



Standard Test Methods for Single Filament Hose Reinforcing Wire Made from Steel¹

This standard is issued under the fixed designation D6320/D6320M; 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 These test methods cover testing of single filament steel wires that are used to reinforce hose products. By agreement, these test methods may be applied to similar filaments used for reinforcing other rubber products.

1.2 These test methods describe test procedures only and do not establish specifications or tolerances.

1.3 These test methods cover the determinations of the mechanical properties listed below:

Property	Section
Breaking force (strength)	7 – 13
Yield strength	7 – 13
Elongation	7 – 13
Knot strength	14 – 20
Torsion resistance	21 – 27
Reverse bend	28 – 34
Wrap	35 – 41
Diameter	42 – 48

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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

D76 Specification for Tensile Testing Machines for Textiles

D123 Terminology Relating to Textiles

D2969 Test Methods for Steel Tire Cords

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.

Current edition approved May 15, 2014. Published June 2014. Originally approved in 1998. Last previous edition approved in 2010 as D6320 – 10. DOI: 10.1520/D6320_D6320M-10R14.

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.

D4848 Terminology Related to Force, Deformation and Related Properties of Textiles

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

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.

3.1.1.1 The following terms are relevant to this standard: hose reinforcing wire, torsion resistance, yield strength.

3.1.2 For definitions of terms related to force and deformation in textiles, refer to Terminology D4848.

3.1.2.1 The following terms are relevant to this standard: breaking force and elongation.

3.1.3 For definitions of other terms related to textiles, refer to Terminology D123.

4. Summary of Test Method

4.1 A summary of the directions prescribed for determination of specific properties of hose reinforcing wire is stated in the appropriate sections of the specific test methods that follow.

5. Significance and Use

5.1 The procedures for the determination of properties of single-filament hose reinforcing wire made from steel are considered satisfactory for acceptance testing of commercial shipments of this product because the procedures are the best available and have been used extensively in the trade.

5.1.1 In the case of a dispute arising from differences in reported test results when using these test methods for acceptance testing of commercial shipments, the purchaser and supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for investigation of bias. As a minimum, two parties should take a group of test specimens which are as homogeneous as possible and which are from a lot of material of the type in question. The test specimens then should be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared by using an appropriate statistical test and an acceptable probability level chosen by the two parties before testing is begun. If a bias is found, either its cause must be determined and corrected or the purchaser and