ASME PVHO-2–2019
(Revision of ASME PVHO-2–2016)

Safety Standard for Pressure Vessels for Human Occupancy: In-Service Guidelines

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME PVHO-2–2019
(Revision of ASME PVHO-2–2016)

Safety Standard for Pressure Vessels for Human Occupancy: In-Service Guidelines

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: January 24, 2020

The next edition of this Standard is scheduled for publication in 2022.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Periodically certain actions of the ASME PVHO Committee may be published as Cases. Cases and interpretations are published on the ASME website under the Committee Pages at http://cstools.asme.org/ as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Committee Pages can be found at http://cstools.asme.org/. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

CONTENTS

Forms

FOREWORD

In 1998 a PVHO Task Group was formed to investigate the need for In-Service Rules and Guidelines for Pressure Vessels for Human Occupancy. Simultaneously, a Sub Task Group was formed to investigate the issue of acrylic window design life versus service life. The design life is based on the PVHO window being exposed to the maximum allowable working pressure (MAWP), at the maximum rated temperature, for the maximum number of (design) cycles, in an outdoor weathering environment. The majority of PVHOs are not operated to such extremes, and service life may indeed be longer than design life. Conversely, if a window is not properly cared for (i.e., becomes exposed, either operationally or nonoperationally, to other detrimental factors that are not, and cannot be, factored into the design life), then the actual service life could be much shorter than the design life. Thus, the recommendation was made that design life and service life be addressed as two different subjects. In 1999 the In-Service Task Group became a PVHO subcommittee, with the most immediate task being the establishment of in-service criteria for PVHO windows and viewports.

This Standard provides the necessary in-service criteria to supplement Section 2, Viewports, of ASME PVHO-1, which applies to new construction only. By comparison, this Standard applies to all ASME PVHO-1 acrylic windows, regardless of their date of manufacture. This Standard consists of both technical criteria and guidelines. They are intended to provide guidance to the user and/or the jurisdictional authority in regard to the establishment of potential service life, and the necessary care, inspection, and repair during that service life—depending on the actual service conditions to which the PVHO and windows have been, or will be, exposed.

Finally, this Standard was prepared as a "stand-alone" document. All forms additional to those normally supplied with the window in accordance with ASME PVHO-1, which may be necessary throughout the service life of the window, are provided herein. Similarly, all necessary ASME PVHO-1 technical data applicable to service and repair (if required) are also provided in this Standard.

The 2019 edition of ASME PVHO-2 further develops and clarifies the in-service guidelines for PVHOs. The requirements for in-service pressure testing gauge calibration have been updated. Nonmandatory Appendix A, covering checklists and logs for PVHO operation, has been deleted, and the text under this appendix has been integrated into the general requirements of Section 1. New testing criteria for increasing the 40,000-hr design life of acrylic windows have been incorporated under Section 2. Additionally, new forms have been added, and some of the existing forms have been updated.

Sections on the following topics are in development are in development and may be included in future editions: quality assurance for PVHO manufacturers, piping systems, medical hyperbaric systems, diving systems, and submersibles.

Previous editions of this Standard were issued in 2003, 2012, and 2016. The 2019 edition of this Standard was approved by the American National Standards Institute as an American National Standard on December 4, 2019.

ASME PRESSURE VESSELS FOR HUMAN OCCUPANCY COMMITTEE

(The following is the roster of the Committee as of February 1, 2019.)

