

SECTION VIII-1

<u>Subject</u>	<u>Interpretation</u>	<u>File No.</u>
Appendix 2, 2-11 and 2-13	VIII-1-07-37	03-1846
Appendix 20, 20-2	VIII-1-07-42	07-2038
Appendix 28 and Fig. UW-13.2	VIII-1-07-49	08-888
U-1(c)(2)	VIII-1-07-43	07-1263
UG-10	VIII-1-07-46	07-2024
UG-11(a)(1), Manufacturer's Standard	VIII-1-07-39	07-394
UG-20(a)	VIII-1-07-41	02-4113
UG-22 and U-2(g)	VIII-1-07-47	08-637
UG-28	VIII-1-07-45	08-362
UG-36(c)(3)(a)	VIII-1-07-50	08-909
UG-80, UW-9(c), and UW-35, Out-of-Roundness Due to Weld Distortions (Peaking)	VIII-1-07-51	08-114
UG-90(b)(8)	VIII-1-07-44	08-105
UG-101(k) and UG-101(p), External MAWP of Bimetallic Tubes	VIII-1-01-161	02-3319
UG-116(e)	VIII-1-07-40	07-1364
UG-125(a)	VIII-1-07-36	06-1323
UHA-51(a)(4)	VIII-1-07-38	07-612
UW-2(d), Service Restrictions, Pressure Vessels, or Parts Subject to Direct Firing	VIII-1-07-48	01-378

Interpretation: VIII-1-01-161

Subject: UG-101(k) and UG-101(p), External MAWP of Bimetallic Tubes (2001 Edition)

Date Issued: April 24, 2003

File: 02-3319

Question: Does Section VIII, Division 1 have rules to establish the external maximum allowable working pressure of a bimetallic tube that does not meet the requirements of UCL or ULW?

Reply: No, see U-2(g).

Note: This interpretation was inadvertently omitted from Volume 53 of the interpretations.

Interpretation: VIII-1-07-36

Subject: UG-125(a) (2004 Edition, 2005 Addenda)

Date Issued: January 16, 2008

File: 06-1323

Question: Is it the intent of Section VIII, Division 1, UG-125(a) to permit flow paths or vents, open directly or indirectly to the atmosphere, to be used to protect against over pressure for pressure vessels constructed in accordance with this Division?

Reply: Yes.

Interpretation: VIII-1-07-37

Subject: Appendix 2, 2-11 and 2-13 (2001 Edition, 2003 Addenda)

Date Issued: January 17, 2008

File: 03-1846

Question: May Appendix 2 of Section VIII, Division 1 be used to design reverse flanges under external pressure if the provisions of 2-11 and 2-13 are satisfied?

Reply: Yes.

Interpretation: VIII-1-07-38

Subject: UHA-51(a)(4) (2004 Edition, 2006 Addenda)

Date Issued: February 13, 2008

File: 07-612

Question (1): An ASME WPS/PQR using austenitic base materials to SA-240 Type 304L (Dual Certified) with semi-automatic GMAW butt weld using a filler metal other than Type 316L was subjected to notch toughness testing at both -320°F and -452°F . The base material, heat affected zone (HAZ), and deposited filler metal was able to and did pass the acceptance criteria of UHA-51(a)(4)(a)(1), (2), and (3). Does this satisfy UHA-51(a)(1) and UHA-51(a)(4) impact testing requirements as permitted in UHA-51(a)(4)(b) “when the base metal, weld metal, or filler metal are unable to meet the requirements of (a) above”?

Reply (1): No. The requirements of UHA-51(a)(4)(a) are not met because the filler metal is not 316L. The requirements of UHA-51(a)(4)(b) are not met because toughness tests were not conducted at the MDMT in accordance with the ASTM E 1820 J_{IC} method.

Question (2): The ASME WPS/PQR described in Question (1) was changed to use nickel-based filler metal to SFA-5.14, AWS ERNiCrMo-3 and was subjected to notch toughness testing at both -320°F and -452°F . The base material, heat affected zone (HAZ), and deposited filler metal was able to and did pass the acceptance criteria of UHA-51(a)(4)(a)(2) and (3). ERNiCrMo-3, being a nonferrous material, does not have a Ferrite Number (FN). Does this satisfy UHA-51(a)(1) and UHA-51(a)(4) impact test requirements as permitted in UHA-51(a)(4)(b) “when the base metal, weld metal, or filler metal are unable to meet the requirements of (a) above”?

