



Designation: A 679/A 679M – 00

Standard Specification for Steel Wire, High Tensile Strength, Cold Drawn¹

This standard is issued under the fixed designation A 679/A 679M; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification covers round, uncoated, high tensile strength, cold-drawn steel spring wire, having properties and quality suitable for the manufacture of mechanical springs and wire forms subject to high static stresses or infrequent dynamic load, or both.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other.

2. Referenced Documents

2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 510 Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel²

A 510M Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel [Metric]²

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment³

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²

A 941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

2.2 ANSI Standard:

B32.4 Preferred Metric Sizes for Round, Square, Rectangle, and Hexagon Metal Products⁶

2.3 Federal Standard:

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)⁷

2.4 Military Standard:

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage⁷

2.5 AIAG Standard:

AIAGB-5 02.00 Primary Metals Identification Tag Application Standard⁸

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology A 941.

4. Ordering Information

4.1 It shall be the responsibility of the purchaser to specify all requirements that are necessary for material under this specification. Such requirements may include, but are not limited to, the following:

4.1.1 Quantity (mass),

4.1.2 Name of material (steel wire, high tensile strength, hard drawn),

4.1.3 Dimensions (Table 1 and Section 9),

4.1.4 Packaging (Section 15),

4.1.5 Heat analysis report, if requested (6.2),

4.1.6 Certification or test report, or both, if specified (Section 14), and

4.1.7 ASTM designation and year of issue.

NOTE 1—A typical ordering description is as follows: 20 Mg high tensile strength, hard-drawn steel mechanical spring wire, 5.00-mm diameter, 500-kg coils to ASTM A 679/A 679M dated _____, or for inch-pound units, 40,000-lb high tensile strength, hard-drawn steel mechanical spring wire, 0.192-in. diameter, in 1000-lb coils to ASTM A 679/A 679M dated _____.

5. Materials and Manufacture

5.1 The steel may be made by any commercially accepted steel making process. The steel may be either ingot cast or continuous strand cast. The rod to be used in the manufacture of wire furnished to this specification shall be in accordance with Specification A 510 or A 510M.

5.2 The finished wire shall be free from detrimental pipe and undue segregation.

5.3 The wire shall be cold drawn to produce the desired mechanical properties.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.03 on Steel Rod and Wire.

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² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 01.05.

⁴ Annual Book of ASTM Standards, Vol 01.01.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁸ Available from the Automotive Industry Action Group, 26200 Lahser, Suite 200, Southfield, MI 48034.