



Designation: E524 – 08 (Reapproved 2020)

# Standard Specification for Standard Smooth Tire for Pavement Skid-Resistance Tests<sup>1</sup>

This standard is issued under the fixed designation E524; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification covers the general requirements for the standard smooth tire for pavement testing. The tire covered by this specification is intended for evaluation of tire-pavement friction.

1.2 The terminology in this specification is consistent with Terminology E867.

1.3 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.

1.4 *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:*<sup>2</sup>

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D1054 Test Method for Rubber Property—Resilience Using a Goodyear-Healey Rebound Pendulum (Withdrawn 2010)<sup>3</sup>

D1765 Classification System for Carbon Blacks Used in Rubber Products

D2240 Test Method for Rubber Property—Durometer Hardness

<sup>1</sup> The 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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<sup>2</sup> 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.

<sup>3</sup> The last approved version of this historical standard is referenced on www.astm.org.

D3182 Practice for Rubber—Materials, Equipment, and Procedures for Mixing Standard Compounds and Preparing Standard Vulcanized Sheets

E867 Terminology Relating to Vehicle-Pavement Systems

## 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 given in Section 5 and in Figs. 1 and 2.

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

3.3 A small raised guideline shall be molded on the tire shoulder area to provide a rapid visual check as to whether the maximum wear level for testing has been reached. Tires should actually be removed from service as recommended in 11.5. The marking on the tire, as suggested in Fig. 1, and curb ribs shall be molded on both sides of the tire.

3.4 Fig. 1 is a photograph of the standard tire and Fig. 2 is a cross section of a typical tire.<sup>4</sup>

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 formulation for the tread portion of the tire is given in Table 1.

4.2 *Fabric*—The fabric shall be polyester body or carcass plies and fiberglass belt plies.

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.

## 5. Dimensions, Weights, and Permissible Variations

5.1 *General*—Details of dimensions are listed as follows and are shown in Fig. 2. When tolerances are not specified, tire dimensions are subject to manufacturer's normal tolerances.

<sup>4</sup> Specification E524 tire is available from Specialty Tires of America, 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,<sup>1</sup> which you may attend.