



Designation: D 2726 – 05

## Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures<sup>1</sup>

This standard is issued under the fixed designation D 2726; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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

### 1. Scope

1.1 This test method covers the determination of bulk specific gravity and density of specimens of compacted bituminous mixtures.

1.2 This test method should not be used with samples that contain open or interconnecting voids or absorb more than 2 % of water by volume, or both, as determined in 10.3.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

- D 979 Practice for Sampling Bituminous Paving Mixtures
- D 1188 Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
- D 3203 Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
- D 3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
- D 4753 Specification for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

<sup>1</sup> 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 Bituminous Mixtures.

Current edition approved July 15, 2005. Published August 2005. Originally approved in 1968. Last previous edition approved in 2004 as D 2726–04.

<sup>2</sup> 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.

D 5361 Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing

D 6752 Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method

### 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *bulk density*—as determined by this test method, the mass of a metre cubed (or foot cubed) of the material at 25°C (77°F).

3.1.2 *bulk specific gravity*—as determined by this test method, the ratio of the mass of a given volume of material at 25°C to the mass of an equal volume of water at the same temperature.

### 4. Summary of Test Method

4.1 The specimen is immersed in a water bath at 25°C (77°F). The mass under water is recorded, and the specimen is taken out of the water, blotted quickly with a damp cloth towel, and weighed in air. The difference between the two masses is used to measure the mass of an equal volume of water at 25°C.

4.2 This test method provides guidance for determination of the oven dry or thoroughly dry mass of the specimen. The bulk specific gravity is calculated from these masses. Then the density is obtained by multiplying the specific gravity of the specimen by the density of the water.

### 5. Significance and Use

5.1 The results obtained from this test method can be used to determine the unit weight of compacted dense bituminous mixtures and in conjunction with Test Method D 3203, to obtain percent air voids. These values in turn may be used in determining the relative degree of compaction.

5.2 Since specific gravity has no units, it must be converted to density in order to do calculations that require units. This conversion is made by multiplying the specific gravity at a given temperature by the density of water at the same temperature.