ASME BPV II Part B Specification Review Form

*** This form is a coversheet that is for information only***

<table>
<thead>
<tr>
<th>Record No: 16-584</th>
<th>Adoption of ASTM: B514-05(R19)</th>
<th>As ASME: SB-514</th>
</tr>
</thead>
</table>

Recommended Subtitle for ASME Specification: Identical with ASTM B514-05(R19)

Previous ASTM Version adopted by ASME: B514-05(R14)
 ASTM Version(s) reviewed: B514-05(R19)

### Review Checklist

#### Part I – Material Addition/Deletion

Has a new grade, type, or class of material(s) been added or deleted to the specification since the last ASME adoption?  
- YES ☐  
- NO ☒

If a new grade, type, or class of material(s) has been added or deleted, then will the specification adoption result in the need for a revision to either an ASME BPV Code Volume or an ASME Code Case?  
- YES ☐  
- NO ☒  
- NA ☒

#### Part II – Property Change to Existing Material

Have any of the following items changed for a material(s) that, as of the last ASME adoption, was already in the ASTM specification:

- A mechanical property?  
  - YES ☐  
  - NO ☒

- A scope or thickness range?  
  - YES ☐  
  - NO ☒

- A chemical composition and/or physical property?  
  - YES ☐  
  - NO ☒

- A heat treatment temperature or range?  
  - YES ☐  
  - NO ☒

If ANY of the above answers is YES, then does the material(s) with the changed property appear in either an ASME BPV Code Volume or an ASME Code Case?  
- YES ☐  
- NO ☒  
- NA ☒

If the material(s) with the changed property appears in an ASME BPV Code Volume(s)/Code Case(s), then will the adoption of this specification result in the need for the Volume/Code Case to be revised?  
- YES ☐  
- NO ☒  
- NA ☒

If the adoption of this ASTM specification will result in the need for an ASME BPV Code Volume/Code Case revision, then has a technical reason for the change been attached to the Record No.?  
- YES ☐  
- NO ☒  
- NA ☒

(If NO is checked, state why:)

#### Part III – Other Changes

Has any other significant change(s) been made to the ASTM specification that was not identified in Parts I-II and of which BPV II needs to be aware?  
- YES ☐  
- NO ☒

Were any changes in the ASTM specification made as a result of an ASME request?  
- YES ☐  
- NO ☒

Has any change(s) been made to the ASTM specification that was not already identified in Parts I-II and which is objectionable to ASME?  
- YES ☐  
- NO ☒

Will any of the proposed changes make any grade, type, or class of material(s) obsolete?  
- YES ☐  
- NO ☒
**Review Checklist**

List any editorial changes to the ASTM Specification (since the last ASME Spec Adoption) of which BVP II needs to be aware:

**NONE**

**Part IV – Necessary Revisions for ASME Adoption**

List any additional revisions necessary for adoption into ASME Code Volume BPV IIB:

- **Scope:** Footnote 2 has been deleted since this specification will become SB-514
- **Ordering Information:** 5.1.6 has been deleted since SB-775 (the specification invoked in section 4) will make certification and test reports mandatory.

NOTE: ASME editors will remove ASTM proprietary footnotes and logo; and then add the ASME logo.

**Part V – BPV IIB Mandatory Appendix II, Table II-200**

Will this adoption result in Table II-200-1 restricting the usage of certain versions of this ASTM specification?

Other acceptable editions will be restricted to 1995 or later. The 1995 edition is the earliest edition available on the ASTM website.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
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</tr>
</tbody>
</table>

Respectfully submitted: Jessica Robertson

Phone 765-456-6416

email jrobertson@haynesintl.com

Thursday, May 21, 2020, 12:00 PM
SPECIFICATION FOR WELDED NICKEL-IRON-CHROMIUM ALLOY PIPE

Identical with ASTM B514-05(R19)
Standard Specification for
Welded Nickel-Iron-Chromium Alloy Pipe

1. Scope

1.1 This specification covers nickel-iron-chromium alloys in the form of welded, cold-worked, and annealed pipe for general corrosive service and heat-resisting applications. These products are furnished in three alloys: UNS N08120, UNS N08800, and UNS N08810. Alloy UNS N08800 is employed normally in service temperatures up to and including 1100 °F (593 °C). Alloys UNS N08120 and UNS N08810 are employed normally in service temperatures above 1100 °F where resistance to creep and rupture is required, and are annealed to develop controlled grain size for optimum properties in this temperature range.

