



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.

Subcontracting Welding Across the Street - A Case Study

Author: Alex Garbolevsky, P.E., Senior Engineer

Company A holds Section VIII, Division 1 & 2 authorizations without field extension. Their ASME Code-stamped vessels require relatively limited welding, primarily consisting of corrosion-resistant weld metal overlay of inside shell and head surfaces. They also have a National Board “R” Certificate of Authorization and perform weld metal buildup / thickness restoration / repair of ASME-stamped vessels.

After a recent move to a new shop location, Company A decided they wanted the capability to perform laser beam overlay welding. However, they lacked equipment and qualified welding operators for this process.

Company B, a friendly and new non-ASME Code neighbor located across the street from Company A’s new shop location, specializes in laser beam welding.

Company A consulted HSB Codes and Standards to see if it was possible to invoke Division 1, UG-11 / Division 2, 3.2.8 in order for Company B to perform subcontracted laser beam welding without ASME Certificates of Authorization on preformed pressure parts.

Unfortunately, UG-11(b) / 3.2.8.2 does not permit welding on shells, heads, etc. of pressure vessels. From this, a second question followed: Is there a Code Case to allow subcontracted welding by a non-ASME Certificate Holder? HSB determined one existed, at least for austenitic stainless steel and certain other materials - Code Case 2590-4. However, it was annulled in December 2018.

Further research established that ASME CA-1-2020, *Conformity Assessment Requirements*, rules did not allow Company A to extend its current Certificates of Authorization by considering Company B as either a “Field Site” or a “Temporary Location.”

ASME defines a **field site** as a location where the final permanent installation takes place. All construction activities must take place at that site. They further define a **temporary location** as a location under the control of the Certificate Holder other than the location listed on the Certificate of Authorization, or field site, where ASME Code activities are performed.¹

Regarding the National Board Inspection Code (NBIC) for repairs and alterations, its glossary defines “**Field**” as — **A temporary location**, under the control of the Certificate Holder, that is used for repairs or alterations to pressure-retaining items at an address different from that shown on the Certificate Holder’s Certificate of Authorization.²

Regrettably, Company B did not satisfy either condition.

HSB recommended Company B obtain ASME “PRT” Section VIII Division 1 and 2 shop certifications. This would allow Company B to laser beam weld on new Company A vessels (as “Parts”). Company A would thus retain responsibility for design and apply an ASME Certification Mark to the completed vessels.

Since ASME Codes are for new construction, Company B’s “PRT” Certificates would not cover repairs. An inquiry was submitted to the National Board who issued the following interpretation:

INTERPRETATION 21-02

Subject: Subcontracted Weld-Overlay Repair

Edition: 2021

Question 1: Is it permitted for an R Certificate of Authorization holder to subcontract welding to another company who does not possess an R Certificate?

Reply 1: No.

Question 2: May a subcontractor’s shop used on a regular basis be considered as a field location to allow welding by and under the control of the R Certificate Holder at that shop?

Reply 2: No.

This interpretation clarified the next step to be taken. Company B would apply for a National Board “R” Certificate of Authorization.

Pending successful completion of the certification process, Company B will have the necessary authorizations to allow Company A to subcontract its ASME and NBIC laser beam welding needs to its new neighbor.

1. American Society of Mechanical Engineers (ASME), *Conformity Assessment Requirements*, CA-1-2020 (2020)

2. The National Board of Boiler and Pressure Vessel Inspectors (NBBI), *Subcontracted Weld-Overlay Repair*, 2021 Interpretations +21-02 (2021)

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Alex joined HSB in 1979, after serving in the US Navy as a Main Propulsion Assistant. He holds a B.A. in Chemistry from the College of the Holy Cross, and an M.S. in Engineering Science from the Rensselaer Polytechnic Institute. Prior to his assignment to Codes and Standards in 2000, he spent 13 years in Germany and represented HSB in more than 25 countries, serving in positions ranging from Authorized Inspector to Technical Managing Director of our subsidiary – HSB International GmbH.

Alex concentrates in providing support for ASME Section V and IX, as well as for the European Union Pressure Equipment Directive “PED” (2014/68/EU), and ASME Section III. He is actively involved in inspector training within the company as well with external technical training seminars including ASME’s “Section I – Power Boilers” (PD-665).

