



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

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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 may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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 and health practices, and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

B127 Specification for Nickel-Copper Alloy (UNS N04400) 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 (UNS N04400) Seamless Pipe and Tube

B166 Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Rod, Bar, and Wire

B167 Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Seamless Pipe and Tube

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