Designation: A333/A333M – 16

Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness[1]

This standard is issued under the fixed designation A333/A333M; 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[2] covers nominal (average) wall seamless and welded carbon and alloy steel pipe intended for use at low temperatures and in other applications requiring notch toughness. Several grades of ferritic steel are included as listed in Table 1. Some product sizes may not be available under this specification because heavier wall thicknesses have an adverse effect on impact properties.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard. The inch-pound units shall apply unless the "M" designation of this specification is specified in the order.

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."

2. Referenced Documents

2.1 *ASTM Standards:*[3]

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A999/A999M Specification for General Requirements for Alloy and Stainless Steel Pipe

A671 Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures

E23 Test Methods for Notched Bar Impact Testing of Metallic Materials

E165 Practice for Liquid Penetrant Examination for General Industry

E709 Guide for Magnetic Particle Testing

2.2 *ASME Boiler and Pressure Vessel Code:*[4]

Section VIII

Section IX

3. Ordering Information

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

3.1.1 Quantity (feet, centimetres, or number of lengths),

3.1.2 Name of material (seamless or welded pipe),

3.1.3 Grade (Table 1),

3.1.4 Size (NPS or outside diameter and schedule number of average wall thickness),

3.1.5 Lengths (specific or random) (Section 9), (see the Permissible Variations in Length section of Specification A999/A999M),

3.1.6 End finish (see the Ends section of Specification A999/A999M),

3.1.7 Optional requirements, (see the Heat Analysis requirement in the Chemical Composition section of A999/A999M, the Repair by Welding section, and the section on Nondestructive Test Requirements),

3.1.8 Test report required, (see the Certification section of Specification A999/A999M),

3.1.9 Specification designation, and

3.1.10 Special requirements or exceptions to this specification.

3.1.11 Supplementary requirements, if any (subsize impact specimens, pipe for hydrofluoric acid alkylation service).

4. Materials and Manufacture

4.1 *Manufacture*—Except as provided in paragraph 4.2, the pipe shall be made by the seamless or welding process with the

[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 A01.10 on Stainless and Alloy Steel Tubular Products.

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[2] For ASME Boiler and Pressure Vessel Code applications see related Specification SA-333 in Section II of that Code.

[3] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[4] Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, http://www.asme.org.

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

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