane sealant.

3.01 Acceptable Manufacturers

A. Sikaflex-1a, as manufactured by Sika Corporation, Lyndhurst, New Jersey, is considered to conform to the requirements of this specification and has performed satisfactorily for joint sealing for a minimum of fifteen years.

B. Substitutions: The use of other than the specified product will be considered providing the contractor requests its use in writing to the Engineer. This request shall be accompanied by (a) A certificate of compliance from an approved independent testing laboratory that the proposed substitute product meets or exceeds the specific performance criteria, tested in accordance with the specified test standards; and (b) Documented proof that the proposed substitute product has a fifteen year proven record of performance of coating of substrates, confirmed by actual field tests and five successful installations that the Engineer can investigate.

3.02 Performance Criteria

A. Properties of the uncured polyurethane sealant:

1. Initial Cure (Tack-Free Time): 6-8 hours
2. Consistency: non-sag
3. Color: 7 architectural colors standard

B. Properties of the cured polyurethane sealant:

1. Tensile Properties (ASTM D-412) at 21 days
   a. Tensile Strength: 140 psi min
   b. Elongation at Break: 600%
   c. Tensile Stress at 100% Elongation: 65 psi min.
   d. Tensile Set after Break: 15% max.
2. Hardness (ASTM D-2240) at 21 days: 50 max. (Shore A)
3. Tear Strength (ASTM D-624) at 21 days: 60 lbs/in. min.
4. Adhesion in Peel (TT-S-00230C) at 28 days
   a. Concrete: 20 lb. min.
   b. Aluminum: 20 lb. min.
   c. Glass: 20 lb. min.
5. Service Range: -40 to 167F min.
6. The sealant shall conform to Federal Specification TT-S-00230C, Type II, Class A.
7. The sealant shall conform to ASTM C-920, Type S, Grade NS, Class 25.
8. The sealant shall be approved by the United States Department of Agriculture.
9. The sealant shall be approved for use in contact with potable water.
10. The sealant shall be non-staining.
11. Final Cure: 5-8 days

3.03 Materials

A. Polyurethane sealant:

1. The joint sealant shall be a one-component, gun grade, polyurethane-base material. It shall be applicable in horizontal, vertical, and overhead hoints. The sealant shall cure under the influence of atmospheric moisture to form an elastomeric substance.

B. Any primers, as required, recommended by the manufacturer of the specified product, approved by the Engineer.

C. Backer rod or bond breaker tape, as approved by the Engineer.

3.04 Mixing and Application

A. Joints:

1. Placement Procedure: Prime all substrates only as required based upon the recommendations of the manufacturer of the specified product, when field testing indicates need, and when the joints will be subject to immersion after cure, as approved by the Engineer.

2. Install approved backer rod or bond breaker tape in all hoints 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.

3. Joints shall be masked to prevent discoloration or application on unwanted areas, as directed by the Engineer. If masking tape in 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.

4. Install sealant into the prepared joints when the joint is at mid-point of its designed expansion and contraction. Place the nozzle of the gun, either hand, air, or electric powered, into the bottom of the joint and fill entire joint. Keep the tip of the nozzle in the sealant, continue on with a steady flow of sealant proceeding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool, as required, to properly fill the joint.

5. Adhere to all limitation and cautions for the polyurethane sealant in the manufacturers printed literature.

B. Cracks

1. For best performance sealant should be gunned into crack to a minimum of a 1/4" in depth. Place the nozzle of the gun, either hand, air or electric powered, into the bottom of the crack and fill entire crack. Keep the tip of the nozzle in the sealant. Continue on with a steady flow of sealant proceeding the nozzle to avoid air entrapment. 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.

3.05 Cleaning

A. The uncured polyurethane sealant can be cleaned from tools with water. The cured polymer-modified portland cement coating 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 above were performed with material and curing conditions at 71-75F and 45-55% relative humidity.

SC-069 Sikaflex®-1a Crack Filler

Figure 1 - Surface Seal

1. Surface seal cracks up to a ¼" wide by gunning Sikaflex-1a into crack.
2. Tool as required to properly fill crack.

Note: Prior to applying ElastoColor, allow sealant to cure for 2 hours. ElastoColor is for use on non traffic bearing surfaces only.

