



Pressure Points

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HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

Discussion: Department of Transportation UN Portable Tank Services

UN Portable Tanks/Intermodal Tanks 49 CFR Parts 178.273 – 178.277

Author: Bruce Redfield, Field Services Manager – HSB Codes & Standards

The information provided herein gives the reader a general outline of HSB's authority provided by U.S. DOT and HSB's approach to providing DOT UN Portable Tank/Intermodal Tank inspection services. Furthermore, the information provides some clarification of the frequent questions asked regarding UN Portable Tanks and the specification rules for both new construction and repair activities.

If there are any inquiries regarding the UN Portable Tank/IM Tank topic, please contact Bruce Redfield at bruce_redfield@hsb.com.

What are HSB's DOT UN Portable Tank/Intermodal Tank (IM) Services?

HSB holds a Designated Approval Agency (DAA) authorized to perform design review, inspection associated with the selected standard of construction, and subsequent applicable certification. HSB is authorized to engage in the cyclical retesting - requalification of UN Portable/IM Tanks in accordance with 49 CFR Part 180.605. Furthermore, HSB is authorized to inspect repair/alteration on ASME Code Stamped DOT UN Portable Tanks conducted in accordance with the NBIC (current Edition) plus the additional 49 CFR Part 180 Regulatory requirements.

Does HSB certify the DOT UN Portable Tanks we inspect?

Yes, HSB verifies and approves the UN Portable Tank designs as a recognized DOT DAA. HSB provides the authorized DAA identification marking on each of the UN Portable tanks where design review has been verified and all required inspections of the 49 CFR Parts 178.273 – 178.275 (as applicable) have been completed satisfactorily.

What personnel are used to provide the DOT inspection activities for HSB?

HSB utilizes the Authorized Inspector (AI) field staff as necessary to complete the required UN Portable Tank inspection activities. Typically, the selection is based on the customer location. We want to carry out the services with a convenient and economical approach. Note: Additional internal training toward DOT Tank Inspector designation is a requirement that will be completed prior to the Inspector conducting any related inspection activities on a UN Portable Tank.

For repair on UN Portable Tanks and Intermodal Tanks (IM), what are the requirements?

Repair rules for UN Portable and Intermodal Tanks (IM) are found in 49 CFR Part 180.605. Repair of a portable tank is authorized, provided such repairs are made in accordance with the requirements prescribed in the specification for the tank's original design and construction. In addition to any other provisions of the specification, no portable tank may be repaired to cause leakage or cracks or to increase the likelihood of leakage or cracks near areas of stress concentration due to cooling metal shrinkage in welding operations, sharp fillets, reversal of stresses, or otherwise. No field welding may be done, except to non-pressure parts. Any cutting, burning, or welding operations on the shell of a UN Portable Tank or IM Tank must be done with the approval of the approval agency and be done in accordance with the requirements of 49 CFR Part 180.605, considering the pressure vessel code used for the construction of the shell (typically ASME Section VIII Div.1). A pressure test to the original test pressure must be performed after the work is completed as per 49 CFR Part 180.605(h)(3).

Can an NB "R" Certificate holder conduct a repair of a UN Portable or IM Tank?

Yes, an NB "R" Certificate holder can conduct repairs on UN or IM Tanks in consideration with the rules provided within the 49 CFR Part 180.605. In other words, the NB "R" Certificate holder must comply with both the 49 CFR regulations and the NBIC with the 49 CFR taking precedent.

If an NB "R" Certificate Holder is conducting a repair of a UN Portable Tank, does NBIC Supplement 6 become a requirement?

No, the NBIC Supplement 6 provides for some helpful guidance but is not yet officially recognized as the method of repair contained with 49 CFR Part 180. One reason for this is that Supplement 6 addresses the requirement to hold an NB "TR" Certificate, which is tied to the concept of official U.S. DOT recognition of ASME Section XII Rules for Construction and Continued Service of Transport Tanks. Unfortunately, Section XII has yet to be officially recognized by the 49 CFR. Below is the current listing of recognized ASME Code Standards contained in the 49 CFR Part 171.7. Additional information can be reviewed if you visit the electronic version of the 49 CFR: [eCFR :: 49 CFR Chapter I -- Pipeline and Hazardous Materials SAFETY Administration, Department of Transportation](#).

