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ANSI Z21.50-2016 • CSA 2.22-2016

Vented decorative gas appliances

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ANSI Z21.50-2016 • CSA 2.22-2016, Vented decorative gas appliances

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Preface

This is the eighth edition of ANSI Z21.50 • CSA 2.22, *Vented decorative gas appliances*. It supersedes the previous editions published in 2014, 2012, 2007, 2003, 2000, 1998, and 1996.

This Standard was prepared by the Z21/CSA Joint Technical Subcommittee on Standards for Vented Gas-Fired Warm Air Heaters, under the jurisdiction of the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories, the Canadian Technical Committee on Gas Appliances and Related Accessories, and the Strategic Steering Committee on Standards for Fuel Burning Equipment, and had been formally approved by the Technical Committees, American National Standards Institute, and the Interprovincial Gas Advisory Council.

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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 publication 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 publication.*
- 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 standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.

History of the development of the Standard for Vented decorative gas 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.

A Z21/CGA joint working group on harmonizing decorative gas appliance standards was established. On October 27-28, 1992 the Z21/CGA Joint Decorative Appliance Subcommittee reviewed the second draft harmonized Standard for Vented Gas Fireplaces based on current coverage from the American National Standard for Vented Decorative Gas Appliances, ANSI Z21.50-1989, Addenda ANSI Z21.50a-1990 and Addenda ANSI Z21.50b-1990; and the National Standard of Canada for Vented Decorative Gas Appliances, CAN/CGA-2.22-M86. Following its review, the joint subcommittee modified the draft document and agreed to distribute a second draft for industry review during March 1993. The first draft was not distributed for industry review.

With the formation of joint subcommittees, a Canadian Gas Association Standards Steering Committee on Gas Burning Appliances and Related Accessories was established to parallel Accredited Standards Committee Z21 and Z83, and to support the formation of joint subcommittees. Operating procedures for joint subcommittees were developed in accordance with American National Standards Institute procedures and subsequently approved by ANSI on April 1, 1993.

During its October 6–7, 1993 meeting, the joint decorative gas appliance subcommittee reconsidered the proposed second draft of the harmonized Standard for Vented Gas Fireplaces dated March 1993, in light of comments received. Changes to the delayed ignition and integrity test, addition of a water shock test and revisions to wind test coverage were redistributed for review and comment. At this time, a third draft of the harmonized standard was developed. The third draft including the revisions was recommended to the Z21 Committee and the CGA Standards Steering Committee for approval.

The proposed third draft of the harmonized Standard for Vented Gas Fireplaces was considered by the Z21 Committee at its April 7, 1994 meeting and by the CGA Standards Steering Committee on April 14, 1994. Comments were received from the Z21 Committee and returned to the joint subcommittee for consideration.

At its May 26-27, 1994 meeting, the joint decorative appliance subcommittee reconsidered draft three and proposed revisions, in light of comments received from the Z21 Committee. As a result, the third draft comprised of the second draft and the proposed revisions were revised to included references to American National Standard for Combination Gas Controls for Gas Appliances, ANSI Z21.78 and revisions to the maximum temperature rise for glass and references to combustion chamber pressure relief device. The third draft, plus all revisions, were recommended again to the Z21 Committee by letter ballot dated August 5, 1994, and the CGA Standards Steering Committee for approval.

Comments were again received from the Z21 Committee revising the conversion kit boxed warning and coverage addressing the moisture test. The joint decorative appliance subcommittee agreed with the revisions recommended by the Z21 Committee.

The proposed third draft of the harmonized Standard for Vented Gas Fireplaces and all revisions were approved by the Z21 Committee by letter ballot dated June 26, 1995 and by the CGA Standards Steering Committee on April 15, 1996.

The first edition of the harmonized Z21/CGA Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council in May 1996, and by the American National Standards Institute Inc., on September 27, 1996.

The second edition of the Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council on August 7, 1998, and by the American National Standards Institute, Inc. on November 3, 1998.

The third edition of the Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council on August 22, 2000, and by the American National Standards Institute, Inc. on November 11, 2000.

The fourth edition of the Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council on August 28, 2003, and by the American National Standards Institute, Inc. on July 11, 2003.

The fifth edition of the Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council on March 15, 2007, and by the American National Standards Institute on February 22, 2007.

The sixth edition of the Standard for Vented Gas Fireplaces was approved by the Canadian Interprovincial Gas Advisory Council on September 28, 2012, and by the American National Standards Institute, Inc. on December 18, 2012.

The seventh edition of the Standard for Vented gas fireplaces was distributed for industry review during May 2012, September 2012, and January 2013; and approved by the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories on December 20, 2013; by the Canadian Technical Committee on Gas Appliances and Related Accessories on October 30, 2013; by the American National Standards Institute, Inc on February 20, 2014; and by the Interprovincial Gas Advisory Council on February 18, 2014.