STANDARDS COMMITTEE OFFICERS

G. Wolfe, *Chair*
J. Witney, *Vice Chair*
E. Lawson, *Secretary*

STANDARDS COMMITTEE PERSONNEL

J. E. Crouch, Southwest Research Institute
B. Faircloth, FMS Engineering, LLC
M. A. Frey, Naval Sea Systems Command
T. R. Galloway, Naval Sea Systems Command
B. Kemper, Kemper Engineering Services, LLC
W. Kohnen, Hydrospace Group, Inc.
D. Lawrence, U.S. Coast Guard
E. Lawson, The American Society of Mechanical Engineers
S. Reimers, Reimers Systems, Inc.
G. Richards, Blanson, Ltd.
T. C. Schmidt, Lockheed Martin
K. A. Smith, U.S. Coast Guard
R. C. Smith, Naval Facilities Engineering Command, Ocean Facilities Program
J. Stromer, Triton Submarines
D. Talati, Sechrist Industries, Inc.
R. Thomas, American Bureau of Shipping
M. R. Walters, Oceaneering International, Inc.
J. Witney, Atlantis Submarines International
G. Wolfe, Southwest Research Institute
E. G. Fink, *Delegate*, Fink Engineering Pty., Ltd.
H. Pauli, *Delegate*, Germanischer Lloyd AG
J. S. Selby, *Delegate*, SOS Group Global, Ltd.
L. Cross, *Alternate*, Kemper Engineering Services, LLC
J. P. Hierholzer, *Alternate*, DNV GL
J. K. Martin, *Alternate*, Perry Technologies
P. Selby, *Alternate*, SOS Group Global, Ltd.
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
W. F. Crowley, Jr., *Contributing Member*, Aerospace & Undersea Support Services, LLC
W. Davison, *Contributing Member*, Consultant
G. J. Jacob, *Contributing Member*, Navy Experimental Diving Unit
J. Maison, *Contributing Member*, Adaptive Computer Technology, Inc.
T. Marohl, *Contributing Member*
J. C. Sheffield, *Contributing Member*, International ATMO, Inc.

HONORARY MEMBERS

R. J. Dzikowski
F. T. Gorman
L. G. Malone, Plastic Supply & Fabric, Inc.
R. P. Swanson

SPECIAL PROJECTS TASK GROUP

J. Witney, *Chair*, Atlantis Submarines International
J. E. Crouch, Southwest Research Institute
E. G. Fink, Fink Engineering Pty., Ltd.
M. A. Frey, Naval Sea Systems Command
T. R. Galloway, Naval Sea Systems Command
B. Kemper, Kemper Engineering Services, LLC
W. Kohnen, Hydrospace Group, Inc.
S. Reimers, Reimers Systems, Inc.
G. Richards, Blanson, Ltd.
R. C. Smith, Naval Facilities Engineering Command, Ocean Facilities Program
G. Wolfe, Southwest Research Institute
L. Cross, *Alternate*, Kemper Engineering Services, LLC
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC

TASK GROUP ON TUNNELING

L. Cross, Kemper Engineering Services, LLC
G. L. East, ASI Marine
E. G. Fink, Fink Engineering Pty., Ltd.
J. P. Hierholzer, DNV GL
B. Kemper, Kemper Engineering Services, LLC
W. Kohnen, Hydrospace Group, Inc.
S. Reimers, Reimers Systems, Inc.
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC

SUBCOMMITTEE ON DESIGN AND PIPING SYSTEMS

T. C. Schmidt, *Chair*, Lockheed Martin
B. Faircloth, *Vice Chair*, FMS Engineering, LLC
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
G. Bryant, Consultant
W. Davison, Consultant
R. K. Dixit, PCCI, Inc. (Reimers Division)
P. Forte, Woods Hole Oceanographic Institution
M. A. Frey, Naval Sea Systems Command
T. R. Galloway, Naval Sea Systems Command
C. Gaumond, Groupe Medical Gaumond
B. Humberstone, Diving Technical Advisor
G. J. Jacob, Navy Experimental Diving Unit
B. Kemper, Kemper Engineering Services, LLC
S. Reimers, Reimers Systems, Inc.
D. A. Renear, Aqua-Air Industries, Inc.
G. Richards, Blanson, Ltd.
R. Thomas, American Bureau of Shipping
M. R. Walters, Oceaneering International, Inc.
J. S. Selby, *Delegate*, SOS Group Global, Ltd.
L. Cross, *Alternate*, Kemper Engineering Services, LLC
J. K. Martin, *Alternate*, Perry Technologies
J. N. Pollack, *Alternate*, U.S. Navy
P. Selby, *Alternate*, SOS Group Global, Ltd.
R. M. Webb, *Alternate*, Naval Sea Systems Command
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
F. Burman, *Contributing Member*, Divers Alert Network
W. F. Crowley, Jr., *Contributing Member*, Aerospace & Undersea Support Services, LLC
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC

