



Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing¹

This standard is issued under the fixed designation A 501; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers black and hot-dipped galvanized hot-formed welded and seamless carbon steel square, round, rectangular, or special shape structural tubing for welded, riveted, or bolted construction of bridges and buildings, and for general structural purposes.

1.2 Square and rectangular tubing is furnished in sizes 1 to 10 in. (25.4 to 254 mm) across flat sides with wall thicknesses 0.095 to 1.000 in. (2.41 to 25.40 mm), dependent upon size; round tubing is furnished in NPS ½ to 24 (see Note 1) inclusive, with nominal (average) wall thicknesses 0.109 to 1.000 in. (2.77 to 25.40 mm), dependent upon size. Special shape tubing and tubing with other dimensions is permitted to be furnished, provided that such tubing complies with all other requirements of this specification.

NOTE 1—The dimensionless designator NPS (nominal pipe size) has been substituted in this standard for such traditional terms as “nominal diameter,” “size,” and “nominal size.”

1.3 The following precautionary statement pertains only to the test method portion of this specification: *This standard does not purport to address all 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.*

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are mathematical conversions of the values in inch-pound units to SI units.

1.5 The text of this specification contains notes and footnotes that provide explanatory material. Such notes and footnotes, excluding those in tables and figures, do not contain any mandatory requirements.

2. Referenced Documents

2.1 ASTM Standards:

A 53 Specification for Pipe, Steel, Black and Hot-Dipped,

Zinc-Coated, Welded and Seamless²

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products³

A 700 Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment⁴

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products³

A 941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys²

2.2 *AIAG Standard:*

B-1 Bar Code Symbology Standard⁵

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology A 941.

4. Ordering Information

4.1 Orders for material under this specification shall contain information concerning as many of the following items as are required to describe the desired material adequately:

4.1.1 Quantity (feet or number of lengths),

4.1.2 Name of material (hot-formed tubing),

4.1.3 Method of manufacture (seamless or welded) (see Section 6),

4.1.4 Finish (black or galvanized),

4.1.5 Size (outside diameter and calculated nominal wall thickness for round tubing and the outside dimensions and calculated nominal wall thickness for square and rectangular tubing (Section 11),

4.1.6 Length (random, multiple, or specific; see 12.3),

4.1.7 End condition (see 17.3),

4.1.8 Burr removal (see 17.3),

4.1.9 Certification (see Section 19),

4.1.10 ASTM specification designation and year of issue,

4.1.11 End use,

4.1.12 Special requirements, and

4.1.13 Bar coding (see 20.3).

¹ 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 A01.09 on Carbon Steel Tubular Products.

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

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

⁴ *Annual Book of ASTM Standards*, Vol 01.05.

⁵ Available from Automotive Industry Action Group, 26200 Lahser Road, Suite 200, Southfield, MI 48034.