1.2 This specification covers outside diameter and nominal wall pipe shown in ANSI B36.19. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of the specification.

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 establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.5 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:

B775 Specification for General Requirements for Nickel and Nickel Alloy Welded Pipe

B899 Terminology Relating to Non-ferrous Metals and Alloys

2.2 ANSI Standard:

B36.19 Stainless Steel Pipe

3. Terminology

3.1 Terms defined in Terminology B899 shall apply unless defined otherwise in this standard.

4. General Requirement

4.1 Material furnished in accordance with this specification shall conform to the applicable requirements of the current edition of Specification B775 unless otherwise provided herein.

5. Ordering Information

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

5.1.1 Alloy name or UNS number.

5.1.2 ASTM designation and year of issue.

5.1.3 Condition (temper) (Table 1).

5.1.4 Dimensions:

5.1.4.1 Nominal pipe size or outside diameter and schedule number or nominal wall thickness.

5.1.4.2 Length (specific or random).

5.1.5 Quantity (feet or metres, or number of pieces).

5.1.6 Certification—State if certification or a report of test results is required.

5.1.7 Samples for Product (Check) Analysis—State whether samples for product (check) analysis should be furnished.

5.1.8 Purchaser Inspection—If the purchaser wishes to witness tests or inspection of material at the place of

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.


For ASME Boiler and Pressure Vessel Code applications see related Specification SB-514 in Section II of that Code.

New designation established in accordance with ASTM E527 and SAE J1086, Practice for Numbering Metals and Alloys (UNS).

4 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.

manufacture, the purchase order must so state indicating which tests or inspections are to be witnessed.

6. Materials and Manufacture

6.1 Pipe shall be made from flat-rolled alloy by an automatic welding process with no addition of filler metal. Subsequent to welding and prior to final solution treatment, the material shall be cold worked either in both weld and base metal or in weld metal only.

6.2 Pipe shall be furnished with a scale-free finish. When bright annealing is used, descaling is not necessary.

7. Chemical Composition

7.1 The material shall conform to the requirements as to chemical composition prescribed in Table 2.

7.2 If a product (check) analysis is performed by the purchaser, the material shall conform to the product (check) analysis variations in Table 1 of Specification B775.

8. Mechanical and Other Requirements

8.1 Mechanical Properties—The material shall conform to the requirements for mechanical properties prescribed in Table 1.

8.2 Grain Size—A transverse sample representing the full-wall thickness of annealed alloys UNS N08120 and N08810 shall conform to an average grain size of ASTM No. 5 or coarser.

8.3 Flattening Test—Pipe shall be capable of withstanding, without cracking, flattening under a load applied gradually at room temperature until the distance between the platens is five times the wall thickness. The weld shall be positioned 90° from the direction of the applied flattening force.

8.4 Annealing Temperature—Alloy UNS N08120 shall be annealed at 2150 °F (1177 °C) minimum; alloy UNS N08810 shall be annealed at 2050 °F (1120 °C) minimum.

8.5 Nondestructive Test Requirements:

8.5.1 Category 1—Each piece of each lot shall be subject to one of the following four tests: hydrostatic, pneumatic (air underwater), eddy current, or ultrasonic.

8.5.2 Category 2—Each piece in each lot shall be subjected to a leak test and an electric test as follows:

8.5.2.1 Leak Test—Hydrostatic or pneumatic (air underwater).

8.5.2.2 Electric Test—Eddy current or ultrasonic.

8.6 The manufacturer shall have the option to test Category 1 or Category 2 and select the nondestructive test methods, if not specified by the purchaser.

8.7 Transverse Guided Bend Test—At the option of the pipe manufacturer, the transverse guided bend test may be substituted in lieu of the flattening test. Two bend specimens shall be taken transversely from pipe or the test specimens may be taken from a test plate of the same material and heat as pipe, which is attached to the end of the cylinder and welded as a prolongation of the pipe longitudinal seam. One test is required for each lot as defined in Specification B775.

