

Information Bulletin No. IB23-044 **WITHDRAWN 2024-02-01**
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INTERPRETATION Requirements for Cold Stretched Austenitic Stainless Steel Pressure Vessels

This Information Bulletin replaces IB13-016, which has been withdrawn.

Provisions

This document defines the requirements that must be met for the design and construction of cold-stretched austenitic stainless steel pressure vessels for use in the Province of Alberta. This document also establishes conditions that must be met for the installation, operation, repair and alteration of cold-stretched pressure vessels in Alberta.

1. General Requirements

- 1.1 All requirements specified in Clause 7.8 and Normative Annex K of CSA B51 *Boiler, pressure vessel, and pressure piping code* must be adhered to.
- 1.2 Use of Mandatory Appendix 44 combined with the rules in paragraph UG-16(a) and Mandatory Appendix 46 ^{note #1} of ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 is prohibited.

2. Design and Design Submission Requirements

- 2.1 Clause K2.8 of CSA B51, Normative Annex K is modified and shall read – “For nozzle reinforcement calculations, the rules and provisions of K.2.9 of CSA B51 are permitted but use of alternative rules provided in paragraph UG-16(a) and Mandatory Appendix 46 of ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 are prohibited. For large openings exceeding the limits specified in UG-36(b)(1), a design submission must address how supplemental rules of 1-7 will be satisfied in addition to the rules of K.2.9 of CSA B51.”
- 2.2 Acceptable designs may be registered either as Alberta Limited Designs (ALD) ^{note #2} or as ALT CRN designs in accordance with Clause 4.3.5 of CSA B51.

3. Post-Construction Requirements

- 3.1 Sections of the AB-513 document that allow qualified owners (users) to conduct, inspect and certify certain types of repairs and alterations under their Certificate of Authorization Permit do not apply for any repair or alteration of cold-stretched vessels.

- 3.2 In addition to the requirements specified in Clause K.6 of CSA B51, Normative Annex K, the requirements specified in Sections 3.3 to 3.7 of this Information Bulletin shall be met for post-construction related activities (e.g. overpressure protection, maintaining reports and records, repairs and alterations, change of ownership).
- 3.3 When welding is utilized for repair and/or alteration, the requirements in Clause K6.6 of CSA B51, Normative Annex K and the following additional requirements shall apply:
 - 3.3.1 Vessel MAWP and all affected vessel components including nozzle attachment reinforcements shall be re-evaluated following any additional cold-stretching using renewed (actual) measurements of the affected component dimensions (e.g. thicknesses); and
 - 3.3.2 Some provisions specified in the Alberta Repair and Alterations Requirements (AB-513) document may not be applicable to the repairs and/or alterations of cold-stretched vessels.
- 3.4 For pressure vessels designed and constructed to the earlier editions of the adopted ASME Code (prior to 2013-07-01) utilizing ASME Code 2596, compliance with this Information Bulletin is mandatory.
- 3.5 An ABSA Inspector must be notified before the owner commences any repair or alteration of a cold-stretched pressure vessel. Please refer to the Pressure Equipment Safety Regulation (AR 49/2006), Section 40(3).
- 3.6 An organization that repairs and/or alters cold-stretched vessels installed in Alberta must have a cold-stretching procedure developed and verified in accordance with Clauses K.1.7 and K.1.8 of CSA B51, Normative Annex K, and the organization must hold an appropriate and valid:
 - 3.6.1 Alberta Certificate of Authorization Permit that allows the organization to repair or alteration cold-stretched vessels for repair or alteration to be performed in Alberta;
 - 3.6.2 Quality control program for repairs or alterations of cold-stretched vessels in accordance with CSA B51 and accepted by the other jurisdiction in Canada where the repair or alteration will be performed; or
 - 3.6.3 National Board (NB) R stamp certificate of authorization, and the organization must provide to ABSA an NB repair or alteration report certified by a NB commissioned Inspector for repair or alteration to be performed outside of Canada.
- 3.7 In the case of a change of ownership to a cold-stretched pressure vessel, the requirements in Clause K6.9 of CSA B51, Normative Annex K and the following additional requirements shall be met:
 - 3.7.1 The equipment reports and records shall be transferred to the new owner as required under Section 36(3) of the Pressure Equipment Safety Regulation (AR 49/2006);
 - 3.7.2 The new owner shall
 - 3.7.2.1 have a Professional Engineer to:

- 3.7.2.1.1 verify and certify the acceptability of the original UDR for the new process/operating conditions and for the condition of the pressure vessel; or
- 3.7.2.1.2 prepare a new UDR in accordance with the requirements of Section 2.1 above and the new UDS shall be within the limitations of the Manufacturer's Design Report and the condition of the pressure vessel;
- 3.7.2.2 issue a letter accepting that any possible future repair and/or alteration can not be performed utilizing welding, without performing additional cold-stretching of the vessel; and
- 3.7.2.3 submit the certified UDR per Section 4.7.2.1 and the letter per Section 3.7.2.2 to ABSA and retain copies as part of the owner's Pressure Equipment Integrity Management program record.

Notes:

1. Paragraph UG-16(a) and Mandatory Appendix 46 allow the use of the ASME Section VIII, Division 2 design rules for the construction of a pressure vessel to ASME Section VIII, Division 1.
2. Designs accepted and registered with an Alberta Limited Design (ALD) registration number typically may have additional conditions imposed including restrictions with respect to the number of pressure vessels which may be constructed to the registered design and/or location and relocation of pressure vessels built to the design.

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