



Standard Specification for Nickel-Iron-Chromium Alloy Plate, Sheet, and Strip¹

This standard is issued under the fixed designation B 409; 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 UNS N08120, UNS N08890, UNS N08800, UNS N08810, and UNS N08811* in the form of rolled plate, sheet, and strip. Alloy UNS N08800 is normally employed in service temperatures up to and including 1100°F (593°C). Alloys UNS N08120, UNS N08810, UNS N08811, and UNS N08890 are normally employed in service temperatures above 1100°F (593°C) where resistance to creep and rupture is required, and they are annealed to develop controlled grain size for optimum properties in this temperature range.

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

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 become 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:³

B 408 Specification for Nickel-Iron-Chromium Alloy Rod and Bar

B 906 Specification for General Requirements for Flat-Rolled Nickel and Nickel Alloys Plate, Sheet, and Strip

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 ASME Boiler and Pressure Vessel Code applications see related Specification SB 409 in Section II of that Code.

* New designations established in accordance with Practice E 527 and SAE J1086, Practice for Numbering Metals and Alloys (UNS).

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.

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*—The terms given in **Table 1** shall apply.

4. General Requirements

4.1 Material furnished under this specification shall conform to the applicable requirements of Specification **B 906** unless otherwise provided herein.

5. Ordering Information

5.1 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:

5.1.1 Alloy (**Table 2**),

5.1.2 Condition (*Temper*)—**Table 3** and **Table 4**, **Appendix X1**, and Specification **B 906**.

5.1.3 Finish—**Appendix X1** and Specification **B 906**.

5.1.4 Dimensions—Thickness, width, and length.

5.1.5 *Optional Requirements:*

5.1.5.1 *Sheet and Strip*—Whether to be furnished in coil, in cut straight lengths, or in random straight lengths.

5.1.5.2 *Strip*—Whether to be furnished with commercial slit edge, square edge, or round edge.

5.1.5.3 *Plate*—Whether to be furnished specially flattened (see **9.7.2**); also how plate is to be cut (Specification **B 906**, **Table A3.4** and **Table A3.7**).

5.1.6 *Fabrication Details*—Not mandatory but helpful to the manufacturer:

5.1.6.1 *Welding or Brazing*—Process to be employed.

5.1.6.2 *Plate*—Whether material is to be hot-formed.

5.1.7 *Certification*—State if certification or a report of test results is required (Specification **B 906**).

5.1.8 *Samples for Product (Check) Analysis*—Whether samples for product (check) analysis should be furnished (see **7.2**).

5.1.9 *Purchaser Inspection*—If purchaser wishes to witness tests or inspection of material at place of manufacture, the purchase order must so state indicating which tests or inspections are to be witnessed (Specification **B 906**).