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Designation: A 996/A 996M – 03

Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement[1]

This standard is issued under the fixed designation A 996/A 996M; 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 rail-steel and axle-steel bars for concrete reinforcement. Three types of product are included, designated with a "rail symbol," and an "R" for bars made of rail-steel and with an "A" for bars made of axle-steel. The standard sizes and dimensions of deformed bars and their number designations are given in Table 1. All sizes and grades of all types may not be readily available; manufacturers should be consulted to verify availability.

1.2 The text of this specification references notes and footnotes that provide explanatory material. These notes and footnotes, excluding those in tables and figures, shall not be considered as requirements of the specification.

1.3 Type "rail symbol" and Type R are of two minimum yield levels, namely 50 000 psi [350 MPa] and 60 000 psi [420 MPa] designated as Grade 50 [350] and Grade 60 [420], respectively. Type A is of two minimum yield levels, namely 40 000 psi [280 MPa] and 60 000 psi [420 MPa] designated as Grade 40 [280] and Grade 60 [420], respectively.

1.4 The weldability of the steel is not a requirement of this specification.

1.5 This specification is applicable for orders in either inch-pound units (Specification A 996) or SI units (Specification A 996M).

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

1.7 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products[2]

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment[3]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[4]

2.2 *Military Standards:*

MIL-STD-129 Marking for Shipment and Storage[5]

MIL-STD-163 Steel Mill Products Preparation for Shipment and Storage[5]

2.3 *Federal Standard:*

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)[5]

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *deformed bar*, *n*—steel bar with protrusions; a bar that is intended for use as reinforcement in reinforced concrete construction.

3.1.1.1 *Discussion*—The surface of the bar is provided with lugs or protrusions that inhibit longitudinal movement of the bar relative to the concrete surrounding the bar in such construction. The lugs or protrusions conform to the provisions of this specification.

3.1.2 *deformations*, *n*—protrusions on a deformed bar.

3.1.3 *rib*, *n*—longitudinal protrusion on a deformed bar.

4. Ordering Information

4.1 It shall be the responsibility of the purchaser to specify all requirements that are necessary for material ordered to this specification. Such requirements shall include, but are not limited to, the following.

4.1.1 Quantity (weight) [mass],

4.1.2 Name of material (rail-steel or axle-steel deformed bars for concrete reinforcement),

4.1.3 Type,

4.1.4 Size,

4.1.5 Grade,

[1] This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.05 on Steel Reinforcement.

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[2] *Annual Book of ASTM Standards*, Vol 01.01.

[3] *Annual Book of ASTM Standards*, Vol 01.05.

[4] *Annual Book of ASTM Standards*, Vol 14.02.

[5] Available from Standardization Documents Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111–5094.

***A Summary of Changes section appears at the end of this standard.**

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