Reply (2): No. Use of ERNiCrMo-3 does not meet the requirements of UHA-51(a)(4)(a), as this paragraph refers to the use of 316L exclusively. If ERNiCrMo-3 is used it must be tested in accordance with UHA-51(a)(4)(b). Ferrite content is not applicable for Ni alloys, and therefore references to ferrite are not applicable.

Question (3): If the ASME WPS/PQR described in the questions above using SFA-5.9 AWS ER308L or SFA-5.14 AWS ERNiCrMo-3 fillers subjected to impact testing at both -320°F and -452°F did not pass the acceptance criteria of UHA-51(a)(4)(a)(1), (2), and (3), may the notch toughness testing of UHA-51(a)(4)(b)(1), (2), and (3) be conducted, and if acceptable to the criteria therein, be acceptable for the UHA-51(a)(1) and UHA-51(a)(4) impact test requirements?

Reply (3): Yes. PQR qualification for all filler metals other than 316L must be conducted in accordance with UHA-51(a)(4)(b)(1), (2), and (3).

Question (4): If the reply to Question (3) is yes, then if SFA-5.9 AWS ER308L, filler metal with an $\text{FN} > 5$, and the notch toughness testing of UHA-51(a)(4)(b)(1), (2), and (3) are conducted, and if acceptable to the criteria therein, are these criteria acceptable for the UHA-51(a)(1) and UHA-51(a)(4) impact testing requirements?

Reply (4): Yes, provided ferrite content does not exceed the FN of the test weld.

Interpretation: VIII-1-07-39

Subject: UG-11(a)(1), Manufacturer's Standard

Date Issued: February 14, 2008

File: 07-394

Question (1): In applying the provisions of UG-11 for Manufacturer's standard parts, is the "Manufacturer" in this context an enterprise that develops and manufactures standard "catalogue" products for inclusion into a pressure vessel with a Code Symbol Stamp?

Reply (1): Yes.

Question (2): May a Manufacturer of pressure vessels who holds a Certificate of Authorization produce parts to an internal standard that satisfies the intent of UG-11, and that will be installed on its Code stamped vessels?

Reply (2): Yes.

Question (3): When the Manufacturer of a vessel to be marked with the Code symbol uses a Manufacturer's standard part, is the vessel Manufacturer responsible to satisfy himself that the part is suitable for the design conditions specified for the completed vessel in accordance with the rules of this Division?

Reply (3): Yes.

Interpretation: VIII-1-07-40

Subject: UG-116(e)

Date Issued: February 14, 2008

File: 07-1364

Question: In accordance with the marking requirements of ASME Section VIII, Division 1, UG-116(e), is a pressure vessel that consists of seamless ellipsoidal heads attached to a shell section with a longitudinal weld, and when the complete vessel is spot radiographed in accordance with UW-11(b), to be marked RT-3?

Reply: Yes.

Interpretation: VIII-1-07-41

Subject: UG-20(a)

Date Issued: February 15, 2008

File: 02-4113

Question: Does ASME Section VIII, Division 1 require a user to consider the effects of startup, shutdown, or other abnormal conditions listed in U-2(a) when determining the design temperature as per UG-20(a), and the design pressure as per UG-21?

Reply: Yes.

Interpretation: VIII-1-07-42

Subject: Appendix 20, 20-2 (2004 Edition, 2006 Addenda)

Date Issued: February 15, 2008

File: 07-2038

Question: Is it permissible to perform the transverse tension tests as required in Appendix 20, 20-2 on a per-heat basis instead of per plate?

Reply: No.

Interpretation: VIII-1-07-43

Subject: U-1(c)(2)

Date Issued: February 15, 2008

File: 07-1263

Question: Paragraph U-1(c)(2) provides the definition of classes of vessels not considered to be within the scope of Section VIII, Division 1. Is it required to apply the ASME Code symbol [U or UM] to equipment that is not listed in the scope exemptions or only partially satisfies the provisions of U-1(c)(2) for a specific item?