Alex holds National Board “AI” and “IS” Commissions with “B”, “I”, “N”, “NS,” and “R” endorsements. From 1993 to 2002, he served as Chairman of ISO/TC-11 Technical Committee for Boilers and Pressure Vessels and currently is a member of ASME’s Standards Committee on Nondestructive Examination, Subgroup on International Materials Specifications, Subgroup on Volumetric Methods, Working Group Radiography, and Subgroup on Brazing. He is a Registered Professional Engineer (Mechanical) in the Commonwealth of Massachusetts.

Ask the engineer

Part 1

Author: Alex Garbolevsky, P.E.

Question: When mistakes are discovered in the Codes, how am I notified?

Response: ASME and National Board each occasionally publish Errata to their respective Codes. However, Errata is not sent out automatically to Code book subscribers.

ASME offers a free email notification subscription service whenever Errata and Special Notices are issued.

Registration for Errata notifications for any or all ASME Boiler and Pressure Vessel Code Sections is available at: <https://cstools.asme.org/BPVErrataAndSpecialNotice.cfm>.

ASME Code Errata are most frequently issued just after Code Week Meetings, generally, in the months of February, May, August, and November.

National Board does not have a notification system for National Board Inspection Code (NBIC) Errata. You need to go to their homepage at nationalboard.org. Next, click on "Inspection Code" in the header. Finally, when the drop-down menu appears, choose "NBIC Publications Information" and scroll down the page to "Errata."

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Part 2

Author: Thomas Pastor, P.E.

Question: Where in ASME Section VIII, Division 1 does it define "complete pressure vessel"?

The reason for asking is that a customer has ordered a pressure vessel with a shell and a lower head and a RFWN flange on the other end without a head being installed. Can this be considered a "complete pressure vessel" or is it a part?

Response: The answer depends on what attaches to the flange on the upper end of the vessel. For example, if this vessel is directly attached to piping via the RFWN, then it would be considered a complete pressure vessel. This is supported by ASME Interpretation VIII-1-01-04:

Question (1): May a pressure vessel, which does not contain an upper head but instead bolts directly to a piping header via a body flange, be "U" stamped as a completed vessel?.

Reply (1): Yes.

However, if the user orders the vessel as described but does not state what the upper flange is attached to, then the vessel manufacturer should treat this vessel as a part.

One common application where you may come across this are pressure vessels that have a flanged immersion heater installed. A company could purchase a vessel without an upper head from Manufacturer A, and a flanged immersion heater from Manufacturer B, and then put the two together to ultimately sell to the end-user. In this case, both the vessel supplied by Manufacturer A and the flange immersion heater would need to be "U" Part stamped. The company selling the "complete vessel" would need to be a Certificate Holder and perform the remaining required Code activities (pressure test, Data Report Form[s], stamping).

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Thomas Pastor is currently Vice President of the Codes and Standards Group for HSB, Global Inspection and Engineering Services Division and has been with HSB for over 34 years. He holds a B.S. and M.S. in Civil Engineering from the University of Connecticut, is a licensed Professional Engineer in the state of Connecticut, and holds a National Board Commission. Tom's technical expertise is in the area of stress analysis and pressure vessel design, and he has presented over 150 courses and workshops on ASME boiler and pressure vessel standards to audiences around the world. Additionally, Thomas Pastor is an ASME Fellow and currently serves on several ASME committees; Senior Vice President of the Council on Standards and Certification, Member of the Board on Pressure Technology Codes & Standards, BPV-VIII Standards Committee (Pressure Vessels), Subgroup Design of BPV-VIII, and Subgroup General Requirements of BPV-VIII.

2022 technical training and marketing events

Dates	Location	Topic
October 18-20	Virtual (Eastern time)	Hot new topic! - ASME Section II
November 1-3	Virtual (Eastern time)	Hot new topic! - ASME Section VIII - Design
November 15&16	Virtual (eastern time)	Hot new topic! - ASME Section IX
November 16&17	Virtual (Eastern time)	Hot new topic! - Department of Transportation - Cylinders
December 6-8	Virtual (Eastern time)	Section VIII, Division 1
December 13&14	Virtual (Eastern time)	Hot new topic! - Welding Procedures Specification (WPS) and Procedure Qualification Records (PQR) - Execution and Documentation

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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October 2022

Pressure Points is published by

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Hartford, CT 06103

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