



Designation: D1894 – 24

Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting¹

This standard is issued under the fixed designation D1894; 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.

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

1. Scope*

1.1 This test method covers determination of the coefficients of starting and sliding friction of plastic film and sheeting when sliding over itself or other substances at specified test conditions. The procedure permits the use of a stationary sled with a moving plane, or a moving sled with a stationary plane. Both procedures yield the same coefficients of friction values for a given sample.

NOTE 1—For the frictional characteristics of plastic films partially wrapped around a cylinder, or capstan, see Test Method G143 under the jurisdiction of ASTM Subcommittee G02.50.

1.2 Test data obtained by this test method is relevant and appropriate for use in engineering design.

1.2.1 As an option to this test, measuring coefficient of friction at temperatures other than 23°C is performed by heating/cooling only the plane while the sled is at ambient temperature.

1.3 The values stated in SI units are to be regarded as 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For a specific precautionary statement, see the end of 6.5.

NOTE 2—This test method is not equivalent to ISO 8295–1995, and results cannot be directly compared between the two methods.

1.5 *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 Recom-*

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

- D618 Practice for Conditioning Plastics for Testing
- D883 Terminology Relating to Plastics
- D1894 Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting (Withdrawn 2023)³
- D3574 Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams
- D4000 Classification System for Specifying Plastic Materials
- E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
- E456 Terminology Relating to Quality and Statistics
- E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method
- E2935 Practice for Evaluating Equivalence of Two Testing Processes
- G143 Test Method for Measurement of Web/Roller Friction Characteristics

2.2 ISO Standard:

- ISO 8295–1995 Plastics—Film and sheeting—Determination of the coefficients of friction⁴

3. Terminology

3.1 Terms used in this standard are defined in accordance with Terminology D883, unless otherwise specified. For terms relating to precision and bias and associated issues, the terms used in this standard are defined in accordance with Terminology E456.

3.2 Definitions:

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. 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 National Standards Institute (ANSI), 1180 Avenue of the Americas, 10th Floor, New York, NY 10036, <http://www.ansi.org>.

¹ This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.19 on Film, Sheeting, and Molded Products.

Current edition approved Nov. 15, 2024. Published December 2024. Originally approved in 1961. Last previous edition approved in 2014 as D1894 - 14, which was withdrawn in March 2023 and reinstated November 2024. DOI: 10.1520/D1894-24.

*A Summary of Changes section appears at the end of this standard