



# 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.

## Publication of the 2021 Edition ASME Boiler and Pressure Vessel Code Synopsis

*Author: Paul Coco, Senior Engineer - HSB Codes and Standards*

The Codes and Standards Technical staff of HSB announces the publication of the 2021 Edition ASME Boiler and Pressure Vessel Code Synopsis.

ASME publishes a new Edition to the ASME Boiler and Pressure Vessel Code every two years containing revisions, additions, and errata to the existing Code Requirements. On July 1, 2021, ASME published the 2021 Edition of the Boiler Pressure Vessel Code (BPVC). Use of the 2021 Edition is optional until January 1, 2022, at which time it becomes mandatory for certificate holders.

As a value-added service to our clients and partners, our Codes and Standards staff summarize all changes to the Code in a Synopsis database, thereby eliminating a line-by-line comparison to determine the change. In many instances, HSB's Code and Standards staff have also provided some brief notes to clarify the revision to the Code and its potential impact on Code certificate holders.

The 2021 Edition ASME Boiler and Pressure Vessel Code Synopsis Report includes:

- Section I - Power Boilers
- Section III and Section XI - Nuclear
- Section IV - Heating Boilers
- Section VIII, Division 1, 2, 3 - Pressure Vessels
- Section XII - Transport Tanks

In addition to these construction Codes, four ASME BPVC reference Codes are included in the 2021 Synopsis: Section II (Materials), Section V (Nondestructive Examination), Section IX (Welding, Brazing, and Fusing Qualifications), and Section XIII (Rules for Overpressure Protection).

The 2021 Edition ASME Boiler and Pressure Vessel Code Synopsis is available to our ASME customers through Technical Resources in the Front Door customer portal. Customers can also find additional resources in our newly added Training Center and Publications Front Door applications.

## What you should know about HSB and DOT

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

The information contained herein gives the reader a general outline of HSB's authority provided by DOT FMCSA and HSB's approach to providing DOT Cargo Tank inspection services. It further provides some clarification of the personnel involved with Cargo Tank inspections. If there are any questions or inquiries regarding the topic of DOT Cargo, please contact Bruce Redfield at [bruce\\_redfield@hsb.com](mailto:bruce_redfield@hsb.com).

### **What are HSB's DOT Cargo Tank services?**

HSB holds the Federal Motor Carrier Safety Administration (FMCSA) number, 1179387. Under this registration, HSB is authorized to provide Inspection of DOT Cargo Tank manufacturing, assembly, testing, and newly constructed DOT Tanks. Furthermore, HSB is authorized to inspect repairs or alterations on ASME Code Stamped DOT Cargo Tanks conducted in accordance with the NBIC (current Edition).

### **Does HSB Register the DOT Tanks we inspect? What is our current scope?**

HSB does not currently provide for the FMCSA registration of DOT Cargo Tanks that we provide inspection on. HSB has limited our scope of activities to provide ASME Section VIII Div.1/49 CFR inspection activities up to the signing of the ASME Manufacturer's Data Report (MDR).

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

We utilize our Authorized Inspector (AI) field staff as necessary to complete the required inspection activities. Typically, the selection is based on the customer location. We want to carry out the services in a convenient and economical approach. Note: Additional training toward DOT Tank Inspector designation must be completed by the selected AI.

### **What training is required towards designation?**

We require that each DOT Tank Inspector Candidate complete a comprehensive reading assignment that involves the 49CFR Regulatory requirements applicable to DOT Cargo Tanks and UN Portable Tanks. Once the reading is completed, the candidate shall achieve a passing grade on two separate exams.

### **Is the Authorized Inspector (AI) the same as the Registered Inspector?**

No, in accordance with the 49CFR, the Authorized Inspector is defined as an Inspector who is currently commissioned by the National Board of Boiler and Pressure Vessel Inspectors and employed as an Inspector by an Authorized Inspection Agency.

The Registered Inspector title is reserved for those personnel who are registered in accordance with 49 CFR Part 107.503, typically by the DOT Cargo Tank manufacturer. The best way to describe the nuance between the two titles is, the AI provides inspection and certification for the DOT Cargo Tank pressure vessel while the Registered Inspector provides total inspection and certification of the entire DOT Cargo Tank from the top safety rails down to the tires.

### **Does HSB provide Transport Canada (TC) Cargo Tank inspection services?**

HSB is not currently registered with Transport Canada to perform TC Cargo Tank specification inspection activities. We do have future plans to obtain the Registration Certificate required to perform the required inspections and certification.

### **Can HSB provide the DOT Cargo Tank Inspection Services globally?**

Yes, in accordance with the 49 CFR and our Registration this would be allowed.

## **Ask the Engineer**

**Question:** My Shop has received an order to build Boiler External Piping (BEP) in accordance with ASME Section I, 2021 Edition. We are contractually responsible to the Boiler Manufacturer who would furnish Form P-3 for the completed boiler unit. Is it acceptable to document the BEP we build in Form P-4A?

