



ANSI Z83.11-2016
(reaffirmed 2021) •
CSA 1.8-2016
(reaffirmed 2021)
American National Standard

Gas food service equipment



This is a preview. [Click here to purchase the full publication.](#)

Legal Notice for Standards

Canadian Standards Association and CSA America Standards, Inc. (operating as "CSA Group") develop standards through a consensus standards development process approved by the Standards Council of Canada and the American National Standards Institute. 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 print 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 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.



This is a preview. [Click here to purchase the full publication.](#)

Standards Update Service

ANSI Z83.11-2016 • CSA 1.8-2016 February 2016

Title: *Gas food service equipment*

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 **2424024**.

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.

CSA Group

The 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. Individuals, companies, and associations across Canada indicate their support for CSA Group's standards development by volunteering their time and skills to Committee work and supporting CSA Group's objectives through sustaining memberships. The more than 7000 committee volunteers and the 2000 sustaining memberships together form CSA Group's total membership from which its Directors are chosen. Sustaining memberships represent a major source of income for CSA Group's standards development activities.

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 eight 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.

American National Standards Institute

The American National Standards Institute (ANSI), Inc. is the nationally recognized coordinator of voluntary standards development in the United States through which voluntary organizations, representing virtually every technical discipline and every facet of trade and commerce, organized labor and consumer interests, establish and improve the some 10,000 national consensus standards currently approved as American National Standards.

ANSI provides that the interests of the public may have appropriate participation and representation in standardization activity, and cooperates with departments and agencies of U.S. Federal, state and local governments in achieving compatibility between government codes and standards and the voluntary standards of industry and commerce.

ANSI represents the interests of the United States in international nontreaty organizations such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). The Institute maintains close ties with regional organizations such as the Pacific Area Standards Congress (PASC) and the Pan American Standards Commission (COPANT). As such, ANSI coordinates the activities involved in the U.S. participation in these groups.

ANSI approval of standards is intended to verify that the principles of openness and due process have been followed in the approval procedure and that a consensus of those directly and materially affected by the standards has been achieved. ANSI coordination is intended to assist the voluntary system to ensure that national standards needs are identified and met with a set of standards that are without conflict or unnecessary duplication in their requirements.

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

Responsibility of approving American standards rests with the
American National Standards Institute, Inc.
25 West 43rd Street, Fourth floor
New York, NY 10036

American National Standard

ANSI Z83.11-2016 • CSA 1.8-2016 ***Gas food service equipment***



American National Standards Institute, Inc.

IGAC

Interprovincial Gas Advisory Council



*® A trademark of the Canadian Standards Association
and CSA America Standards Inc., operating as "CSA Group"*

*Approved on February 2, 2016 by ANSI
Approved on January 11, 2016 by IGAC
Effective in Canada May 2017
Published in February 2016 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.*

ISBN 978-1-4883-0123-0

*© 2016 Canadian Standards Association
All rights reserved. No part of this publication may be reproduced in any form whatsoever
without the prior permission of the publisher.*

This is a preview. Click here to purchase the full publication.

Contents

Interprovincial Gas Advisory Council	4
Canadian Technical Committee on Gas Appliances and Related Accessories	6
Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories	8
Z83/CSA Joint Technical Subcommittee on Standards for Gas Food Service Equipment	11
Preface	13
1 Scope	16
2 Reference publications	18
3 Definitions	22
4 Construction	34
4.1 General	34
4.2 Bolts, nuts, screws, and other threaded fasteners	37
4.3 Thickness and finish of material	38
4.4 Bases, legs, casters, and frames	39
4.5 Structural integrity and rigidity	40
4.6 Main burners and ignition devices	40
4.7 Burner supports	43
4.8 Primary air control	44
4.9 Orifices and orifice holders	45
4.10 Manual gas valves	46
4.11 Gas supply lines	48
4.12 Ignition systems	53
4.13 Automatic ignition systems	54
4.14 Gas appliance pressure regulators	56
4.15 Bleeds and vents	58
4.16 Thermostats	58
4.17 Automatic valves	60
4.18 Pilot gas filters	61
4.19 Flue collars and flue outlets, flue risers, and flue deflectors	61
4.20 Draft hoods	62
4.21 Motors and blowers	62
4.22 Insulation	65
4.23 Doors	66
4.24 Rack supports	66
4.25 Burner boxes	66
4.26 Drip trays	66
4.27 Oven and broiler linings	67
4.28 Oven bottoms	67
4.29 Extreme bottoms and broiler bottoms	68

