
Standard Specification for High-Strength Steel Bars for Prestressed Concrete

AASHTO Designation: M 275M/M 275-20

Technical Subcommittee: 4f, Metals

Release: Group 2 (June)

ASTM Designation: A722/A722M-18



**American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. This specification covers Type I and Type II high-strength steel bars intended for use in prestressed concrete construction or in prestressed ground anchors. Bars are of a minimum ultimate tensile strength level of 1035 MPa [150,000 psi].
- 1.2. Two types of bars are provided: Type I bar has a plain surface and Type II bar has surface deformations.
- 1.3. Supplementary requirements of an optional nature are provided. They shall apply only when specified by the purchaser.
- 1.4. This specification is applicable for orders in either SI units (M 275M) or in inch-pound units (M 275). SI units and inch-pound units are not necessarily equivalent. Inch-pound units are shown in brackets in the text for clarity, but they are the applicable values when the material is ordered to M 275.

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
 - T 244, Mechanical Testing of Steel Products
 - T 285, Bend Test for Bars for Concrete Reinforcement
- 2.2. *ASTM Standards:*
 - A700, Standard Guide for Packaging, Marking, and Loading Methods for Steel Products for Shipment
 - A751, Standard Test Methods, Practice and Terminology for Chemical Analysis of Steel Products
- 2.3. *Military Standard:*
 - MIL-STD-129, Marking for Shipment and Storage
- 2.4. *Federal Standard:*
 - Fed. Std. 123, Marking for Shipment (Civil Agencies)

3. ORDERING INFORMATION

- 3.1. *Orders for high strength steel bars under this specification shall contain the following information:*
- 3.1.1. Quantity (mass);
- 3.1.2. Size and length;
- 3.1.3. Type I or Type II; and
- 3.1.4. AASHTO designation and year of issue.
- 3.2. *The purchaser shall have the option to specify additional requirements, including but not limited to the following:*
- 3.2.1. Report on chemical composition (Section 5.1);
- 3.2.2. Special inspection requirements (Section 14.2);
- 3.2.3. Load-elongation curve, (Section 16);
- 3.2.4. Special preparation for delivery, if desired (Section 17); and
- 3.2.5. Supplementary requirements (Section S1).

Note 1—A typical ordering description is as follows: 50 high-strength bars for prestressing concrete to M 275M/M 275-____; 26-mm diameter, 12.3 m long, Type II; packed in accordance with ASTM A700; meeting supplementary bending properties. [50 high-strength bars for prestressing concrete to M 275M/M 275-____; 1-in. diameter, 40 ft, 6 in. long, Type II; packed in accordance with ASTM A700; meeting supplementary bending properties.]

4. MATERIALS AND MANUFACTURE

- 4.1. The bars shall be rolled from properly identified heats of mold cast or strand-cast steel. The standard sizes and dimensions of Type I and Type II bars shall be those listed in Table 1 and Table 2, respectively.

Table 1—Dimensions for Type I (Plain) Bar

Nominal Diameter		Nominal Mass [Weight]		Nominal Area ^a	
mm	in.	kg/m	lb/ft	mm ²	in. ²
19	$\frac{3}{4}$	2.23	1.50	284	0.44
22	$\frac{7}{8}$	3.04	2.04	387	0.60
25	1	3.97	2.67	503	0.78
29	$1\frac{1}{8}$	5.03	3.38	639	0.99
32	$1\frac{1}{4}$	6.21	4.17	794	1.23
35	$1\frac{3}{8}$	7.52	5.05	955	1.48

^a The nominal area is determined from the nominal diameter in inches. Values have been converted from inch-pound units to metric units.