



Designation: B668 – 23

Standard Specification for Iron-Nickel-Chromium-Molybdenum Alloy Seamless Pipe and Tube¹

This standard is issued under the fixed designation B668; 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 UNS N08028 and N08029 seamless cold-finished or hot-finished pipe and tube intended for general corrosive service.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

B829 Specification for General Requirements for Nickel and Nickel Alloys Seamless Pipe and Tube

B899 Terminology Relating to Non-ferrous Metals and Alloys

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this specification, refer to Terminology **B899**.

¹ This specification is under the jurisdiction of ASTM Committee **B02** on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee **B02.07** on Refined Nickel and Cobalt and Their Alloys.

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² 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. Ordering Information

4.1 It is the responsibility of the purchaser to specify all requirements that are necessary for the safe and satisfactory performance of material ordered under this specification. Examples of such requirements include, but are not limited to, the following:

4.1.1 Alloy name or UNS number,

4.1.2 ASTM designation and year of issue,

4.1.3 *Dimensions:*

4.1.3.1 Outside diameter, minimum or average wall thickness (in inches or millimetres, not gauge number), and length,

4.1.3.2 Standard pipe size, schedule and length,

4.1.4 Quantity (feet or metres, or number of pieces),

4.1.5 Optional requirements,

4.1.6 *Samples for Product (Check) Analysis*—State whether samples for product (check) analysis should be furnished, and

4.1.7 *Purchaser Inspection*—If the purchaser wishes to witness tests or inspection of material at the place of manufacture, the purchase order must so state, indicating which tests or inspections are to be witnessed.

5. Materials and Manufacture

5.1 Material furnished under this specification shall conform to the applicable requirements of Specification **B829** unless otherwise provided herein.

5.2 Pipe and tube shall be furnished in the solution-annealed condition.

NOTE 1—The recommended heat treatment for UNS N08028 shall consist of heating the material to a temperature of 1975 °F to 2100 °F (1080 °C to 1150 °C) with subsequent quenching in water or rapidly cooling by other means. The recommended heat treatment for UNS N08029 shall consist of heating the material to a minimum temperature of 2000 °F (1100 °C) with subsequent quenching in water or rapidly cooling by other means.

5.3 The scale shall be removed by suitable means. When bright annealed, scale removal operations are not necessary.

6. Chemical Composition

6.1 The material shall conform to the requirement prescribed in **Table 1**.

6.1.1 A chemical analysis shall be made on each lot of material as described in Specification **B829**.

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