



Standard Specification for Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement¹

This standard is issued under the fixed designation A1022/A1022M; 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 stainless steel wire and welded wire reinforcement produced from hot-rolled stainless steel rod. The stainless steel wire is cold-worked, drawn or rolled, plain (non-deformed) or deformed or a combination of deformed and plain. It is used as concrete reinforcement for applications requiring resistance to corrosion or controlled magnetic permeability, or both. Common wire sizes and dimensions are found in this specification. Actual wire sizes are not restricted to those shown in the tables.

1.2 A supplementary requirement (S1) is provided and shall apply only when specified by the purchaser. In order to obtain a corrosion tested or controlled magnetic permeability product, steel conforming to Supplementary Requirement S1 should be ordered.

1.3 The chemical composition of the steel (stainless alloy) shall be selected for suitability to the application involved by agreement between the manufacturer and the purchaser. Unless otherwise specified by the purchaser, Specification [A276](#) shall be used for chemical requirements. The UNS designations are to be included with the type number and noted in brackets. Examples of austenitic stainless steel designations are Type 304 [S30400], 304L [S30403], 316 [S31600], 316L [S31603], 316N [S31651], 316LN [S31653] and examples of duplex stainless steel designations are Type 2205 [S32205] and 329 [S32900].

NOTE 1—Only austenitic and duplex stainless steels are usually recommended for use as reinforcement in concrete because of their high corrosion resistance. Austenitic stainless steels have good general corrosion resistance, strength characteristics which can be improved by cold working, good toughness and ductility properties at low temperatures, and low magnetic permeability. Duplex stainless steels have generally a corrosion resistance greater than that of most austenitic steels and are magnetic. Other stainless steels with different chemical compositions than the series and types mentioned above, may be used for less restrictive applications.

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 [A01.05](#) on Steel Reinforcement.

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1.4 Wire for welded wire reinforcement is generally manufactured at 75 ksi [520 MPa] yield strength level. Other strength levels shall be by agreement between the purchaser and manufacturer.

NOTE 2—The term used to refer to yield strength levels are the same as those in ASTM Standards for welded wire reinforcement.

1.5 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. 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.

2. Referenced Documents

2.1 *ASTM Standards:*²

[A276 Specification for Stainless Steel Bars and Shapes](#)
[A342/A342M Test Methods for Permeability of Weakly Magnetic Materials](#)

[A370 Test Methods and Definitions for Mechanical Testing of Steel Products](#)

[E83 Practice for Verification and Classification of Extensometer Systems](#)

2.2 *Military Standards:*³

[MIL-STD-129 Marking for Shipment and Storage](#)

2.3 *Federal Standard:*³

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

2.4 *ACI Standard:*⁴

[ACI 318 Building Code Requirements for Structural Concrete](#)

2.5 *Adjuncts:*

[Weld Tester Drawing](#)⁵

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 Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

⁴ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.

⁵ Available from ASTM International Headquarters. Order Adjunct No. [ADJA0185](#). Original adjunct produced in 1967.

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