



Standard Guide for Measuring and Reporting Friction Coefficients¹

This standard is issued under the fixed designation G115; 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 guide covers information to assist in the selection of a method for measuring the frictional properties of materials. Requirements for minimum data and a format for presenting these data are suggested. The use of the suggested reporting form will increase the long-term usefulness of the test results within a given laboratory and will facilitate the exchange of test results between laboratories. It is hoped that the use of a uniform reporting format will provide the basis for the preparation of handbooks and computerized databases.

1.2 This guide applies to most solid materials and to most friction measuring techniques and test equipment.

1.3 *Units*—The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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

- C808** Guide for Reporting Friction and Wear Test Results of Manufactured Carbon and Graphite Bearing and Seal Materials
- C1028** Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
- D1894** Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting
- D2047** Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine

- D2394** Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring
- D2534** Test Method for Coefficient of Kinetic Friction for Wax Coatings
- D2714** Test Method for Calibration and Operation of the Falex Block-on-Ring Friction and Wear Testing Machine
- D3108** Test Method for Coefficient of Friction, Yarn to Solid Material
- D3412** Test Method for Coefficient of Friction, Yarn to Yarn
- D3702** Test Method for Wear Rate and Coefficient of Friction of Materials in Self-Lubricated Rubbing Contact Using a Thrust Washer Testing Machine
- D4103** Practice for Preparation of Substrate Surfaces for Coefficient of Friction Testing
- D4917** Test Method for Coefficient of Static and Kinetic Friction of Uncoated Writing and Printing Paper by Use of the Horizontal Plane Method (Withdrawn 2010)³
- D4918** Test Method for Coefficient of Static Friction of Uncoated Writing and Printing Paper by Use of the Inclined Plane Method (Withdrawn 2010)³
- D5183** Test Method for Determination of the Coefficient of Friction of Lubricants Using the Four-Ball Wear Test Machine
- D6425** Test Method for Measuring Friction and Wear Properties of Extreme Pressure (EP) Lubricating Oils Using SRV Test Machine
- E122** Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process
- E303** Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
- E670** Test Method for Testing Side Force Friction on Paved Surfaces Using the Mu-Meter
- E1911** Test Method for Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester
- E2100** Practice for Calculating the International Runway Friction Index
- E2101** Test Method for Measuring the Frictional Properties of Winter Contaminated Pavement Surfaces Using an Averaging-Type Spot Measuring Decelerometer

¹ This guide is under the jurisdiction of ASTM Committee G02 on Wear and Erosion and is the direct responsibility of Subcommittee G02.50 on Friction.

Current edition approved Nov. 15, 2013. Published November 2013. Originally approved in 1993. Last previous edition was approved in 2010 as G115–10. DOI: 10.1520/G0115-10R13.

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.