CSA GROUP™

CSA B140.12:22
National Standard of Canada

Oil-fired service water heaters for domestic hot water, space heating, and swimming pools

SCC CCN

Legal Notice for Standards

Canadian Standards Association (operating as "CSA Group") develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in printed or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents thereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.

Standards Update Service

CSA B140.12:22
July 2022

Title: *Oil-fired service water heaters for domestic hot water, space heating, and swimming pools*

To register for e-mail notification about any updates to this publication
- go to **www.csagroup.org/store/**
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2329146**.

If you require assistance, please e-mail **techsupport@csagroup.org** or call 416-747-2233.

Visit CSA Group's policy on privacy at **www.csagroup.org/legal** to find out how we protect your personal information.

Canadian Standards Association (operating as "CSA Group"), under whose auspices this National Standard has been produced, was chartered in 1919 and accredited by the Standards Council of Canada to the National Standards system in 1973. It is a not-for-profit, nonstatutory, voluntary membership association engaged in standards development and certification activities.

CSA Group standards reflect a national consensus of producers and users — including manufacturers, consumers, retailers, unions and professional organizations, and governmental agencies. The standards are used widely by industry and commerce and often adopted by municipal, provincial, and federal governments in their regulations, particularly in the fields of health, safety, building and construction, and the environment.

More than 10 000 members indicate their support for CSA Group's standards development by volunteering their time and skills to Committee work.

CSA Group offers certification and testing services in support of and as an extension to its standards development activities. To ensure the integrity of its certification process, CSA Group regularly and continually audits and inspects products that bear the CSA Group Mark.

In addition to its head office and laboratory complex in Toronto, CSA Group has regional branch offices in major centres across Canada and inspection and testing agencies in fourteen countries. Since 1919, CSA Group has developed the necessary expertise to meet its corporate mission: CSA Group is an independent service organization whose mission is to provide an open and effective forum for activities facilitating the exchange of goods and services through the use of standards, certification and related services to meet national and international needs.

For further information on CSA Group services, write to
CSA Group
178 Rexdale Boulevard
Toronto, Ontario, M9W 1R3
Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at www.scc.ca.

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada's economic competitiveness and social well-being, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at www.scc.ca.

Standards Council of Canada
600-55 Metcalfe Street
Ottawa, Ontario, K1P 6L5
Canada

Cette Norme Nationale du Canada n'est disponible qu'en anglais.

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 to judge its suitability for their particular purpose.

National Standard of Canada

CSA B140.12:22

Oil-fired service water heaters for domestic hot water, space heating, and swimming pools

Published in July 2022 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

To purchase standards and related publications, visit our Online Store at www.csagroup.org/store/
or call toll-free 1-800-463-6727 or 416-747-4044.

ICS 91.140.65
ISBN 978-1-4883-4237-0

Contents

Technical Committee on Oil-Burning Appliance Standards

M. Mailvaganam	Toronto, Ontario, Canada *Category: General Interest*	*Chair*
R. Sumabat	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada *Category: Regulatory Authority*	*Vice-Chair*
R. Alqasrani	Technical and Corporate Services, Alberta Municipal Affairs, Edmonton, Alberta, Canada *Category: Regulatory Authority*	
C. Baumgartner	Natural Resources Canada, Ottawa, Ontario, Canada *Category: General Interest*	
M. Bouchard	Granby Industries LP, Cowansville, Québec, Canada	*Non-voting*
M. Evans	CSA Group, Toronto, Ontario, Canada *Category: User Interest*	
M. R. Freill	Mark 1 Engineering Limited, Dartmouth, Nova Scotia, Canada *Category: General Interest*	
S. Hazell	Wilson Fuel Co., Lower Sackville, Nova Scotia, Canada *Category: User Interest*	
P. Hikspoors	Giant Factories Inc., Montréal, Québec, Canada	*Non-voting*
P. Legault	Integrated Review Services, Ottawa, Ontario, Canada *Category: General Interest*	
Y. Legault	Granby Industries LP, Granby, Québec, Canada *Category: Producer Interest*	

H. Liauw	Weishaupt Corporation, Mississauga, Ontario, Canada *Category: Producer Interest*	
S. MacNamara	MacNamara Fuels, Newmarket, Ontario, Canada *Category: User Interest*	
J. Mosseau	Kenstruct Ltd., Pefferlaw, Ontario, Canada	*Non-voting*
T. Olszewski	R.W. Beckett Corporation, North Ridgeville, Ohio, USA *Category: Producer Interest*	
A. P. Perrie	APM Heating and Cooling, Durham, Ontario, Canada	*Non-voting*
B. Serio	Riello Canada Inc., Mississauga, Ontario, Canada *Category: Producer Interest*	
J. Wade	ULC Standards, Ottawa, Ontario, Canada	*Non-voting*
D. Jeremic Nikolic	CSA Group, Toronto, Ontario, Canada	*Project Manager*
N. Shrewsbury-Gee	CSA Group, Toronto, Ontario, Canada	*Project Manager*

Preface

This is the fifth edition of CSA B140.12, *Oil-fired service water heaters for domestic hot water, space heating, and swimming pools*. It supersedes the previous edition, published in 2003 under the title *Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools*. It also supersedes the third edition, published in 1976 under the title *Oil-Fired Service Water Heaters and Swimming Pool Heaters,* and the first two editions, published in 1972 and 1966 under the title *Oil-Fired Service Water Heaters*.

CSA B140.12 is one of a series of oil-burning equipment Standards providing minimum requirements for the safe operation, acceptable performance, design, construction, manufacture, marking, and testing of oil-burning equipment. It should be read in conjunction with CSA B140.0, *Oil-burning equipment: General requirements*.

The major changes in this edition include the following:

a) The title has been changed from *Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools* to *Oil-fired service water heaters for domestic hot water, space heating, and swimming pools*.
b) Reference publications have been updated (Clause 2).
c) All definitions have been deleted, and a reference has been inserted to redirect users to the definitions in CSA B140.0 (Clause 3).
d) The requirement for electrical features has been removed because it is covered in CSA B140.0.
e) A new requirement has been added requiring appliances tested for use with biodiesel content in excess of 5% to have the burner and the fuel-delivery system components acceptable to the certification body for the blend specified (Clause 5.17).
f) The information required on the marking has been updated to include the input rate when the water heater is acceptable to the certification body for use with biodiesel content in excess of 5% (Clause 6.1).
g) The requirement for a cleanout brush or scraper being available from the manufacturer has been deleted (Clause 6.2.1).
h) Additional information has been added to the instructions (Clause 7.1).
i) Guidance has been provided to be included in the operating instructions when the water heater is acceptable to the certification body for use with biodiesel content in excess of 5% and No. 1 (kerosene) oil (Clause 7.3).
j) Guidance has been added for testing when the water heater is acceptable to the certification body for use with fuel having biodiesel content in excess of 5% and not exceeding 20% (Clause 8.2.12).
k) New requirements have been added when testing with biodiesel content in excess of 5% (Clause 8.3.4).
l) A new annex (Annex A) containing French translations for specified markings has been added.

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

This Standard was prepared by the Technical Committee on Oil-Burning Appliance Standards, under the jurisdiction of the Strategic Steering Committee on Fuels and Appliances, and has been formally approved by the Technical Committee.

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.