



Standard Test Method for Single Wheel Driving Traction in a Straight Line on Snow- and Ice-Covered Surfaces¹

This standard is issued under the fixed designation F1805; 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 a procedure for measuring the driving traction of passenger car and light truck tires while traveling in a straight line on snow- or ice-covered surfaces.

1.2 This test method utilizes a dedicated, instrumented, four-wheel rear-wheel drive test vehicle with a specially instrumented drive axle to measure fore-aft and vertical forces acting on a single driven test tire.

1.3 This test method is suitable for research and development purposes where tires are compared during a single series of tests. They may not be suitable for regulatory statutes or specification acceptance because the values obtained may not necessarily agree or correlate either in rank order or absolute traction performance level with those obtained under other environmental conditions on other surfaces or the same surface after additional use.

1.4 The values stated in SI units are to be regarded as the standard. Ordinarily, N and kN should be used as units of force. This standard may utilize kgf as a unit of force in order to accommodate the use of load and pressure tables, as found in other standards both domestic and global that are commonly used with this standard. The values given in parentheses are for information only.

1.5 *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

E1136 Specification for P195/75R14 Radial Standard Reference Test Tire

¹ This test method is under the jurisdiction of Committee F09 on Tires and is the direct responsibility of Subcommittee F09.20 on Vehicular Testing.

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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.

F377 Practice for Calibration of Braking/Tractive Measuring Devices for Testing Tires

F538 Terminology Relating to the Characteristics and Performance of Tires

F1046 Guide for Preparing Artificially Worn Passenger and Light Truck Tires for Testing

F1572 Test Methods for Tire Performance Testing on Snow and Ice Surfaces

F1650 Practice for Evaluating Tire Traction Performance Data Under Varying Test Conditions

F2493 Specification for P225/60R16 97S Radial Standard Reference Test Tire

2.2 Other Standards:

The European Tyre and Rim Technical Organisation Standards Manual³

The Japan Automobile Tyre Manufacturers Association, Inc. Yearbook⁴

The Tire & Rim Association, Inc. Year Book⁵

Tire Information Service Bulletin, Vol. 37/No. 3 Rubber Manufacturers Association (RMA) Definition for Passenger and Light Truck Tires for Use in Severe Snow Conditions⁶

3. Terminology

3.1 Definitions:

3.1.1 *candidate tire*, *n*—a test tire that is part of a test program. **F538**

3.1.1.1 *Discussion*—The term “candidate object” may be used in the same sense as *candidate tire*.

3.1.2 *control tire*, *n*—a reference tire used in a specified manner throughout a test program. **F538**

3.1.2.1 *Discussion*—A control tire may be of either type and typical tire used is the reference (control) tire in Practice **F1650**

³ Available from The European Tyre and Rim Technical Organisation, 78/80, rue Defacqz B-1060, Brussels, Belgium.

⁴ Available from The Japan Automobile Tyre Manufacturers Association, Inc., No. 33 Mori Bldg. 8th Floor, 3-8-21 Toranomon, Minato-ku, Tokyo, Japan 105-0001.

⁵ Available from The Tire & Rim Association, Inc., 175 Montrose West Ave., Suite 150, Copley, OH 44321.

⁶ Available from the Rubber Manufacturers Association, 1400 K Street, N.W., Washington D.C. 20005.