



Standard Test Methods for Steel Tire Cords¹

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1. Scope

1.1 These test methods cover the testing of cords made from steel that are specifically designed for use in the reinforcement of pneumatic tires. By agreement, these test methods may be used to test similar cords or filaments used for reinforcing other rubber products. The steel cords may be wound on spools or beams. The steel cords may also be woven into fabric, in which case they must be removed from the fabric prior to testing.

NOTE 1—For other methods of testing tire cords and tire cord fabrics, refer to Methods D885, Test Methods D1871, Specifications D122, and Test Methods D2692 and D2970/D2970M. For tolerances on tire cords and tire cord fabrics, refer to Specifications D122 and Methods D885.

1.2 These test methods include test procedures only; they do not establish specifications or tolerances.

1.3 This test method includes the following sections:

Subject	Section
Adhesion of Steel Cords and Filaments to Elastomers	16
Brass Coating Composition and Mass	14, 15
Breaking Force (Strength)	10
Construction	12
Data Form for Reporting Test Results	Appendix X1
Elongation at Break	10
Elongation Between Defined Forces (EDF)	11
Flare	8
Lay	12
Linear Density	9
Visual Appearance	8
Nomenclature System	Annex A1
Residual Torsions	8
Straightness	8
Thickness and Out-of-Roundness	13

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. See 14.3 and Note 11.*

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

¹ These test methods are under the jurisdiction of ASTM Committee D13 on Textiles and are the direct responsibility of Subcommittee D13.19 on Industrial Fibers and Metallic Reinforcements.

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2. Referenced Documents

2.1 ASTM Standards:²

D76 Specification for Tensile Testing Machines for Textiles
D122 Tolerances for Tire Fabrics Other Than Tire Cord Fabrics (Withdrawn 1993)³

D123 Terminology Relating to Textiles

D885 Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Manufactured Organic-Base Fibers

D1871 Test Method for Adhesion Between Tire Bead Wire and Rubber

D2229 Test Method for Adhesion Between Steel Tire Cords and Rubber

D2692 Test Method for Air Wicking of Tire Fabrics, Tire Cord Fabrics, Tire Cord, and Yarns

D2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data (Withdrawn 2008)³

D2970/D2970M Test Methods for Testing Tire Cords, Tire Cord Fabrics, and Industrial Yarns Made From Glass Filaments

D4393 Test Method for Strap Peel Adhesion of Reinforcing Cords or Fabrics to Rubber Compounds

D6477 Terminology Relating to Tire Cord, Bead Wire, Hose Reinforcing Wire, and Fabrics

E663 Practice for Flame Atomic Absorption Analysis (Withdrawn 1997)³

2.2 International Bureau for the Standardization of Man-Made Fibers (BISFA):

Internationally Agreed Methods for Testing Steel Tire Cords⁴

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms relating to tire cord, bead wire, hose wire, and tire cord fabrics, refer to Terminology D6477.

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 BISFA, Lauren Garten Strasse 12, PO Box, CH-4010 BASLE Switzerland.