CSA Group

CSA B52-13

Mechanical refrigeration code

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Preface

This is the eleventh edition of CSA B52, *Mechanical refrigeration code*. It supersedes the previous editions published in 2005, 1999, 1995, 1992, 1991, 1983, 1977, 1965, 1951, and 1939.

The 11th edition of this Standard provides the minimum requirements for the design, construction, installation, inspection, and maintenance of the mechanical refrigeration systems, and is complemented by the practical implementation guidance B52 Handbook, helping to minimize the risk of personal injury. The Code applies to all refrigeration systems installed, whether in new or existing premises, to systems that undergo a substitution of refrigerant, and to parts that are replaced in or added to the system.

Changes to this edition include:

a) Clause 2 has been has been updated to add the following definitions:
   i) Automated control;
   ii) Fade-out vessel;
   iii) Gas cooler;
   iv) Manual control;
   v) Pressure-regulating relief valve;
   vi) Primary refrigerant;
   vii) Secondary refrigerant;
   viii) Subcritical;
   ix) Subcritical system;
   x) Systems;
   xi) Supercritical;
   xii) Thermal relief device (or thermal expansion relief device);
   xiii) Transcritical system; and
   xiv) Triple point;
b) Updates to Clause 4.3.1.2.3;
c) Updates to Clauses 5.5.1, 5.6, 5.7.1, and 5.8.1, addition of Clause 5.9.2.1(c);
d) The addition of a note to Clause 6.3 and an update to Clause 6.3(d);
e) Updates to Clauses 7.2.2.1, the addition of Clause 7.2.2.4;
f) Updates to Clause 7.2.3 to include
   i) renumbering of Clauses 7.2.3.1.1, 7.2.3.1.2, and 7.2.3.3 of the 2005 edition; and
   ii) the addition of Clauses 7.2.3.2, 7.2.3.2.1, and 7.2.3.2.2;
g) Updates to Clause 7.2.4,;
h) Updates to Table 6;
i) The addition of Clause 7.3.6.5;
j) Updates to Clauses 8.1, 8.2, 8.3, 8.4.1, 8.4.3, and the addition of Clause 8.4.4;
k) Updates to Annex I;
l) The addition of Annex J;
m) The addition of Annex K; and
n) The addition of Annex L.

This Standard contains recommendations only and does not have the force of law until adopted officially by a jurisdiction. The regulatory authorities having jurisdiction, including those that have adopted this Standard, should be consulted on the extent of such adoption, as the Standard could have been adopted with exemptions or with additional requirements.

This Standard was prepared by the Technical Committee on Mechanical Refrigeration Code, under the jurisdiction of the Strategic Steering Committee on Mechanical Industrial Equipment Safety, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*

4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*

a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*

b) *provide an explanation of circumstances surrounding the actual field condition; and*

c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.

5) *This Standard is subject to review five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*

a) *Standard designation (number);*

b) *relevant clause, table, and/or figure number;*

c) *wording of the proposed change; and*

d) *rationale for the change.*

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1 Scope

1.1 Purpose

The purpose of this Standard is to minimize the risk of personal injury by providing minimum requirements for the design, construction, installation, inspection, and maintenance of the mechanical refrigeration systems and volatile direct refrigeration systems specified in Clauses 1.2.1 and 1.2.2.

Note: *This Standard does not directly address protection of property and preservation of the environment.*

1.2 Application

1.2.1

Except as specified in Clause 1.2.3, this Standard applies to the design, construction, installation, inspection, and maintenance of every refrigeration system as provided for by the "Act" (as defined in Clause 3) and identified in this Standard.

1.2.2

This Standard applies to

a) all refrigeration systems installed subsequent to its adoption. This includes refrigeration systems installed in a new or existing premises. It also applies to all premises, including the machinery room if required, in which a refrigeration system is to be installed;
b) refrigeration systems that undergo a substitution of refrigerant in a premises defined in Item (a); and
c) those parts of a refrigeration system that are replaced in, or added to, systems installed prior to its adoption.

Note: *When adding or replacing parts (see Item (c)), consideration should be given to the premises requirements of Item (a).*

1.2.3

This Standard does not apply to the following:

a) the use of water or air as a refrigerant;
b) bulk-storage gas tanks not permanently connected to a refrigeration system;
c) refrigeration systems installed on railroad cars, motor vehicles, motor-drawn vehicles, aircraft, or ships; and
d) refrigeration systems used for air conditioning in private residences.

1.3 Mandatory language

In this Standard, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; "should" is used to express a recommendation or that which is advised but not required; and "may" is used to express an option or that which is permissible within the limits of the standard.