



Designation: B366/B366M – 23

Standard Specification for Factory-Made Wrought Nickel and Nickel Alloy Fittings¹

This standard is issued under the fixed designation B366/B366M; 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 wrought welding fittings for pressure piping, factory-made from nickel and nickel alloys. Threaded fittings as covered in ASME B16.11 are also covered by this specification. The term welding applies to butt-welding or socket-welding parts such as 45° and 90° elbows, 180° bends, caps, tees, reducers, lap-joint stub ends, and other types, as covered by ASME B16.9, ASME B16.11, MSS SP-43, MSS SP-95, and MSS SP-97.

1.1.1 Several grades of nickel and nickel alloys are included in this specification. Grades are designated with a prefix, WP or CR, based on the applicable ASME or MSS dimensional and rating standards.

1.1.2 Class WP fittings are those manufactured to the requirements of ASME B16.9, B16.11.

1.1.3 For each of the WP nickel and nickel alloy grades, several classes of fittings are covered to indicate whether seamless or welded construction was utilized. Class designations are also utilized to indicate the nondestructive test method and extent of nondestructive examination (NDE). **Table 1** is general summary of the fitting classes applicable to all WP grades of nickel and nickel alloys covered by this specification. There are no classes for the CR grades. Specific requirements are covered elsewhere.

1.2 This specification does not apply to cast welding fittings.

1.3 Optional supplementary requirements are provided for fittings where a greater degree of examination is desired. These supplementary requirements call for additional tests. When desired, one or more of these may be specified in the order.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.5 *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 Safety Data Sheet (SDS) for this product/material as provided by the manufacturer, to establish appropriate safety, health, and environmental practices, and determine the applicability of regulatory limitations prior to use.*

1.6 *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

- B127** Specification for Nickel-Copper Alloy Plate, Sheet, and Strip
- B160** Specification for Nickel Rod and Bar
- B161** Specification for Nickel Seamless Pipe and Tube
- B162** Specification for Nickel Plate, Sheet, and Strip
- B163** Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes
- B164** Specification for Nickel-Copper Alloy Rod, Bar, and Wire
- B165** Specification for Nickel-Copper Alloy Seamless Pipe and Tube
- B166** Specification for Nickel-Chromium-Aluminum Alloy, Nickel-Chromium-Iron Alloys, Nickel-Chromium-Cobalt-Molybdenum Alloy, Nickel-Iron-Chromium-Tungsten Alloy, and Nickel-Chromium-Molybdenum-Copper Alloy Rod, Bar, and Wire
- B167** Specification for Standard Specification for Nickel-Chromium-Aluminum Alloys (UNS N06699) Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696) Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617) Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674)

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.

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



TABLE 1 Fitting Classes for WP Grades

Class	Construction	Nondestructive Examination
S	Seamless	None
W	Welded	Radiography or Ultrasonic
WX	Welded	Radiography
WU	Welded	Ultrasonic

and Nickel-Chromium-Molybdenum-Copper Alloy (UNS N06235) Seamless Pipe and Tube

B168 Specification for Nickel-Chromium-Aluminum Alloys (UNS N06699), Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674), and

B333 Specification for Nickel-Molybdenum Alloy Plate, Sheet, and Strip

B335 Specification for Nickel-Molybdenum Alloy Rod

B407 Specification for Nickel-Iron-Chromium Alloy Seamless Pipe and Tube

B408 Specification for Nickel-Iron-Chromium Alloy Rod and Bar

B409 Specification for Nickel-Iron-Chromium Alloy Plate, Sheet, and Strip

B423 Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloy Seamless Pipe and Tube

B424 Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloys Plate, Sheet, and Strip

B425 Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloys Rod and Bar

B434 Specification for Nickel-Molybdenum-Chromium-Iron Alloys Plate, Sheet, and Strip

B435 Specification for Heat and Corrosion Resistant High Temperature Alloy Plate, Sheet, and Strip

B443 Specification for Nickel-Chromium-Molybdenum-Columbium Alloy and Nickel-Chromium-Molybdenum-Silicon Alloy Plate, Sheet, and Strip

