



Standard Specification for Pressure Consolidated Powder Metallurgy Iron-Nickel- Chromium-Molybdenum (UNS N08367) and Nickel- Chromium-Molybdenum-Columbium (Nb) (UNS N06625) Alloy Pipe Flanges, Fittings, Valves, and Parts¹

This standard is issued under the fixed designation B 834; 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 approval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers pressure consolidated powder metallurgy iron-nickel-chromium-molybdenum (UNS N08367) and nickel-chromium-molybdenum-columbium (Nb) (UNS N06625) pipe flanges, fittings, valves, and parts intended for general corrosion or heat-resisting service.

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 The following safety hazards caveat pertains only to test methods portions, Sections 7.3 and 13, of this specification: *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 establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

E 8 Test Methods for Tension Testing of Metallic Materials
E 1473 Test Methods for Chemical Analysis of Nickel, Cobalt, and High-Temperature Alloys

G 28 Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys

G 48 Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution

2.2 Manufacturer's Standardization Society of the Valve and Fittings Industry Standard:

SP-25 Standard Marking System for Valves, Fittings,

Flanges, and Unions³

2.3 ASME/ANSI Standard:

ASME/ANSI B16.5 Pipe Flanges and Flanged Fittings⁴

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *can, n*—the container used to encapsulate the powder during the pressure consolidation process; it is removed from the final part.

3.1.2 *compact, n*—the consolidated powder from one can; it may be used to make one or more parts.

3.1.3 *fill pin, n*—the part of the compact in the spout used to fill the can; it is not usually integral to the part produced.

3.1.4 *part, n*—a single item coming from a compact, either prior to or after machining.

3.1.5 *powder blend, n*—a homogeneous mixture of powder from one or more heats; it is limited to the amount that can be mixed in the same blender at one time.

3.1.6 *rough part, n*—the part prior to final machining.

4. Ordering Information

4.1 Orders for material under this specification should include the following information:

4.1.1 Quantity (weight or number of pieces),

4.1.2 Name of material or UNS number,

4.1.3 Microstructure examination, if required (5.1.4),

4.1.4 ASTM designation and year of issue,

4.1.5 Inspection (14.1),

4.1.6 Whether rough part or finish machined (7.2.2),

4.1.7 Supplementary requirements, when applicable, and

4.1.8 If possible, the intended end use.

5. Materials and Manufacture

5.1 Manufacturing Practice:

5.1.1 Compacts shall be manufactured by placing a single powder blend into a can, evacuating the can, and sealing it. The

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.

³ Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602.

⁴ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990.