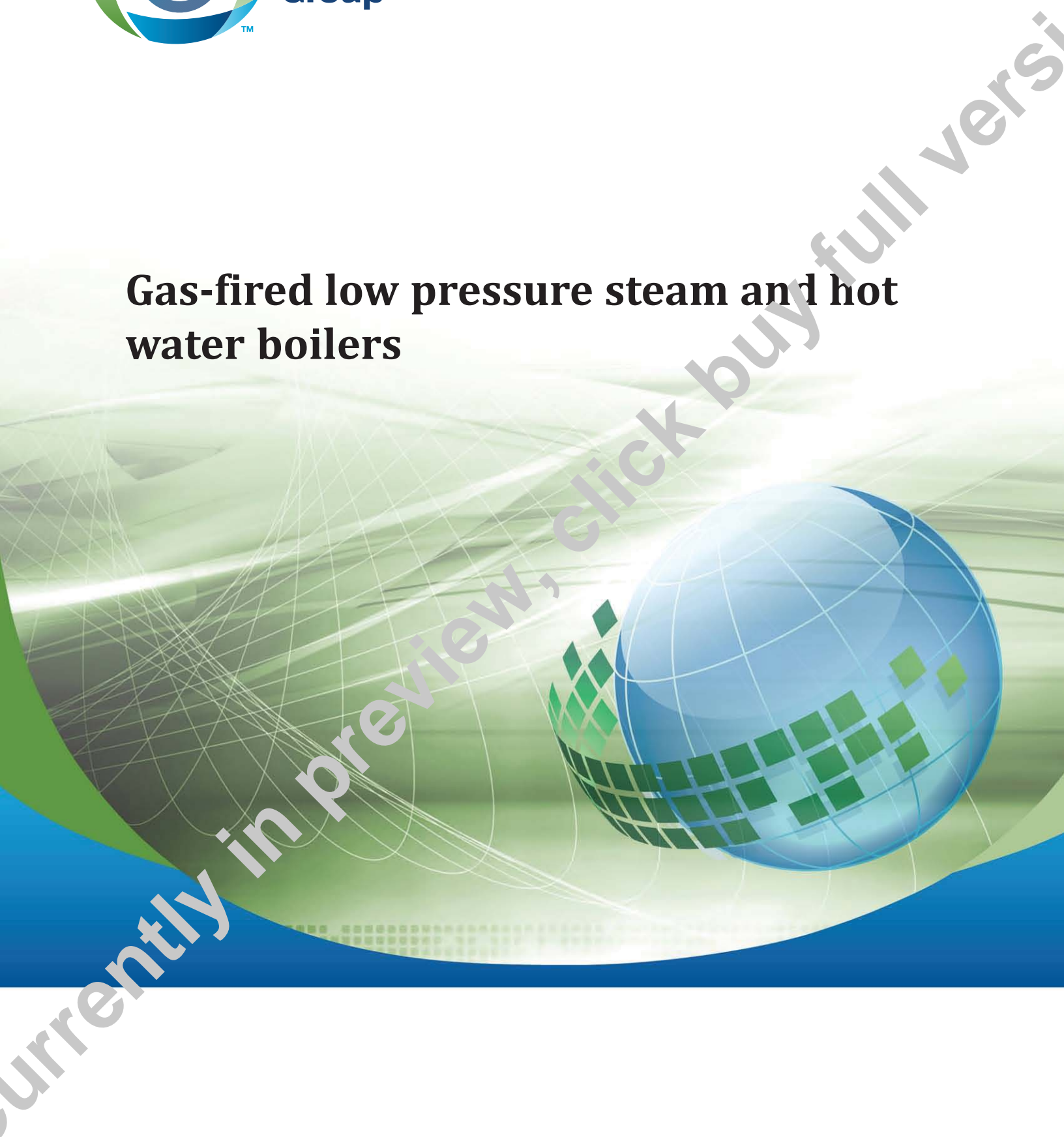




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E. Scott	British Columbia Safety Authority (BCSA), New Westminster, British Columbia	<i>Associate</i>
B.J. Twiecki	National Propane Gas Association, Frankfort, Illinois, USA	<i>Associate</i>
M. Thomas	Natural Resources Canada CANMET Energy, Ottawa, Ontario	<i>Associate</i>

