# INTERPRETATIONS TO ASME RTP-1

(Interpretations are not part of ASME RTP-1–1995 and are included for information only.)

## INTRODUCTION

As a service to persons who use the RTP-1 Standard, the RTP Committee renders interpretations of the requirements upon request. The procedure for requesting an interpretation is described in the following paragraphs.

The interpretations include all replies that have been approved by the RTP Main Committee in response to inquiries concerning interpretation of the Standard.

An interpretation applies either to the edition and addenda in effect on the date of issuance of the interpretation or the edition and addenda stated in the interpretation. Subsequent revisions to the Standard may supersede the interpretation.

## PROCEDURE FOR REQUESTING INTERPRETATIONS

On request, the RTP Committee will render an interpretation of any requirement of RTP-1. Interpretations can only be rendered in response to a written request, which should be addressed to:

Secretary, RTP Main Committee
The American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, NY 10017

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request using the following format.

*(a) Subject.* Cite the applicable paragraph number(s) and/or give a concise description of the subject.

*(b) Question.* Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings which are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format may be rewritten in this format prior to being answered, which may inadvertently change the original intent of the request.

ASME procedures provide for reconsideration of an interpretation 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. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.



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## (c) Interpretation: 3-1

Subject: RTP-1–1995 Edition, Para. 8-220(b)(3)

Date Issued: September 17, 1996

Question: Paragraph 8-220(b)(3) in RTP-1 states: "evaluation and approval of material manufacturers and suppliers of parts and subcontracted services in accordance with Appendix M-6." Is this responsibility truly addressed in Appendix M-6?

Reply: No.

## (c) Interpretation: 3-2

Subject: RTP-1–1995 Edition, Paras. 2A-300 and M8-200(b)

Date Issued: October 8, 1996

Question: Does a Fabricator have to produce a design basis laminate for each resin/reinforcement combination used in an RTP-1 vessel?

Reply: Yes.

## (c) Interpretation: 3-3

Subject: RTP-1–1995 Edition, Para. 8-220(f)

Date Issued: December 18, 1996

Question: The scope of Part 8 in RTP-1 makes reference to fabricated subcontracted services. Are independent testing facilities included in the requirements for surveying and auditing?

Reply: No.

## (c) Interpretation: 3-4

Subject: RTP-1–1995 Edition, Overlay Joints

Date Issued: January 27, 1997

Question: Within RTP-1, are not overlay joints simply laminates involving a correct combination of resin and reinforcing under environmentally acceptable conditions?

Reply: Yes.



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## (c) Interpretation: 3-5

Subject: RTP-1–1995 Edition, Design Rules for Conical Body Sections and Horizontal Vessels

Date Issued: March 6, 1997

Question (1): May vessels containing a conical body section be designed and fabricated in accordance with RTP-1 rules?

Reply (1): Yes. See Subpart 3B design rules and also para. NM1-200.

Question (2): May horizontal vessels be designed and fabricated in accordance with RTP-1 rules?

Reply (2): Yes. See Subpart 3B design rules and also para. NM1-300.

Question (3): Do the rules of RTP-1 impose any size limitations on vessels?

Reply (3): No.

## (c) Interpretation: 3-6

Subject: RTP-1–1995 Edition, Para. 8-220(f)

Date Issued: March 12, 1997

Question (1): Must all suppliers of subcontracted services be audited by the Fabricator as described in para. 8-220(f) of RTP-1?

Reply (1): No.

Question (2): Is the term "evaluation and approval" as given in para. 8-220(f) of RTP-1 defined?

Reply (2): No.

Question (3): Are there criteria contained in RTP-1 to conduct the "evaluation and approval" process?

Reply (3): No.

Question (4): Does RTP-1 specify that the issuance of a purchase order (verbal or written) constitutes evidence of satisfactory conclusion of a review and approval process?

Reply (4): No.

Question (5): Must all activities subcontracted by the Fabricator be surveyed and audited?

Reply (5): No.

Question (6): Does RTP-1 provide explanation of the phrase "with at least the same scope and frequency as the ASME RTP-1 Certificate Holder" as given in para. 8-220(f)?

Reply (6): No.

Question (7): May subcontracted service providers be surveyed and audited by means other than an on-site audit?

