This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

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Standard Specification for Welded Wire Mesh Fence Fabric (Metallic-Coated or Polymer Coated) for Meshes of 6 in.^{2} [3871 mm^2] or Less, in Panels or Rolls, with Uniform Meshes[1]

This standard is issued under the fixed designation F2453/F2453M; 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 welded wire mesh fence fabric produced from steel wire or metallic-coated steel wire. The metallic-coated fabric may be polymer coated after fabrication.

1.2 Welded wire mesh fence fabric is produced in four types, based on the kind of coating, as described in Section 4.

1.3 This specification is applicable to orders in either inch-pound units or SI units. Values stated in either inch-pound or SI units are to be regarded separately as the standard. Within the text, the SI units are shown in brackets. The values in the two systems are not exact equivalents; therefore, each system shall be used independent of the other, without combining values in any way.

1.4 This specification references notes and footnotes, which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of this specification.

1.5 The following safety hazards caveat pertains only to the test methods portion, Section 13, of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations proper to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A82/A82M Specification for Steel Wire, Plain, for Concrete Reinforcement (Withdrawn 2013)[3]

A90/A90M Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings

A123/A123M Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

A185/A185M Specification for Steel Welded Wire Reinforcement, Plain, for Concrete (Withdrawn 2013)[3]

A641/A641M Specification for Zinc–Coated (Galvanized) Carbon Steel Wire

A853 Specification for Steel Wire, Carbon, for General Use

A856/A856M Specification for Zinc-5 % Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire

A902 Terminology Relating to Metallic Coated Steel Products

B117 Practice for Operating Salt Spray (Fog) Apparatus

D1499 Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics

F934 Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials

2.2 *ISO Standard:*[4]

ISO 2178 Non-Magnetic Coatings on Magnetic Substrates—Measurement of Coating Thickness—Magnetic Method

3. Terminology

3.1 *Definitions*—Refer to Terminology A902 for general terminology relating to metallic-coated steel products.

3.2 *Definitions of Terms Specific to This Standard:*

[1] This specification is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.35 on Architectural Metal Fence Systems.

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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 National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

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3.2.1 *welded wire mesh fence fabric*—material composed of a series of longitudinal and transverse steel wires arranged substantially at right angles to each other, and welded together at the points of intersection by electrical resistance welding to form fabricated sheets or rolls. See Tables 1 and 2 for list of standard mesh sizes.

4. Classification

4.1 Welded wire mesh fence fabric is classified in accordance with coating as follows:

4.1.1 *Type 1,* consists of welded wire fabric made from wire which is zinc-coated, as per Specification A641/A641M Class 3 minimum, before being welded into fabric, known as galvanized before welding.

4.1.2 *Type 2,* consists of welded wire fabric which is made from uncoated wire and the fabric is subsequently zinc-coated after fabrication, in accordance with Specification A123/A123M, Coating Grade 35, known as galvanized after welding.

4.1.3 *Type 3,* consists of welded wire fabric made from wire which is coated with zinc-5 % aluminum-mischmetal alloy (Zn-5A1-MM), in accordance with Specification A856/A856M, Class A, before being welded into fabric, known as zinc 5 % aluminum mischmetal alloy-coated steel before welding.

4.1.4 *Type 4,* consists of welded wire fabric made from wire which is zinc-coated, in accordance with Specification A641/A641M, Class 1 minimum, before being welded into fabric, known as galvanized before welding, and subsequently polymer coated.

4.1.5 In agreement between buyer and supplier Type 1, 2, or 3 can be used to produce polymer coated welded wire fabric.

5. Ordering Information

5.1 Orders for material purchased under this specification shall include the following information:

5.1.1 Quantity (number of units of rolls or panels).

5.1.2 Mesh description: wire spacing and size (gage).

5.1.3 Panel (height by length) or Roll (height by length).

5.1.4 Type of coating (Section 4), including the specific type to be furnished.

5.1.5 ASTM designation and year of issue.

5.1.6 Any special requirements (see Section 8).

5.1.7 Certification, if required (see 15.1)

NOTE 1—A typical ordering description, when same mesh and gage, is as follows: 500 panels—0.5 in. by 3 in. by 8.5 gage/120 in. by 99 in. Type 2, conforming to Specification F2453 or 100 rolls of 2 in. by 2 in. 8.5 gage/96 in. by 100 ft, Type 1, conforming to Specification F2453. The vertical mesh opening (height measured from top to bottom) is designated first followed by the horizontal mesh opening (width measured from left to right).

6. Material and Manufacture

6.1 The wire used in the manufacture of welded wire mesh fence fabric shall conform to the specifications in 6.1.1 as appropriate for the type ordered, except the tensile strength shall conform to 7.1. The wire may be produced from any grade of steel listed in Specification A82/A82M or Specification A853.

6.1.1 Type 1 welded wire fabric shall be manufactured from zinc-coated steel wire conforming to Specification A641/A641M Class 3 coating (minimum). Type 2 welded wire fabric shall be manufactured from uncoated steel wire conforming to Specification A82/A82M or Specification A853, and the fabric subsequently zinc-coated by the hot-dip process, conforming to Specification A123/A123M, Coating Grade 35 (minimum). Type 3 welded wire fabric shall be manufactured from zinc-5 % a1uminum-mischmetal coated steel wire conforming to Specification A856/A856M, Class A coating (minimum). Type 4 welded wire fabric shall be manufactured from zinc-coated steel wire conforming to Specification A641/A641M—Class 1 coating.

6.2 Wire for welded wire mesh fence fabric shall be assembled by automatic machines or other suitable mechanical means that will ensure accurate spacing and alignment of all members of the finished fabric. Longitudinal and transverse members of the welded wire fabric shall be connected at every intersection in accordance with the requirements of 13.4 by the process of electric resistance welding, which employs the principle of fusion combined with pressure.

6.3 The polymer coating used in the manufacture of polymer-coated welded wire mesh fence fabric shall conform to the properties in 8.2 and 8.3.

TABLE 1 Panel Sizes[A]

Vertical Mesh Spacing (in.)	Horizontal Mesh Spacing (in.)	Wire Diameter			Panel Width for Post Spacings 6, 7, 8, and 10 ft (in.)	Panel Length (Height) (ft)
		Guage	in.	[mm]		
2.0	2.0	11	0.120	3.06	74, 86, 98, 122	6 - 21
2.0	2.0	8.5	0.155	3.93	74, 86, 98, 122	6 - 21
2.0	2.0	6	0.192	4.88	74, 86, 98, 122	6 - 21
2.0	2.0	6.5	0.185	4.70	74, 86, 98, 122	6 - 21
0.5	2.0	10.5	0.128	3.25	74, 86, 98, 122	6 - 21
0.5	2.0	11	0.120	3.06	74, 86, 98, 122	6 - 21
0.5	3.0	11	0.120	3.06	75, 87, 99, 123	6 - 21
0.5	3.0	10.5	0.128	3.25	75, 87, 99, 123	6 - 21
0.5	3.0	9	0.148	3.77	75, 87, 99, 123	6 - 21
0.5	3.0	8.5	0.155	3.94	75, 87, 99, 123	6 - 21
0.5	3.0	8	0.162	4.12	75, 87, 99, 123	6 - 21
0.5	3.0	6	0.192	4.88	75, 87, 99, 123	6 - 21
0.75	3.0	4	0.225	5.72	75, 87, 99, 123	6 - 21

[A] Panels available up to 10 ft 6 in. in width (not all meshes) and 21 ft in length. The vertical mesh spacing is the distance measured from the top to the bottom. The horizontal mesh opening is the distance measured from left to right.

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