4.30	Open top grates	68
4.31	Pressure chambers	68
4.32	Pressure relief valve	69
4.33	Low water cutoff	69
4.34	Emergency relief devices	69
4.35	Leg sheets and drip trays of hot plates	70
4.36	Storage vessels of assembled units of coffee brewing equipment	70
4.37	Water containers	70
4.38	Fryer construction	70
4.39	Fryer temperature limiting devices	71
4.40	Self-contained LP-gas supply systems	71
4.41	Enclosures for self-contained LP-gas supply systems	77
4.42	Remote LP-gas supply cylinder systems	78
4.43	Quick-disconnect devices	79
4.44	Wind or rain diverters for outdoor appliances, carts, and trailers	79
4.45	Conversion Kits	80
4.46	Carts or trailers	80
4.47	Instructions	81
4.48	Marking	87
5	Performance	97
5.1	General	97
5.2	Test gases	98
5.3	Test pressures and burner adjustments	100
5.4	Combustion	102
5.5	Burner operating characteristics	106
5.6	Pilot operating characteristics	108
5.7	Automatic ignition systems	109
5.8	Ignition systems	117
5.9	Proved igniter systems	119
5.10	Manual gas valves	121
5.11	Gas appliance pressure regulators	121
5.12	Automatic valves	122
5.13	Thermostats	122
5.14	Wall, floor, and component temperatures	126
5.15	(Optional) Flue gas temperature	135
5.16	Door relief	135
5.17	Draft hoods	136
5.18	Appliances equipped with induced draft or power burners	138
5.19	Mechanical draft venting	140
5.20	Operational tests of electrical components and parts	141
5.21	Structural integrity, stability, and rigidity	142
5.22	Performance of appliances provided with pyrolytic self-cleaning features	145
5.23	Thermal efficiency	150
5.24	Hydrostatic test	153
5.25	Deep fat fryer temperature limiting devices	154
5.26	Flue gas baffles and fin temperatures	154
5.27	Maintaining rate (Urns and appurtenant water heaters)	155
5.28	Storage vessel temperature limits	156

5.29	Emergency relief devices (Urns and appurtenant water heaters)	156
5.30	Performance of LP-gas cylinder connection devices	158
5.31	Rain test	159
5.32	Wind test	161
5.33	Washdown test	162
5.34	Marking material adhesion and legibility	162
5.35	Permanently attached marking tags for tableside cooking appliances	163
5.36	Drop test for tableside cooking appliances	164
5.37	Fuel container loading endurance test for tableside cooking appliances	164

6 Manufacturing and production tests 164

Annex A (normative)	— Items unique to the United States	166
Annex B (normative)	— Items unique to Canada	175
Annex C (informative)	— Provisions for listed gas appliance conversion kits (Optional)	179
Annex D (informative)	— Component listing and installation standards	182
Annex E (informative)	— Pertinent references to ANSI Y14.15	183
Annex F (informative)	— Wire color designations	184
Annex G (informative)	— Preferred graphic symbols of commonly used items, extracted from Standard ANSI/IEEE 315, graphic symbols for electrical and electronics diagrams, and abbreviations for these items	185
Annex H (informative)	— Sample failure modes and effects analysis for component miswiring*	188
Annex I (informative)	— Table of conversion factors	189

Interprovincial Gas Advisory Council

J. Renaud	Régie du bâtiment du Québec, Montréal, Québec, Canada <i>Category: Regulatory Authority</i>	<i>Chair</i>
J.R. Marshall	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada	<i>Vice-Chair</i>
A. Ali	Government of Nunavut Community & Government Services, Iqaluit, Nunavut, Canada	
R. Brousseau	Régie du Bâtiment du Québec, Montréal, Québec, Canada	
M.E. Davidson	Province of New Brunswick Dept of Public Safety, Fredericton, New Brunswick, Canada	
A. Durnie	Alberta Municipal Affairs, Edmonton, Alberta, Canada	<i>Alternate</i>
D. Eastman	Service NL, Newfoundland & Labrador, St. John's, Newfoundland and Labrador, Canada	
P. Fowler	Nova Scotia Dept of Labour and Advanced Education, Halifax, Nova Scotia, Canada	
D.N. Hird	SaskPower, Regina, Saskatchewan, Canada	
C. Lashek	Manitoba, Office of the Fire Commissioner, New Winnipeg, Manitoba, Canada	
W. Lock	British Columbia Safety Authority (BCSA), New Westminster, British Columbia, Canada	
S.C. Manning	Alberta Municipal Affairs Safety Services, Edmonton, Alberta, Canada	
R. McRae	Government of the NWT Public Works & Services, Yellowknife, Northwest Territories, Canada	

J. Melling	SaskPower, Saskatoon, Saskatchewan, Canada	<i>Alternate</i>
B.W. Reid	Department of Environment, Energy and Forestry, Charlottetown, Prince Edward Island, Canada	
G. Tremblett	Service NL, Newfoundland & Labrador, St. John's, Newfoundland and Labrador, Canada	<i>Alternate</i>
C. Valliere	Alberta Municipal Affairs Safety Services, Edmonton, Alberta, Canada	<i>Alternate</i>
M.A. Wani	Government of Nunavut Community & Government Services, Iqaluit, Nunavut, Canada	
D. Young	Yukon Government, Whitehorse, Yukon Territory, Canada	
B. Zinn	British Columbia Safety Authority (BCSA), Coquitlam, British Columbia, Canada	<i>Alternate</i>