TECHNICAL SAFETY BC

DIRECTIVE

SUBSTITUTION OF REFRIGERANT TYPE

Date of Issue: May 29, 2026 **No: D-BP 2026-01**

The following directive is being issued by a provincial safety manager pursuant to section 30 of the Safety Standards Act (the **"Act"**) to clarify the requirements for substitution of refrigerant type in refrigeration systems.

Definitions

In this directive:

"Refrigeration System" means a refrigeration plant.

"Refrigeration Equipment" means machinery in which refrigerants are capable of being vaporized, compressed, and liquified.

"Refrigeration Plant" means an assembly of refrigeration equipment and includes a pressure plant connected to it.

"Certified Equipment" means equipment that has been tested and is identified as acceptable by an accredited certification agency. A certification agency is an organization accredited by the Standards Council of Canada under the *Standards Council of Canada Act* [federal] as an organization engaged in conformity assessment.

> **Note:** "Certified Equipment" is substantially equivalent to the commonly used term, "listed equipment."

General Details:

Refrigeration systems and equipment are subject to the requirements of the Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation (the **"Regulation"**) unless specifically exempt from the application of the Regulation under section 3(2)(f), 3(2)(j), or 3(2)(r).

The CSA B52 Mechanical Refrigeration Code, as adopted under the Regulation, sets out the general requirements for substitution of a refrigerant including:

- Clause 1.2.2.(b), which stipulates that the CSA B52:23 applies to refrigeration systems that undergo a substitution of refrigerant.
- Clause 5.2.(d), which provides that modifications must be verified by the original equipment manufacturer and its accredited certification body.
- Clause 5.12, which provides that substitution of a refrigerant type shall not be done without:
  a) permission of the authority having jurisdiction (where required);
  b) compliance with CSA B52:23; and
  c) verification of compliance with the design requirements under CSA B52:23 by:
     i. the original equipment manufacturer; or
     ii. a professional engineer.

This directive clarifies the process and detailed requirements associated with the substitution of a refrigerant in both certified and design-registered refrigeration systems.

Specific Details:

Permit Requirements:

The substitution of a refrigerant in an existing refrigeration system is interpreted under the Safety Standards Act to be an alteration of the system. In the event of a refrigerant substitution, the following requirements are triggered under the Act and its associated regulations:

- In accordance with section 62(1)(b) of the Regulation, an installation permit is required to alter a refrigeration system or part of refrigeration system.
- All regulated work must be performed by the holder of a Class REF contractor's license with an appropriately-scoped quality control program addressing the alteration of refrigeration systems.

Alteration Requirements for Certified Refrigeration Systems:

For refrigeration systems certified in accordance with Clause 5.2 of CSA B52:

- As required by clauses 5.2(d) and 5.12(c)(i) of the CSA B52, any modification, including a refrigerant substitution, must be verified by the original equipment manufacturer and its accredited certification body.
- Prior to substituting a refrigerant, written authorization must be obtained from each of:
    - the original equipment manufacturer or a professional engineer; and
    - the accredited certification body responsible for the original certification.
- The written authorization must confirm that:
    - the refrigerant substitution has been evaluated for the specific make and model of the equipment; and
    - the substitution does not invalidate the original product certification.

The above documentation must be submitted together with an installation permit application for review as part of Technical Safety BC's assessment process.

Alteration Requirements for Design-registered Refrigeration Systems:

For refrigeration systems that are not certified in accordance with Clause 5.2 of CSA B52:

- A professional engineer must review the system and its design for compatibility with a substituted refrigerant, in accordance with Clause 5.12(c)(ii) of CSA B52.
- Refrigerant substitution is interpreted by Technical Safety BC to be a design alteration. In accordance with section 82(a) of the Regulation, the altered design must be registered with Technical Safety BC.

For additional information on the registration of refrigeration system designs, see Information Bulletin # IB-DA 2020-01: Design Registration of Refrigeration Plants and Systems Information Bulletin.

Compliance with the latest edition of CSA B52:

In accordance with clauses 1.2.2.(b) and 5.12 (b) of CSA B52, where a refrigeration system undergoes a refrigerant substitution, the system must be brought into full compliance with the latest edition of the CSA B52. This includes but is not limited to:

- machinery room requirements;
- refrigerant charge limits; and
- occupancy requirements.

Signage:

As pursuant to clause 5.11.4 of CSA B52, when the **type** of refrigerant is changed, a new permanent sign must be securely attached to the refrigeration system, indicating the following:

- name and address of licensed contractor substituted the refrigerant;
- new refrigerant type (name and classification);
- lubricant type and amount;
- total weight of new refrigerant required for normal operation;
- refrigeration capacity at design or nominal conditions; and
- total prime mover(s) nameplate kW rating or full load current and voltage.

Provincial Safety Manager – Boiler, Pressure Vessel, and Refrigeration.

References:
Safety Standards Act
Power Engineers, Boiler, Pressure Vessel & Refrigeration Safety Regulation
CSA B52: 2023, Mechanical Refrigeration Code