

ANSI Z21.18-2007
CSA 6.3-2007

American National Standard/
CSA Standard For
**Gas Appliance Pressure
Regulators**

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AMERICAN NATIONAL STANDARD
ANSI Z21.18-2007

CSA STANDARD
CSA 6.3-2007

Third Edition - 2007
This Standard is based on the Standard for
Gas Appliances Pressure Regulators
ANSI Z21.18-2000 • CSA 6.3-2000
and Addendas Z21.18a-2001 • CSA 6.3a-2001,
Z21.18b-2005 • CSA 6.3b-2005

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10036***

Preface

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of gas appliance pressure regulators. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on gas appliance pressure regulators 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 gas appliance pressure regulators, 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 CSA America, 8500 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 gas appliance pressure regulator 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*; or 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.

History Of The Development Of Standard For Gas Appliance Pressure Regulators

(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.

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.

At its July 14, 1993 meeting, the Joint Automatic Gas Controls Subcommittee adopted ANSI Z21.18 for distribution for review and comment as a harmonized standard, in that Z21.18 and CAN1-6.3 were identical in content. The first draft harmonized gas appliance pressure regulator standard was distributed for review and comment during March 1994.

Following reconsideration and modification of the proposed harmonized draft standard for gas appliance pressure regulators, in light of comments received, the joint automatic gas controls subcommittee, at its July 14, 1994 meeting, recommended the proposed standard to the Z21 Committee and the CGA Standards Steering Committee, for approval.

The proposed harmonized standard for gas appliance pressure regulators was approved by the Z21 Committee by letter ballot dated January 17, 1995. The CGA Standards Steering Committee approved the proposed harmonized standard for automatic gas valves by letter ballot dated April 13, 1995.

The first edition of the harmonized Z21/CSA Standard for Gas Appliance Pressure Regulators was approved by the Canadian Interprovincial Gas Advisory Council on October 18, 1995 and by the American National Standards Institute, Inc., on November 15, 1995.

The second edition of the harmonized Z21/CSA Standard for Gas Appliance Pressure Regulators was approved by the Canadian Interprovincial Gas Advisory Council on August 22, 2000, and by the American National Standards Institute, Inc., on September 27, 2000.

This the third edition of the harmonized Z21/CSA Standard for Gas Appliance Pressure Regulators was approved by the Canadian Interprovincial Gas Advisory Council on September 14, 2007, and by the American National Standards Institute, Inc., on July 19, 2007.

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

Z21.18-1995 • CGA 6.3-M95	ANSI Z21.18-2000 • CSA 6.3-2000
Z21.18a-1998 • CGA 6.3a-M98	ANSI Z21.18a-2001 • CSA 6.3a-2001
Z21.18b-2000 • CGA 6.3b-M00	ANSI Z21.18b-2005 • CSA 6.b-2005

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

ANSI Z21.18-2007 • CSA 6.3-2007

NOTE: This edition of Z21.18 • CSA 6.3, 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. (Standard for use of the International System of Units (SI): The Modern Metric System, IEEE/ASTM SI 10 or Metric Practice Guide, 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. 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 Gas Appliance Pressure Regulators

Part I: Construction

1.1 Scope

1.1.1

Types of Regulators. This standard applies to individual gas appliance pressure regulators, which are not a part of a combination control (see Part V, Definitions), constructed entirely of new, unused parts and materials, hereinafter referred to as regulators, intended for application on individual gas appliances.

This standard also applies to negative gas appliance pressure regulators (see Part V, Definitions). The performance of negative pressure regulators is covered under Part III of this standard.

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

Components performing functions other than those of a gas appliance pressure regulator shall comply with the applicable American National Standards.

1.1.2

Types of Gases. This standard applies to regulators for operations with natural, manufactured and mixed gases, liquefied petroleum gases and LP gasair mixtures.

1.1.3

Regulators shall be classified in accordance with their intended application with reference to inlet pressures as follows:

Rated
Inlet Pressure

1/2 psi (3.5 kPa)
2 psi (13.8 kPa)
5 psi (34.5 kPa)

1.1.4

Types of Application. This standard applies to regulators for the following general types of application:

- a. Main burner load application;
- b. Pilot burner load application;
- c. Main burner and pilot burner load application to control a minimum pilot flow rate of:
 1. 0.15 ft³/hr (1.18 cm³/s), or
 2. 0.50 ft³/hr (3.93 cm³/s); or