Reply (7): Yes.



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## (c) Interpretation: 3-7

Subject: RTP-1–1995 Edition, Para. 8-220(f)

Date Issued: March 13, 1997

Question: Can an independent Testing Laboratory or Engineering Services Contractor (who might design an RTP-1 vessel) possess an RTP-1 Certificate?

Reply: Yes, anyone who meets all of the requirements of the Standard can possess an RTP-1 Certificate.

## (c) Interpretation: 3-8

Subject: RTP-1–1995 Edition, Part 4

Date Issued: May 1, 1997

Question (1): Is it the intent of RTP-1 that the fabrication details shown in Figs. 4-2 through 4-11 and Tables 4-1 through 4-3 be the only permissible fabrication details for torispherical head attachments to shells, shell-section-to-shell-section joints, nozzle and manway configuration and attachment overlay details, or nozzle gusseting details?

Reply (1): No. See para. 4-100.

Question (2): Are conical or spherical head design configurations permissible under the requirements of RTP-1, and if so where are the details shown?

Reply (2): Yes. For conical head design see para. 3A-240, and for spherical head design and attachments see Subpart 3B design rules.

Question (3): Figures 4-1 and 4-5, and the requirements of para. 4-320 in RTP-1 give only details for circumferential shell section joints. Are axial (longitudinal) shell section joints permitted in RTP-1?

Reply (3): Yes. Figures 4-1 and 4-5, and para. 4-320 apply to circumferential joints only.

Question (4): It is quite common, for example, in absorption columns or scrubbers, to have requirements for transitions in diameters. Typically, this might be done with a conical shaped section between two cylindrical sections of different diameters. Is a butt joint permissible at one or both of the cone-section-to-cylinder-section junctures, and if so where are the fabrication details shown?

Reply (4): Yes. See Fig. 4-5 and para. 4-320(c) or (d).

Question (5): Are joints permissible in flat portions of a vessel (for example, a flat bottom), and if so where are the fabrication details shown?

Reply (5): Yes. Fabrication details are not shown.

Question (6): Figures 4-8 through 4-11 all deal with nozzle configurations [and possibly manway configurations per para. 3A-700(a)]. All show the nozzles (or manways) penetrating the vessel wall at a normal (90 deg) angle. Are nozzle or manway penetrations at other than 90 deg permissible, and if so where are the ranges of permissible angle variation and fabrication details shown?

Reply (6): Yes. See para. 3A-700(c) for design limitations. Fabrication details are covered by Figs. 4-8 through 4-11.



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Question (7): Are tangential nozzles permissible, and if so where are the fabrication details shown to handle the resulting unusual stress concentrations?

Reply (7): Yes. For design details, see Subpart 3B design rules. For fabrication details, see Figs. 4-8 through 4-11.

Question (8): Figure 4-6 gives very specific details for nozzles. General Note (a) requires that gaskets shall be of $\frac{1}{8}$ in. thick full-face elastomeric material having a hardness of Shore A60±5. Is it the intent of RTP-1 that fluorocarbon or envelope gaskets be permitted with one or more of their components being of nonelastomeric material?

Reply (8): Yes. See para. 4-410.

Question (9): Only "round" flanged nozzles or manways are shown in Figs. 4-5 and 4-7 through 4-11. Are square or oval openings permissible, and if so where are the design and fabrication details shown?

Reply (9): Yes. See Subpart 3B design rules.

Question (10): Are threaded attachments permissible for RTP-1 Symbol stamped vessels, and if so where are the fabrication details shown?

Reply (10): Yes. See Subpart 3B design rules, and laminate covering threads must meet the requirements of para. 2A-220.

Question (11): Are studding pad type nozzles permissible, and if so where are the fabrication details shown?

Reply (11): Yes. See Subpart 3B analysis methods for design and fabrication details.

Question (12): It is quite common on atmospheric vessels with nonhazardous contents to employ a "gooseneck" vent nozzle on the top head. Is this permissible, and if so where are the construction details shown for this "nonflanged" nozzle?

Reply (12): Yes. A "gooseneck" nozzle may be used for atmospheric tanks only. For fabrication details, see Figs. 4-8 through 4-10. For attachment and reinforcing details, see Table 2A-1 or 2A-2 for minimum nozzle thicknesses.

