



Standard Specification for Plain End Seamless and Electric-Resistance-Welded Steel Pipe for High-Pressure Pipe-Type Cable Circuits¹

This standard is issued under the fixed designation A 523; 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 seamless and electric-resistance-welded steel pipe used as conduit for the installation of high-pressure pipe-type electrical cables in NPS 4 to NPS 12, inclusive, with nominal (average) wall thicknesses 0.219 to 0.562 in., depending on size. Pipe having other dimensions (Note 2) may be furnished, provided such pipe 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.”

NOTE 2—A comprehensive listing of standardized pipe dimensions is contained in ANSI B36.10.

1.2 Pipe ordered under this specification is suitable for welding and for forming operations involving flaring, belling, and bending.

1.3 Pipe for this purpose shall be furnished in Grade A or Grade B as specified in the purchase order. Grade A is more suitable for forming operations involving bending, flaring, or belling and this grade is normally preferred. This provision is not intended to prohibit the cold bending, flaring, or belling of Grade B pipe.

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

1.5 The following hazard caveat applies to the test method portion, Section 20, of this specification: *This standard does not purport to address all of the safety problems, 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:

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 Steel Pipe.

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This specification was initiated by the IEEE Insulated Conductors Committee in recognition of the need for a specification embodying the special requirements of pipe for high-voltage electrical circuits. It was prepared for acceptance as an ASTM specification by a task group of Subcommittee A01.09 of ASTM Committee A-1.

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

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²

E 59 Method of Sampling Steel and Iron for Determination of Chemical Composition³

2.2 *ANSI Standard:*

B36.10 Welded and Seamless Wrought Steel Pipe⁴

3. Ordering Information

3.1 Orders for material under this specification should include the following, as required, to describe the desired material adequately:

3.1.1 Quantity (feet or number of lengths),

3.1.2 Name of material (steel pipe),

3.1.3 Method of manufacture (seamless or electric-resistance-welded),

3.1.4 Grade (Table 1),

3.1.5 Size (outside diameter and nominal wall thickness or weight per foot),

3.1.6 Length when other than specified in Section 13,

3.1.7 End finish (Section 16),

3.1.8 Skelp for tension tests, if permitted 20.2,

3.1.9 When mill applied coating is required (Section 10), and

3.1.10 ASTM specification number.

4. Process

4.1 The steel shall be made by one or more of the following processes: open-hearth, basic-oxygen, or electric-furnace.

4.2 Steel may be cast in ingots or may be strand cast. When steels of different grades are sequentially strand cast, identification of the resultant transition material is required. The producer shall remove the transition material by any established procedure that positively separates the grades.

5. Chemical Composition

5.1 The steel shall conform to the requirements as to chemical composition prescribed in Table 2 and the chemical analysis shall be in accordance with Test Methods, Practices,

² *Annual Book of ASTM Standards*, Vol 01.03.

³ *Annual Book of ASTM Standards*, Vol 03.05.

⁴ Available from American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.