# **ASME B31.3**

# **INTERPRETATIONS NO. 16**

Replies to Technical Inquiries April 1, 1997, Through March 31, 1998

## General Information

It has been agreed to publish interpretations issued by the B31 Committee concerning B31.3 as part of the update service to the Code. The interpretations have been assigned numbers in chronological order. Each interpretation applies to the Edition or Addenda stated in the interpretation, or if none is stated, to the Edition or Addenda in effect on the date of issuance of the interpretation. Subsequent revisions to the Code may have superseded the reply.

These replies are taken verbatim from the original letters, except for a few typographical and editorial corrections made for the purpose of improved clarity. In some instances, a review of the interpretation revealed a need for corrections of a technical nature. In these cases, a revised reply bearing the original interpretation number with the suffix R is presented.

ASME procedures provide for reconsideration of these interpretations when or if additional information is available which the inquirer believes might affect the interpretation. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME committee or subcommittee. As stated in the Statement of Policy in the Code documents, ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

For detailed instructions on preparation of technical inquiries to the B31 Committee, refer to Appendix Z.

# **Code Reference and Subject Indexes**

Code Reference and Subject Indexes have been prepared to assist the user in locating interpretations by location or by subject matter in the Code. They cover interpretations issued from Volume 1 up to and including the present volume, and will be updated with each volume. **B31.3** 

Subject	Interpretation	File No.
Para. 300(c)(3), Intent of the Code	16-12	B31-97-026B
Para. 302.2.1, Prssure-Temperature Design Criteria — Listed Components	16-18	B31-97-038
Having Established Ratings		
Para. 302.3.2, Limits of Calculated Stresses Due to Sustained Loads and Displacement Strains	16-04	B31-96-057
Para. 302.3.5, Limits of Calculated Stresses Due to Sustained Loads and	16-11	B31-97-024
Displacement Strains		
Para. 304.1.1, Pressure Design of Components	16-14	B31-97-029
Para. 328.5.2, Welding Requirements Fillet and Socket Welds	16-06	B31-96-058B
Para. 331.1.6, Temperature Verification.	16-09	B31-97-013
Para. 332.2.2(a), Bending Temperature	16-08	B31-97-001
Para. 341.3.4, Progressive Examination	16-01	B31-96-053
Para. 341.3.4, Progressive Examination	16-02	B31-96-054
Para. 341.3.4, Progressive Examination	16-05	B31-96-058A
Para. 344, Types of Examination	16-13	B31-97-028
Para. 345, Leak Testing	16-03	B31-96-055
Table 302.3.5, Stress-Range Reduction Factors.	16-10	B31-97-014
Table 323.2.2, Minimum Temperatures Without Impact Testing for Carbon   Steel Materials	14-12R	B31-95-018
Table 341.3.2A. Examination Acceptance Criteria	16-07	B31-96-060
Flanged Ball Valves	16-16	B31-97-036
Tapered Pipe Thread Joints.	16-15	B31-97-032
Tubing in Category M Fluid Service	16-17	B31-97-037

187

#### Interpretation: 14-12R

Subject: ASME B31.3-1993 Edition, Table 323.2.2, Minimum Temperatures Without Impact Testing for Carbon Steel Materials

Date Issued: November 20, 1995

File: B31-95-018

Question: Does ASME B31.3-1993 Edition require impact testing of ASTM A 403 WP304W, B16.9 fittings manufactured from A 312 welded TP304 pipe without the use of weld metal deposits and used at design temperatures of  $-425^{\circ}$ F or above.

Reply: No. See Table 323.2.2, Column A.

# Interpretation: 16-01

Subject: ASME B31.3-1996 Edition, Para. 341.3.4, Progressive Examination

Date Issued: May 20, 1997

File: B31-96-053

Question: In accordance with ASME B31.3-1996 Edition, para. 341.3.4, Progressive Examination, if a defective weld is repaired, found defective again, repaired a second time and again found to be defective, is it necessary to examine two additional items for each failed repair?

Reply: No. See para. 341.3.3.

#### Interpretation: 16-02

Subject: ASME B31.3-1993 Edition, Para. 341.3.4, Progressive Examination

Date Issued: May 20, 1997

File: B31-96-054

Question (1): In accordance with ASME B31.3-1993 Edition, Table 341.3.2A and para. 341.3.4, when the engineering design specifies more stringent acceptance criteria for normal fluid service, do the requirements of para. 341.3.4, Progressive Examination, still apply?

Reply (1): Yes.

Question (2): In accordance with ASME B31.3-1993 Edition, for normal fluid service, when a particular one hundred welds constitute a designated lot, welder "A" completes three welds and two are radiographed to acceptance, and welder "B" completes ninety-seven welds and five are radiographed to acceptance, do all welds in the lot, after visual and leak tests, meet the requirements of the Code?