SUBCOMMITTEE ON DIVING SYSTEMS

R. Thomas, *Chair*, American Bureau of Shipping
T. R. Galloway, *Vice Chair*, Naval Sea Systems Command
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
G. Bryant, Consultant
W. F. Crowley, Jr., Aerospace & Undersea Support Services, LLC
G. L. East, ASI Marine
B. Faircloth, FMS Engineering, LLC
B. Humberstone, Diving Technical Advisor
B. Kemper, Kemper Engineering Services, LLC
D. Lawrence, U.S. Coast Guard
J. K. Martin, Perry Technologies
D. A. Renear, Aqua-Air Industries, Inc.
J. S. Selby, SOS Group Global, Ltd.
K. A. Smith, U.S. Coast Guard
M. R. Walters, Oceaneering International, Inc.
E. G. Fink, *Delegate*, Fink Engineering Pty., Ltd.
H. Pauli, *Delegate*, Germanischer Lloyd AG
L. Cross, *Alternate*, Kemper Engineering Services, LLC
T. Gilman, *Alternate*, U.S. Coast Guard
P. Selby, *Alternate*, SOS Group Global, Ltd.
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC
T. Marohl, *Contributing Member*

SUBCOMMITTEE ON GENERAL REQUIREMENTS

M. A. Frey, *Chair*, Naval Sea Systems Command
B. Kemper, *Vice Chair*, Kemper Engineering Services, LLC
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
J. E. Crouch, Southwest Research Institute
T. R. Galloway, Naval Sea Systems Command
S. Reimers, Reimers Systems, Inc.
J. Witney, Atlantis Submarines International
L. Cross, *Alternate*, Kemper Engineering Services, LLC
J. N. Pollack, *Alternate*, U.S. Navy
R. M. Webb, *Alternate*, Naval Sea Systems Command
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
G. J. Jacob, *Contributing Member*, Navy Experimental Diving Unit
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC

SUBCOMMITTEE ON MEDICAL HYPERBARIC SYSTEMS

G. Richards, *Chair*, Blanson, Ltd.
T. Dingman, *Vice Chair*, Healogics
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
F. Burman, Divers Alert Network
L. Cross, Kemper Engineering Services, LLC
W. T. Gurnee, Oxyheal Health Group
S. Reimers, Reimers Systems, Inc.
R. C. Smith, Naval Facilities Engineering Command, Ocean Facilities Program
D. Talati, Sechrist Industries, Inc.
E. G. Fink, *Delegate*, Fink Engineering Pty., Ltd.
H. Pauli, *Delegate*, Germanischer Lloyd AG
B. Kemper, *Alternate*, Kemper Engineering Services, LLC
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
W. Davison, *Contributing Member*, Consultant
K. W. Evans, *Contributing Member*, Perry Baromedical
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC
J. C. Sheffield, *Contributing Member*, International ATMO, Inc.
N. To, *Contributing Member*, U.S. Food and Drug Administration

SUBCOMMITTEE ON POST CONSTRUCTION

J. E. Crouch, *Chair*, Southwest Research Institute
R. C. Smith, *Vice Chair*, Naval Facilities Engineering Command, Ocean Facilities Program
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
G. Bryant, Consultant
T. Dingman, Healogics
M. A. Frey, Naval Sea Systems Command
T. R. Galloway, Naval Sea Systems Command
D. R. Hurd, Atlantis Submarines International
B. Kemper, Kemper Engineering Services, LLC
W. Kohnen, Hydrospace Group, Inc.
D. Lawrence, U.S. Coast Guard
J. K. Martin, Perry Technologies
G. Richards, Blanson, Ltd.
D. Talati, Sechrist Industries, Inc.
J. Witney, Atlantis Submarines International
L. Cross, *Alternate*, Kemper Engineering Services, LLC
T. Gilman, *Alternate*, U.S. Coast Guard
J. N. Pollack, *Alternate*, U.S. Navy
R. M. Webb, *Alternate*, Naval Sea Systems Command
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
J. Bell, *Contributing Member*, Fink Engineering Pty., Ltd.
W. F. Crowley, Jr., *Contributing Member*, Aerospace & Undersea Support Services, LLC
W. Davison, *Contributing Member*, Consultant
P. Forte, *Contributing Member*, Woods Hole Oceanographic Institution
B. Humberstone, *Contributing Member*, Diving Technical Advisor
G. J. Jacob, *Contributing Member*, Navy Experimental Diving Unit
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC
J. C. Sheffield, *Contributing Member*, International ATMO, Inc.