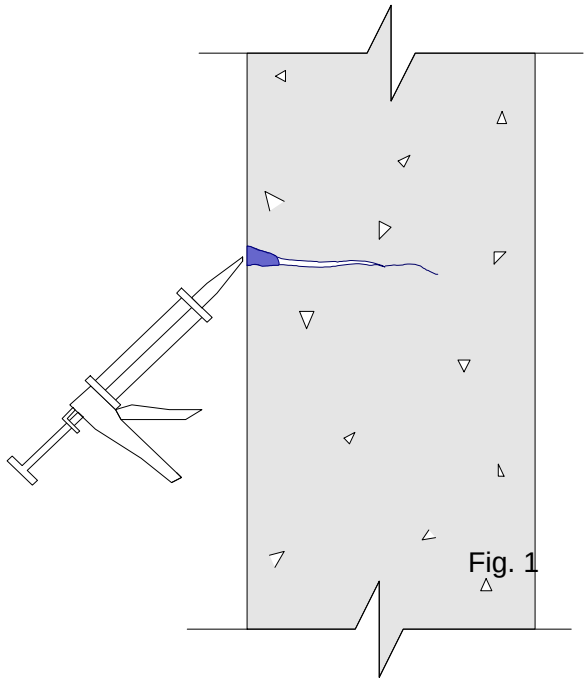

Fig. 1

Figure 2 - Notch & Seal

1. Gun Sikaflex-1a into prepared crack to a minimum depth of ¼".
2. Tool as required to properly fill crack.

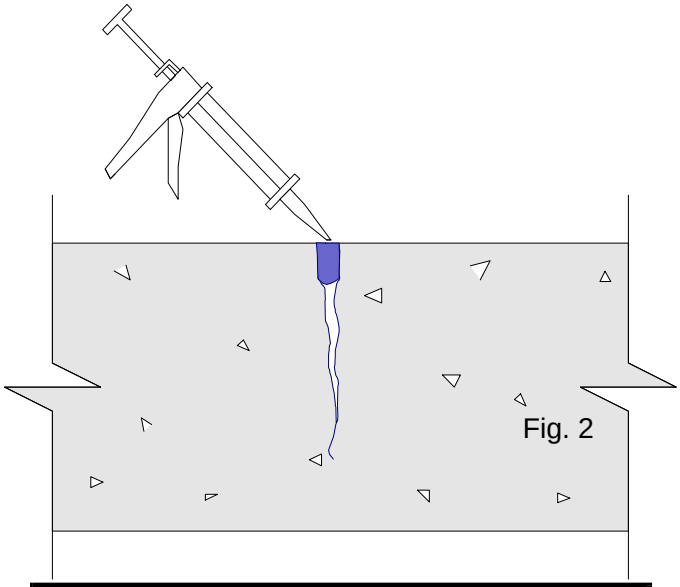

Fig. 2

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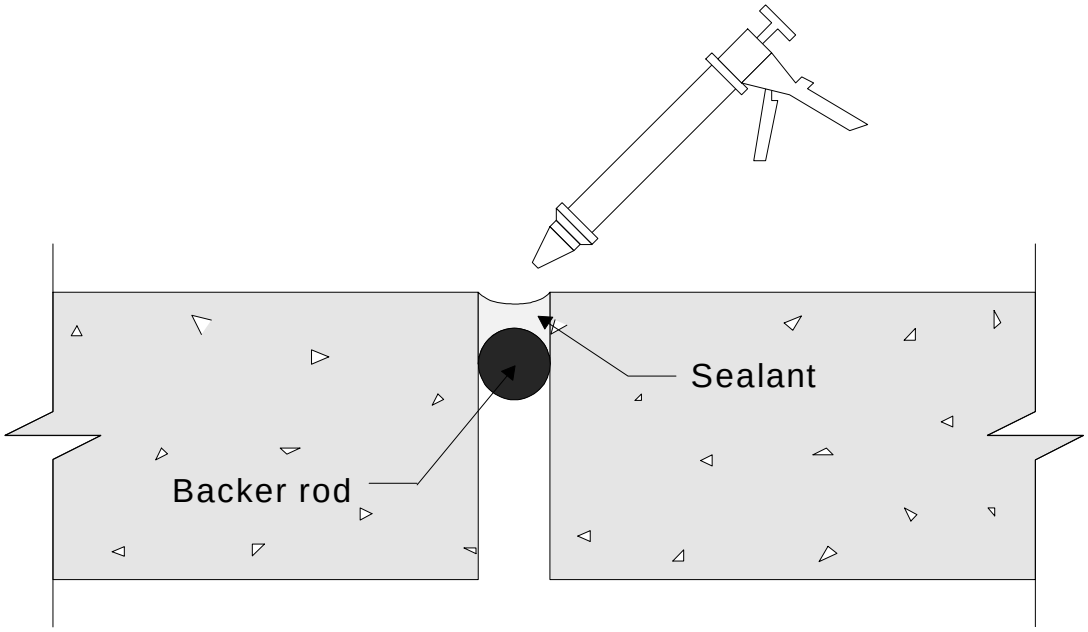
Date: _____

SC-069

Sikaflex®-1a
Expansion Joint Filler



1. Install appropriate backer material to prevent three-sided adhesion and to control sealant depth.

2. Sikaflex-1a should be gunned into joint at mid-point of designed expansion and contraction.

3. Tool as required to properly fill joints.

Note: Sikaflex-1a is designed for all types of joints where maximum sealant will not exceed ½" in depth.

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