Reply (2): Yes, provided no other welds in the designated lot were examined showing unacceptabel defects.

#### 16-03, 16-04

#### Interpretation: 16-03

Subject: ASME B31.3-1996 Edition, Para. 345, Leak Testing

Date Issued: May 20, 1997

File: B31-96-055

Question (1): In accordance with ASME B31.3-1996 Edition, para. 345.1(b); with a system design pressure of 150 psig at 200°F, and where a hydrostatic pressure test is impractical, does a pneumatic test at 150 psig or 110% of design pressure, whichever is less, satisfy the requirements of the Code?

Reply (1): No. See para. 345.5.4.

Question (2): In accordance with ASME B31.3-1996 Edition, under the above conditions, would testing in accordance with para. 345.9 be required?

Reply (2): No. Use of the alternative leak test is permitted only if the conditions of para. 345.1(c) are met.

#### Interpretation: 16-04

Subject: ASME B31.3a-1996 Addenda, Para. 302.3.2, Limits of Calculated Stresses Due to Sustained Loads and Displacement Strains

Date Issued: May 20, 1997

File: B31-96-057

Question (1): In accordance with ASME B31.3a-1996 Addenda, para. 302.3.5, shall the longitudinal sustained stresses,  $S_L$ , be evaluated in the installed and all operating positions of the pipe relative to its supports and restraints?

Reply (1): Yes.

Question (2): In accordance with ASME B31.3a-1996 Addenda, para. 302.3.5, is there an allowable operating stress for the combination of longitudinal sustained stresses and displacement stresses, not displacement stress ranges?

Reply (2): No. See para. 319.2.3.

# Interpretation: 16-05

Subject: ASME B31.3-1996 Edition, Para. 341.3.4, Progressive Examination

Date Issued: May 20, 1997

File: B31-96-058A

Question (1): A welder's production welds experience some rejections. The welder is retained and requalified. In accordance with ASME B31.3-1996 Edition, para. 341.3.4, Progressive Examination, does the Code require more stringent examination of this welders welds?

Reply (1): No.

Question (2): In accordance with ASME B31.3-1996 Edition, para. 341.3.4, can the two additional joints examined after a defective joint is found to be counted as part of the 5% random radiography requirement?

Reply (2): No.

#### Interpretation: 16-06

Subject: ASME B31.3-1996 Edition, Para. 328.5.2, Welding Requirements --- Fillet and Socket Welds

Date Issued: May 20, 1997

File: B31-96-058B

Question: In accordance with ASME B31.3-1996 Edition, para. 328.5.2 and Fig. 328.5.2c, what is the minimum gap acceptable in a socket-welded joint after welding?

Reply: The  $\frac{1}{16}$  in approximate gap shown in Fig. 328.5.2c is "before welding." The Code does not  $\frac{1}{16}$  provide a gap dimension after welding.

### Interpretation: 16-07

Subject: ASME B31.3-1993 Edition, Table 341.3.2A, Examination Acceptance Criteria

Date Issued: May 20, 1997

File: B31-96-060

Question: In accordance with ASME B31.3-1993 Edition, Table 341.3.2A, in the radiographic examination of girth and miter groove welds, can a densitometer be used to evaluate root concavity?

Reply: The Code does not address the use of a densitometer for this purpose.

#### 16-08, 16-09, 16-10

#### Interpretation: 16-08

Subject: ASME B31.3-1996 Edition, Para. 332.2.2(a), Bending Temperature

Date Issued: May 20, 1997

File: B31-97-001

Question: In accordance with ASME B31.3-1996 Edition, paras. 332.2.2(a) and (b), are the transformation ranges used in B31.3 considered to be the lower critical temperatures in ASME B31.1-1995 Edition, para. 129.3.1?

Reply: No.

#### Interpretation: 16-09

Subject: ASME B31.3a-1996 Addenda, Para. 331.1.6, Temperature Verification

Date Issued: May 20, 1997

File: B31-97-013

Question: In accordance with ASME B31.3a-1996 Addenda, para. 331.1.6, can a thermocouple be laid on a part being heat treated as opposed to being attached?

Reply: The Code requires only that temperature be checked by thermocouple, pyrometers, or other suitable methods to ensure that WPS requirements are met. It does not otherwise address positioning or attachment of thermocouples, except for a permissive statement in para. 330.1.3(b) allowing attachment by capacitor discharge method without procedure and performance qualifications.

