



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

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1. Scope

1.1 This test method covers procedures for preparing and testing laboratory-fabricated or field-recovered cores of bituminous mixtures to determine the Indirect Tensile (IDT) Strength.

1.2 The within-laboratory repeatability standard deviation, for the recommended rate of loading (50 mm/min) and test temperature (25°C), has been determined to be 80 kPa for 101.6 mm diameter specimens, based on 28 labs using either 2 or 4 test replicates with 11 different mix samples. Additional data is provided in [Table](#) for the user's information. The between-laboratory reproducibility of this test method is being determined and will be available on or before August 2012. Therefore, this test method should not be used for acceptance or rejection of materials for purchasing purposes.

1.3 The values stated in SI units are to be regarded as standard.

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:²

- [D1074](#) Test Method for Compressive Strength of Bituminous Mixtures
- [D1561](#) 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[Specimens for Dynamic Modulus Testing](#) (Withdrawn 2010)³

- [D3549](#) 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 - [D4013](#) Practice for Preparation of Test Specimens of Bituminous Mixtures by Means of Gyratory Shear Compactor (Withdrawn 2013)³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 Bituminous 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 T245](#) Standard Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
 - [AASHTO T312](#) 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 bituminous mixtures is conducted 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 bituminous mixtures in conjunction with

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.

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>.