Designation: A 65 – 01

Standard Specification for Steel Track Spikes[1]

This standard is issued under the fixed designation A 65; 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 steel track spikes used as fastenings between railroad rails, tie plates, and ties.

1.2 Two grades of spikes are described, Grades 1 and 2, previously known as "soft" and "high carbon" steel.

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

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

A 29/A29M Specification for Steel Bars, Carbon and Alloy, Hot-Wrought and Cold-Finished, General Requirements for[2]

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products[3]

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment[2]

2.2 *American Railway Engineering and Maintenance of Way Association Manual for Railway Engineering*[4]

Design of Cut Track Spike (1963), Chapter 5, Part 2

3. Ordering Information

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

3.1.1 *Quantity* (weight),

3.1.2 *Grade* in accordance with 1.2 and Table 1, Table 2, Table 3, Table 4, Table 5, and Table 6,

3.1.3 *Design*—AREMA design (see 2.2), or other, including drawings if required,

3.1.4 *Dimensions*—cross section and length,

3.1.5 *Supplementary Requirement* if to apply (see S 1) and Table 1, and

3.1.6 *Certification and Test Report Requirements* (see 12.1).

TABLE 1 Chemical Requirements

	Grade 1 ("soft steel")	Grade 2 ("high-carbon steel")
Carbon, min, %	0.12	0.30
Copper, min, % when specified	0.20	0.20

4. Manufacture

4.1 The steel shall be made by any of the following processes: electric-furnace or basic-oxygen.

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

TABLE 2 Product Analysis

Allowance Beyond Limits of Specified Chemical Analysis		
	Percent under min limit	Percent over max limit
Carbon	0.04	0.04

TABLE 3 Tension Test Requirements

	Grade 1 ("soft steel")	Grade 2 ("high-carbon steel")
Yield point, min	0.5 × tensile strength	0.5 × tensile strength
Tensile strength, min, psi	55 000	70 000
MPa	380	485
Elongation in 2 in. or 50 mm, min %	25	25

TABLE 4 Bend Test Requirements

	Grade 1	Grade 2
Body bend, cold	180°—flat on itself	120°—around pin of diameter not greater than spike thickness
Head bend, cold	backward to the line of the face	backward to an angle of 55° with face

[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 A01.01 on Steel Rails and Accessories.

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

[3] *Annual Book of ASTM Standards,* Vol 01.03.

[4] Available from American Railway Engineering and Maintenance of Way Assn., 8201 Corporate Drive, Suite 1125, Landover, MD 20785.