Standard Specification for UNS N08028 and N08029 Seamless Pipe and Tube[1]

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. The general requirements are covered in Specification B829.

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 be come familiar with all hazards including those identified in the appropriate Material Safety Data Sheet (MSDS) for this product/material as provided by the manufacturer, to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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

3. General Requirement

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

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 gage 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 *Certification*—State if certification is required,

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

4.1.8 *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 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 to 2100°F (1080 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.

5.2 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.

6.2 If a product (check) analysis is performed by the purchaser, the material shall conform to Table 1 subject to the product (check) analysis variations prescribed in Specification B829.

7. Mechanical Properties and Other Requirements

7.1 The material shall conform to the mechanical properties prescribed in Table 2. One test is required for each lot, as defined in Specification B829.

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

TABLE 1 Chemical Requirements

Alloy	UNS N08028	UNS N08029
Element	Composition, %	Composition, %
Carbon, max	0.030	0.020
Silicon, max	1.0	0.6
Manganese, max	2.50	2.0
Phosphorus, max	0.030	0.025
Sulfur, max	0.030	0.015
Chromium	26.0–28.0	26.0-28.0
Nickel	30.0–34.0	30.0-34.0
Molybdenum	3.0–4.0	4.0-5.0
Copper	0.6–1.4	0.6-1.4
Iron	remainder[A]	remainder[A]

[A] Determined arithmetically by difference.

7.1.1 One tension test shall be made on each lot of pipe or tube.

7.2 *Flaring Test*—One flaring test shall be made on a specimen from one end of one pipe or tube from each lot of finished tubes.

7.3 *Hydrostatic Test or Nondestructive Test:*

TABLE 2 Tensile Requirements

Alloy	Tensile Strength, min, ksi (MPa)	Yield Strength, 0.2 % Offset, min, ksi (MPa)	Elongation in 2 in. (50.8 mm) or 4*D*, min, %
UNS N08028	73 (500)	31 (214)	40
UNS N08029	73 (500)	31 (214)	40

7.3.1 Each pipe or tube shall be subjected to either the hydrostatic test or the nondestructive electric test at the manufacturer's option. The purchaser may specify which test is to be used.

8. Dimensions and Permissible Variations

8.1 *Outside Diameter and Wall Thickness*—The permissible variations in the outside diameter and the wall thickness shall not exceed those prescribed in Tables 3, 4 and 5 of Specification B829.

9. Keywords

9.1 seamless tube; UNS N08028; UNS N08029

SUMMARY OF CHANGES

Committee B02 has identified the location of selected changes to this standard since the last issue (B668-05 (2010)) that may impact the use of this standard. (Approved May 15, 2014.)

(1) Addition of UNS N08029 to Title, Scope, 5.1, Table 1, and Table 2.