This, the eighth edition of the Standard for vented decorative gas appliances was distributed for industry review during July 2013, June 2014, November 2014, and December 2014; and approved by the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories on August 29, 2016; by the Canadian Technical Committee on Gas Appliances and Related Accessories on November 4, 2016; by the American National Standards Institute, Inc on October 31, 2016; and by the Interprovincial Gas Advisory Council on September 20, 2016. This edition reintroduces the term “decorative” to describe the appliances covered in this Standard as not a primary source of heat.

The previous editions of the vented gas fireplace standard, and addenda thereto, approved by the American National Standards Institute, Inc. and the Interprovincial Gas Advisory Council are as follows:

ANSI Z21.50-1996 • CGA 2.22-M96

ANSI Z21.50-1998 • CGA 2.22-M98

ANSI Z21.50-2000 • CSA 2.22-2000

ANSI Z21.50a-1998 • CGA 2.22a-M98

ANSI Z21.50b-1998 • CGA 2.22b-M98

ANSI Z21.50a-1999 • CGA 2.22a-M99

ANSI Z21.50b-2000 • CGA 2.22b-M00

ANSI Z21.50a-2001 • CSA 2.22a-2001

ANSI Z21.50-2003 • CSA 2.22-2003

ANSI Z21.50-2007 • CSA 2.22-2007

ANSI Z21.50-2012 • CSA 2.22-2012

ANSI Z21.50-2014 • CSA 2.22-2014

ANSI Z21.50b-2002 • CSA 2.22b-2002

ANSI Z21.50a-2003 • CSA 2.22a-2003

ANSI Z21.50b-2005 • CSA 2.22b-2005

ANSI Z21.50a-2008 • CSA 2.22a-2008

ANSI Z21.50b-2009 • CSA 2.22b-2009

Note: *This edition of ANSI Z21.50 • CSA 2.22 incorporates changes to the 2014 edition. All changes other than editorial are denoted by a Δ in the margin.*

ANSI Z21.50-2016 • CSA 2.22-2016

Vented decorative gas appliances

1 Scope

Δ 1.1

This Standard applies to newly produced vented decorative gas appliances (see Clause 3, Definitions), hereinafter referred to as appliances, constructed entirely of new, unused parts and materials and having input ratings up to and including 400,000 Btu/hr (117 228 W).

These appliances are for:

- a) use with natural gas;
- b) use with propane;
- c) direct vent gas appliances for manufactured home (USA only) or mobile home OEM installation or aftermarket installation convertible for use with natural gas and propane gas when provision is made for the simple conversion from one gas to the other (see Clauses 4.1.22 and 4.1.23);
- d) direct vent gas appliances for manufactured home (USA only) or mobile home aftermarket installation for use with natural gas only or propane gas only (see Clause 4.1.23); and
- e) direct vent gas appliances for manufactured home (USA only) or mobile home OEM installation for use with propane gas only (see Clause 4.1.22).

The construction of vented decorative gas appliances for use with the above mentioned gases is covered under Clause 4, Construction.

The performance of vented decorative gas appliances for use with the above mentioned gases is covered under Clause 5, Performance.

Δ 1.2

These appliances are not:

- a) for use with a thermostat;
- b) a source of heat; and
- c) for use with solid fuels.

1.3

Annex H, Automatic intermittent pilot ignition systems for field installation, includes provisions for newly produced (optional) automatic intermittent pilot ignition systems (see Clause 3, Definitions), constructed entirely of new, unused parts and materials to be adapted in the field to an appliance equipped with an existing continuous pilot burner and which have been examined and tested for compliance with this Standard when installed on the appliance.

1.4

If a value for measurement given in this Standard is followed by an equivalent value in other units; the first stated value is the specification.

1.5

Clause 2, Reference publications, contains a list of standards specifically referenced in this Standard and sources from which they may be obtained. It is the responsibility of the user of this Standard to determine which referenced standard applies based on the requirements of the Authority Having Jurisdiction (AHJ) for the location of installation.

1.6

This Standard also applies to appliances with draft hoods that are factory equipped with automatic vent damper devices (see Clause 3, Definitions), hereinafter referred to as vent damper devices.

1.7

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

1.8

Special construction provisions applicable to vented decorative gas appliances designed for use with an optional design-certified conversion kit are outlined under Annex A, Provisions for listed gas appliance conversion kits (optional).

1.9

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

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

Note: *Canadian Gas Association (CGA) Standards, Recommended Practices, and Codes are published by CSA Group.*

CSA Group

ANSI Z21.15-2009 (R2014) • CSA 9.1-2009 (R2014) and Addenda ANSI Z21.15a-2012 (R2014) • CSA 9.1a-2012 (R2014)

Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves

ANSI Z21.18-2007 (R2012) • CSA 6.3-2007 (R2012) and Addenda ANSI Z21.18a-2010 (R2012) • CSA 6.3a-2010 (R2012)

Gas Appliance Pressure Regulators