Information Bulletin No. IB25-004 **March 06, 2025**

INTERPRETATION
CSA B52 "Hybrid" Refrigeration System

This Information Bulletin provides requirements for hybrid refrigeration systems.

A hybrid refrigeration system is an assembly of refrigeration components that are:
- designed, constructed, and tested in accordance with the requirements of CSA B52:23, and
- designed and constructed to one of CSA or UL Standards listed below, tested and certified by an accredited certification body at the factory.

A hybrid refrigeration system is an assembly of refrigeration components that cannot be considered a certified factory assembled refrigeration system per Clause 5.2 of CSA B52:23. Additional pressure piping system or refrigeration components are necessary, and field assembly is required to complete the refrigeration system. It is typical that these hybrid refrigeration systems require ABSA field inspection activities.

> *Example of a hybrid refrigeration system:*
> *When piping and fittings assembled in a field are connecting a refrigeration component "X" designed and constructed to UL-207 Standard at factory "1", tested and certified by accredited certification body "A" with a refrigeration component "Y" designed and constructed to CSA C22.2 No. 236 Standard at factory "2", tested and certified by accredited certification body "B", this assembly creates a hybrid refrigeration system that is not a certified factory assembled refrigeration system per Clause 5.2 of CSA B52:23.*

In the example provided above, rules provided in Clauses 5.7.1(b), 5.7.3(b), or 5.8.1(b) of CSA B52:23 are not applicable to refrigeration components "X" and "Y". This Information Bulletin provides an approach for refrigeration components "X" and "Y" to be installed in a hybrid refrigeration system.

Definitions

For this Information Bulletin, the following terms are defined below:

Refrigeration system – a combination of interconnected parts forming a closed circuit in which refrigerant is circulated for the purpose of extracting and then rejecting heat. [Clause 3.1 of CSA B52:23]

Refrigeration components – parts of a refrigeration system such as piping, fittings, evaporator coils, condenser coils, and associated headers; or, a refrigeration module that is an assembly of piping, fittings, evaporator coils, condenser coils, or associated headers designed and constructed to one of CSA or UL Standards listed below, tested and certified by an accredited certification body at the factory.

Requirements for refrigeration components that are part of hybrid refrigeration system

1. Refrigeration components that are designed, constructed, and tested in accordance with the requirements of CSA B52:23 (except Clause 5.2)

These refrigeration components shall meet the requirements of CSA B52:23 for its design, design registration, construction, testing, inspection, and stamping.

Examples:
- piping and fittings assembled in a field shall meet the requirements of CSA B52:23, Clause 5.7.1(a);
- evaporator and condenser coils and associated headers shall meet the requirements of CSA B52:23, Clause 5.7.3(a);
- components other than pressure vessels, piping and fittings shall meet the requirements of CSA B52:23, Clause 5.8.1(a).

2. Refrigeration components that are designed and constructed to one of CSA or UL Standards listed below, tested and certified by an accredited certification body at the factory

These refrigeration components shall comply with all the following:

a) Refrigeration component design shall be covered by one of the following Standards and is tested and certified by an accredited certification body at the factory.
   i) CAN/CSA-C22.2 No. 60335-2-24
   ii) CAN/CSA-C22.2 No. 60335-2-40, CAN/CSA-C22.2 No. 117, or CAN/CSA-C22.2 No. 236
   iii) CAN/CSA-C22.2 No. 60335-2-89 or CSA-C22.2 No. 120;
   iv) CAN/CSA-C22.2 No. 128; and
   v) UL-207:2022 may only be used for evaporator and condenser coils and associated headers

b) Design needs to be registered in accordance with the *Pressure Equipment Safety Regulation*, and design registration submission to ABSA Design Survey shall include:
   i) CSA or UL certification showing compliance to (a)(i), (ii), (iii), (iv) or (v),
   ii) Declaration of Conformity, such as the AB-351,
   iii) Quality Management System certified by ABSA, in accordance with Sec. 11 of the PESR or ISO 9001:2015 acceptable to the ABSA Design Surveyor SCO or Administrator for those manufacturers outside AB,
   iv) Drawings, specifications, supporting documents, and other information relating to the refrigeration component design, and
   v) any physical test report or calculations for the purpose of establishing the working pressure.

c) Modifications of refrigeration components shall be verified by the original equipment manufacturer and its accredited certification body. Otherwise, any modifications executed need to follow CSA B51, this Information Bulletin, and design registered by ABSA. Welding and brazing performed in the field shall follow CSA B52:23 and CSA B51.

Requirements for hybrid refrigeration systems

Each hybrid refrigeration system shall comply with all of the following:

1. Field assembled piping and pressure vessels shall follow the requirements in CSA B51 and CSA B52:23.
2. Prior to the initial operation, and after completion of the construction, the hybrid refrigeration system shall be tested in accordance with Section 30 of the *Pressure Equipment Safety Regulation*.
3. The hybrid refrigeration system and all its refrigeration components shall be documented on the AB-83 and AB-275 as applicable.
4. All other provisions of CSA B52:23 and Alberta Regulations shall be complied with, including the total quantity of refrigerant per occupied space, occupancy classification, and the use of a machinery room.

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