CSA GROUP™

CSA/ANSI Z21.54:19 • CSA 8.4:19
National Standard of Canada
American National Standard

Gas hose connectors for portable outdoor gas-fired appliances

Standards Council of Canada
Conseil canadien des normes

REVISED DECEMBER 2020

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Revision History

CSA/ANSI Z21.54:19 • CSA 8.4:19, Gas hose connectors for portable outdoor gas-fired appliances

Update No. 1 — December 2020	Revision symbol (in margin)
Clause 4.3.1	①

Standards Update Service

CSA/ANSI Z21.54:19 • CSA 8.4:19
April 2019

Title: *Gas hose connectors for portable outdoor gas-fired appliances*

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National Standard of Canada
American National Standard

CSA/ANSI Z21.54:19 • CSA 8.4:19

Gas hose connectors for portable outdoor gas-fired appliances

Interprovincial Gas Advisory Council

American National Standards Institute, Inc.

Approved on March 14, 2019 by ANSI
Approved on March 4, 2019 by IGAC
Published in April 2019 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

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ICS 97.020
ISBN 978-1-4883-1644-9

Contents

Preface

This is the fourth edition of CSA/ANSI Z21.54 • CSA 8.4, *Gas hose connectors for portable outdoor gas-fired appliances*. It supersedes the previous editions published in 2014, 2002, and 1996.

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

a) Administrative provisions (e.g., the term "shall" in the Scope, marking to identify standard) were modified.
b) Allow for larger connector dimensions utilized on higher BTU capacity gas fired appliances.
c) Tables were updated to align dimensions referenced in standard and increase hose sizes to align with testing criteria added.
d) Additional performance tests included to evaluate the product and align with other industry standards (e.g., ammonia vapor, aging, sunlight resistance, and salt spray).

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

This Standard was prepared by the Z21/CSA Joint Technical Subcommittee on Connectors for Gas Appliances, under the jurisdiction of the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories and the Strategic Steering Committee on Fuels and Appliances. It has been formally approved by the Z21/83 Technical Committee, the 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 Fuels and Appliances 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 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) *This Standard contains SI (Metric) units corresponding to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (IEEE/ASTM SI 10,* American National Standard for Metric Practice*, or ISO 80000-1:2009,* Quantities and units – Part 1: General*, is used as a guide in making metric conversion from yard/pound quantities.) 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, are to be provided.*
3) *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.*
4) *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.*

5) *This Standard is subject to review at least every five years; 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.*
6) *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:*
   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 standardizatio*n and are available on the* Current Standards Activities *page at standardsactivities.csa.ca.*

History of development of the standard for gas hose connectors for portable outdoor gas-fired appliances

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 preliminary step toward harmonization with international standards.

With the formation of joint subcommittees, a Canadian Gas Association Standards Steering Committee on Gas Burning Appliances and Related Accessories was established to parallel and to support the formation of joint subcommittees. Operating procedures, in accordance with American National Standards Institute procedures, for joint subcommittees were developed and subsequently approved by ANSI on April 1, 1993.

A draft harmonized standard for Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, ANSI Z21.54, was prepared during 1993. At its September 23-24, 1993 meeting, the Joint Subcommittee on Standards for Gas Appliance Connectors adopted the first draft harmonized standard for gas hose connectors for distribution for review and comment during August 1994.

Following reconsideration and modification of the proposed draft standard for gas hose connectors in light of comments received, the joint connector subcommittee, at its September 20, 1994 meeting, recommended the proposed fourth draft to the Z21 Committee and the CGA Standards Steering Committee for approval.

The proposed draft of the harmonized standard for gas hose connectors was approved by the Z21 Committee at its April 1995 meeting. The CGA Standards Steering Committee approved the proposed draft harmonized standard for gas hose connectors by letter ballot dated May 19, 1995.

The first edition of the harmonized Z21/CGA standard for Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances was approved by the CGA Standards Advisory Committee and the Canadian Interprovincial Gas Advisory Council on July 1, 1995 and by the American National Standards Institute, Inc., on July 16, 1996.

The second editions of the standard for Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances, and addenda thereto, approved by the Interprovincial Gas Advisory Council and American National Standards Institute, Inc. are as follows:

Z21.54-2002 • CSA 8.4-2002
Z21.54a-2006 (R2001) • CSA 8.4a-2006
Z21.54b-2009 • CGA 8.4b-2009

The third edition was approved by the Canadian Interprovincial Gas Advisory Council on May 30, 2014 and by the American National Standards Institute, Inc., on March 14, 2014.

This, the fourth edition, was approved by the Canadian Interprovincial Gas Advisory Council on March 4, 2019 and by the American National Standards Institute, Inc., on March 14, 2019.

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

CSA/ANSI Z21.54-2019 • CSA 8.4-2019

Note: *This edition of CSA/ANSI Z21.54 • CSA 8.4 incorporates changes to the 2014 edition. Changes, other than editorial, are denoted by a delta in the margin.*

CSA/ANSI Z21.54:19 • CSA 8.4:19
Gas hose connectors for portable outdoor gas-fired appliances

1 Scope

1.1
This Standard applies to gas hose connectors (See Clause 3 Definitions), hereinafter referred to as connectors. They are conduits for conveying gas and depend for gas-tightness on the wall structure of the hose material. Such connectors are:

a) newly produced and constructed entirely of new, unused parts and materials; and
b) equipped with a fitting at each end provided with standard taper pipe threads.

1.2
Connectors covered by this Standard are intended for:

a) connection of portable outdoor gas-fired appliances to the gas supply piping;
b) use in unconcealed outdoor locations;
c) use only in locations where they will not be likely to be subject to excessive temperatures [above 200°F (93.5 °C)];
d) use with natural gas, manufactured gas, mixed gases, propane and LP gas-air mixtures; and
e) use on gas piping systems having fuel gas pressures not in excess of 1/2 psi (3.45 kPa).

1.3
All references to psi throughout this Standard are to be considered gauge pressure unless otherwise specified.

1.4
Annex A contains provisions that are unique to Canada.

1.5
Clause 2 contains a list of standards specifically referenced in this Standard and sources from which these reference standards may be obtained.

1.6
This Standard contains SI (Metric) equivalents to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (IEEE/ASTM SI 10 is used as a guide in making metric conversion from yard/pound quantities.) If a value for a measurement and an equivalent value in other units, the first stated is to be regarded as the requirement. The given equivalent value may be approximate. If a value for a measurement and an equivalent value in other units, are both specified as a quoted marking requirement, the first stated unit, or both shall be provided.

1.7
In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that

