Designation: A713 – 04 (Reapproved 2010)

Standard Specification for Steel Wire, High-Carbon Spring, for Heat-Treated Components[1]

This standard is issued under the fixed designation A713; 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 specification covers round carbon spring steel wire in coils intended for the manufacture of mechanical springs and wire forms that are heat treated (austenitized, quenched, and tempered) after fabrication.

1.2 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A510 Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel

A700 Guide for Packaging, Marking, and Loading Methods for Steel Products for Shipment

A941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E30 Test Methods for Chemical Analysis of Steel, Cast Iron, Open-Hearth Iron, and Wrought Iron (Withdrawn 1995)[3]

E112 Test Methods for Determining Average Grain Size

E350 Test Methods for Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

2.2 *Society of Automotive Engineers Standard:*[4]

J 1086 Numbering Metals and Alloys

2.3 *AIAG Standard:*[5]

AIAGB-5 02.00 Primary Metals Identification Tag Application Standard

3. Terminology

3.1 *Definitions:*

3.1.1 *heat-treated components*—mechanical springs or wire forms that are austenitized, quenched, and tempered after fabrication.

3.2 Refer to Terminology A941 for a more detailed description of heat-treating terms.

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 include, but are not limited to, the following:

4.1.1 Quantity (weight),

4.1.2 Name of material (Sections 1 and 7),

4.1.3 Diameter (Table 1),

4.1.4 Packaging, marking, and loading (Section 12),

4.1.5 ASTM designation and date of issue,

4.1.6 Special requirements (Sections 8 and 9), and

4.1.7 End use.

NOTE 1—A typical ordering description is as follows: Steel Wire, High Carbon Spring, for Heat-Treated Components, Grade 1070, to ASTM A713 dated _____, for Door Closer Springs, 30 000 lb, Size 0.250 in. in 500-lb Catch Weight Coils.

5. General Requirements for Delivery

5.1 Material furnished under this specification shall conform to the applicable requirements of the latest edition of Specification A510 unless otherwise specified herein.

[1] This specification is under the jurisdiction of ASTM Committee A01 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] 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 American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, http://www.asme.org.

[5] Available from Automotive Industry Action Group (AIAG), 26200 Lahser Rd., Suite 200, Southfield, MI 48033, http://www.aiag.org.

***A Summary of Changes section appears at the end of this standard**