9. Number of Tests

9.1 Chemical Analysis—One per lot.

9.2 Mechanical Properties—One test per lot.

9.3 Flattening or Transverse Guided Bend Test—One test per lot.

9.4 Grain Size—One test per lot.

9.5 Nondestructive—Each piece in each lot.

10. Keywords

10.1 UNS N08120; UNS N08800; UNS N08810; welded pipe
<table>
<thead>
<tr>
<th>Specification</th>
<th>Latest Adopted ASTM</th>
<th>Description</th>
<th>Other Acceptable ASTM Editions</th>
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<tbody>
<tr>
<td>SB-408</td>
<td>06(R11)</td>
<td>Identical except that certification and a test report have been made mandatory.</td>
<td>87 through 06(R11)</td>
</tr>
<tr>
<td>SB-409</td>
<td>06(R11)</td>
<td>Identical except that certification and a test report have been made mandatory.</td>
<td>87 through 06(R11)</td>
</tr>
<tr>
<td>SB-423</td>
<td>05(R09)</td>
<td>Identical except that certification is mandatory, 4.1.8 has been changed to reference 9.1, and an editorial correction to X1.1.</td>
<td>84 € by 05(R09)</td>
</tr>
<tr>
<td>SB-424</td>
<td>11</td>
<td>Identical except that certification has been made mandatory and a report of test results shall be furnished.</td>
<td>87 through 11</td>
</tr>
<tr>
<td>SB-425</td>
<td>99(R09)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>84 through 99(R09)</td>
</tr>
<tr>
<td>SB-434</td>
<td>06(R11)</td>
<td>Identical except that certification and test reports have been made mandatory.</td>
<td>83a through 06(R11)</td>
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<tr>
<td>SB-435</td>
<td>06(R16)</td>
<td>Identical except that certification and test reports have been made mandatory.</td>
<td>87a through 06(R16)</td>
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<td>SB-443</td>
<td>00(R14)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>84 through 00(R14)</td>
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<tr>
<td>SB-444</td>
<td>06(R11)</td>
<td>Identical except that certification and test report have been made mandatory.</td>
<td>84 through 06(R11)</td>
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<tr>
<td>SB-446</td>
<td>03(R08)€ by 1</td>
<td>Identical except that certification and reporting have been made mandatory, and lot definition is revised.</td>
<td>84 through 03(R08) € by 1</td>
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<tr>
<td>SB-462</td>
<td>10€ by 1</td>
<td>Identical except that certification and a test report have been made mandatory, and chemistries of N06686 and N08031 were corrected in Table 1. Acceptable ASTM editions are limited to 06 and later for N06200 material, and exclude 10 for N06022 material, and exclude 10e1 for N06686 and N08031 material.</td>
<td>82 through 10€ by 1</td>
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<tr>
<td>SB-463</td>
<td>04(R09)</td>
<td>Identical except that certification and reporting have been made mandatory.</td>
<td>84 through 04(R09)</td>
</tr>
<tr>
<td>SB-464</td>
<td>05(R09)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>84 through 05(R09)</td>
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<tr>
<td>SB-466/SB-466M</td>
<td>14</td>
<td>Identical except for the deletion of paras. 5.2.1, 9.5, and 9.5.1 to make tensile testing mandatory for all sizes. Certification and test reports have been made mandatory.</td>
<td>92a through 14</td>
</tr>
<tr>
<td>SB-467</td>
<td>14</td>
<td>Identical except that the use of filler metal is prohibited. Certification, test report, and product specification marking have been made mandatory.</td>
<td>88(R03) through 14</td>
</tr>
<tr>
<td>SB-468</td>
<td>04(R09)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>84 through 04(R09)</td>
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<tr>
<td>SB-473</td>
<td>07(R13)</td>
<td>Identical except certification is mandatory.</td>
<td>87 through 07(R13)</td>
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<tr>
<td>SB-493/SB-493M</td>
<td>08€ by 1</td>
<td>For permissible editions prior to 08, identical except that certification is mandatory; for the 08 and later editions, identical.</td>
<td>83(R93) through 08€ by 1</td>
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<tr>
<td>SA-494/SA-494M</td>
<td>15</td>
<td>Identical except that certification and test reports have been made mandatory, UNS Numbers corrected for Grades M35-2, N3M, and N7M in Table 1, and E1473 replaces E30, E38, and E76 in paras. 2.1 and 7.4.</td>
<td>86 through 15</td>
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<tr>
<td>SB-505/SB-505M</td>
<td>08a</td>
<td>Identical except that certification, marking, test reports, and conformance to mechanical properties have been made mandatory.</td>
<td>87 through 08a</td>
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<tr>
<td>SB-511</td>
<td>01(R09)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>87 through 01(R09)</td>
</tr>
<tr>
<td>SB-514</td>
<td>05(R14)</td>
<td>Identical except that certification has been made mandatory.</td>
<td>85 through 05(R14)</td>
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