SUBCOMMITTEE ON SUBMERSIBLES

R. Thomas, *Chair*, American Bureau of Shipping
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
G. Bryant, Consultant
J. P. Hierholzer, DNV GL
D. R. Hurd, Atlantis Submarines International
B. Kemper, Kemper Engineering Services, LLC
W. Kohnen, Hydrospace Group, Inc.
J. K. Martin, Perry Technologies
K. A. Smith, U.S. Coast Guard
J. Stromer, Triton Submarines
M. R. Walters, Oceaneering International, Inc.
J. Witney, Atlantis Submarines International
H. Pauli, *Delegate*, Germanischer Lloyd AG
L. Cross, *Alternate*, Kemper Engineering Services, LLC
D. Lawrence, *Alternate*, U.S. Coast Guard
W. F. Crowley, Jr., *Contributing Member*, Aerospace & Undersea Support Services, LLC
T. R. Galloway, *Contributing Member*, Naval Sea Systems Command
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC
R. M. Webb, *Contributing Member*, Naval Sea Systems Command

SUBCOMMITTEE ON VIEWPORTS

B. Kemper, *Chair*, Kemper Engineering Services, LLC
J. Witney, *Vice Chair*, Atlantis Submarines International
E. Lawson, *Secretary*, The American Society of Mechanical Engineers
G. Bryant, Consultant
B. Faircloth, FMS Engineering, LLC
D. R. Hurd, Atlantis Submarines International
W. Kohnen, Hydrospace Group, Inc.
D. Lawrence, U.S. Coast Guard
D. A. Renear, Aqua-Air Industries, Inc.
G. Richards, Blanson, Ltd.
R. C. Smith, Naval Facilities Engineering Command, Ocean Facilities Program
J. Stromer, Triton Submarines
D. Talati, Sechrist Industries, Inc.
R. Thomas, American Bureau of Shipping
L. Cross, *Alternate*, Kemper Engineering Services, LLC
J. K. Martin, *Alternate*, Perry Technologies
M. W. Allen, *Contributing Member*, Microbaric Oxygen Systems, LLC
K. K. Kemper, *Contributing Member*, Kemper Engineering Services, LLC

CORRESPONDENCE WITH THE PVHO COMMITTEE

General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, PVHO Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Proposing a Case. Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

Interpretations. Upon request, the PVHO Standards Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the PVHO Standards Committee.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the PVHO Standards Committee at the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
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. Please provide a condensed and precise question, composed in such a way that a “yes” or “no” reply is acceptable.
Proposed Reply(ies):	Provide a proposed reply(ies) in the form of “Yes” or “No,” with explanation as needed. If entering replies to more than one question, please number the questions and replies.
Background Information:	Provide the Committee with any background information that will assist the Committee in understanding the inquiry. The Inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. 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.

Attending Committee Meetings. The PVHO Standards Committee regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the PVHO Standards Committee.

ASME PVHO-2–2019
SUMMARY OF CHANGES

Following approval by the ASME PVHO Committee and ASME, and after public review, ASME PVHO-2–2019 was approved by the American National Standards Institute on December 4, 2019.

ASME PVHO-2–2019 includes the following changes identified by a margin note, **(19)**.