**Answer:** The quick answer is No.

Documenting BEP has often led to some amount of confusion historically within the Section I user community. PG-109 is revised in the 2021 edition of Section I with the addition of two new paragraphs, PG-109.1.1 and PG-109.1.2. The situation described in the question above is addressed in PG-109.1.1, leading to PG-112.2.4 and Form P-4 which supports the answer of "No." In this case, the Boiler Manufacturer certifying the Form P-3 for the completed boiler unit is ultimately responsible for BEP including its design. See PG-104.1 Note 1. The piping subcontractor in this situation may or may not perform the design of BEP and the extent (which includes the possibility of no design function) of design functions needs to be documented under the "Remarks" of Form P-4 as mentioned in PG-112.2.4(c)(3).

However, if the piping contractor is not contractually responsible to the Boiler Manufacturer as described in PG-104.1 Note 2, then per PG-109.1.2, paragraph PG-112.2.5 provides guidance for the documentation of BEP on a Form P-4A. Note, a revision was made to PG-112.2.5 in 2019 clarifying that the organization certifying the Form P-4A retains the responsibility for the Code design which a certificate holder needs to fulfill when they are not contractually responsible to the Boiler Manufacturer. Keep in mind, Line 5 of Form P-4A has the provision "Code Design By:" which allows an organization other than the Certificate Holder/Manufacturer (who certifies Form P-4A) to perform the design work. However, the Certificate Holder certifying Form P-4A is ultimately responsible for design and the AI signing the Form P-4A has the duty for the verification of calculations per PG-90.1.4. There is no provision such as the one provided in PG-112.2.4(c)(3) in PG-112.2.5.

Section I Interpretation BPV I-18-25 (copied below) clarifies the documentation requirements of BEP and also provides the clarification when a company that holds a valid Certificate of Authorization for use of the ASME Certification Mark with the PRT Designator can fabricate BEP. As stated in Q&Rs 5 and 6, the only time a PRT certificate holder can fabricate (they can never design BEP as design is not included in the scope of PRT) is when they are contractually responsible to the Boiler Manufacturer.

Interpretation #:	BPV I-18-25
Record Number:	18-2292
Subject Description:	BEP, Use of P-4 and P-4A and use of the PRT Designator
Standard Designation:	BPV Section I
Par/Fig/Table:	PG-106.8, PG-109.3
Edition/Addenda:	2017
Codes and Standards Type:	ASME

**Background:** Company A holds a valid Certificate of Authorization for use of the ASME Certification Mark with a Designator that covers design (S or PP). Company B holds a valid Certificate of Authorization for use of the ASME Certification Mark with the PRT Designator.

**Question 1:** When Company A is not contractually responsible to the Boiler Manufacturer and fabricates BEP, are they required to document the piping on Form P-4A in accordance with PG-112.2.5?

**Answer:** Yes.

**Question 2:** For the conditions in Question 1, when Company A documents the piping on Form P-4A, are they responsible for the design even if the design has been performed by others identified in Line 5 of the form?

**Answer:** Yes.

**Question 3:** When Company A is contractually responsible to the Boiler Manufacturer and fabricates BEP, are they required to document the piping on Form P-4 in accordance with PG-112.2.4?

**Answer:** Yes.

**Question 4:** For the conditions in Question 3, when Company A documents the piping on Form P-4, are they responsible for the design?

**Answer:** Yes, unless the Boiler Manufacturer has performed the design; see PG-112.2.4.

**Question 5:** When Company B is not contractually responsible to the Boiler Manufacturer, may they fabricate BEP?

**Answer:** No.

**Question 6:** When Company B is contractually responsible to the Boiler Manufacturer, may they fabricate BEP and document the piping on a Form P-4?

**Answer:** Yes, provided the Boiler Manufacturer has performed the design.

**Disclaimer:** ASME - The above interpretation was transcribed by HSB from the official ASME interpretation database <http://cstools.asme.org/Interpretation/SearchInterpretation.cfm>. Although every effort was made to accurately reproduce this interpretation, use of this information should be for research only. It is strongly recommended that the ASME interpretation published from their website be used for Code business.

The stamping requirements of BEP are provided in PG-109.2 and PG-109.3. Although PG-106.8.1 makes reference to Form P-4, there is no reason to go to PG-106.8.1 for stamping of BEP just because PG-106.8.1 also makes reference to Form P-4. Additionally, there is no direct reference from PG-109 to PG-106.8 so Code users should not be interpreting that the use of a Form P-4 for BEP, when applicable, requires stamping in accordance with PG-106.8.1.

## 2021 technical training and marketing events

Dates	Location	Topic
September 27, 2021	Virtual/EMEA	PE(S)R
September 28, 2021	Virtual/Americas	PE(S)R
October 19-21, 2021	Virtual/US	ASME Section III (E21)
November 9-11, 2021	Virtual/US	ASME Section IX & NBIC (E21)
November 30, 2021	Virtual/US	2021 Code Synopsis (E21) Sections I & II
December 7, 2021	Virtual/US	2021 Code Synopsis (E21) Sections V & IX
December 14, 2021	Virtual/US	2021 Code Synopsis (E21) Section VIII, Div 1 & 2
December TBD	Virtual/Americas	PED Series with PE(S)R

For more information on HSB training and events, please email us at [GetInfo@HSB.com](mailto:GetInfo@HSB.com).

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

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