C.L. Rake

CSA Group,
Cleveland, Ohio, USA

Program Manager

M. Khan

CSA Group,
Mississauga, Ontario

Project Manager

Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories

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G.J. Potter	Cambridge Engineering, Chesterfield, Missouri, USA <i>Representing Producer Interest</i>	
J.A. Ranfone	American Gas Association Inc., Washington, District of Columbia, USA <i>Representing Gas Supplier/Utility Interest</i>	
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F.A. Stanonik	Air-Conditioning, Heating, and Refrigeration Institute, Arlington, Virginia, USA <i>Representing Producer Interest</i>	<i>Associate</i>
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C. Suchovsky	Burner Technology Unlimited, Inc, Walton Hills, Ohio, USA <i>Representing General Interest</i>	
D.W. Switzer	Consumer Product Safety Commission, Rockville, Maryland, USA <i>Representing Government Agency Interest</i>	<i>Associate</i>
H. Virgil	Brownsburg, Indiana, USA <i>Representing Consumer/User Interest</i>	
A.B. Wagner-Sherwin	St. Louis Community College, St. Louis, Missouri, USA <i>Representing Consumer/User Interest</i>	
M.B. Williams	Association of Home Appliance Manufacturers (AHAM), Washington, District of Columbia, USA <i>Representing Producer Interest</i>	
T.R. Wiseman	Vulcan-Hart Company A Div. of ITW Food Equipment Group, Baltimore, Maryland, USA <i>Representing Producer Interest</i>	<i>Alternate</i>
R. Wozniak	Underwriters Laboratories Inc., Melville, New York, USA <i>Representing Research & Testing Interest</i>	
C.L. Rake	CSA Group, Cleveland, Ohio, USA	<i>Program Manager</i>
S.M. Corcoran	CSA Group, Cleveland, Ohio, USA	<i>Project Manager</i>

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J. Melling	SaskPower, Saskatoon, Saskatchewan	<i>Alternate</i>
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B.W. Reid	Department of Environment, Energy and Forestry, Charlottetown, Prince Edward Island	
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E. Skehor	British Columbia Safety Authority (BCSA), Courtenay, British Columbia	
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G. Tremblett	Service NL, Newfoundland & Labrador, St. John's, Newfoundland and Labrador	<i>Alternate</i>
C. Valliere	Alberta Municipal Affairs Safety Services, Edmonton, Alberta	<i>Alternate</i>
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B. Zinn	British Columbia Safety Authority (BCSA), Coquitlam, British Columbia	<i>Alternate</i>

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G. Baker	Beckett Gas Inc., North Ridgeville, Ohio, USA	<i>Alternate</i>
D. Bixby	A.O. Smith Water Products Company Division of A.O. Smith Corporation, McBee, South Carolina, USA	
N. Butt	Weil-McLain, Michigan City, Indiana, USA	<i>Alternate</i>
P. Cabot	American Gas Association Inc., Washington, , USA	
K.J. Carlisle	Karl Dungs Inc, Blaine, Minnesota, USA	
J. Chicoine	Mestex, A Division of Mestek, Inc., Dallas, Texas, USA	
R. Choi	KD Navien America, Inc., Irvine, California, USA	<i>Alternate</i>
K.S. Dorrough	Rinnai America Corporation, Peachtree City, Georgia, USA	<i>Alternate</i>
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C. Jacques	Bradford-White Corporation, Middleville, Michigan, USA	
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R.A. Jordan	Consumer Product Safety Commission, Rockville, Maryland, USA	<i>Associate</i>
S. Kassab	Weil-McLain, Michigan City, Indiana, USA	
J. Kleiss	Lochinvar LLC, Lebanon, Tennessee, USA	<i>Alternate</i>
G. Lloyd	Sempra Energy Utility, Los Angeles, California, USA	

