



Standard Test Method for Bead Unseating of Tubeless Passenger and Light Truck Tires¹

This standard is issued under the fixed designation F2663; 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 static non-rolling laboratory method of determination of a tubeless tire's resistance to bead unseating. The test requires the use of a standardized fixture and load machine. The test is conducted using a defined test pressure and method of determining the resultant force to unseat the tire from the rim.

1.2 This test method is applicable for all passenger, light truck, and temporary spare tires.

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

1.4 *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

F538 Terminology Relating to the Characteristics and Performance of Tires

F1502 Test Method for Static Measurements on Tires for Passenger Cars, Light Trucks, and Medium Duty Vehicles

3. Terminology

3.1 Definitions:

3.1.1 *bead, of a tire, n*—part of a tire that comes in contact with the rim and is shaped to secure the tire to the rim. **F538**

3.1.2 *bead unseating block, n*—machined block of cast aluminum used on the bead unseating fixture to press against the tire sidewall. **F538**

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 June 1, 2015. Published July 2015. Originally approved in 2007. Last previous edition approved in 2007 as F2663 – 07a. DOI: 10.1520/F2663-15.

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.

3.1.3 *manufacturer, n*—of a tire, the name of a company or wholly owned subsidiary making the tire. **F538**

3.1.4 *measuring rim, n*—any “rim” with a width as specified for the design or measuring rim for a particular tire size designation, and with the “bead” seat and flange dimensions in accordance with publications of tire and rim standards organizations current at the time of manufacture. **F538**

3.1.5 *outside diameter, n*—the maximum diameter of a tire when it is mounted and inflated. **F538**

3.1.6 *overall width, n*—the maximum cross-sectional width of a tire, including protective or decorative ribs. **F538**

3.1.7 *rim, n*—the specially shaped circular periphery to which a tire may be mounted with appropriate bead fitment. **F538**

3.1.8 *rim, test, n*—a rim having the configuration and dimensions suitable for use with a test tire in accordance with publications of a tire and rim standards organization current at the time of tire manufacture. **F538**

3.1.9 *sidewall, of a tire, n*—that portion of a tire between the tread and the bead. **F538**

3.1.10 *specified design section width, n*—width specified in the publications of tire and rim standards organizations current at the time of manufacture for a new tire of that size designation and type when inflated on its “measuring rim.” **F538**

3.1.11 *tire, light truck, n*—a tire of a group prescribed in “Light Truck” or “Commercial” tire sections of industry standards manuals such as The European Tyre and Rim Technical Organisation (ETRTO), Japan Automobile Tyre Manufacturers Association (JATMA), and The Tire and Rim Association (TRA). The tire will typically have either “LT” or “C” (C-type) as part of the tire size designation.

3.1.11.1 *Discussion*—An LT tire is a light truck tire with the letters “LT” either as a prefix or suffix of the tire size nomenclature. These tires are typically standardized by JATMA or TRA. A C-type tire is a light truck (commercial) tire with the letter “C” as a suffix to the tire size nomenclature. These tires are standardized by ETRTO, and located in the “Commercial” tire section of the Standards Manual.

3.1.12 *tire, passenger car, n*—a tire of a group prescribed in a passenger tire section of industry standards manuals such as