



CAN/CSA-C743-09
National Standard of Canada
(reaffirmed 2019)



Performance Standard for rating packaged water chillers



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Update No. 1

C743-09

May 2010

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Title: *Performance Standard for rating packaged water chillers — originally published September 2009*

The following revisions have been formally approved:

Revised	Outside front cover and title page
New	National Standards of Canada text
Deleted	None

CSA C743-09 originally consisted of **34 pages** (viii preliminary and 26 text), each dated **September 2009**. It now consists of the following pages:

September 2009	iii–viii and 1–26
May 2010	Cover, National Standards of Canada text, title page, and copyright page

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CAN/CSA-C743-09 *September 2009*

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Performance Standard for rating packaged water chillers



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This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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Preface

This is the third edition of CSA C743, *Performance Standard for rating packaged water chillers*. It supersedes the previous editions published in 2002 and 1993.

This Standard is compatible with ARI 550/590, ANSI/ARI 560, ANSI/ASHRAE Standard 30, and ANSI/ASHRAE/IESNA Standard 90.1 (including Addendum M).

This Standard applies to factory-designed and prefabricated direct- and indirect-fired absorption, centrifugal, and positive displacement compressor-equipped chillers. Major changes in this edition include the following:

- (a) provisions have been added to include chillers using secondary coolants for freeze protection; and
- (b) minimum energy efficiency levels have been updated.

CSA acknowledges that the development of this Standard was made possible, in part, by the financial support of Natural Resources Canada (NRCan), Manitoba Hydro, and the Ontario Ministry of Energy (OME).

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Performance Standard for Rating Packaged Water Chillers, under the jurisdiction of the Technical Committee on Heating, Ventilation, Air Conditioning, and Refrigeration and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

September 2009

Notes:

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C743-09

Performance Standard for rating packaged water chillers

1 Scope

1.1

This Standard applies to factory-designed and prefabricated vapour-compression chillers that include one or more hermetic or external drive compressors.

1.2

The compressor types covered under this Standard include

- (a) centrifugal;
- (b) screw;
- (c) scroll;
- (d) reciprocating; and
- (e) other types.

1.3

The condenser types covered under this Standard include

- (a) water-cooled;
- (b) air-cooled/evaporatively cooled; and
- (c) air- or water-cooled heat reclaim.

Packages can also be supplied without a condenser.

1.4

This Standard applies to

- (a) factory-designed and prefabricated water-cooled absorption chiller/heater units;
- (b) units that are
 - (i) single-effect indirect-fired by steam or hot water; and
 - (ii) double-effect, both indirect-fired by steam or hot water and direct-fired by oil, natural gas, or liquefied petroleum (LP) gas (water is the refrigerant and lithium bromide is the absorbent); and
- (c) positive displacement chillers using fluids with secondary coolants (glycol or brine) for freeze protection and leaving brine temperatures greater than 0 °C (32°F).

1.5

This Standard does not apply to

- (a) absorption chiller/heater units with air-cooled condensers; or
- (b) applications employing heat pumping or exhaust gas firing.