



Designation: D1188/D1188M – 22

Standard Test Method for Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Coated Samples¹

This standard is issued under the fixed designation D1188/D1188M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This test method covers the determination of bulk specific gravity of specimens of Parafilm-coated, compacted asphalt mixtures.

1.2 This method should be used with samples that contain open or interconnecting voids or absorb more than 2.0 % of water by volume, or both.

NOTE 1—A method for calculating the percent water absorbed by the specimen on a volume basis is described in Test Method [D2726/D2726M](#).

1.3 The bulk specific gravity of the compacted asphalt mixtures may be used in calculating the unit weight of the mixture.

1.4 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.

1.5 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.

1.6 *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.*

¹ This test method is under the jurisdiction of ASTM Committee [D04](#) on Road and Paving Materials and is the direct responsibility of Subcommittee [D04.21](#) on Specific Gravity and Density of Asphalt Mixtures.

Current edition approved June 15, 2022. Published June 2022. Originally approved in 1951. Last previous edition approved in 2015 as D1188 – 07 (2015). DOI: 10.1520/D1188_D1188M-22.

2. Referenced Documents

2.1 ASTM Standards:²

[D979/D979M](#) Practice for Sampling Bituminous Paving Mixtures

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

[D2726/D2726M](#) Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures

[D3203/D3203M](#) Test Method for Percent Air Voids in Compacted Asphalt Mixtures

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

[D4753](#) Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

[D5361/D5361M](#) Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing

[D7227/D7227M](#) Practice for Rapid Drying of Compacted Asphalt Mixture Specimens Using Vacuum Drying Apparatus

[E1](#) Specification for ASTM Liquid-in-Glass Thermometers

[E1137/E1137M](#) Specification for Industrial Platinum Resistance Thermometers

3. Significance and Use

3.1 This test method is useful in calculating percent air voids as given in Test Method [D3203/D3203M](#). Since specific gravity has no units, it must be converted to density when this type of measurement is required. This conversion is made by multiplying the specific gravity at a given temperature by the density of water at the same temperature.

NOTE 2—The quality of the results produced by this standard are dependent on the competence of the personnel performing the procedure and the capability, calibration, and maintenance of the equipment used. Agencies that meet the criteria of Specification [D3666](#) are generally considered capable of competent and objective testing, sampling,

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.