Designation: A 82 – 01

American Association State Highway and Transportation Officials
Standard AASHTO No.: M 32

# Standard Specification for Steel Wire, Plain, for Concrete Reinforcement[1]

This standard is issued under the fixed designation A 82; 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.

*This standard has been approved for use by agencies of the Department of Defense.*

## 1. Scope

1.1 This specification covers cold-drawn steel wire, as-drawn or galvanized, to be used as such, or in fabricated form, for the reinforcement of concrete, in sizes not less than 2.03 mm (0.080 in.) nominal diameter.

1.2 Supplement S1 describes high-strength wire, which shall be furnished when specifically ordered. It shall be permissible to furnish high-strength wire in place of regular wire if mutually agreed to by the purchaser and the supplier.

1.3 The values stated in either inch-pound units or SI units are to be regarded as standard. Within the text the inch-pound units are shown in parentheses. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values may result in nonconformance with the specification.

## 2. Referenced Documents

2.1 *ASTM Standards:*

A 185 Specification for Steel Welded Wire Reinforcement, Plain, for Concrete[2]

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products[3]

A 641 Specification for Zinc-Coated (Galvanized) Carbon Steel Wire[4]

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment[5]

E 83 Practice for Verification and Classification of Extensometers[6]

2.2 *U.S. Military Standards:*

MIL-STD-129 Marking for Shipment and Storage[7]

MIL-STD-163 Steel Mill Products Preparation for Shipment and Storage[7]

2.3 *U.S. Federal Standard:*

Fed. Std. No. 123 Marking for Shipments (Civil Agencies)[7]

2.4 *Other Standard:*

ACI 318 Building Code Requirements for Structural Concrete[8]

## 3. Ordering Information

3.1 Orders for material to this specification should include the following information:

3.1.1 Quantity (weight),

3.1.2 Name of material (cold-drawn steel wire for concrete reinforcement),

3.1.3 Wire size number (see Section 8),

3.1.4 Packaging (see Section 15), and

3.1.5 ASTM designation and year of issue.

3.1.6 Special requirements, if any. (See Supplement S1.)

NOTE 1—A typical ordering description is as follows: 100 000 lb cold-drawn steel wire for concrete reinforcement, Size No. W5 in 500 lb secured coils, to ASTM – _____.

## 4. Materials and Manufacture

4.1 The steel shall be made by one of the following processes: open-hearth, electric furnace, or basic-oxygen.

4.2 The wire shall be cold drawn from rods that have been hot rolled from billets.

4.3 Unless otherwise specified, the wire shall be supplied uncoated. When specified as galvanized, it shall be galvanized at finish size.

## 5. Mechanical Property Requirements

5.1 *Tension Tests*:

5.1.1 When tested as described in Test Methods and Definitions A 370, the material, except as specified in 5.1.2, shall conform to the tensile property requirements in Table 1 based on nominal area of wire.

5.1.2 The yield strength shall be determined as described in Test Methods and Definitions A 370 at an extension of 0.5 % of gage length. The manufacturer is not required to test for yield strength, but is responsible for supplying a product that will meet the stipulated limit when tested in conformance with the

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[2] *Annual Book of ASTM Standards*, Vol 01.04.

[3] *Annual Book of ASTM Standards*, Vol 01.03.

[4] *Annual Book of ASTM Standards*, Vol 01.06.

[5] *Annual Book of ASTM Standards*, Vol 01.05.

[6] *Annual Book of ASTM Standards*, Vol 03.01.

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

[8] Available from American Concrete Institute, P. O. Box 9094, Farmington Hills, MI 48333–9094.

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