



CSA/ANSI Z83.26:20 • CSA 2.37:20
National Standard of Canada
American National Standard



Gas-fired outdoor infrared patio heaters



Standards Council of Canada
Conseil canadien des normes

REVISED MARCH 2021

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 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 must 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.



Revision History

CSA/ANSI Z83.26:20 • CSA 2.37:20, Gas-fired outdoor infrared patio heaters

Errata — March 2021	Revision symbol (in margin)
Clauses 2 , 4.21.15 , 5.17.2 , and C.2 Annex C	Δ

Currently in preview, click buy full version

Standards Update Service

***CSA/ANSI Z83.26:20 • CSA 2.37:20
November 2020***

Title: *Gas-fired outdoor infrared patio heaters*

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 **24277-20**

If you require assistance, please e-mail techsupport@csagroup.org or call 419-771-47-2233.

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.

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.

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



Standards Council of Canada
Conseil canadien des normes

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.

**A trademark of the Canadian Standards Association, operating as “CSA Group”*

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 product 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.

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

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.

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

*National Standard of Canada
American National Standard*

**CSA/ANSI Z83.26:20 • CSA 2.37:20
Gas-fired outdoor infrared patio
heaters**



IGAC

Interprovincial
Standards Advisory Council

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



American National
Standards Institute, Inc.

Approved on October 22, 2020 by ANSI
Approved on November 11, 2020 by IGAC
Published in November 2020 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 97.100.20
ISBN 978-1-4883-2632-5

© 2020 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.

Contents

Interprovincial Gas Advisory Council	3
Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories	5
Canadian Technical Committee on Gas Appliances and Related Accessories	8
ANSI/CSA Joint Subcommittee on Standards for Gas-Fired Central Furnaces	11
Preface	15
0 History of the development of the Standard for Gas-fired outdoor infrared patio heaters	17
1 Scope	18
2 Reference publications	19
3 Definitions	22
4 Construction	29
4.1 General construction	29
4.2 Assembly	30
4.3 Accessibility	31
4.4 Materials	31
4.5 Joints in heating elements	34
4.6 Main burners	34
4.7 Combustion air control	35
4.8 Orifices and orifice fittings	36
4.9 Ignition systems	37
4.10 Automatic pilot igniters	38
4.11 Pilot gas filters	39
4.12 Gas supply lines	39
4.13 Fixed fuel piping systems	42
4.14 Self-contained propane gas supply systems	43
4.15 Enclosures for self-contained propane gas supply systems	46
4.16 Manual valves	47
4.17 Gas appliance pressure regulators	48
4.18 Automatic valves	49
4.19 Adjustment of minimum input rating	49
4.20 Instructions	50
4.21 Marking	54
5 Performance	60
5.1 General	60
5.2 Test gases	60
5.3 Test pressures and burner adjustments	61
5.4 Combustion — General	62

5.5	Combustion — Tabletop heaters	63
5.6	Combustion — Power burners	64
5.7	Burner operating characteristics	64
5.8	Pilot burners and safety shutoff devices	65
5.9	Direct ignition systems	68
5.10	Automatic pilot ignition systems	70
5.11	Pressure regulators	71
5.12	Manual ignition systems	71
5.13	Non-load-bearing flue gas baffle temperatures	72
5.14	Allowable heating element and load-bearing flue gas baffle temperatures	73
5.15	Wall, floor and ceiling temperatures	73
5.16	Component, handle and knob, tubing and fittings, and electrical equipment and wiring temperatures	74
5.17	Burn hazard and clothing ignition potential	78
5.18	Manifold and control assembly capacity	82
5.19	Rain test	83
5.20	Wind test	84
5.21	Manual valves	85
5.22	Appliance stability	87
5.23	Marking material adhesion and legibility	88
6	Manufacturing and production tests	89
6.1	General	89
6.2	Production line tests	89
6.3	Periodic tests	90
<hr/>		
Annex A (normative)	— Propane gas cylinder label	91
Annex B (normative)	— Items unique to the United States	93
Annex C (normative)	— Items unique to Canada	104
Annex D (informative)	— Provisions for listed appliance gas conversion kits	110
Annex E (informative)	— Provisions for listed high altitude conversion kits	113
Annex F (informative)	— Type size and vertical spacing between lines	117
Annex G (informative)	— Pertinent references to ANSI Y14.15	118
Annex H (informative)	— Wire color designations	119
Annex I (informative)	— Recommended wire color usage	120
Annex J (informative)	— Preferred graphic symbols of commonly used items, extracted from ANSI/IEEE 31-1975	121
Annex K (informative)	— Table of conversion factors	123

Preface

This is the third edition of CSA/ANSI Z83.26 • CSA 2.37, *Gas-fired outdoor infrared patio heaters*. It supersedes the previous editions published in 2014 and 2007.

The third edition of this Standard has been updated to reflect current industry practice and address CSA Group's guide on drafting Standards. Major changes to this edition include the following:

- a) Replace references to liquefied petroleum (LP) gas with propane to clarify that other forms of LP gas are not intended to be used.
- b) Increase in maximum input rating to 24 000 Btu/hr.
- c) Distinction between a tabletop heater and a patio heater not for tabletop use.
- d) New Annex D, which permits manufacturers to offer gas field conversion kits for heaters using both natural and propane gas.
- e) New Annex E, which addresses installations at altitudes over 2000 ft (610 m).
- f) Existing coverage from ANSI Z21.103 added to address appliances using two one-pound cylinders with CGA 600 connectors.
- g) Existing coverage from CSA/ANSI Z21.10.1 • CSA 4.1 added to allow the use of two automatic gas valves to be used in a series to control the main burner gas instead of a single manual valve.
- h) Existing coverage from ANSI Z21.58 • CSA 1.6 added and adapted to address failure of the products to function under wind conditions.

