



Designation: D6931 – 17

Standard Test Method for Indirect Tensile (IDT) Strength of Asphalt Mixtures¹

This standard is issued under the fixed designation D6931; 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 This test method covers procedures for preparing and testing laboratory-fabricated or field-recovered cores of asphalt mixtures to determine the indirect tensile (IDT) strength.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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.*

1.4 *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

D1074 Test Method for Compressive Strength of Asphalt Mixtures

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)

D3496 Practice for Preparation of Bituminous Mixture Specimens for Dynamic Modulus Testing (Withdrawn 2010)³

¹ This test method is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.26 on Fundamental/Mechanistic 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.

D3549/D3549M Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens

D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

D4013 Practice for Preparation of Test Specimens of Bituminous Mixtures by Means of Gyratory Shear Compactor (Withdrawn 2013)³

D4867/D4867M Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures

D5581 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6 inch-Diameter Specimen)

D6925 Test Method for Preparation and Determination of the Relative Density of Asphalt Mix Specimens by Means of the Superpave Gyratory Compactor

D6926 Practice for Preparation of Asphalt Mixture Specimens Using Marshall Apparatus

D6927 Test Method for Marshall Stability and Flow of Asphalt Mixtures

E1 Specification for ASTM Liquid-in-Glass Thermometers

2.2 *AASHTO Standards:*⁴

AASHTO T 245 Standard Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus

AASHTO T 312 Standard Method for Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

3. Summary of Test Method

3.1 The IDT strength of asphalt mixtures is determined by loading a cylindrical specimen across its vertical diametral plane at a specified rate of deformation and test temperature. The peak load at failure is recorded and used to calculate the IDT strength of the specimen.

4. Significance and Use

4.1 The values of IDT strength may be used to evaluate the relative quality of asphalt mixtures in conjunction with laboratory mix design testing and for estimating the potential for rutting or cracking. The results can also be used to determine

⁴ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.