



**CSA
Group**

B108-14

Compressed natural gas fuelling stations installation code

Currently in preview, click buy full versi

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, 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 print or PDF 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 hereof, 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

B108-14

March 2014

Title: *Compressed natural gas fuelling stations installation code*

To register for e-mail notification about any updates to this publication

- go to shop.csa.ca
- click on **CSA Update Service**

The **List ID** that you will need to register for updates to this publication is **242271**

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

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

B108-14
**Compressed natural gas fuelling
stations installation code**

IGAC

Interprovincial Gas Advisory Council



**CSA
Group**

™A trade-mark of the Canadian Standards Association and CSA America Inc., operating as "CSA Group"

*Approved on March 7, 2014 by IGAC
Effective in Canada July 1, 2015
Published in March 2014 by CSA Group
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6*

*To purchase standards and related publications, visit our Online Store at shop.csa.ca
or call toll-free 1-800-463-6727 or 416-747-4044.*

ISBN 978-1-77139-326-3

© 2014 CSA Group

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

Contents

Technical Committee on Natural Gas Powered Vehicles and Fuelling	2
Subcommittee on Natural Gas Powered Vehicles Refuelling Stations Installation Code	4
Preface	6
1 Scope	7
2 Reference publications	8
3 Definitions	9
4 General requirements	12
5 Compressors	14
6 Storage	17
7 Dispensing	21
8 Flow control devices	24
9 Storage vessel dispatch and receiving	27
10 Design, installation, and testing of piping, tubing, and fittings	27
11 Installation of CNG equipment in vaults	28
12 Installation of VRAs connected to storage or piping	30
13 Indoor fuelling of natural gas vehicles	31
<hr/>	
Annex A (informative) — Additional information on natural gas fuelling stations	33
Annex B (normative) — Indoor fuelling of natural gas vehicles	34

Technical Committee on Natural Gas Powered Vehicles and Fuelling

M.A. Tremayne	Enbridge Gas Distribution, Toronto, Ontario, Canada <i>Category: User Interest</i>	<i>Chair</i>
O. Alonso	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada <i>Category: Government and/or Regulatory Authority</i>	
G. Bartlett	Atco Gas, Edmonton, Alberta, Canada <i>Category: User Interest</i>	
R. Chautems	Compression Technology Corporation, Milton, Ontario, Canada <i>Category: Producer Interest</i>	
D. Davis	Transport Canada, Ottawa, Ontario, Canada <i>Category: Government and/or Regulatory Authority</i>	
V. Fe	FortisBC Energy Inc (FEL), Surrey, British Columbia, Canada <i>Category: Producer Interest</i>	
A. Hoskin	Natural Resources Canada, Ottawa, Ontario, Canada	<i>Associate</i>
S. Katz	Katz and Associates Inc., North Vancouver, British Columbia, Canada <i>Category: General Interest</i>	
W.C. LaRose	Edmonton, Alberta, Canada	
A. McInnes	Canadian Natural Gas Vehicle Alliance, Ottawa, Ontario, Canada	<i>Associate</i>
F. Morin	Gaz Métro Plus, Boucherville, Québec, Canada <i>Category: User Interest</i>	

M. Smith Union Gas Limited,
Chatham, Ontario, Canada
Category: User Interest

M. Sulatisky Saskatchewan Research Council,
Saskatoon, Saskatchewan, Canada
Category: Government and/or Regulatory Authority

J. Cairns CSA Group, *Project Manager*
Cleveland, Ohio, USA

Currently in preview, click buy full version

Subcommittee on Natural Gas Powered Vehicles Refuelling Stations Installation Code

