Designation: E1551 – 16

Standard Specification for a Size 4.00-8 Smooth Tread Friction Test Tire[1]

This standard is issued under the fixed designation E1551; 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 the general requirements for a special purpose, smooth-tread standard tire for measuring tire-pavement friction forces. The tire is utilized on fixed braking slip continuous friction measuring equipment such as the Runway Friction Tester, Surface Friction Tester, or BV-11 Skiddometer Trailer.

1.2 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.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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D1054 Test Method for Rubber Property—Resilience Using a Goodyear-Healey Rebound Pendulum (Withdrawn 2010)[3]

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

2.2 *Other Documents:*

BV-11 Skiddometer Trailer—Instruction and Servicing Manual

DOT/FAA/AS-90-1 Reliability and Performance of Friction Measuring Tires and Friction Equipment Correlation[4]

Advisory Circular 150/5320-12 —"Measurement, Construction and Maintenance of Skid Resistant Airport Pavement Surfaces"[5]

3. Materials and Manufacture

3.1 The individual standard tires shall conform to the design standards of Section 5. Dimensions, weights, and permissible variations are also given in Section 5 and in Fig. 1 and Fig. 2.

3.2 Tread compounding, fabric processing, and all steps in tire manufacturing shall be certified to ensure that the specifications are met (see Section 7).

3.3 The markings on the tire as shown in Fig. 1 shall be molded on both sides of the tire.[6]

3.4 Fig. 1 shows a view of the tread surface and a side view of the standard, special purpose, smooth tread tire and Fig. 2 is a typical tire cross section with critical dimensions identified.

3.5 Tire should be mounted so that it is rotated in the direction of the arrow on the side of the tire. See Fig. 1.

4. Material Requirements

4.1 The compounding requirements for the tread compound are given in Table 1.

4.2 The fabric shall be nylon, 1260/2 Denier.

NOTE 1—Certain proprietary products have been specified since exact duplication of properties of the finished tire may not be achieved with other similar products. This inclusion does not in any way comprise a recommendation for these proprietary products nor against similar products of other manufacturers, nor does it imply any superiority over any such similar products.

[1] This specification is under the jurisdiction of ASTM Committee E17 on Vehicle - Pavement Systems and is the direct responsibility of Subcommittee E17.24 on Tire and Slider Characteristics.

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

[4] Available from National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, VA 22161, http://www.ntis.gov.

[5] Available from U.S. Department of Transportation Federal Aviation Administration, 800 Independence Ave., S.W., Washington, DC 20591.

[6] Specified tire is available from Specialty Tires of America, Inc., P.O. Box 749, 1600 Washington St., Indiana, PA 15701. 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.

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