## (c) Interpretation: 3-9

Subject: RTP-1–1995 Edition and RTP-1a–1995, Environmental Conditions

Date Issued: January 16, 1998

Question: Does RTP-1 provide recommendations on environmental conditions during fabrication?

Reply: No.



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## (c) Interpretation: 3-10

Subject: RTP-1–1995 Edition, Fabrication of Cored Wall Sections and Heads

Date Issued: January 16, 1998

Question (1): May cored wall sections such as ribs or stiffeners be used under the requirements of RTP-1 where the strength of the coring material is not considered?

Reply (1): Yes.

Question (2): May cored materials be used exterior to full supported flat bottoms not subject to bending or external pressure under the requirements of RTP-1, provided compressive properties have been properly addressed?

Reply (2): Yes.

Question (3): May cored materials be used in vessel parts, such as shells, or curved or unsupported flat heads, that are subject to internal or external pressure under the requirements of RTP-1?

Reply (3): No.



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## (c) Interpretation: 3-11

Subject: RTP-1–1995 Edition and RTP-1a–1995, Subparts 3A and 3B, Appendix M-8, Design Rules

Date Issued: January 16, 1998

Question (1): Are stresses caused by thermal expansion or thermal gradients, and acting at the same time as the operating mechanical loads, part of the operating design loads?

Reply (1): No.

Question (2): Since Subpart 3A of RTP-1 does not give a method for the development of loads and stresses due to thermal gradients, is a Subpart 3B analysis required to meet the requirements of the Standard for stresses due to thermal gradients?

Reply (2): Yes.

Question (3): Does RTP-1 define a temperature at which a laminate is free of thermal stress?

Reply (3): No.

Question (4): Are there strength limits on axial loads on shells under the requirements of para. 3A-210, and strain limits on axial loads on shells under the requirements of para. 3A-440?

Reply (4): Yes.

Question (5): Table M8-1 and Fig. M8-1 require a tangential nozzle. Since this is outside the scope of para. 3A-700(c), is a Subpart 3B analysis required?

Reply (5): Yes.

Question (6): Table M8-1 and Fig. M8-1 require a vessel with legs. Since concentrated loads due to legs are outside the scope of Subpart 3A, is a Subpart 3B analysis required?

Reply (6): Yes.

Question (7): Table M8-1 requires a design temperature of 150°F. If stresses due to thermal gradients are outside the scope of Subpart 3A [see Question (2)], is a Subpart 3B analysis required?

Reply (7): Yes.

Question (8): Do the provisions contained in Appendix M-8 require a Fabricator to demonstrate design comprehension of Subpart 3B as well as fabrication capability?

Reply (8): No.



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## (c) Interpretation: 3-12

Subject: RTP-1–1995 Edition and RTP-1a–1995, para. 6-930, Tables 2A-1 and 2A-2, Subpart 2B

Date Issued: January 16, 1998

Question (1): Are proof tests required for all components?

Reply (1): No.

Question (2): Does *all* in para. 6-930(d) refer to all data?

Reply (2): Yes.

Question (3): Can the tensile strength and modulus of *all* anisotropic laminates be determined through destructive testing?

Reply (3): No.

Question (4): Can the minimum values of laminates listed in Tables 2A-1 and 2A-2 be used for design in lieu of a value taken from a design basis laminate?

Reply (4): Yes.

Question (5): Are design basis laminates required to establish values to be used for design when laminates other than those specifically described in Tables 2A-1 and 2A-2 are to be employed in fabrication?

Reply (5): Yes.

Question (6): Is a proof tested laminate acceptable if it indicates 95% of design basis strength or 90% of design basis modulus?

Reply (6): No.

Question (7): Is data contained in Subpart 2B which can be used to evaluate the results of proof tests?

Reply (7): No.

Question (8): Does Subpart 2B contain data which provides guidance in developing proof test laminates?

Reply (8): Yes.

Question (9): Are proof tests required to be conducted at the design temperature?

Reply (9): No.

Question (10): Is there a requirement to refrigerate samples to be destructively tested, when they are cut, prior to testing?

Reply (10): No.



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