Designation: D3851 – 07 (Reapproved 2012)

Standard Specification for Urethane Microcellular Shoe Soling Materials[1]

This standard is issued under the fixed designation D3851; 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 specification covers urethane microcellular materials for shoe soling applications. It provides physical property requirements and identifies test methods for determining those specific properties.

1.2 SI units are to be regarded as the preferred units of measurements for values. The inch-pound values in parentheses can be used if there is an agreement between the contractual parties.

NOTE 1—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

D1052 Test Method for Measuring Rubber Deterioration—Cut Growth Using Ross Flexing Apparatus

D1622 Test Method for Apparent Density of Rigid Cellular Plastics

D1938 Test Method for Tear-Propagation Resistance (Trouser Tear) of Plastic Film and Thin Sheeting by a Single-Tear Method

D2240 Test Method for Rubber Property—Durometer Hardness

D3489 Test Methods for Microcellular Urethane Materials

3. Classification

3.1 This specification covers three grades of microcellular urethane materials that may be selected for use according to abrasion resistance, cut-growth resistance, and other physical properties. The grades are classified as Grade 1, Grade 2, and Grade 3.

4. Ordering Information

4.1 Any product represented as complying with this specification shall meet all the requirements listed herein for its particular classification.

5. Physical Requirements

5.1 The material shall conform to requirements for physical properties prescribed in Table 1.

6. Test Methods

6.1 The physical tests shall be in accordance with Test Method D3489.

7. Inspection

7.1 Inspection of the material shall be agreed upon in writing between the purchaser and the supplier as part of the purchase contract.

7.2 Testing for conformance to requirements shall be done in accordance with this specification and Test Methods D3489.

8. Retest and Rejection

8.1 If any failure occurs, the materials may be retested to establish conformity in accordance with agreement between the purchaser and the seller.

9. Packaging, Marking, and Labeling

9.1 *Packaging*—The material shall be packed in standard commercial containers, so constructed as to ensure acceptance by common or other carriers for safe transportation at the lowest rate to the point of delivery, unless otherwise specified in the contract or order.

9.2 *Marking*—The shipping container shall be marked with the name, type, and quality of material in accordance with the contract or order under which the shipment is made. The shipping container shall also be marked with the name of the manufacturer and the contract or order number.

9.3 *Labeling*—In order that purchasers may identify products complying with all requirements of this specification, producers choosing to produce such products in conformance

[1] This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.22 on Cellular Materials - Plastics and Elastomers.

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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.

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