



Standard Specification for Metallic-Coated Steel Marcellled Tension Wire for Use With Chain Link Fence¹

This standard is issued under the fixed designation A 824; 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 0.177 in. (4.50 mm) diameter metallic-coated carbon steel marcellled tension wire for use with chain-link fence. The 0.177 in. (4.50 mm) diameter metallic-coated wire shall be produced in accordance with Specification A 817. Three types of coatings are covered:

- 1.1.1 *Type I*—Aluminum-coated (aluminized),
- 1.1.2 *Type II*—Zinc-coated (galvanized), and
- 1.1.3 *Type III*—Zinc-5 % Aluminum Mischmetal (Zn5Al-MM) alloy-coated.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

- A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment²
- A 817 Specification for Metallic-Coated Steel Wire for Chain-Link Fence³
- A 902 Terminology Relating to Metallic-Coated Steel Products³

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this specification, refer to Terminology A 902.

3.2 *Definitions of Terms Specific to This Standard:* Description of Term Specific to This Standard:

3.2.1 *marcelling*—a process whereby either a uniform helix or a series of waves is put in a wire to facilitate tensioning the wire when installed to support the top or bottom, or both, of the chain-link fabric (see 5.2.1).

4. Ordering Information

4.1 Orders for metallic-coated steel tension wire should

include the following information:

- 4.1.1 Quantity (expressed in number of coils),
- 4.1.2 Name of product,
- 4.1.3 Type of coating (see 5.3),
- 4.1.4 Class of coating if applicable (see 5.3.2 and 5.3.3),
- 4.1.5 Packaging requirements (see Section 14),
- 4.1.6 Certification or test report, or both, if specified (see Section 13), and
- 4.1.7 ASTM designation and year of issue.

NOTE 1—A typical ordering description is as follows: 20 coils metallic-coated steel tension wire, Type II, Class 2, in 100-lb coils, to ASTM A 824— ____.

5. Materials and Manufacture

5.1 The steel rod from which the wire is drawn shall be manufactured by the open-hearth, electric-furnace, or basic-oxygen process.

5.2 The 0.177 in. (4.50 mm) diameter wire shall be cold-drawn, metallic-coated at finished size to produce the specified mechanical properties per Specification A 817, then marcellled as specified in 5.2.1.

5.2.1 Marcelling shall produce a helix or series of waves in the wire with the offset distance from the wire axis to the wave peaks or the helix not less than 0.125 in. (3.18 mm) (measured to the center of the wire). The pitch (distance between successive points on the waves or helix) shall be not more than 12 in. (305 mm). Prior to making measurements of the marcelling, curvature from coiling shall be removed by the application of a 500-lbf (2225-N) tensile load. Maintain the load while measuring the offset distance and pitch. Measurements shall be made on a section of wire with a length at least two times the pitch length.

5.2.1.1 Measurement of offset distance may be performed by placing a straightedge against two adjacent peaks or corresponding points on a helix, measuring the distance to the inside of the wire 180° opposite, and dividing the value by two.

5.3 The 0.177 in. (4.50 mm) diameter wire shall be furnished with one of three types of coating, per Specification A 817 as specified:

5.3.1 *Type I—Aluminum-Coated (Aluminized)*, with coating weight specified.

5.3.2 *Type II—Zinc-Coated (Galvanized)*, in three classes of coating weights as specified.

¹ This specification is under the jurisdiction of ASTM Committee F14 on Fences and is the direct responsibility of Subcommittee F14.40 on Chain Link Fence and Wire Accessories.

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² *Annual Book of ASTM Standards*, Vol 01.05.

³ *Annual Book of ASTM Standards*, Vol 01.06.