



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



# Performance Standard for rating packaged water chillers



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## ***C743-09***

### ***May 2010***

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<b>Revised</b>	Outside front cover and title page
<b>New</b>	National Standards of Canada text
<b>Deleted</b>	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:

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

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# *National Standard of Canada*

## *CAN/CSA-C743-09*

### *Performance Standard for rating packaged water chillers*



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# ***Technical Committee on Heating, Ventilation, Air Conditioning, and Refrigeration***

<b>B. Killins</b>	Natural Resources Canada, Ottawa, Ontario	<i>Chair</i>
<b>R. Cane</b>	Caneta Research, Mississauga, Ontario	<i>Vice-Chair</i>
<b>S. Cao</b>	BC Hydro, Burnaby, British Columbia	
<b>A. Carrier</b>	Hydro-Québec, Montréal, Québec	
<b>G. Cooke</b>	Air Solutions Incorporated, Cambridge, Ontario	
<b>K. Delves</b>	Natural Resources Canada, Ottawa, Ontario	
<b>P. Duffy</b>	Buchan Lawton Parent Limited, Toronto, Ontario	
<b>P. Edwards</b>	Peter Edwards Co., Mississauga, Ontario	
<b>D. Fugler</b>	Canada Mortgage and Housing Corporation, Ottawa, Ontario	
<b>P. Grinbergs</b>	Airia Brands Inc., London, Ontario	
<b>E. Grzesik</b>	Ontario Ministry of Energy, Toronto, Ontario	
<b>J. Haysom</b>	Ottawa, Ontario	
<b>A. Heffler</b>	Ottawa, Ontario	
<b>G. Henriques</b>	Henriques Consulting, Richmond, British Columbia	
<b>N. Hutchings</b>	Ontario Power Authority Conservation Bureau, Toronto, Ontario	
<b>C. Kahramanoglu</b>	Ontario Ministry of Municipal Affairs and Housing, Toronto, Ontario	

<b>A. Kelly</b>	Canadian Electricity Association, Ottawa, Ontario	
<b>C. Li</b>	Hydro One Networks Inc., Toronto, Ontario	
<b>D. Li</b>	CSA International, Toronto, Ontario	<i>Associate</i>
<b>R. Lord</b>	Carrier Corporation, Murfreesboro, Tennessee, USA	
<b>R. Martin</b>	California Energy Commission, Sacramento, California, USA	
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<b>K. Veerman</b>	FortisBC Inc., Kelowna, British Columbia	
<b>M. Hopkins</b>	Canadian Standards Association, Mississauga, Ontario	<i>Project Manager</i>

# ***Subcommittee on Performance Standard for Rating Packaged Water Chillers***

<b>R. Cane</b>	Caneta Research, Mississauga, Ontario	<i>Chair</i>
<b>B. Killins</b>	Natural Resources Canada, Ottawa, Ontario	<i>Vice-Chair</i>
<b>E. Aldcroft</b>	Brookfield Properties, Toronto, Ontario	
<b>B. Bond</b>	McQuay International, Brampton, Ontario	
<b>L. Burgett</b>	Trane, a Business of Ingersoll Rand, La Crosse, Wisconsin, USA	
<b>E. Grzesik</b>	Ontario Ministry of Energy, Toronto, Ontario	
<b>A. Kelly</b>	Canadian Electricity Association, Ottawa, Ontario	
<b>R. Lord</b>	Carrier Corporation, Murfreesboro, Tennessee, USA	
<b>V. Minea</b>	LTE-Hydro-Québec, Shawinigan, Québec	
<b>R. Morrison</b>	CSA International, Toronto, Ontario	
<b>M. Paquette</b>	Intertek, Franklinton, North Carolina, USA	
<b>R. Richmond-Smith</b>	Air-Conditioning, Heating, and Refrigeration Institute, Arlington, Virginia, USA	
<b>J. Tarascio</b>	Johnson Controls, L.P., Oakville, Ontario	
<b>J. Shikaze</b>	Canadian Standards Association, Mississauga, Ontario	<i>Project Manager</i>

# 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

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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.