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.

Designation: D8115 – 17 (Reapproved 2021)

Standard Test Method for Rubber Property—Abrasion Resistance (Multi-Directional Platform Abrader)[1]

This standard is issued under the fixed designation D8115; 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 abrasion resistance of rubbers (vulcanized thermoset rubbers and thermoplastic elastomers) that are subject to abrasive/frictional wear in actual service. The abrasion resistance is measured by simultaneously moving 4 test pieces across the surface of abrasive sheets in a soft lissajous movement, and is expressed as volume loss in cubic millimeters where a smaller number indicates better abrasion resistance.

1.2 Test results obtained by this test method shall not be assumed to represent the wear behavior of rubber products in actual service.

1.3 Results obtained by this test have shown to be similar to those obtained using Test Method D5963 and ISO 4649.

1.4 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

1.5 *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.*

1.6 *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]

D297 Test Methods for Rubber Products—Chemical Analysis

D2240 Test Method for Rubber Property—Durometer Hardness

D5963 Test Method for Rubber Property—Abrasion Resistance (Rotary Drum Abrader)

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 *ISO Standards:*[3]

ISO 868 Plastics and Ebonite—Determination of Indentation Hardness by Means of a Durometer (Shore Hardness)

ISO 2781 Rubber, Vulcanized—Determination of Density

ISO 4649 Rubber, vulcanized or thermoplastic—Determination of abrasion resistance using a rotating cylindrical drum device

ISO 7619 Rubber—Determination of Indentation Hardness by Means of Pocket Hardness Meters

3. Terminology

3.1 *Definitions:*

3.1.1 *abrasion loss, A, (mm^3), n*—the volume loss of a defined rubber test piece determined by sliding the test piece under specified conditions over the surface of an abrasive sheet mounted to an abrading table of specified dimensions.

4. Summary of Test Method

4.1 This test method provides procedures for preparing test pieces of specified dimensions from vulcanized thermoset rubbers or thermoplastic elastomers and for evaluating their abrasion resistance by sliding a test piece across the surface of an abrasive paper attached to an abrading table.

4.2 The test is performed under specified conditions of contact pressure, sliding distance, travel speed of the test piece, and the degree of abrasiveness of the abrasive sheet. These are outlined in 7.1.

4.3 The abrasion resistance is reported as abrasion loss (volume) in cubic millimeters and is calculated from the mass

[1] This test method is under the jurisdiction of ASTM Committee D11 on Rubber and Rubber-like Materials and is the direct responsibility of Subcommittee D11.15 on Degradation 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] Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, http://www.iso.org.

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