



Standard Specification for Uncoated, Stress-Relieved Steel Bars for Prestressed Concrete Railroad Ties¹

This standard is issued under the fixed designation A 911/A 911M; 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 uncoated stress-relieved steel bars for use in prestressed concrete railroad ties.

1.2 Supplement I describes low-relaxation bars and relaxation testing for that product. Low-relaxation bars shall be furnished when specifically ordered, and may be furnished in place of regular bars if mutually agreed to by the purchaser and manufacturer.

1.3 This specification is applicable for orders in either inch-pounds units (as Specification A 911) or in SI units (as Specification A 911M).

1.4 The values stated in either inch-pound units or SI units are to be regarded separately as standards. Within the text, the SI 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.

2. Referenced Documents

2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

E 328 Methods for Stress-Relaxation Tests for Materials and Structures³

2.2 Federal Standard:

Fed. Std. No. 123 Marking for Shipments (Civil Agencies)⁴

2.3 Military Standards:

MIL-STD-129 Marking for Shipment and Storage⁴

MIL-STD-163 Steel Mill Products Preparation for Shipment and Storage⁴

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 01.03.

³ Annual Book of ASTM Standards, Vol 03.01.

⁴ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *lot, n*—all the coils of bars of the same nominal bar size contained on an individual shipping release or shipping order, from the same cast or heat of steel.

4. Ordering Information

4.1 It shall be the responsibility of the purchaser to specify all requirements that are necessary for bars 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 (uncoated, stress-relieved bars for prestressed concrete railroad ties),

4.1.3 Diameter of bar (inches) [millimetres],

4.1.4 Packaging,

4.1.5 ASTM designation and year of issue, and

4.1.6 Special requirements, if any.

NOTE 1—A typical ordering description is as follows: 100 tons [90 t] uncoated, stress-relieved steel bars for prestressed concrete railroad ties, 0.394-in. [10-mm] diameter bars in 6.5-ft [2.0-m] diameter coils to ASTM A XXX – [A XXXM –].

5. Manufacture

5.1 The bars shall be made from properly identified heats of steel made by the electric-furnace, the open-hearth, or the basic oxygen process.

5.2 After hot-rolling, the bars shall be cold-drawn and finally stress-relieved by induction heat treatment to produce the desired mechanical properties and then coiled.

6. Chemical Requirements

6.1 An analysis of each heat of steel shall be made by the manufacturer from test samples taken during the pouring of each heat.

6.2 The analysis of the steel shall conform to the chemical requirements specified in Table 1.

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

