Transportation of Dangerous Goods

TDG Bulletin

CSA B620 Paths to compliance for non-compliant highway tanks

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This bulletin highlights incidents of major non-compliance recently observed with facilities registered in accordance with CSA B620-14, “Highway tanks and TC portable tanks for the transportation of dangerous goods” (CSA B620). For each scenario, a path to compliance has been proposed.

Transport Canada recognizes that the following details may not cover every circumstance or scenario that facilities will encounter. If you have questions regarding this process, please send your questions to TDGMOC-TMDContenants@tc.gc.ca.

Scenario A: Tests and Inspections

Non-compliances related to CSA B620 tests and inspections may include, but are not limited to:

- A facility not properly testing and/or inspecting highway or portable tank in accordance with Clause 7, CSA B620, requirements (e.g. reclosing pressure relief devices were not tested during the 5-year pressure test); and
- A facility not holding a valid CSA B620 Certificate of Registration from Transport Canada.

Applicable CSA B620-14 Clauses:

4.1, 7, 7.1.1 (b), 7.1.1 (c), 8.1.1

Path to compliance:

1) Highway and portable tanks improperly tested and/or inspected by a facility are to be retested and/or re-inspected in accordance with CSA B620.

Scenario B: Welding - General

CSA B620 covers several functions that involve welding, including manufacturing, modifying and repairing. Modifications, by definition, do not necessarily include welding, but most require it.

Non-compliances with welding typically involve facilities using welders and/or welding procedures that do not meet the Clause 4.4, CSA B620, and American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section IX, requirements.

Applicable CSA B620-14 Clauses:

3.2, 4.1, 4.4

Path to compliance:

1) Non-compliant welds are to be removed.
2) Welds are to be redone by qualified welders using appropriate and qualified welding procedures at a CSA B620 facility that is registered to manufacture, modify, and/or repair, as applicable, tanks of that specification.

Notes:

- In certain situations, welds may not need to be redone. For instance, a facility may be able to provide records showing that a welder was previously qualified, but their qualification had lapsed (e.g. he or she has not welded with a specific welding process in a 6-month period). If this is the case, then the welds may be considered acceptable, when the facility can demonstrate and support with records, an acceptable welder requalification.

Scenario C: Repairs

CSA B620 **repairs** involve *returning a tank to its original design and specification by welding on the tank wall, on integral structural components of the tank, such as the rollover dam, tank sill, or baffles, and on any components that contain lading, such as piping.* See Clause 3.2, CSA B620-14, for a complete definition.

Common non-compliances include:

- Facility performed CSA B620 repairs without “Repair” listed on its Certificate of Registration, or without the authority to repair a particular tank specification;
- Facility performed CSA B620 repairs without qualified welders and/or qualified procedures; and
- Facility did not issue CSA B620, Clause 7.5.10, Repair Report.

Applicable CSA B620-14 Clauses:

3.2, 4.1, 4.4, 7.5, 8.1.1 (a), 8.1.1 (b)

Path to compliance:

1) See Scenario B, as it covers acceptable corrective actions for non-compliant welds.

2) The registered repair facilities are to prepare Clause 7.5.10, CSA B620, Repair Reports, only after all repair-related requirements of CSA B620 have been met.

3) The registered repair facilities are to keep CSA B620 Repair Reports for 20 years.

Notes:

- Under certain circumstances, a facility may create and issue a CSA B620 Repair Report at a later date than when the repair was completed. This will only be acceptable when the facility used qualified welders and welding procedures and has sufficient records outlining the repair work that was done (e.g. invoices, B620 test and inspection reports).

Scenario D: Modifications

A CSA B620 **modification** is *a change to the original design of a previously certified highway or portable tank that affects its structural integrity or lading retention capability.* Modifications include tank remounts. See Clause 3.2, CSA B620-14, for a complete definition.

Common non-compliances include:

- Facility performed CSA B620 modifications without “Modification” listed on its Certificate of Registration, or without the authority to modify a particular tank specification;

- Facility performed CSA B620 modifications without involving a Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2, including valid Transport Canada Registration Numbers (TCRN)); and

- Facility performed tank remounts (modification) without affixing modification plates, issuing modification certificates of compliance, etc.

Applicable CSA B620-14 Clauses:

3.2, 4.1, 4.4, 7.6, 8.1.1 (a), 8.3.4

Path to compliance:

1) If welding was involved, see Scenario B, as it covers acceptable corrective actions for non-compliant welds.

