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 highway/runway pavement joints with a one-component, low-modulus, non-sag, elastomeric silicone 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. Sikasil 728 NS, 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. Silicone sealant:
1. The joint sealant shall be a one-component, non-sag, silicone-based 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 Silicone sealant:
2. Initial Cure (Tack-Free Time) ASTM C-679: 30-40 minutes
3. Consistency: non-sag
4. Color: Limestone & Gray

B. Properties of the cured silicone sealant:
1. Tensile Properties (ASTM D-412) at 21 days Self-Leveling
   a. Tensile Strength at break: minimum 175 psi (1.20 Mpa)
   b. Tensile Elongation: minimum 1000%
   c. Modulus of Elasticity - 100% Elongation 35 psi (0.24 Mpa) min

2. Shore OO Hardness (ASTM D-661) at 21 days:
   a. Self-leveling: 50+/5

3. Peel Strength (ASTM C-794)
   a. 40-pli 0% Adhesion Loss

4. Service Range: -80°F (-62°C) to 350°F (176°F)
5. Joint Movement (ASTM C-920): +100% / -50%
6. The sealant shall be non-staining.
7. Final Cure: 7 to 10 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. Gun or extrude the sealant into the prepared joint in one direction keeping a constant beed. Avoid
         overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the
         joint.
      4. Sealant must be recessed in the joint a minimum of ¼ inch from the surface.
      5. Adhere to all limitations and cautions for the silicone sealant in the manufacturer's printed
         literature.

   B. Cracks:
      1. Gun the sealant into the prepared crack in one direction keeping a constant beed as necessary. Avoid
         overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the
         crack.
      2. Sealant must be recessed in the joint a minimum of ¼ inch from the surface.
      3. Adhere to all limitations and cautions for the silicone sealant as stated in the manufacturers printed
         literature.

3.03 Cleaning
   A. The uncured silicone sealant can be cleaned with an approved solvent. The cured silicone sealant can only
      be removed mechanically.
   B. Leave work area in a neat, clean condition without evidence of spillovers onto adjacent areas.
SC-173 Sikasil®-728 NS
Crack Filler

Figure 1 - Sikasil-728 NS (non-sag)

1. **Gun Sikasil-728 NS** into prepared crack. Sealant is to be recessed in the crack a minimum $\frac{1}{4}$” from the surface. Minimum depth $\frac{1}{4}$”

2. **Tool as required to properly fill crack.**
**Figure 1 - Sikasil-728 NS (non-sag)**

1. Pour or extrude **Sikasil-728 NS** into prepared joint, allow to flow and level as necessary. Sealant is to be recessed in the joint a minimum of 1/4” from the surface. Minimum depth 1/4”.

2. Apply sealant by bulk caulking gun, industrial pumping or other acceptable method.
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