



Designation: B333 – 03 (Reapproved 2013)

Standard Specification for Nickel-Molybdenum Alloy Plate, Sheet, and Strip¹

This standard is issued under the fixed designation B333; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification² covers plate, sheet, and strip of nickel-molybdenum alloys (UNS N10001, N10665, N10675, N10629, and N10624)* as shown in **Table 1**, for use in general corrosive service.

1.2 The following products are covered under this specification:

1.2.1 *Sheet and Strip*—Hot or cold rolled, solution annealed, and descaled unless solution anneal is performed in an atmosphere yielding a bright finish.

1.2.2 *Plate*—Hot or cold rolled, solution annealed, and descaled.

1.3 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.

1.4 *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

B906 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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* New designation established in accordance with ASTM E527 and SAE J 1086, Practice for Numbering Metals and Alloys (UNS).

² For ASME Boiler and Pressure Vessel Code applications, see related Specification SB-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.

E112 Test Methods for Determining Average Grain Size

E140 Hardness Conversion Tables for Metals Relationship Among Brinell Hardness, Vickers Hardness, Rockwell Hardness, Superficial Hardness, Knoop Hardness, and Scleroscope Hardness

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *cold-rolled plate, n*—material $\frac{3}{16}$ to $\frac{3}{8}$ in. (4.76 to 9.52 mm), inclusive, in thickness.

3.1.2 *hot-rolled plate, n*—material $\frac{3}{16}$ in. (4.76 mm) and over in thickness.

3.1.3 *plate, n*—material $\frac{3}{16}$ in. (4.76 mm) and over in thickness.

3.1.4 *sheet and strip, n*—material under $\frac{3}{16}$ in. (4.76 mm) in thickness.

4. General Requirements

4.1 Material furnished under this specification shall conform to the applicable requirements of Specification B906 unless otherwise provided herein.

5. Ordering Information

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

5.1.1 *Alloy*—**Table 1**,

5.1.2 *Dimensions*—Thickness (in decimals of an inch), width, and length (inch or fractions of an inch),

5.1.3 *Optional Requirement*—Plate; how the plate is to be cut (Specification B906, Table A2.3)

5.1.4 *Certification*—State if certification or a report of test results is required (Specification B906, Section 21),

5.1.5 *Purchase Inspection*—State which tests or inspections are to be witnessed (Specification B906, Section 18), and

5.1.6 *Samples for Product (Check) Analysis*—State whether samples should be furnished (Specification B906, Section 7.2.2).