G.R. Smith	Change Energy Services, Mississauga, Ontario, Canada	<i>Chair</i>
O. Alonso	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada	
R. Brousseau	Régie du Bâtiment du Québec, Montréal, Québec, Canada	
R. Chautems	Compression Technology Corporation, Milton, Ontario, Canada	
D. Ducasse	Gaz Métro, Montréal, Québec, Canada	
M.A. Epp	Jenmar Concepts Inc, Langley, British Columbia, Canada	
V. Fe	FortisBC Energy Inc (FEI), Surrey, British Columbia, Canada	
A. Ghelesel	FortisBC Energy Inc (FEI), Surrey, British Columbia, Canada	
D.N. Hird	SaskPower, Regina, Saskatchewan, Canada	
A. Hoskin	Natural Resources Canada, Ottawa, Ontario, Canada	<i>Associate</i>
S. Katz	S. Katz and Associates Inc., North Vancouver, British Columbia, Canada	
I. Khan	Ontario Ministry of Labour, Toronto, Ontario, Canada	

D. Patel	Kraus Global Inc., Winnipeg, Manitoba, Canada	
I. Patterson	Viridis Technologies Inc, Sharon, Ontario, Canada	
J. Renaud	Régie du bâtiment du Québec, Montréal, Québec, Canada	
J.M. Rowand	Jordair Compressors Incorporated, Delta, British Columbia, Canada	
J. Taylor	Kraus Global Inc., Winnipeg, Manitoba, Canada	
M.A. Tremayne	Enbridge Gas Distribution, Toronto, Ontario, Canada	
D. VanLaar	IMW Industries LTD, Chilliwack, British Columbia, Canada	
B. Vodden	598796 Ontario Limited ola Hi-Tech Auto Care/Hi- Tech Fuel Syst, London, Ontario, Canada	
P.R. Wressell	FTI International Inc., Vaughan, Ontario, Canada	
J. Cairns	CSA Group, Cleveland, Ohio, USA	<i>Project Manager</i>

Preface

This is the third edition of CSA B108, *Compressed natural gas fuelling stations installation code*. It supersedes the previous editions published in 1999 and 1995.

This Code was prepared by the CSA B108 Subcommittee on NGV fuelling stations installation code, under the jurisdiction of the Technical Committee on Natural gas powered vehicles and fuelling and had been formally approved by the Technical Committee(s) and the Interprovincial Gas Advisory Council.

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 Code is stated in its Scope, it is important to note that it remains the responsibility of the users of the Code to judge its suitability for their particular purpose.*
- 3) *This publication was developed by consensus, which is defined by CSA Policy governing standardization – Code of good practice for standardization as “substantial agreement. Consensus implies 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 publication.*
- 4) *To submit a request for interpretation of this Code, 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 Code 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.*

B108-14

Compressed natural gas fuelling stations installation code

1 Scope

1.1

This Code applies to compressed natural gas fuelling stations that may be employed for fleet and public dispensing operations.

1.2

The scope of this Code does not include fuelling vehicles with liquefied natural gas (LNG). At LNG facilities that also include CNG vehicle fuelling, this Code applies only to facilities downstream of the isolation valve at the outlet of the natural gas vaporizer.

1.3

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

1.4

All references to “kPa (psi)” throughout this Code are to be considered gauge pressures, unless otherwise specified.

1.5

This Code contains SI (Metric) units corresponding to the yard/pound quantities, the purpose being to allow the Code to be used in SI (Metric) units. If a value for a measurement and a corresponding value in other units are stated, the first stated value is to be regarded as the requirement. The given corresponding value may be approximate. If a value for a measurement and a corresponding value in other units, are both specified as a quoted marking requirement, the first stated unit, or both shall be provided.

Note: *IEEE/ASTM SI 10 or ISO 80000-1 are used as a guide in making metric conversion from yard/pound quantities.*

Where the word “gallon” is used in this Code, it indicates a U.S. Gallon equivalent to 3.785 liters water capacity.

Note: *This code was developed originally using the imperial system of measurement and subsequently converted to metric units having three (3) significant digits. Every attempt has been made to provide accurate conversion values, When designing systems using these values engineering judgment needs to be applied.*