A. Lord	Bradford-White Corporation, Middleville, Michigan, USA	<i>Alternate</i>
B. Mickelson	Honeywell International Inc, Golden Valley, Minnesota, USA	
S. O'Leary	Honeywell International Inc, Golden Valley, Minnesota, USA	<i>Alternate</i>
J. Overall	Union Gas Limited, Toronto, Ontario	
M. Pablo	Orkli, S. Coop, Ordizia-Gipuzkoa, Spain	<i>Associate</i>
K. Pirotin	KD Navien America, Inc., Irvine, California, USA	
K. Pollard	Harsco Industrial, Patterson-Kelley, East Stroudsburg, Pennsylvania, USA	<i>Alternate</i>
E. Rightmier	AERCO International, Inc, Blauvelt, New York, USA	
N.W. Rolph	Lochinvar LLC, Lebanon, Tennessee, USA	
A. Saksena	Vulcan Hart Company A Div. of ITW Food Equipment Group, Troy, Ohio, USA	
R. Savadekar	Beckett Gas Inc., North Ridgeville, Ohio, USA	
D. Schuh	A.O. Smith Corporation, McBee, South Carolina, USA	<i>Alternate</i>
C. Sime	Karl Dungs Inc, Blaine, Minnesota, USA	<i>Alternate</i>
G. Sirois	PB Heat, LLC, Bally, Pennsylvania, USA	

P. Sohler	Crown Boiler Company, Philadelphia, Pennsylvania, USA	
F.A. Stanonik	Air-Conditioning, Heating, and Refrigeration Institute, Arlington, Virginia, USA	<i>Alternate</i>
P.W. Stephens	Heat Transfer Products Inc, East Freetown, Massachusetts, USA	
C. Suchovsky	Burner Technology Unlimited, Inc, Walton Hills, Ohio, USA	
M. Travers	Reliance Comfort L.P, Cambridge, Ontario	<i>Alternate</i>
R. Vlastic	Union Gas Limited, London, Ontario	
C. Weiss	Field Controls LLC, Kinston, North Carolina, USA	<i>Associate</i>
A. Yilmaz	Air-Conditioning, Heating, and Refrigeration Institute, Arlington, Virginia, USA	<i>Associate</i>
J. York	Rinnai America Corporation, Peachtree City, Georgia, USA	
S. M. Corcoran	CSA Group, Cleveland, Ohio, USA	<i>Project Manager</i>

Preface

This is the Fourth edition of ANSI Z21.13 • CSA 4.9, Gas-fired low pressure steam and hot water boilers.

This Standard was prepared by the Z21/CSA Joint Technical Advisory Group on Standards for Gas-Fired Steam and Hot Water Boilers under the jurisdiction of the Technical Committee on Gas Appliances and Related Accessories, the Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories, and the Strategic Steering Committee on Standards for Fuel Burning Appliances, and had been formally approved by the Technical Committee(s), American National Standards Institute, and the Interprovincial Gas Advisory Council.

Interpretations: The Strategic Steering Committee on Standards for Fuel Burning 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's procedures for interpretation shall be followed to determine the intended safety principle.”

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History of the development of standards for ANSI Z21.13 • CSA 4.9

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 first draft of this harmonized standard was based on current coverage from the American National Standard for Gas-fired low-pressure steam and hot water boilers, Z21.13-1991, Z21.13a-1993, Z21.13b-1994, and the Canadian Gas Association Standards CGA 3.3-1976, Industrial and commercial atmospherically fired vertical flue boilers and hot water supply heaters, and CGA 4.9-1969, Gas-Fired Steam and Hot Water Boilers.

Following reconsideration and modification of the proposed draft standard, in light of comments received, the joint subcommittee at its December 2, 1998 meeting, recommended the proposed draft standard to Accredited Standards Committee Z21/83 and the (Interim CSA) Standards Steering Committee for approval.

