



ASTM A 185 - 79

American Association State
Highway and Transportation Officials
Standard AASHTO No: M 55

Standard Specification for WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT¹

This standard is issued under the fixed designation A 185; 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.

This specification has been approved for use by agencies of the Department of Defense for listing in the DoD Index of Specifications and Standards.

1. Scope

1.1 This specification covers welded wire fabric to be used for the reinforcement of concrete.

NOTE 1—The values stated in inch-pound units are to be regarded as the standard.

2. Applicable Documents

2.1 ASTM Standards:

A 82 Specification for Cold-Drawn Steel Wire for Concrete Reinforcement²

A 700 Recommended Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment²

2.2 Military Standard³:

MIL-STD-129 Marking for Shipment and Storage

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

2.3 Federal Standard³:

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

3. Description of Term

3.1 *Welded Wire Fabric*, as used in this specification, designates a material composed of cold-drawn steel wires, "as drawn" or galvanized, fabricated into sheet (or so-called "mesh") formed by the process of electric welding. The finished material shall consist essentially of a series of longitudinally and transverse wires arranged substantially at right angles to each other and welded together at all points of intersection.

4. Ordering Information

4.1 Orders for material to this specification

shall include the following information:

4.1.1 Quantity (weight or square area),

4.1.2 Name of material (welded steel wire fabric for concrete reinforcement),

4.1.3 Wire spacing and sizes,

4.1.4 Length and width of sheets or rolls,

4.1.5 Packaging (see Section 18), and

4.1.6 ASTM designation and date of issue

NOTE 2—A typical ordering description is as follows: 10 000 ft² welded steel wire fabric for concrete reinforcement, 4 x 12-W20 x W6, in flat sheets 96 in. wide x 240 in. long, in secured lifts, to ASTM A 185 dated —.

5. Grade of Wire

5.1 The wire used in the manufacture of welded wire fabrics shall conform to Specification A 82.

6. Fabrication

6.1 The wires shall be assembled by automatic machines or by other suitable mechanical means which will assure accurate spacing and alignment of all members of the finished fabric.

6.2 Longitudinal and transverse members shall be securely connected at every intersection by a process of electrical-resistance welding which employs the principle of fusion combined with pressure.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel and Related Alloy and is the direct responsibility of Subcommittee A01.05 on Steel Reinforcement.

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² *Annual Book of ASTM Standards*, Part 4.

³ Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, Pa. 19120.



6.3 Wire of proper grade and quality when fabricated in the manner herein required shall result in a strong, serviceable mesh-type product having substantially square or rectangular openings. It shall be fabricated and finished in a workmanlike manner, shall be free from injurious defects, and shall conform to this specification.

7. Mechanical Requirements

7.1 All wire of the finished fabric shall meet the minimum requirements for tensile properties and shall also withstand the bend test as prescribed for the wire before fabrication in Specification A 82.

7.2 In order to assure adequate weld-shear strength between longitudinal and transverse wires, weld-shear tests as described in 8.3 shall be made. The minimum average shear value in pounds-force shall not be less than 35,000 multiplied by the nominal area of the larger wire in square inches (or in newtons shall not be less than 241 multiplied by the nominal area in square millimetres) where the smaller wire is not less than size W1.2 and has an area of 40 percent or more of the area of the larger wire. Typical examples of the 40 percent or more wire size differential are as follows:

Larger	Smaller
Size No. W20	Size No. W8
Size No. W15	Size No. W6
Size No. W10	Size No. W4

7.3 Fabric having a relationship of longitudinal and transverse wires other than those covered in 7.2 shall not be subject to the weld shear requirement.

8. Tension Tests and Weld Shear Tests

8.1 Tests for determination of conformance to the requirements of 7.1 may be made on the welded wire fabric after fabrication either across or between the welds. Not less than 50 percent of the samples tested shall be across a weld.

8.2 Reduction of area may be determined by measuring the ruptured section of a specimen which has been tested either across or between the welds. However, in the case of a specimen which has been tested across a weld, the measurement shall be made only when rupture has occurred at a sufficient distance from the center of the weld to permit an accurate measurement of the fractured section.

8.3 Weld-shear tests for determination of conformance to the requirements of 7.2 shall be conducted using a fixture as described in Section 11.

8.3.1 Four welds selected at random from a specimen representing the entire width of the fabric shall be tested for weld shear strength. The material shall be deemed to conform to the requirements for weld shear strength if the average of the four samples complies with the values stipulated in 7.2. If this average fails to meet the prescribed minimum value, all the welds across the specimen shall then be tested. The fabric will be acceptable if the average of all weld shear test values across the specimen meets the prescribed minimum value.

9. Bend Tests

9.1 The bend test shall be made on a specimen between the welds.

10. Test Specimens

10.1 Test specimens for testing tensile properties shall be obtained by cutting from the finished fabric, units of suitable size to enable proper performance of the intended tests.

10.2 Specimens used for testing tensile properties across a weld shall have the welded joint located approximately at the center of the wire being tested, and the cross wire forming the welded joint shall extend approximately 1 in. (25 mm) beyond each side of the welded joint.

10.3 Test specimens for determining weld-shear properties shall be obtained by cutting from the finished fabric a section, including one transverse wire, across the entire width of the sheet or roll. From this specimen four welds shall be selected at random for testing. The transverse wire of each test specimen shall extend approximately 1 in. (25 mm) on each side of the longitudinal wire. The longitudinal wire of each test specimen shall be of such length below the transverse wire so as to be adequately engaged by the grips of the testing machine and of such length above the transverse wire that its end shall be above the center line of the upper bearing of the testing device.

10.4 Tests for conformance to dimensional characteristics shall be made on full sheets or rolls.

10.5 If any test specimen shows defects or develops flaws it may be discarded and another substituted.