
Standard Specification for Steel Strand, Low-Relaxation Uncoated Seven-Wire for Concrete Reinforcement

AASHTO Designation: M 203M/M 203-20

Technical Subcommittee: 4f, Metals

Release: Group 2 (June)

ASTM Designation: A416/A416M-18



**American Association of State Highway and Transportation Officials
555 12th Street NW, Suite 1000
Washington, D.C. 20004**

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1. SCOPE

- 1.1. This specification covers two grades of uncoated low-relaxation, seven-wire steel strand for use in pretensioned and post-tensioned prestressed concrete construction. Grade 1725 [250] and Grade 1860 [270] have minimum ultimate strengths of 1725 MPa [250 ksi] and 1860 MPa [270 ksi], respectively, based on the nominal area of the strand.
- 1.2. The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the inch-pound units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.
- 1.3. The supplementary requirements in S1 shall be specified for 15.24-mm- [0.600-in.-] diameter uncoated seven-wire steel strand if needed for applications in prestressed ground anchors.

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standard:*
 - T 244, Mechanical Testing of Steel Products
- 2.2. *ASTM Standards:*
 - A981/A981M, Standard Test Method for Evaluating Bond Strength for 0.600-in. [15.24-mm] Diameter Steel Prestressing Strand, Grade 270 [1860], Uncoated, Used in Prestressed Ground Anchors
 - A1061/A1061M, Standard Test Methods for Testing Multi-Wire Steel Prestressing Strand
- 2.3. *IEEE/ASTM Standard:*
 - SI 10, American National Standard for Use of the International System of Units (SI): The Modern Metric System
- 2.4. *Military Standard:*
 - MIL-STD-129, Marking for Shipment and Storage
- 2.5. *Federal Standard:*
 - Fed. Std. No. 123, Marking for Shipments (Civil Agencies)

3. TERMINOLOGY

3.1. *Description of Term Specific to This Standard:*

3.1.1. *lay length*—the axial distance required for a helically placed outer wire to make one complete revolution of a strand.

3.1.2. *strand*—a group of wires having a center wire enclosed tightly by six helically placed outer wires.

3.1.2.1. *Discussion*—the direction of lay is either right-handed or left-handed.

3.1.3. *strand splice*—a production connection between two separate lengths of strand never intended to carry prestressing loads.

3.1.4. *weld wire*—a resistance butt-weld joining two separate lengths of wire after wire drawing and before the wire is formed into strand.

4. ORDERING INFORMATION

4.1. *Orders for seven-wire strand under this specification should include the following information:*

4.1.1. Quantity (meters) [feet],

4.1.2. Nominal diameter of strand,

4.1.3. Grade of strand, and

4.1.4. AASHTO designation and year of issue.

Note 1—A typical ordering description is as follows: 25 600 m [84,000 ft], 13 mm [0.5 in.], Grade 1860 [270] low-relaxation strand, in 3600-m [12,000-ft] reelless packs conforming to M 203M/M 203.

4.2. *The purchaser shall have the option to specify additional requirements, including but not limited to the following:*

4.2.1. Relaxation evidence for similarly dimensioned strand of the same grade (6.5),

4.2.2. Specifically dimensioned strand (7.5)

4.2.3. Whether strand splices are permitted (8.1.1),

4.2.4. Weldless strand (8.2.2),

4.2.5. Requirements for outside inspection (11.1),

4.2.6. Load-elongation curve (13.2),

4.2.7. Packaging and package marking (Section 14),

4.2.8. Supplementary Requirement S1, and

4.2.9. Other special requirements, if any.