

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 Central Laboratories, Chemical Testing Branch. Silicone joint sealant specification requirements are listed in Section 41-5.02B of the 2022 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 |

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| 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 $\frac{3}{5}$ in. maximum thickness of sealant and test under AASHTO T 132. Briquettes must be dried to constant mass at $212 \pm 10^\circ\text{F}$.

^b Prepare 12 in. \times 1 in. \times 3 in. concrete blocks under ASTM C 719. Use a sawed face for bond surface. Seal 2 in. of block leaving $\frac{1}{2}$ in. on each end of specimen unsealed. The depth of sealant must be $\frac{2}{5}$ inch and the width $\frac{1}{2}$ in.

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

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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 date will be up to 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 three (3) months prior to the listed date.

If you have any questions about this program, please contact Mariano Pontillas by phone at (916) 227-5718 or via e-mail sent to at <Mariano.Pontillas@dot.ca.gov>.