Page	*Location*	*Change*
2	1-3.4	Added
3	1-7	Added, from former Nonmandatory Appendix A
6	2-2.4	Revised
7	2-4.3	Last paragraph revised
8	2-4.8	Last sentence revised
11	2-6.8	Subparagraph (a) revised
13	2-8	Added
15	Table 2-4.1.1-1	(1) Title revised
		(2) General Note (g) added
17	Table 2-4.1.1-2	(1) Title revised
		(2) General Note (g) added
18	Table 2-4.1.1-3	(1) Title revised
		(2) General Note (c) added
19	Form VM-1	Former Form VP-1 redesignated, and “Window service life expended” line deleted
20	Form VM-2	Former Form VP-2 revised in its entirety
22	Form VM-3	Former Form VP-3 revised in its entirety
23	Form VT-1	Added
36	Form IV-1-2	“Window markings” line added
37	Form IV-5-1	“Window Identification” line replaced with “Window markings” line
40	VI-6	First value in third paragraph revised
41	Table VI-6-1	Title revised
42	Form VI-1	(1) Title revised
		(2) “Window markings” line added
		(3) “Test specimens are original submittal” line deleted
43	Form VI-2	Revised in its entirety
44	Nonmandatory Appendix A	Text moved to subsection 1-7

SPECIAL NOTE: ASME PVHO-2 Cases are no longer published with the edition.

Section 1
General

1-1 INTRODUCTION AND SCOPE

(a) This Standard provides technical requirements and guidelines for the operation and maintenance of PVHOs and PVHO systems that were designed, constructed, tested, and certified in accordance with ASME PVHO-1, Safety Standard for Pressure Vessels for Human Occupancy.

(b) This Standard provides technical criteria for the user to establish the serviceability of a PVHO acrylic window under its specific environmental service conditions. Windows in protected environments as well as those in severe environments are addressed. Judicious use of this Standard will allow the user and/or the jurisdictional authority to determine when a PVHO acrylic window requires replacement.

1-2 RESPONSIBILITIES AND JURISDICTIONAL CONSIDERATIONS

1-2.1 User's Responsibilities

The PVHO and PVHO systems user shall provide the designer with information regarding the service conditions that the PVHO and PVHO systems may encounter during their service life. The user shall protect the PVHO and its systems from hazards, and ensure they are used within their design limitations. It is the user, and not the designer or fabricator, who is responsible for determining the safe service life in accordance with the technical criteria and guidelines herein. The user is responsible for retaining all documentation for each PVHO and its associated systems, and shall establish a program of periodic inspection to determine the need for repair or replacement of any part, in accordance with the requirements listed in this Standard. For window repair and replacement requirements, refer to Section 2, Viewports.

1-2.2 Jurisdictional Considerations

The operation of each PVHO is typically governed under specific rules of the jurisdiction in which it is operated. (Examples include, but are not necessarily limited to, the state, the U.S. Food and Drug Administration, and the U.S. Coast Guard.) This Safety Standard is intended to complement the jurisdictional requirements (i.e., to provide guidance to both users and jurisdictional authorities in regard to in-service requirements for the PVHO, acrylic windows, and PVHO systems). The responsibility for compliance with jurisdictional in-service requirements, which may become invoked as a result of the technical criteria and guidelines as set forth herein, lies with the user.

1-3 IN-SERVICE EVALUATIONS, REPAIRS, AND MODIFICATION OF PVHOs

1-3.1 In-Service PVHO Evaluation and Testing

The owner shall be responsible for performing periodical pressure testing of the PVHO pressure boundary, pressurized systems, and PVHO operational systems. Test pressures shall be at maximum operating pressure and not exceed the maximum allowable working pressure of the components/systems being tested. These tests shall be performed and documented at a periodicity established by the user, manufacturer, and/or applicable jurisdiction.

Pressure testing shall be performed on any valve, fitting, and/or piping/tubing that penetrate the PVHO pressure boundary following reassembly or replacement. The test boundary shall include the first stop valve both upstream and downstream of the reassembled or replaced component.

Pressure testing after pressure vessel or piping weld repairs shall be a hydrostatic or pneumatic test and shall follow the applicable pressure vessel or system component code or standard.

New pressure boundary components (i.e., valve, piping, and windows) shall be hydrostatically or pneumatically tested in accordance with the applicable pressure vessel or system component code or standard.

1-3.2 PVHO Windows and Viewports

The owner shall be responsible for ensuring that in-service viewport evaluations, window replacements, and inspections are performed in accordance with this Standard.

(a) PVHO acrylic windows shall be evaluated and, if necessary, repaired per subsections 2-4 through 2-6 of this Standard.