



Designation: D5167 – 13 (Reapproved 2018)

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

This standard is issued under the fixed designation D5167; 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 practice 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 practice is applicable to the hot-applied joint and crack sealants and fillers used in both portland cement and asphaltic-concrete pavements.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

1.4 **Warning**—Mercury has been designated by the EPA and many state agencies as a hazardous material that can cause central nervous system, kidney, and liver damage. Mercury, or its vapor, may be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury-containing products. See the applicable product Material Safety Data Sheet (MSDS) for details and EPA's website—<http://www.epa.gov/mercury/faq.htm>—for additional information. Users should be aware that selling mercury and/or mercury-containing products into your state may be prohibited by state law.

1.5 *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.* For specific precautions, see Section 7.

¹ This practice is under the jurisdiction of ASTM Committee D04 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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1.6 *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:*²

D5535 Terminology Relating to Formed-in-Place Sealants for Joints and Cracks in Pavements (Withdrawn 2009)³

E1 Specification for ASTM Liquid-in-Glass Thermometers

E220 Test Method for Calibration of Thermocouples By Comparison Techniques

E171/E171M Practice for Conditioning and Testing Flexible Barrier Packaging

3. Terminology

3.1 *Definitions*—Refer to Terminology D5535 for definitions of the following terms used in this practice: *maximum heating temperature*, *minimum application 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 Practice E171/E171M, 23 ± 2 °C (73.4 ± 3.6 °F) and 50 % relative humidity ± 10 %. The material shall be conditioned for 24 h at standard conditions before melting or heating.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

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 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 315 °C (600 °F).

6.1.3 The heat source shall be thermostatically controlled and capable of maintaining the heat transfer oil temperature

within a tolerance of ±3 °C (±5 °F) and capable of heating the oil to a maximum of 288 °C (550 °F).

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 Figs. 1 and 2 (bottom discharge type) and Fig.

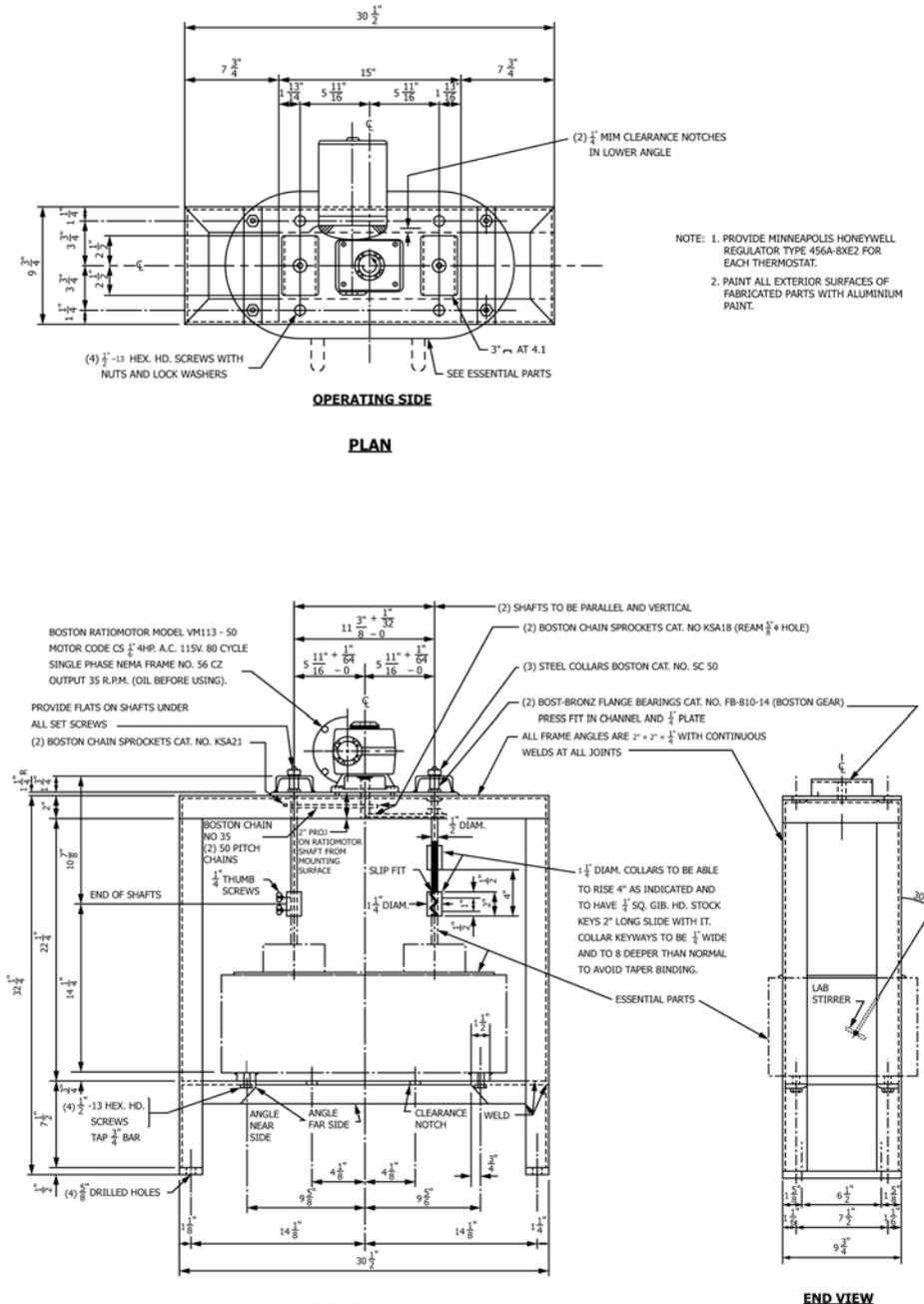


FIG. 1 Detailed Drawing of Joint Sealant Laboratory Melting Unit