



Standard Test Method for Testing Side Force Friction on Paved Surfaces Using the Mu-Meter¹

This standard is issued under the fixed designation E670; 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 the measurement of the side force friction of paved surfaces utilizing a device commonly called a Mu-Meter.²

1.2 This test method utilizes a measurement obtained by pulling the Mu-Meter, containing two freely rotating test wheels angled to the direction of motion, over a pavement surface at a constant speed while the test wheels are under a constant static load. This method provides data of the side force friction (and other data) along the whole length of the test surface being tested which is applied to a variety of computerized algorithms enabling the production of results including (but not limited to) rolling averages, numeric and graphical representations, friction mapping and reports formatted in the layout approved by a wide variety of national airport regulators.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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. See also Section 6.*

¹ This test method is under the jurisdiction of ASTM Committee E17 on Vehicle - Pavement Systems and is the direct responsibility of Subcommittee E17.21 on Field Methods for Measuring Tire Pavement Friction.

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² The sole source of supply of the apparatus known to the committee at this time is Douglas Equipment Ltd, Douglas House, Village Road, Arle, Cheltenham, Gloucestershire UK GL51 0AB and Douglas Equipment International, 8305 Cherokee Boulevard, Douglasville, Douglas County, Atlanta, Georgia 30134 USA. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.

2. Referenced Documents

2.1 *ASTM Standards:*³

D297 Test Methods for Rubber Products—Chemical Analysis

D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

D1054 Test Method for Rubber Property—Resilience Using a Goodyear-Healey Rebound Pendulum (Withdrawn 2010)⁴

D1765 Classification System for Carbon Blacks Used in Rubber Products

D2240 Test Method for Rubber Property—Durometer Hardness

D3182 Practice for Rubber—Materials, Equipment, and Procedures for Mixing Standard Compounds and Preparing Standard Vulcanized Sheets

E178 Practice for Dealing With Outlying Observations

E303 Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester

E1551 Specification for Special Purpose, Smooth-Tread Tire, Operated on Fixed Braking Slip Continuous Friction Measuring Equipment

3. Summary of Test Method

3.1 The Mu-Meter consists of a trailer similar to the one in Fig. 1, which is towed by a vehicle.²

3.2 The test tires are positioned in the test mode. The Mu-Meter is brought to the desired test speed. Water (if applicable) is delivered ahead of the test tires and the beginning of the test is marked. The resulting sideways friction force acting between the test tires and the pavement surface is digitized and recorded in the volatile memory of the processor

³ 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.

⁴ The last approved version of this historical standard is referenced on www.astm.org.