Reply: See U-1(c)(1). The Code does not mandate the application of the ASME Code symbol for any piece of equipment. The laws or regulations issued by the municipality, state, provincial, federal, or other enforcement or regulatory bodies having jurisdiction at the location of an installation establish the mandatory applicability of the Code rules, in whole or in part, within their jurisdiction. Those laws or regulations may require the use of this Division of the Code for vessels or components not considered to be within its Scope.

Note: This interpretation also appears as VIII-2-07-07 and VIII-3-07-04.

Interpretation: VIII-1-07-44

Subject: UG-90(b)(8) (2004 Edition, 2006 Addenda)

Date Issued: March 4, 2008

File: 08-105

Question: Does UG-90(b)(8) require the inspector to be involved in repairs other than the base metal repairs as addressed in UG-78?

Reply: No.

Interpretation: VIII-1-07-45

Subject: UG-28 (2007 Edition)

Date Issued: March 13, 2008

File: 08-362

Question: The design length for external pressure design of a vessel section, L , is shown schematically in Fig. UG-28 as the distance between flanges. Does this length, L , apply to integral type flanges (see Mandatory Appendix 2, Fig. 2-4) if the flanges meet the requirements of UG-29 for stiffening rings?

Reply: Yes.

Interpretation: VIII-1-07-46

Subject: UG-10

Date Issued: March 25, 2008

File: 07-2024

Question: May castings tested for mechanical properties in accordance with the rules of EN 1563 be accepted for ASME Section VIII, Division 1 construction by the vessel manufacturer certifying the material to SA-395, using UG-10?

Reply: No.

Interpretation: VIII-1-07-47

Subject: UG-22 and U-2(g) (2007 Edition)

Date Issued: May 8, 2008

File: 08-637

Question (1): Is it permissible to construct a vessel in accordance with Section VIII, Division 1 if the design is governed by cyclic loading?

Reply (1): Yes, see UG-22(e) and U-2(g).

Question (2): Does the Code define any specific volumetric nondestructive examination requirements for a Section VIII, Division 1 vessel whose design is governed by cyclic loading?

Reply (2): No.

Question (3): When designing a vessel in accordance with Section VIII, Division 1 for cyclic pressure service, is it required to consider the effects of weld seam peaking in the fatigue analysis if such consideration would have an impact on the required fatigue life of the vessel?

Reply (3): Yes. See U-2(g).

Interpretation: VIII-1-07-48

Subject: UW-2(d), Service Restrictions, Pressure Vessels, or Parts Subject to Direct Firing

Date Issued: May 13, 2008

File: 01-378

Question: Is it required by UW-2(d)(2) to postweld heat treatment of the entire vessel when chambers, sections, or parts of the completed vessel are not subject to direct firing?

Reply: No.

Interpretation: VIII-1-07-49

Subject: Appendix 28 and Fig. UW-13.2 (2007 Edition)

Date Issued: June 10, 2008

File: 08-888

Question: Mandatory Appendix 28 provides an alternative to the requirement " $a + b$ not be less than $2t_s$ " given in UW-13(e)(4) and Fig. UW-13.2. When applying the provisions of Appendix 28, is the requirement shown in Fig. UW-13.2 as " t_p not less than the smaller of t_s or $\frac{1}{4}$ in." still mandatory?

Reply: Yes.

Interpretation: VIII-1-07-50

Subject: UG-36(c)(3)(a) (2007 Edition)

Date Issued: June 23, 2008

File: 08-909

Question: In UG-36(c)(3)(a), does the term "vessel shells or heads with a required minimum thickness" refer to the minimum thickness as determined by UG-27, UG-28, UG-32, and UG-33 as applicable?

Reply: Yes.

Interpretation: VIII-1-07-51

Subject: UG-80, UW-9(c), and UW-35, Out-of-Roundness Due to Weld Distortions (Peaking)

Date Issued: June 26, 2008

File: 08-114

Question (1): In accordance with the rules of Section VIII, Division 1, may the sections of a multisegment shell course be different thicknesses?

Reply (1): Yes. See UW-9(c).

Question (2): Are the rules in UG-80 for out-of-roundness applicable to determine the acceptance criteria for weld distortions (such as peaking) in a cylindrical shell?

Reply (2): Yes.