ANSI Z21.78-2005
CSA 6.20-2005

American National Standard/
CSA Standard For

Combination Gas Controls For Gas Appliances

AMERICAN NATIONAL STANDARD
ANSI Z21.78-2005

CSA STANDARD
CSA 6.20-2005

Third Edition

This Standard is a revised edition
of the former

Standard for

COMBINATION GAS CONTROLS FOR GAS APPLIANCES

ANSI Z21.78-2000 • CSA 6.20-2000,
and Addenda
ANSI Z21.78a-2001 • CSA 6.20a-2001, and
ANSI Z21.78b-2004 • CSA 6.20b-2004

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Preface

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of a combination gas control for gas appliances. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on combination gas controls for gas appliances designed for utilization of gas. There are risks of injury to persons inherent in appliances that, if completely eliminated, would defeat the utility of the appliance. The provisions in this standard are intended to help reduce such risks while retaining the normal operation of the appliance.

Nothing in this standard is to be considered in any way as indicating a measure of quality beyond compliance with the provisions it contains. It is designed to allow compliance of combination gas controls, the safety construction and performance of which may exceed the various provisions specified herein. In its preparation, full recognition has been given to possibilities of improvement through ingenuity of design. As progress takes place, revisions may become necessary. When they are believed desirable, recommendations or suggestions should be forwarded to the Chairman of Accredited Standards Committee Z21/Z83, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, or the Chairman of the CSA Technical Committee on Gas Appliances and Related Accessories, 5060 Spectrum Way, Suite 100; Mississauga, Ontario, Canada L4W 5N6.

Safe and satisfactory operation of a combination gas control for gas appliances depends to a great extent upon its proper installation, use and maintenance. It should be installed, as applicable, in accordance with the *National Fuel Gas Code, ANSI Z223.1/NFPA 54*; the *Natural Gas and Propane Installation Code, CSA B149.1.*

Users of this American National Standard/CSA Standard are advised that the devices, products and activities within its scope may be subject to regulation at the Federal, Territorial, Provincial, state or local level. Users are strongly urged to investigate this possibility through appropriate channels. In the event of a conflict with this standard, the Federal, Territorial, Provincial, state or local regulation should be followed.

THIS STANDARD IS INTENDED TO BE USED BY THE MANUFACTURING SECTOR AND BY THOSE APPLYING THE EQUIPMENT AND BY THOSE RESPONSIBLE FOR ITS PROPER INSTALLATION. IT IS THE RESPONSIBILITY OF THESE USERS TO DETERMINE THAT IN EACH CASE THIS STANDARD IS SUITABLE FOR AND APPLICABLE TO THE SPECIFIC USE THEY INTEND.

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EFFECTIVE DATE: An organization using this standard for product evaluation as a part of its certification program will normally establish the date by which all products certified by that organization should comply with this standard. In Canada, the Interprovincial Gas Advisory Council normally stipulate an effective date for the standard.

History Of The Development Of Standard For Combination Gas Controls For Gas Appliances

(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.

At its December 11-12, 1990 meeting the Z21 Automatic Valves, Pressure Regulators and Combination Controls for Gas Appliances Subcommittee agreed with the CGA Standards Committee on Accessories for Gas-Fired Equipment to the development of a harmonized standard for combination gas controls, using the second draft of the proposed American National Standard for Combination Gas Controls for Gas Appliances. Subsequently, a proposed harmonized standard was distributed for industry review in Canada in April 1992.

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 Committees Z21 and Z83, 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.

Following reconsideration of the proposed harmonized draft standard for combination gas controls, in light of comments received, the joint automatic gas controls subcommittee, by letter ballot dated October 24, 1994, adopted the proposed harmonized standard for combinations gas controls and recommended the proposed harmonized standard to the Z21 Committee and the CGA Standards Steering Committee for approval.

Following procedures, the Z21 Committee, at its April 5, 1995 meeting, adopted the proposed harmonized standard for combination gas controls for gas appliances. The CGA Standards Steering Committee adopted the proposed harmonized standard for combination gas controls for gas appliances by a letter ballot dated May 19, 1995.

The first edition of the harmonized Z21/CGA Standard for Combination Controls for Gas Appliances was approved as American National Standard by the American National Standards Institute, Inc., on July 15, 1996. The Interprovincial Gas Advisory Council approved the proposed harmonized standard by a letter ballot dated January 17, 1997.

The second edition of the harmonized Z21/CSA Standard for Combination Controls for Gas Appliances was approved by The Canadian Interprovincial Gas Advisory Council (IGAC) on August 22, 2000 and by the American National Standards Institute, Inc., on September 27, 2000.

The third edition of the harmonized Z21/CSA Standard for Combination Controls for Gas Appliances was approved by the Interprovincial Gas Advisory Council (IGAC) on April 1, 2005 and by the American National Standards Institute, Inc., on March 9, 2005.

The previous edition of the combination controls for gas appliances standard, and addenda thereto, approved by the American National Standards Institute, Inc. and the Interprovincial Gas Advisory Council, are as follows:

Z21.78-1997 • CGA 6.20-M97	Z21.78-2000 • CSA 6.20-2000
Z21.78a-1998 • CGA 6.20a-M98	Z21.78a-2001 • CSA 6.20a-2001
Z21.78b-1999 • CGA 6.20b-M99	Z21.78b-2004 • CSA 6.20b-2004

The following identifies the designation and year of the harmonized standard:

ANSI Z21.78-2005 • CSA 6.20-2005

Note: *This edition of Z21.78-2005 • CSA 6.20-2005, incorporates changes to the 2000 edition and addenda thereto. Changes, other than editorial, are denoted by a vertical line in the margin.*

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NOTE

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 or CAN/CSA Z234.1 are 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. Except as noted if in Exhibit B, 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.

American National Standard/CSA Standard For Combination Gas Controls For Gas Appliances

Part I: Construction

1.1 Scope

1.1.1 This standard applies to newly produced combination gas controls (see Definitions, Part IV), hereinafter referred to as controls, constructed entirely of new, unused parts and materials.

1.1.2 The combination control may include other functions such as pilot gas filters, pressure switches, etc., which shall be of an approved type (see Definitions, Part IV), or shall be investigated as an integral part of the combination control for construction and performance equivalent to an approved type.

A control which incorporates two or more automatic valves and no other function, (as defined by combination control, see Definitions, Part IV), may be tested to this Standard or *Automatic Valves for Gas Appliances, Z21.21 • CSA 6.5*, at the discretion of the manufacturer.

1.1.3 Compliance of a combination control with this standard does not imply that the combination control is acceptable for use on gas appliances without supplemental tests with the combination control applied to the particular appliance design.

1.1.4 This standard applies to combination controls having a maximum operating gas pressure of $^1/_2$ psi (3.5 kPa) with one or more of the following fuel gases: natural, manufactured, mixed, liquefied petroleum and liquefied petroleum gas-air mixtures.

1.1.5 This standard applies to combination controls which are capable of operation in ambient temperatures of 32°F (0°C) to 125°F (51.5°C), unless a higher temperature, lower temperature or both, are specified by the manufacturer.

1.1.6 Exhibit A contains items unique to the United States.

1.1.7 Exhibit B contains items unique to Canada.

1.1.8 Exhibit C contains a list of standards specifically referenced in this standard, and sources from which these reference standards may be obtained.

1.1.9 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.

1.1.10 All references to psi through this standard are to be considered gage pressure unless otherwise specified.