The proposed draft of the harmonized standard for gas-fired low-pressure steam and hot water boilers, as modified by the joint subcommittee, was approved by the Z21/83 Committee at its April 15, 1999 meeting, and by the CSA Standards Steering Committee on Gas Appliances and Related Accessories by letter ballot dated April 9, 1999.

The second edition of the American National Standard/CSA Standard for Gas-fired low-pressure steam and hot water boilers was approved by the Canadian Interprovincial Gas Advisory Council on May 18, 2004, and by the American National Standards Institute, Inc., on June 23, 2004.

The third edition of the American National Standard/CSA Standard for Gas-fired low-pressure steam and hot water boilers was approved by the Canadian Interprovincial Gas Advisory Council on January 4, 2010, and by the American National Standards Institute, Inc., on October 30, 2009.

This, the fourth edition of the American National Standard/CSA Standard for Gas-fired low-pressure steam and hot water boilers, was approved by the Canadian Interprovincial Gas Advisory Council on March 13, 2013, and by the American National Standards Institute, Inc., on March 7, 2013.

The previous edition of the Gas-fired low-pressure steam and hot water boilers standard, and addenda there to, approved by the Interprovincial Gas Advisory Council and American National Standards Institute, Inc. are as follows:

ANSI Z21.13-2000 • CSA 4.9-2000
ANSI Z21.13a-2002 • CSA 4.9a-2002
ANSI Z21.13b-2003 • CSA 4.9b-2003

ANSI Z21.13-2004 • CSA 4.9-2004
ANSI Z21.13a-2005 • CSA 4.9a-2005
ANSI Z21.13b-2007 • CSA 4.9b-2007

ANSI Z21.13-2010 • CSA 4.9-2010
ANSI Z21.13a-2010 • CSA 4.9a-2010
ANSI Z21.13b-2012 • CSA 4.9b-2012

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

ANSI Z21.13-2013 • CSA 4.9-2013

Note: *This edition of Z21.13 • CSA 4.9 incorporates changes to the 2010 edition and addenda thereto. Changes other than editorial are noted by a vertical line in the margin.*

ANSI Z21.13-2013 • CSA 4.9-2013

Gas-fired low pressure steam and hot water boilers

1 Scope

1.1

This standard applies to newly produced gas-fired low-pressure steam and hot water boilers with gas inlet pressure ratings not exceeding ½ psi (3.5 kPa) and having input ratings of less than 12,500,000 Btu/hr (3 663 389 W) (see Clause 3), hereinafter referred to as boilers*, constructed entirely of new unused parts and materials, for operation at or below the following pressures and temperatures:

Steam heating boilers
15 psi (103.42 kPa) steam pressure

Hot water heating boilers
160 psi (1.10 MPa) water pressure
250°F (121°C) water temperature

Hot water supply boilers
160 psi (1.10 MPa) water pressure
250°F (121°C) water temperature

- a) For use with natural gas;
- b) For use with manufactured gas;
- c) For use with mixed gas;
- d) For use with liquefied petroleum gases; and
- e) For use with LP gas-air mixtures.

The construction of boilers for use with the above-mentioned gases is covered under Clause 4.

The performance of boilers for use with the above-mentioned gases is covered under Clause 5.

* See Clause 7 (7.2.1) for boilers covered in Canada which exceed the above limits in gas inlet pressure and/or input ratings.

1.2

This standard applies to indoor type boilers, of other than the direct vent which are categorized according to vent pressure and temperature as either Category I, Category II, Category III or Category IV (see Clause 3), and to outdoor type boilers.

1.3

This standard also applies to direct vent boilers (see Clause 3). A direct vent boiler anticipated by this standard is essentially a balanced flue appliance with the air intake and vent outlet in proximity. Other designs shall be subjected to such additional tests as believed necessary at the discretion of the testing agency.