



Designation: D 5167 – 91 (Reapproved 1997)

Standard Practice for Melting of Hot-Applied Joint and Crack Sealant and Filler for Evaluation¹

This standard is issued under the fixed designation D 5167; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This standard establishes the procedure for melting or heating, or both, of hot-applied joint and crack sealants and fillers in preparation for the making of test specimens used in the laboratory evaluations of the sealants and fillers. Refer to the specific standard material specification for sampling requirements, test sample quantity, temperatures and times for melting and heating, and the number of specimens required for testing.

1.2 This procedure is applicable to the hot-applied joint and crack sealants and fillers used in both portland cement and asphaltic-concrete pavements.

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 and health practices and determine the applicability of regulatory limitations prior to use.* For specific precautions see Section 7.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values in parentheses are provided for information purposes only.

2. Referenced Documents

2.1 ASTM Standards:

E 1 Specification for ASTM Thermometers²

E 77 Test Method for the Inspection and Verification of Thermometers²

E 171 Specification for Standard Atmospheres for Conditioning and Testing Materials³

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *recommended safe heating temperature*—The maximum temperature recommended by the manufacturer of the sealant or filler to which the sealant or filler can be heated and still conform to the particular specification requirements.

3.1.2 *recommended pouring temperature*—The minimum temperature recommended by the manufacturer of the sealant

or filler to which the sealant or filler can be heated and still conform to the particular specification requirements.

3.1.3 *recommended application temperature*—any temperature between the recommended safe heating temperature and the recommended pouring temperature.

4. Significance and Use

4.1 It is intended that this practice be used by manufacturers, users and testing agencies. The use of this practice establishes a uniform procedure for the melting or heating of hot-applied sealants and fillers. It is not intended to establish test procedures or conditions of test which are associated with each of the joint sealants and fillers.

5. Standard Conditions

5.1 The laboratory atmospheric conditions, hereinafter referred to as standard conditions, shall be as detailed in Specification E 171, $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) and 50 % relative humidity ± 5 %. The material shall be conditioned for 24 h at standard conditions before melting or heating.

6. Apparatus

6.1 Laboratory Melter:

6.1.1 The equipment for melting of the joint sealant or filler shall be an oil jacketed melter equipped with a mechanical agitator and thermometers for the oil bath and material in the melting vat.

6.1.2 The heat transfer oil shall be a high flash point oil, that is, in excess of 600°F (315°C).

6.1.3 The heat source shall be thermostatically controlled and capable of maintaining the heat transfer oil temperature within a tolerance of $\pm 5^\circ\text{F}$ ($\pm 3^\circ\text{C}$) and capable of heating the oil to a maximum of 550°F (288°C).

6.1.4 The mechanical agitator speed for the material shall be 30 ± 5 rpm when fully loaded and the agitator speed for the oil bath shall be such to allow continuous circulation of the oil.

6.1.5 Except when adding the sealant or filler sample, or checking temperature, the melter's pots shall be covered with close fitting lids.

6.1.6 Refer to Fig. 1 and Fig. 2 (bottom discharge type) and Fig. 3 (removable can type) for typical laboratory melters. Also see Note 1.

6.2 The thermometers used in this melting operation shall meet the requirements of Specification E 1 and be checked for

¹ This practice is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.33 on Formed-In-Place Sealants for Joints and Cracks in Pavements.

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² Annual Book of ASTM Standards, Vol 14.03.

³ Annual Book of ASTM Standards, Vol 15.09.

