



Standard Test Method for Static Measurements on Tires for Passenger Cars, Light Trucks, and Medium Duty Vehicles¹

This standard is issued under the fixed designation F1502; 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 methods for performing certain mechanical static measurements on tires. The term “static” implies that the tire is not rotating while measurements are being made.

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

1.3 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D2240 Test Method for Rubber Property—Durometer Hardness

F421 Test Method for Measuring Groove and Void Depth in Passenger Car Tires

F538 Terminology Relating to the Characteristics and Performance of Tires

F870 Practice for Tread Footprints of Passenger Car Tires Groove Area Fraction and Dimensional Measurements

F1082 Practice for Tires—Determining Precision for Test Method Standards (Withdrawn 2005)³

3. Terminology

3.1 *Definitions:*

3.1.1 *outside diameter, n*—the maximum diameter of a tire when it is mounted and inflated.

3.1.2 *overall width, n*—the maximum cross-sectional width of a tire, including protective or decorative ribs.

3.1.3 *tire weight, n*—the weight of an unmounted tire without tube or flap.

3.1.4 *tread arc width, n*—the length of the arc measured from one extreme of the tread design proper to the opposite extreme; that is, from shoulder to shoulder perpendicular to the circumferential center line.

3.1.5 *tread hardness, n*—the hardness of an element in the tread design as measured by a designated standard gage.

3.1.6 *tread radius, n*—the radius of a circle whose arc best fits the tread surface when the radius template used is held perpendicular to the circumferential center line of an inflated tire.

3.2 For additional definitions of terms used in this test method, refer to Terminology **F538**.

4. Significance and Use

4.1 Static measurements of tires are important to tire manufacturers, processing engineers, and vehicle design engineers for purposes of commerce (in consumer/vendor agreements) and in tire research and development.

4.2 The procedures are sufficiently detailed to achieve commercially acceptable reproducibility among laboratories and may therefore be used for specification, compliance, or reference purposes.

4.3 Changes attributable to growth after inflation may be obtained by comparing measurements made immediately after inflation with those made 18 to 24 h later.

5. Tire Marking

5.1 For measurements other than weight, the tire shall be marked at six equally spaced locations around the circumference. Starting at the DOT serial, make radial lines from bead to bead, perpendicular to the tread center line, at 60-degree intervals. Number the resulting sections “1” through “6” in a clockwise sequence as viewed from the side containing the serial number.

¹ This test method is under the jurisdiction of ASTM Committee **F09** on Tires and is the direct responsibility of Subcommittee **F09.30** on Laboratory (Non-Vehicular) Testing.

Current edition approved Jan. 1, 2016. Published February 2016. Originally approved in 1994. Last previous edition approved in 2010 as F1502 – 05 (2010). DOI: 10.1520/F1502-05R16.

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.