



CSA B52HB:20

A practical handbook for implementing CSA B52:18, Mechanical refrigeration code



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***A practical handbook for
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Contents

Technical Committee on Mechanical Refrigeration Code (B52)	2
Preface	7
0 Introduction	8
1 Scope of CSA B52	22
2 Reference publications	23
3 Definitions and abbreviations	23
4 System selection and application requirements	24
5 Equipment design and construction	38
6 Installation	49
7 Overpressure protection	62
8 Maintenance of systems	74
9 Precautions	85
<hr/>	
Annex A — Use in refrigeration systems of refrigerants considered ozone-depleting substances	87
Annex B — Use of hydrocarbon refrigerants — In new equipment and as drop-in replacements for other classes of refrigerants in existing systems	89
Annex C — Maximum refrigerant quantities per occupied space — Derivation of values for Table 1, CSA B52 for A1 and B1 refrigerants	91
Annex D — Design considerations and refrigeration piping for variable refrigerant flow (VRF) systems	98
Annex E — Considerations and tips for ammonia/water (ammonium hydroxide) mixtures	100
Annex F — ASHRAE 15 regulation deference of ammonia refrigeration systems	102

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Preface

This is the third edition of CSA B52HB, *A practical handbook for implementing CSA B52:18, Mechanical refrigeration code*. It supersedes the previous editions published in 2016 and 2005.

The primary objective of this Handbook is to provide both novice and experienced users of CSA B52 with a concise, user-friendly guide to understanding and implementing the requirements of CSA B52. The B52 Code, which originated in 1939, has been regularly updated throughout the years and is now in its twelfth edition. This Handbook also briefly describes the evolution of CSA B52, touching on the Code's development process, updates and interpretations, and the relationship between the Code and jurisdictional regulations.

Changes in the CSA B52:18 Standard are reflected in this edition of the Handbook.

As society has been advocating the change to natural refrigerants in order to preserve the environment, there are many safety issues which must be addressed. This version of the CSA B52 Handbook will provide many of the recommended minimum safety protocols to be adhered to, in order to avoid issues. Many of the changes along with an explanation are as follows: Members of the B52 Technical Committee also contributed to its development.

CSA Group gratefully acknowledges the work of Ian Frost and Craig MacDonald in the development of this Handbook. Material on ammonia diffusion tanks was generously provided by James Shou. The Technical Committee on the Mechanical Refrigeration Code also contributed to the development of this Handbook.

Notes:

- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
- 2) *All inquiries regarding this Special Publication should be addressed to CSA Group, 178 Rexdale Blvd., Toronto, Ontario, Canada M9W 1R3.*

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0 Introduction

General

Since its first publication in 1939, CSA B52, *Mechanical refrigeration code*, has achieved an impressive degree of consensus as the Canadian standard for the safe usage of various types and sizes of mechanical refrigeration systems. The Code provides the public with the minimum requirements for the design, construction, installation, testing, and maintenance of mechanical refrigeration systems.

Over the years, however, a need has been expressed for a supplementary document explaining the meaning of the Code and the relationship between the Code's requirements and federal, provincial, and territorial jurisdictional regulations. This Handbook is intended to help users such as design engineers, installing contractors, owners, system operators, system inspectors, and regulators achieve a better understanding of CSA B52 and its application.

Throughout this Handbook, CSA B52-18 is sometimes referred to as the "Code". This Handbook reproduces material from the Code, which appears in textboxes. Tables and figures reproduced from the Code maintain the numbering found in the Code (e.g., Table 2 from the Code is reproduced as Table 2 in the Handbook). Tables and figures that are unique to the Handbook are prefixed with "HB" (e.g., Table [HB.2](#)). In addition, some material has been excerpted from other sources. Where this excerpted material appears in the body of the Handbook, it will appear in a textbox; and where it appears in an annex, it will appear without a textbox.

The evolution of CSA B52

The first edition

During the late 1930s, a Joint Committee on Refrigeration, appointed by Québec's Department of Labour in co-operation with the Canadian Refrigeration and Air Conditioning Association, met with representatives of refrigeration system manufacturers in Montréal. They prepared the first drafts of the Code for local purposes, in an attempt to set up standards for the application, installation, and use of refrigerating machinery.

These drafts, at the request of Québec's Department of Labour, were submitted to the Canadian Engineering Standards Association (now CSA Group) to be considered as the basis for an interprovincial code for mechanical refrigeration. The Canadian Engineering Standards Association set up a Committee on Mechanical Refrigeration, which included representatives of manufacturers, general users, and regulatory authorities. The following organizations were represented on that committee:

- a) Frigidaire, a Division of General Motors, Montréal;
- b) Canadian Westinghouse Co. Ltd., Hamilton;
- c) Universal Cooler Co. of Canada, Brantford;
- d) Kelvinator of Canada Ltd., Montréal;
- e) Linde Canadian Refrigeration Co. Ltd., Montréal;
- f) Canadian Industries Ltd., Montréal;
- g) Canadian General Electric, Toronto;