#### Interpretation: 16-10

Subject: ASME B31.3a-1996 Addenda, Table 302.3.5, Stress-Range Reduction Factors

Date Issued: May 20, 1997

File: B31-97-014

Question (1): In accordance with ASME B31.3a-1996 Addenda, does the stress range reduction factor, f, as listed in Table 302.3.5 and provided in equation (1c) depend on the material of construction?

Reply (1): No, except see para. 319.3.4(b).

Question (2): In accordance with ASME B31.3a-1996 Addenda, Appendix D, do the stress intensification factors,  $i_i$  and  $i_a$  depend on the material of construction?

Reply (2): No.

#### Interpretation: 16-11

Subject: ASME B31.3a-1996 Addenda, Para. 302.3.5, Limits of Calculated Stresses Due to Sustained Loads and Displacement Strains

Date Issued: November 10, 1997

File: B31-97-024

Question (1): In accordance with ASME B31.3a-1996 Addenda, para. 302.3.5, is the stress range reduction factor independent of the material of construction?

Reply (1): Yes; however, see para. 319.3.4(b).

Question (2): In accordance with ASME B31.3a-1996 Addenda, are the stress intensification factors listed in Appendix D independent of the material of construction?

Reply: Yes; however, see para. 319.3.4(b).

#### Interpretation: 16-12

Subject: ASME B31.3a-1996 Addenda, Para. 300(c)(3), Intent of the Code

Date Issued: November 10, 1997

File: B31-97-026B

Question (1): May a piping designer use para. 300(c)(3) of ASME B31.3a-1996 Addenda and apply a more rigorous analysis to qualify the design and acceptance criteria of piping where the Code requirements employ a simplified approach?

Reply (1): Yes, if the designer can demonstrate the validity of the approach to the owner.

Question (2): In accordance with ASME B31.3-1996 Edition, does a piping system that has been designed in accordance with the Code but not fabricated or assembled as specified by the engineering design, comply with the Code if a more rigorous analysis proves it suitable for the service intended?

Reply (2): No. See para. 300.2, Definitions — Assembly and Erection. Also, see para. 341.3.2.

#### Interpretation: 16-13

Subject: ASME B31.3a-1996 Addenda, Para. 344, Types of Examination

Date Issued: November 10, 1997

File: B31-97-028

Question: In accordance with ASME B31.3a-1996 Addenda, para. 344, does the Code contain instruction or restrictions regarding the design of a designated lot of piping?

Reply: No, other than the definition in Note 2 of para. 344.1.3.

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#### 16-14, 16-15, 16-16

#### Interpretation: 16-14

Subject: ASME B31.3a-1996 Addenda, Para. 304.1.1, Pressure Design of Components

Date Issued: November 10, 1997

File: B31-97-029

Question: For subsea production systems where ASME B31.3 is required, can the internal design gage pressure, *P*, in paras. 304.1.1 and 304.1.2 be interpreted as coincident internal design gage pressure minus external gage pressure?

Reply: Yes; however, when the coincident external gage pressure is greater than the internal gage pressure, the design shall be in accordance with para. 304.1.3.

# Interpretation: 16-15

Subject: ASME B31.3a-1996 Addenda, Tapered Thread Joints

Date Issued: November 10, 1997

File: B31-97-032

Question: In accordance with ASME B31.3a-1996 Addenda, does the Code permit the use of tapered pipe thread joints?

Reply: Yes, provided the joints comply with the provisions of paras. 314 and 335.3.

#### Interpretation: 16-16

Subject: ASME B31.3-1996 Edition, Flanged Ball Valves

Date Issued: November 10, 1997

File: B31-97-036

Question: According to ASME B31.3-1996 Edition, are flanged ball valves where the ball is held in place by a threaded retainer plug in which the end of the plug forms some or all of the flange face prohibited from use in Category M Fluid Service?

Reply: No.

# Interpretation: 16-17

Subject: ASME B31.3-1996 Edition, Tubing in Category M Fluid Service

Date Issued: September 3, 1997

File: B31-97-037

Question: In accordance with ASME B31.3-1996 Edition, is tubing with flared, flareless, and compression tubing joints prohibited for Category M fluid service in sizes larger than 16 mm ( $\frac{5}{8}$  in.) O. D. for piping other than instrumentation signal lines in contact with process fluids and process temperature-pressure conditions?

Reply: No. Also, see Interpretation 2-13.

# Interpretation: 16-18

Subject: ASME B31.3a-1996 Addenda, Para. 302.2.1, Pressure-Temperature Design Criteria — Listed Components Having Established Ratings

Date Issued: September 3, 1997

File: B31-97-038

Question: When selecting a flange on the basis of pressure-temperature rating given in ASME B16.5, in accordance with ASME B31.3a-1996 Addenda, para. 302.2.1, is it required to consider any external forces and moments acting on the flange?

Reply: Yes. See para. 303.