



Designation: D8138 – 23

## Standard Specification for Preformed Silicone Joint Sealing System for Bridges<sup>1</sup>

This standard is issued under the fixed designation D8138; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers the material requirements for preformed silicone joint seals for bridges. The seal consists of a silicone rubber gland preformed to a continuous length. Its design shall prevent any tension from occurring in the seal or bonding point during normal movement. The seal is installed by bonding it to the joint header with a silicone-based adhesive and is designed to seal the joint, preventing liquid intrusion.

1.2 The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**C639** Test Method for Rheological (Flow) Properties of Elastomeric Sealants

**C679** Test Method for Tack-Free Time of Elastomeric Sealants

**C793** Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants

**D395** Test Methods for Rubber Property—Compression Set

**D412** Test Methods for Vulcanized Rubber and Thermoplas-

tic Elastomers—Tension

**D573** Test Method for Rubber—Deterioration in an Air Oven

**D624** Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

**D2240** Test Method for Rubber Property—Durometer Hardness

### 3. Materials and Manufacture

3.1 The seals shall be preformed to a continuous length, and the material shall be silicone rubber.

3.2 The adhesive shall be a silicone-based adhesive.

### 4. Physical Requirements

4.1 The materials for the seal shall conform to the physical properties prescribed in **Table 1**.

4.2 The materials for the adhesive shall conform to the physical properties prescribed in **Table 2**.

4.3 In the applicable requirements of **Table 1** and the test method, all deflection shall be based on the nominal width.

### 5. Dimensions and Working Parameters

5.1 The size, shape, and dimensional tolerances shall be as outlined in **5.2**.

5.2 Measurements used for physical laboratory testing shall be taken to the nearest 0.01 in. (0.3 mm) and reported/recorded to the nearest 0.1 in. (3 mm) as the average of the measurements. The measured width shall be greater than or equal to the nominal width. Measurements shall be taken at quarter points of the sample.

5.3 The lengths of samples for performance testing purposes shall be 2 ft  $\pm$  0.25 in. (601  $\pm$  6 mm) length for the seal and appropriate amount of silicone-based adhesive per manufacturer's recommendation.

### 6. Sampling

6.1 Samples shall be taken at random from each shipment of material. If the shipment consists of more than one lot, each lot shall be sampled.

6.2 A lot shall consist of the quantity for each copious section agreed upon between the purchaser and the supplier.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.32 on Bridges and Structures.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.