B444 Specification for Nickel-Chromium-Molybdenum-Columbium Alloys (UNS N06625 and UNS N06852) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219) Pipe and Tube

B446 Specification for Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625), Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219), and Nickel-Chromium-Molybdenum-Tungsten Alloy (UNS N06650) Rod and Bar

B462 Specification for Forged or Rolled Nickel Alloy Pipe Flanges, Forged Fittings, and Valves and Parts for Corrosive High-Temperature Service

B463 Specification for UNS N08020 Alloy Plate, Sheet, and Strip

B464/B464M Specification for Welded UNS N08020 Alloy Pipe

B468 Specification for Welded UNS N08020 Alloy Tubes

B472 Specification for Nickel Alloy Billets and Bars for Reforging

B473 Specification for UNS N08020, UNS N08024, and UNS N08026 Nickel Alloy Bar and Wire

B511 Specification for Nickel-Iron-Chromium-Silicon Alloy Bars and Shapes

B512 Specification for Nickel-Chromium-Silicon Alloy Billets and Bars

B514 Specification for Welded Nickel-Iron-Chromium Alloy Pipe

B515 Specification for Welded Nickel-Iron-Chromium Alloy Tubes

B516 Specification for Welded Nickel-Chromium-Aluminum Alloy (UNS N06699) and Nickel-Chromium-Iron Alloy (UNS N06600, UNS N06601, UNS N06603, UNS N06025, UNS N06045, UNS N06690, and UNS N06693) Tubes

B517 Specification for Welded Nickel-Chromium-Iron Alloy Pipe

B535 Specification for Nickel-Iron-Chromium-Silicon Alloys (UNS N08330 and N08332) Seamless Pipe and Tube

B536 Specification for Nickel-Iron-Chromium-Silicon Alloys Plate, Sheet, and Strip

B564 Specification for Nickel Alloy Forgings

B572 Specification for UNS N06002, UNS N06230, UNS N12160, and UNS R30556 Rod

B573 Specification for Nickel-Molybdenum-Chromium-Iron Alloys (UNS N10003, N10242) Rod

B574 Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel-Molybdenum-Chromium, Low-Carbon Nickel-Molybdenum-Chromium-Tantalum, Low-Carbon Nickel-Chromium-Molybdenum-Copper, and Low-Carbon Nickel-Chromium-Molybdenum-Tungsten Alloy Rod

B575 Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel-Chromium-Molybdenum-Copper, Low-Carbon Nickel-Chromium-Molybdenum-Tantalum, Low-Carbon Nickel-Chromium-Molybdenum-Tungsten, and Low-Carbon Nickel-Molybdenum-Chromium Alloy Plate, Sheet, and Strip

B581 Specification for Nickel-Chromium-Iron-Molybdenum-Copper Alloy Rod

B582 Specification for Nickel-Chromium-Iron-Molybdenum-Copper Alloy Plate, Sheet, and Strip

B619/B619M Specification for Welded Nickel and Nickel-Cobalt Alloy Pipe

B622 Specification for Seamless Nickel and Nickel-Cobalt Alloy Pipe and Tube

B625 Specification for Ni-Fe-Cr-Mo-Cu-N Low-Carbon Alloy, Ni-Fe-Cr-Si Alloy, Cr-Ni-Fe-N Low-Carbon Alloy, Fe-Ni-Cr-Mo-Cu-N Alloy, and Ni-Fe-Cr-Mo-N Alloy Plate, Sheet, and Strip

B626 Specification for Welded Nickel and Nickel-Cobalt Alloy Tube

B649 Specification for Ni-Fe-Cr-Mo-Cu-N Low-Carbon Alloy and Cr-Ni-Fe-N Low-Carbon Alloy Bar and Wire, Ni-Cr-Fe-Mo-N Alloy Wire, and Ni-Fe-Cr-Mo-N Alloy Bar

B673 Specification for Nickel-Iron-Chromium-Molybdenum and Iron-Nickel-Chromium-Molybdenum-Copper Welded Pipe