



Standard Test Methods for Quantitative Extraction of Bitumen From Bituminous Paving Mixtures¹

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1. Scope

1.1 These test methods cover the quantitative determination of bitumen in hot-mixed paving mixtures and pavement samples. Aggregate extracted from a paving mixture may be used for sieve analysis using Test Method [D5444](#).

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 non-conformance with the standard.

1.2.1 Measurements of volume and mass are only given in SI units because they are the only units typically used in practice when performing this test method.

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.* Specific hazards are given in Section 7.

NOTE 1—The results obtained by these test methods may be affected by the age of the material tested, with older samples tending to yield slightly lower bitumen content. Best quantitative results are obtained when the test is made on mixtures and pavements shortly after their preparation. It is difficult to remove all the asphalt when some aggregates are used and some chlorides may remain within the mineral matter affecting the measured asphalt content.

2. Referenced Documents

2.1 ASTM Standards:²

[C128](#) Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate

¹ These test methods are under the jurisdiction of ASTM Committee [D04](#) on Road and Paving Materials and are the direct responsibilities 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.

[C670](#) Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

[D70](#) Test Method for Density of Semi-Solid Bituminous Materials (Pycnometer Method)

[D604](#) Specification for Diatomaceous Silica Pigment (Withdrawn 2003)³

[D979](#) Practice for Sampling Bituminous Paving Mixtures

[D1461](#) Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures

[D1856](#) Test Method for Recovery of Asphalt From Solution by Abson Method

[D2111](#) Test Methods for Specific Gravity and Density of Halogenated Organic Solvents and Their Admixtures

[D3666](#) Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

[D5444](#) Test Method for Mechanical Size Analysis of Extracted Aggregate

[D6368](#) Specification for Vapor-Degreasing Solvents Based on *normal*-Propyl Bromide and Technical Grade *normal*-Propyl Bromide

2.2 *Federal Specifications:*

[O-T-634](#) (latest) *normal* Propyl Bromide, Technical⁴

3. Summary of Test Methods

3.1 The paving mixture is extracted with trichloroethylene, *normal* Propyl Bromide, or methylene chloride using the extraction equipment applicable to the particular method. The bitumen content is calculated by difference from the mass of the extracted aggregate, moisture content, and mineral matter in the extract. The bitumen content is expressed as mass percent of moisture-free mixtures.

4. Significance and Use

4.1 All of these test methods can be used for quantitative determinations of bitumen in hot-mixed paving mixtures and pavement samples for specification acceptance, service evaluation, control, and research. Each method prescribes the solvent or solvents and any other reagents that can be used in

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

⁴ Available from DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, <http://quicksearch.dla.mil>.