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AMERICAN SOCIETY FOR TESTING AND MATERIALS  
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## Standard Specification for Steel Screw Spikes<sup>1</sup>

This standard is issued under the fixed designation A 66; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.*

### 1. Scope

1.1 This specification covers steel screw spikes used as fastenings between railroad rails, tie plates, and ties.

1.2 Supplementary Requirement S1 specifying copper content is provided. It shall apply only when specified by the purchaser.

1.3 The values stated in inch-pound units are to be regarded as the standard.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products<sup>2</sup>

#### 2.2 Military Standards:

MIL-STD-129 Marking for Shipment and Storage<sup>3</sup>

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage<sup>3</sup>

#### 2.3 Federal Standard:

Federal Standard No. 123 Marking for Shipments (Civil Agencies)<sup>3</sup>

### 3. Ordering Information

3.1 Orders for screw spikes under this specification shall include the following information as appropriate:

3.1.1 *Quantity* (weight),

3.1.2 *Style of Head*—A, B, or C<sup>4</sup> or other, including drawings if necessary,

3.1.3 *Type of Point*—pilot point or not pointed,

3.1.4 *Dimensions*—diameter and length, under head,

3.1.5 *Supplementary Requirement* if to apply (see S1), and

3.1.6 *Certification* (see 11.1).

### 4. Manufacture

4.1 The steel shall be made by any of the following

processes: open-hearth, electric-furnace, basic-oxygen.

4.2 The steel may be cast by a continuous process, or in ingots.

4.3 The heads and threads of the spikes may be formed by hot- or cold-forming methods.

### 5. Mechanical Requirements

#### 5.1 Tensile Requirements:

5.1.1 The material as represented by a tension test of a full-size finished spike, or a specimen machined from a finished spike, shall conform to the requirements prescribed in Table 1.

5.1.2 Tension tests of full-size spikes shall be performed using a 10° wedge as described in Test Methods A 370, Supplement S11.1.5.

5.1.3 Where the design of the spike is such that full-size testing is impracticable, the tension test may be made on a specimen machined from a finished spike. Dimensions of the test specimen shall conform to the requirements of Test Methods A 370.

5.1.4 When a machined specimen test is performed, the elongation requirement prescribed in Table 1 shall apply.

5.1.5 The yield point shall be determined by the drop of the beam or halt in the gage of the testing machine.

5.2 *Bend Requirement*—The body of a full-size finished spike shall withstand the bend test described in Table 2 without cracking on the outside of the bent portion.

#### 5.3 Number of Tests:

5.3.1 One tension test and one bend test shall be made from each lot of 100 kegs or fraction thereof.

5.3.2 If, during the test, a previously undiscovered material or manufacturing flaw should be disclosed that interferes with the test or interpretation of results, the substitution of another sample spike shall be permitted after it is demonstrated to the satisfaction of the purchaser or his representative, that the condition is not typical of the remainder of the lot.

### 6. Dimensions and Permissible Variations

6.1 The finished spikes shall conform to the dimensions specified by the purchaser, subject to the permissible variations prescribed in Table 3.

6.2 The threads shall be sharp and true to gage and of the design specified by the purchaser.

<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 A01.01 on Steel Rails and Accessories.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 01.03.

<sup>3</sup> Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

<sup>4</sup> Consult manufacturer's literature for design details for A, B, and C-style heads.