This Standard was prepared by the ANSI/CSA Joint Subcommittee on Standards for Gas-Fired Central Furnaces, under the jurisdiction of the Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories (Z21/83) and the Strategic Steering Committee on Fuels and Appliances. It has been formally approved by the Z21/83 Technical Committee, the Canadian Technical Committee on Gas Appliances and Related Accessories and the Interprovincial Gas Advisory Council.

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.

This Standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Interpretations: The Strategic Steering Committee on Standards for Gas Appliances and Related Accessories has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant CSA committee interpretation has not already been published, CSA Group's procedures for interpretation shall be followed to determine the intended safety principle."

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 Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much 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 Standard.

- 4) To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:
- define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - provide an explanation of circumstances surrounding the actual field condition; and
 - 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 Standard is subject to review within five years from the date of publication. 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:
- Standard designation (number);
 - relevant clause, table, and/or figure number;
 - wording of the proposed change; and
 - rationale for the change.

CSA/ANSI Z83.26:20 • CSA 2.37:20

Gas-fired outdoor infrared patio heaters

0 History of the development of the Standard for Gas-fired outdoor infrared patio heaters

Note: *This history is informative and is not part of the Standard.*

With the onset of the Free Trade Agreement between the United States and Canada on January 2, 1988, significant attention was given to the harmonization of the United States and Canadian safety standards addressing gas-fired equipment for residential, commercial and industrial applications. It was believed that the elimination of the differences between the standards would remove potential trade barriers and provide an atmosphere in which North American manufacturers could market more freely in the United States and Canada. The harmonization of these standards was also seen as a step toward harmonization with international standards. Joint subcommittees were established to facilitate the standards harmonization process between the United States and Canada.

The draft harmonized standard was based on coverage from the CSA International Requirement 5.90 For Gas-Fired Infrared Patio Heaters.

During its August 22, 2006 meeting, the Z83/CSA Joint Technical Advisory Group (TAG) on Standards for Gas-Fired Infrared Radiant Heaters approved the first draft harmonized standard for gas-fired outdoor infrared patio heaters, Z83.26/CSA 2.37, for distribution for review and comment.

Following reconsideration and modification of the proposed draft standard, in light of comments received, the joint TAG, at its December 5, 2006 meeting, recommended the proposed draft standard to the Z21/83 Committee and the CSA Technical Committee for approval.

The proposed draft harmonized standard for gas-fired outdoor infrared patio heaters was approved by the Z21/83 Committee on June 27, 2007, and by the CSA Technical Committee on April 19, 2007.

The first edition of the Standard for Gas-Fired Outdoor Infrared Patio Heaters, Z83.26/CSA 2.37 was approved by the Canadian Interprovincial Gas Advisory Council on September 14, 2007 and by the American National Standards Institute, Inc., on July 23, 2007.

The second edition of the Standard for Gas-Fired Outdoor Infrared Patio Heaters, Z83.26/CSA 2.37 was approved by the Canadian Interprovincial Gas Advisory Council on May 29, 2014 and by the American National Standards Institute, Inc., on June 9, 2014.

This, the third edition of the Standard for Gas-Fired Outdoor Infrared Patio Heaters, was approved by the American National Standards Institute, Inc., (TBD) and by the Interprovincial Gas Advisory Council on (TBD).

The following identifies the designation and year of the third edition of the standard:

CSA/ANSI Z83.26:20 • CSA 2.37:20.

Note: *This edition of CSA/ANSI Z83.26 • CSA 2.37 incorporates changes to the 2014 edition.*

1 Scope

1.1

This Standard applies to newly produced gas-fired outdoor infrared patio heaters (see Clause [3](#)) hereinafter referred to as “heaters” or “appliances”, constructed entirely of new, unused parts and materials for use with:

- a) natural gas; or
- b) propane.

1.2

The heaters covered by this Standard are intended for installation in and heating of residential or non-residential spaces.

1.3

Infrared patio heaters may be suspended overhead, angle-mounted overhead, wall-mounted, floor-mounted or for tabletop use.

1.4

Patio heaters intended for tabletop use are those limited to input ratings of 24 000 Btu/hr (7034 W) or less. These units incorporate an integral self-contained propane gas supply system consisting of a maximum of two disposable 1 lb (0.45 kg) fuel capacity cylinders and operating at pressures not greater than 5 psi (34.5 kPa).

1.5

Infrared patio heaters not intended for tabletop use may be for connection to

- a) a fixed fuel piping system operating at inlet gas pressures not exceeding 1/2 psi (3.5kPa); or
- b) an integral self-contained propane gas supply system, provided the appliance incorporates mounting means for the attachment of a maximum of one cylinder limited to a maximum of 20 lb (9.1 kg) of fuel operating at regulated outlet with
 - i) pressure not exceeding 11 in wc (2.74 kPa); or
 - ii) pressures in excess of 11 in wc (2.74 kPa) but not greater than 5 psi (34.5 kPa).

1.6

Clause [2](#) contains a list of standards specifically referenced in this Standard and sources from which these reference standards may be obtained.

1.7

Special construction provisions applicable to an appliance designed for use with an optional listed conversion kit are outlined under Annex [D](#).

1.8

Special construction provisions applicable to infrared heaters designed to operate at altitudes over 2000 ft (610 m) are outlined in Annex [E](#).

1.9

If a value for measurement as given in this Standard is followed by an equivalent value in other units, the first stated value is to be regarded as the specification.