



Standard Test Method for Ductility of Asphalt Materials¹

This standard is issued under the fixed designation D113/D113M; 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.

^{ε1} NOTE—Editorially updated to dual designation in December 2023.

1. Scope

1.1 This test method describes the procedure for determining the ductility of an asphalt material measured by the distance to which it will elongate before breaking when two ends of a briquet specimen of the material of the form described in 4.1 are pulled apart at a specified speed and at a specified temperature. Unless otherwise specified, the test shall be made at a temperature of $25 \pm 0.5^\circ\text{C}$ [$77 \pm 0.9^\circ\text{F}$] and with a speed of $5\text{ cm/min} \pm 5.0\%$. At other temperatures the speed should be specified.

1.2 Because of the large number of methods for obtaining test samples, it is impractical to discuss specific products in this test method. Refer to individual product specifications for guidance in obtaining a test sample.

1.3 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.4 The values stated in 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 each other. Combining values from the two systems may result in nonconformance with the standard. Bath and mold dimensions are given in SI units only, as the equipment is not available in inch-pound units.

1.5 **Warning**—Mercury has been designated by the United States Environmental Protection Agency 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 Safety Data Sheet (SDS) for details and the EPA's website (<http://www.epa.gov/>

[mercury/faq.htm](http://www.epa.gov/mercury/faq.htm)) for additional information. Users should be aware that selling mercury or mercury-containing products, or both, in your state may be prohibited by state law.

1.6 *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.*

1.7 *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

- C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
- D5/D5M Test Method for Penetration of Bituminous Materials
- D402/D402M Test Method for Distillation of Cutback Asphalt (Withdrawn 2023)³
- D1754/D1754M Test Method for Effects of Heat and Air on Asphaltic Materials (Thin-Film Oven Test)
- D2872 Test Method for Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)
- D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
- D6934 Test Method for Residue by Evaporation of Emulsified Asphalt
- D6997 Test Method for Distillation of Emulsified Asphalt
- D7403 Test Method for Determination of Residue of Emulsified Asphalt by Low Temperature Vacuum Distillation

¹ This test method is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.44 on Rheological Tests.

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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.