CALIFORNIA DEPARTMENT OF TRANSPORTATION

AUTHORIZATION REQUIREMENTS AND ACCEPTANCE CRITERIA for SILICONE JOINT SEALANT

The following procedures are required to authorize silicone joint sealant suppliers for inclusion on the Authorized Material List (AML). This program is administered by the Office of Roadway Materials Testing, Chemical Testing Branch. Silicone joint sealant specification requirements are listed in Section 41-5.02B of the 2018 Standard Specifications.

1. **For new materials the manufacturer will provide:**

   A. Authorized Material List Submittal Form TL-9502, <http://cefs.dot.ca.gov/jsp/forms.jsp>
   B. Material/system data sheet with detailed performance information, properties and installation instructions. Data in this document will indicate that the system will meet the performance acceptance criteria.
   C. Safety Data Sheet.
   D. When requested, send a sample to the Chemical Testing Branch.

2. **Performance acceptance criteria:**

   Silicone joint sealant must be single component, low modulus product. Acid cure joint sealants are not allowed. When sealant tested in accordance with Table 1, it shall meet the specified requirements. All tests are performed at ambient laboratory conditions, 77°F and 50 % relative humidity. If the sample requires curing for 7 days, it will be cured at laboratory conditions.

Table 1: Performance Acceptance Criteria for Silicone Joint Sealant

Quality Characteristic	Test Method	Requirement
Tensile stress, 150 % elongation, cure 7 days	ASTM D 412 (Die C)	45 psi max.
Flow, 15% slope, channel A	ASTM C 639	Must not flow from channel
Extrusion rate, 0.12-inch opening at 50 psi.	ASTM C 603	3 to 9 oz/min.
Specific gravity	ASTM D 792 Method A	1.01 to 1.51
Durometer hardness, at 0°F, Shore A, cure 7 days	ASTM C 661	10 to 25

Quality Characteristic	Test Method	Requirement
Ozone and UV resistance, after 5,000 hours	ASTM C 793	No chalking, cracking or bond loss
Tack-free	ASTM C 679	Less than 75 minutes
Elongation, cure 7 days	ASTM D 412 (Die C)	500 % min.
Set to Touch	ASTM D 1640	Less than 75 minutes
Bond, to concrete mortar-concrete briquettes, cure 7 days	AASHTO T 132 [a]	50 psi min.
Movement capability and adhesion, 100 % extension at 0°F after, air cured 7 days and followed by 7 day water soak	ASTM C 719 [b]	No adhesive or cohesive failure after 5 cycles

[a] Mold briquettes under AASHTO T 132, saw in half and bond with a 3⁄5 in. maximum thickness of sealant and test under AASHTO T 132. Briquettes must be dried to constant mass at 212 ±10°F.

[b] Prepare 12 in. ×1 in. × 3 in. concrete blocks under ASTM C 719. Use a sawed face for bond surface. Seal 2 in. of block leaving ½ in. on each end of specimen unsealed. The depth of sealant must be 2⁄5 inch and the width ½ in.

3. Send the submittal and sample to the Chemical Testing Branch.

California Department of Transportation Laboratory
Attn: Chemical Testing Branch, Silicone Joint Seal
Materials Engineering and Testing Services
5900 Folsom Boulevard
Sacramento, CA 95819

When the submittal package has been evaluated and reviewed, the Department will notify the manufacturer of the findings. When any discrepancies are resolved to the satisfaction of the Department, the material will be placed on the AML.

The authorization of silicone joint sealant will expire in 5 years.

The Department reserves the right to sample, test and to remove the product from the AML at any time.

4. Reauthorization:

Manufacturer should submit its package with current information to the Chemical Testing Branch at least 3 months prior to the listed expiration date.

If you have any questions about this program, please contact the Caltrans Chemistry Branch by e-mail sent to <chemistry.branch@dot.ca.gov>.