



**Designation: A 882/A882M – 96<sup>€1</sup>**

## **Standard Specification for Epoxy-Coated Seven-Wire Prestressing Steel Strand<sup>1</sup>**

This standard is issued under the fixed designation A 882/A882M; 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 (€) indicates an editorial change since the last revision or reapproval.

€<sup>1</sup> NOTE—Editorial corrections were made in June 2001.

### **1. Scope**

1.1 This specification covers ASTM Specification A 416 low-relaxation Grade 250 and Grade 270 seven-wire prestressing steel strand with protective fusion-bonded epoxy coating applied by the electrostatic deposition method or other method that will meet the coating requirements in Section 7.

NOTE 1—The manufacturer as identified throughout this specification is the coating applicator.

1.2 Supplementary Requirements S1 contains requirements for epoxy-coated and filled strand. Epoxy-coated and filled strand shall not be furnished unless ordered, or by arrangement between purchaser and manufacturer.

NOTE 2—This standard is a product specification and it does not delineate requirements regarding the use of epoxy-coated strand. Proper use of epoxy-coated strand includes design considerations, handling, installing, and stressing of strands, permissible concrete curing temperature, and procedures for repairing damaged coating and protection of the ends of strands. Information and procedures for such items are presented in a report by the PCI Ad Hoc Committee on Epoxy-Coated Strand.<sup>2</sup>

1.3 This specification is applicable for orders in either inch-pound units (as Specification A 882) or SI units [as Specification A 882M].

1.4 The values stated in either inch-pound or SI units are to be regarded as standard. Within the test, the SI units are shown in brackets. The values stated in each system must be used independently of the other. Combining values from the two systems may result in nonconformance with this specification.

### **2. Referenced Documents**

#### **2.1 ASTM Standards:**

- A 370 Test Methods and Definitions for Mechanical Testing of Steel Products<sup>3</sup>
- A 416/A 416M Specification for Steel Strand, Uncoated

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

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<sup>2</sup> “Guidelines for the Use of Epoxy-Coated Strand,” *PCI Journal*, Precast/Prestressed Concrete Institute, Vol. 38, No. 4, July-August 1993, pp. 26–32.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 01.03.

Seven-Wire for Prestressed Concrete<sup>4</sup>

B 117 Practice for Operating Salt Spray (Fog) Apparatus<sup>5</sup>

D 968 Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive<sup>6</sup>

G 14 Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test)<sup>7</sup>

G 20 Test Method for Chemical Resistance of Pipeline Coatings<sup>7</sup>

2.2 *Federal Highway Administration Report:*

FHWA-RD-74-18 Nonmetallic Coatings for Concrete Reinforcing Bars (February 1974)<sup>8</sup>

### **3. Ordering Information**

3.1 The purchaser should specify:

3.1.1 Diameter, grade, and type of uncoated strand in accordance with Specification A 416/A 416M (latest edition).

3.1.2 Smooth or grit impregnated coating (see 6.3).

3.1.3 Quantity (in feet [metres]).

3.1.4 Requirements for certification (see Section A1.2.3).

3.1.5 Requirements for material samples (see 4.3).

3.1.6 Requirements for patching material (see 4.4).

NOTE 3—A typical ordering description for epoxy-coated strand is as follows: 84 000 feet [2560 m] of grit-impregnated epoxy-coated strand, ½-in. [12.7-mm] diameter, Grade 270 K low-relaxation on wooden reels to ASTM Specification A 882 – [A 882M – ].

### **4. Materials**

4.1 Prestressing steel strand to be coated shall meet the requirements of Specification A 416/A 416M as specified by the purchaser and shall be free of contaminants such as oil, grease, or paint.

4.1.1 Epoxy-coated strand shall have relaxation losses of not more than 4 % when initially loaded to 70 % of specified minimum breaking strength of the strand after 1000 h when tested under conditions of Specification A 416/A 416M.

4.2 The coating material shall meet the requirements listed in Annex A1 of this specification. The coating material shall be

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 01.04.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 03.02.

<sup>6</sup> *Annual Book of ASTM Standards*, Vol 06.01.

<sup>7</sup> *Annual Book of ASTM Standards*, Vol 06.02.

<sup>8</sup> Available from the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161.