



Designation: D4125/D4125M – 21

Standard Test Methods for Asphalt Content of Asphalt Mixtures by the Nuclear Method¹

This standard is issued under the fixed designation D4125/D4125M; 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 These test methods cover the procedures for determining the asphalt content of samples of uncompacted asphalt mixtures (Test Method A), and of laboratory compacted specimens of asphalt mixtures (Test Method B) by examining a test sample with an apparatus that utilizes neutron thermalization techniques.

1.2 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.

1.3 A precision and bias statement for Method B in this standard has not been developed at this time. Therefore, Method B should not be used for acceptance or rejection of a material for purchasing purposes.

1.4 *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. See Section 6 and 8.4.2, 8.5.6, and Note 4 for specific hazards.*

1.5 *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

¹ These test methods are under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and are the direct responsibility of Subcommittee D04.25 on Analysis of Asphalt Mixtures.

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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.

for Test Methods for Construction Materials
D75/D75M Practice for Sampling Aggregates
D140/D140M Practice for Sampling Asphalt Materials
D979/D979M Practice for Sampling Bituminous Paving Mixtures
D1461 Test Method for Moisture or Volatile Distillates in Asphalt Mixtures
D1559 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (Withdrawn 1998)³
D1561/D1561M Practice for Preparation of Bituminous Mixture Test Specimens by Means of California Kneading Compactor
D3387 Test Method for Compaction and Shear Properties of Bituminous Mixtures by Means of the U.S. Corps of Engineers Gyratory Testing Machine (GTM) (Withdrawn 2020)³
D4013 Practice for Preparation of Test Specimens of Bituminous Mixtures by Means of Gyratory Shear Compactor (Withdrawn 2013)³

3. Significance and Use

3.1 These test methods are useful as a rapid, nondestructive technique for determination of asphalt content of asphalt mixtures.

3.2 These test methods are suitable for quality control and acceptance testing for construction and for research and development applications. The test method is used for determination of asphalt content only as it does not provide extracted aggregate for gradation analysis.

3.3 The nondestructive nature of the test allows repetitive measurements to be made on a single test sample for statistical analysis of test data.

3.4 These test methods determine the asphalt content of a test sample by comparing the measured asphalt content with previously established calibration data.

3.4.1 The asphalt content of a material expressed as a percentage is the ratio of the mass of asphalt in a given mass of material to the total mass of the sample or to the mass of the solid material particles.

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