– **ASME BPVC.II.A-2017 (Volumes 1 and 2), Section II** – Materials – Part A – Ferrous Materials Specifications

– **ASME BPVC.II.B-2017, Section II** – Materials – Part B – Nonferrous Material Specifications

– **ASME BPVC.V-2017, Section V** – Nondestructive Examination

– **ASME BPVC.VIII.1-2017, Section VIII** – Rules for Construction of Pressure Vessels Division 1

– **ASME BPVC.IX-2017, Section IX** – Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators

Can ASME Section XII be used for new construction of UN Portable Tanks or IM Tanks?

Yes, if the manufacturer of the UN or IM tank first applies for a Special Permit (SP) with the U.S. DOT in accordance with 49 CFR Part 107.

Can an NB "R" facility provide the services to meet the UN Portable Tank periodic testing regulations?

Yes, if the NB "R" facility follows all the 49 CFR Regulatory Requirements covered in the 49 CFR Part 180.605.

About the author

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Bruce Redfield is the Field Services Manager DOT/TC for the HSB Codes & Standards Group. Bruce has been with HSB for 30 years and maintains a broad scope of knowledge in Transportation Vessels/Cylinders, ASME Boiler and Pressure Vessels, and International Codes.

Ask the engineer

Author: Jay Cameron, P.E.

Upon publication of new editions of the ASME Boiler and Pressure Vessel Code, HSB Codes and Standards staff complete a comprehensive review and publish our code synopsis as a value-added service to our clients and partners, summarizing all changes to the Code, thereby eliminating a line-by-line comparison to determine the change.

In the 2021 Edition, HSB alerted ASME of potential issues in Section II, Part D. ASME launched an investigation to look into all the Section II-D Revisions, which resulted in about 120 pages of Errata between the US Customary and Metric books. Many of these are editorial and may not have an effect on your clients' designs, but should all be reviewed for their impact.

ASME defines Errata as corrections to incorrectly published items, or to correct typographical or grammatical errors in BPV Codes. Note that per the Summary of Changes page in the Code books, and the Note at the bottom of the Errata webpage, "Such errata shall be used on the date posted."

The Errata pdf files can be found at <https://cstools.asme.org/csconnect/CommitteePages.cfm?Committee=N20060000&CommitteeErrata=yes>.

Please send all inquiries regarding this content to TechSupport@hsb.com.

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Jay joined HSB in 1992. He holds a B.S. degree in Mechanical Engineering, Engineering Mechanics from Worcester Polytechnic Institute and an M.S. degree in Metallurgy from Rensselaer Polytechnic Institute and is a Registered Professional Engineer. Jay provides technical assistance for all non-nuclear ASME Boiler and Pressure Vessel Codes and the National Board Inspection Code (NBIC) and supports clients with design reviews. His technical expertise is in the areas of pressure vessel design and repair, stress analysis and materials. Jay currently serves as Chair of BPV II (Materials) and Vice Chair of the Subgroup on Materials (BPV VIII) and is a member of the Special Committee on Interpretations (BPV VIII). He has presented courses on pressure vessel design to audiences around the world.

2022 technical training and marketing events

| Dates | Location | Topic |
|---------------------|------------------|--|
| April 5 & 6 | Virtual/Americas | ASME Section IX Welding Requirements |
| April 11-13 | Dallas, TX | Boiler 2022 - Booth #702 |
| April 27 & 28 | Virtual/Americas | NBIC Repair and Alterations |
| June 7-9 | Virtual/Americas | ASME Section I & B31.1 |
| June 14-16, 23 & 24 | Virtual/Americas | ASME Section VIII, Division 2 |
| July | Virtual/Americas | ASME Section III |
| July | Virtual/Americas | PED Series and PE(S)R |
| August | Virtual/Americas | ASME Section VIII - Toughness |
| September | Virtual/Americas | ASME Section V |
| October | Virtual/Americas | ASME Section II |
| November | Virtual/Americas | ASME Section VIII - Design |

For more information on HSB training and events, please email us at GetInfo@HSB.com.

To register for an event, [click here](#).

Please note, registration for the 2022 schedule is currently open for events that have firm dates posted. New topics may also be added throughout the year.

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