2) Highway/portable tanks that have been incorrectly modified (e.g. remounted) must be brought to a facility authorized to perform those functions for re-work.

3) A CSA B620 Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2) must review each tank to determine what needs to be corrected, such as tank mounting, piping and rear accident damage protection. The B620 Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2) must then review and approve the changes before having a Transport Canada registered facility carry out any necessary work and certify the highway tanks in compliance with CSA B620. Tanks listed in Clause 5.1.1.2 must have valid TCRN's that cover all required design elements.
4) The registered modifier must issue a Modification Certificate of Compliance to the tank owner, affix a Modification Plate, and maintain any associated design-related records (i.e. calculations and drawings).
5) The registered modifier must maintain copies of the Modification Certificate of Compliance and design records for at least 20 years.

Scenario E: Manufacture / Assembly

CSA B620 **manufacturing** refers to the *portion of the fabrication process of a highway or portable tank that involves welding on the tank wall, on integral structural components of the tank such as the rollover dam, tank sill or baffles, and on any components such as piping that contain lading.* See Clause 3.2, CSA B620-14, for a complete definition.

CSA B620, **assembly**, is the portion of the fabrication process of a highway or portable tank that does not involve welding on the tank wall, any components that contain lading (i.e. piping), or integral structural components of the tank, such as the rollover dam, tank sill, baffles, and so on. See Clause 3.2, CSA B620-14, for a complete definition.

Common non-compliances include:

- Facility performed CSA B620 manufacturing function without "manufacture" or "assembly" listed on its Certificate of Registration, or without the authority to manufacture or assemble a particular tank specification;
- Facility performed CSA B620 manufacture/assembly without involving the necessary Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2);
- Facility performed manufacture/assembly without maintaining or issuing required documentation (e.g. certificate of compliance); and

  Facility performed manufacture/assembly on tanks listed in Clause 5.1.1.2 without valid TCRN's to cover all required design elements.

Applicable CSA B620-14 Clauses:

3.2, 4.1, 4.4, 5, 6, 8.1.1 (a), 8.2.1, 8.3.1, 8.3.4

Path to compliance:

1) If welding was involved, see Scenario B, as it covers acceptable corrective actions for non-compliant welds.
2) Highway/portable tanks that have been incorrectly manufactured and/or assembled must be brought to a facility authorized to perform those functions for re-work.
3) A CSA B620 Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2) must review each tank to determine what needs to be corrected, such as tank mounting, piping and rear accident damage protection. The CSA B620 Design Engineer (or professional engineer for tanks listed in Clause 5.1.1.2) must then review and approve the changes before having a Transport Canada registered facility carry out any necessary work and certify the highway tanks in compliance with CSA B620. Tanks listed in Clause 5.1.1.2 must have valid TCRN's that cover all required design elements.
4) The registered manufacturer/assembler must issue a Certificate of Compliance to the tank owner, appropriately mark and affix a Metal Identification Plate, and maintain any associated design-related records (i.e. calculations and drawings).
5) The registered manufacturer/assembler must maintain copies of the Certificate of Compliance and design records for at least 20 years.

Scenario F: 306 to 406 Conversions

There have been instances of registered facilities inappropriately changing the specification of highway tanks. It is believed that these conversions were mistakenly done at the same time as the completion of **retrofit** work for manhole assemblies/vents (Annex A, CSA B620-14). However, given that retrofits do not entail changes to tank specifications, this conversion was made in error.

As per Annex A.2 of CSA B620-14, new construction and certification of tanks must be done in accordance with the latest standard (provided it is enforceable by the TDG Regulations). By marking and representing the tank as TC 406, the facility is stating that all aspects of the standard in force have been met. This must be supported by records (e.g. design calculations, drawings, etc.). As of January 12, 2018, the 2014 edition of CSA B620 is in force.

Applicable CSA B620-14 Clauses:

3.2, Annex A

Path to compliance:

1) Facilities will need to consult a CSA B620 Design Engineer to examine the current tank, review tank records, and determine what changes have been made. The Design Engineer will also need to identify the necessary corrections in order to re-establish its compliance with the 306 specification to which it was built.

Contact Information

If you have additional questions or concerns, please contact:

Transport Canada, Regulatory Affairs Branch, Transportation of Dangerous Goods
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