



Designation: B 468 – 99

Standard Specification for Welded UNS N08020, N08024, and N08026 Alloy Tubes¹

This standard is issued under the fixed designation B 468; 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 specification² covers welded UNS N08020, N08024, and N08026 alloy boiler, heat exchanger, and condenser tubes for general corrosion-resisting and low- or high-temperature service.

1.2 This specification covers tubes $\frac{1}{8}$ to 5 in. (3.18 to 127 mm), inclusive, in outside diameter and 0.015 to 0.500 in. (0.38 to 12.70 mm), inclusive, in wall thickness. Table 2 of Specification B 751 lists the dimensional requirements of these sizes. Tubes having other dimensions may be furnished provided such tubing complies with all other requirements of this specification.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels³

B 751 Specification for General Requirements for Nickel and Nickel-Alloy Welded Tube⁴

E 8 Test Methods for Tension Testing of Metallic Materials⁵

3. General Requirement

3.1 Material furnished in accordance with this specification shall conform to the applicable requirements of the current edition of Specification B 751 unless otherwise provided herein.

¹ This specification is under the jurisdiction of ASTM Committee B-2 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 ASME Boiler and Pressure Vessel Code applications, see related Specification SB-468 in Section II of that code.

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

⁴ *Annual Book of ASTM Standards*, Vol 02.04.

⁵ *Annual Book of ASTM Standards*, Vol 03.01.

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 Quantity (feet or number of lengths),

4.1.2 UNS number,

4.1.3 Size (outside diameter and minimum or average wall thickness),

4.1.4 Length (random or specific),

4.1.5 ASTM designation,

4.1.6 *Product Analysis*— State if required,

4.1.7 *Certification*— State if a certification or a report of test results is required,

4.1.8 *Purchaser Inspection*—State which tests or inspections are to be witnessed, if any, and

4.1.9 Supplementary requirements, if any.

5. Materials and Manufacture

5.1 The tubing shall be made from flat-rolled stock by an automatic welding process with no addition of filler metal. Subsequent to welding and prior to final heat treatment, the material shall be cold-worked in either the weld metal only, or in both the weld and base metal.

5.2 *Heat Treatment*— Tubing of UNS N08020 alloy shall be furnished in the stabilized-annealed condition. Tubing of UNS N08024 alloy shall be furnished in the annealed condition. Tubing of UNS N08026 alloy shall be furnished in the solution-annealed condition.

NOTE 1—The recommended annealing temperatures are 1800 to 1850°F (982 to 1010°C) for UNS N08020, 1925 to 1975°F (1052 to 1079°C) for UNS N08024, and 2050 to 2200°F (1121 to 1204°C) for UNS N08026.

6. Chemical Composition

6.1 The material shall conform to the composition limits specified in Table 1. One test is required for each lot as defined in Specification B 751.