ANSI Z21.41-2014 • CSA 6.9-2014

Quick disconnect devices for use with gas fuel appliances

--`,,,,,,,,,`,,`,`,`,`,`,,`,`-`-`,,`,,`,`,,`---

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

Legal Notice for Standards

Canadian Standards Association and CSA America, Inc. (operating as "CSA Group") develop standards through a consensus standards development process approved by the Standards Council of Canada and the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.

CSA Group

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

Revision History

ANSI Z21.41-2014 • CSA 6.9-2014, Quick disconnect devices for use with gas fuel appliances

Revision from previous edition	Revision symbol (in margin)
Clauses 1.1, 1.2, 4.9, 4.9.1, 4.9.2, 4.9.3, 4.9.5, 4.9.6, 4.9.8, 4.9.9, 5.1.1, 5.2.1, and 5.4	Δ

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

Standards Update Service

ANSI Z21.41-2014 • CSA 6.9-2014
April 2014

Title: *Quick disconnect devices for use with gas fuel appliances*

To register for e-mail notification about any updates to this publication
- go to **shop.csa.ca**
- click on **CSA Update Service**

The **List ID** that you will need to register for updates to this publication is **2422843**.

If you require assistance, please e-mail **techsupport@csagroup.org** or call 416-747-2233.

Visit CSA Group's policy on privacy at **csagroup.org/legal** to find out how we protect your personal information.

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

CSA Group

The Canadian Standards Association (operating as CSA Group), under whose auspices this National Standard has been produced, was chartered in 1919 and accredited by the Standards Council of Canada to the National Standards system in 1973. It is a not-for-profit, nonstatutory, voluntary membership association engaged in standards development and certification activities.

CSA Group standards reflect a national consensus of producers and users including manufacturers, consumers, retailers, unions and professional organizations, and governmental agencies. The standards are used widely by industry and commerce and often adopted by municipal, provincial, and federal governments in their regulations, particularly in the fields of health, safety, building and construction, and the environment.

Individuals, companies, and associations across Canada indicate their support for CSA Groups standards development by volunteering their time and skills to Committee work and supporting CSA Groups objectives through sustaining memberships. The more than 7000 committee volunteers and the 2000 sustaining memberships together form CSA Groups total membership from which its Directors are chosen. Sustaining memberships represent a major source of income for CSA Groups standards development activities.

CSA Group offers certification and testing services in support of and as an extension to its standards development activities. To ensure the integrity of its certification process, CSA Group regularly and continually audits and inspects products that bear the CSA Group Mark.

In addition to its head office and laboratory complex in Toronto, CSA Group has regional branch offices in major centres across Canada and inspection and testing agencies in eight countries. Since 1919, CSA Group has developed the necessary expertise to meet its corporate mission: CSA Group is an independent service organization whose mission is to provide an open and effective forum for activities facilitating the exchange of goods and services through the use of standards, certification and related services to meet national and international needs.

American National Standards Institute

The American National Standards Institute (ANSI), Inc. is the nationally recognized coordinator of voluntary standards development in the United States through which voluntary organizations, representing virtually every technical discipline and every facet of trade and commerce, organized labor and consumer interests, establish and improve the some 10,000 national consensus standards currently approved as American National Standards.

ANSI provides that the interests of the public may have appropriate participation and representation in standardization activity, and cooperates with departments and agencies of U.S. Federal, state and local governments in achieving compatibility between government codes and standards and the voluntary standards of industry and commerce.

ANSI represents the interests of the United States in international nontreaty organizations such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). The Institute maintains close ties with regional organizations such as the Pacific Area Standards Congress (PASC) and the Pan American Standards Commission (COPANT). As such, ANSI coordinates the activities involved in the U.S. participation in these groups.

ANSI approval of standards is intended to verify that the principles of openness and due process have been followed in the approval procedure and that a consensus of those directly and materially affected by the standards has been achieved. ANSI coordination is intended to assist the voluntary system to ensure that national standards needs are identified and met with a set of standards that are without conflict or unnecessary duplication in their requirements.

For further information on CSA Group services, write to
CSA Group
5060 Spectrum Way, Suite 100, Mississauga, Ontario,
Canada L4W 5N6

Responsibility of approving American standards rests with the
American National Standards Institute, Inc.
25 West 43rd Street, Fourth floor
New York, NY 10036

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

ANSI Z21.41-2014 • CSA 6.9-2014

Quick disconnect devices for use with gas fuel appliances

American National Standards Institute, Inc.

IGAC

Interprovincial Gas Advisory Council

™A trade-mark of the Canadian Standards Association and CSA America Inc., operating as "CSA Group"

Approved on January 13, 2014 by ANSI
Approved on October 14,2013 by IGAC
Effective in Canada June 1, 2015
Published in April 2014 by CSA Group
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6

To purchase standards and related publications, visit our Online Store at ***shop.csa.ca***
or call toll-free 1-800-463-6727 or 416-747-4044.

ISBN 978-1-77139-434-5

© 2014 CSA Group
All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

Documents
Document Sharing Hub

Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014

Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

Contents

Interprovincial Gas Advisory Council *2*

CSA Technical Committee on Gas Appliances and Related Accessories *4*

Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories *6*

Z21/CSA Joint Technical Advisory Group on Manually Operated Gas Valves *9*

Preface *12*

1 Scope *15*

2 Reference publications *16*

3 Definitions *17*

4 Construction *17*
4.1 General *17*
4.2 Dimensions *18*
4.3 Operation *18*
4.4 Safety *19*
4.5 Strength *20*
4.6 Materials *25*
4.7 Assembly *25*
4.8 Instructions *25*
4.9 Marking *26*

5 Performance *29*
5.1 Leakage *29*
5.2 Capacity *30*
5.3 Durability at high temperatures *33*
5.4 Continued operation *34*
5.5 Season cracking *34*
5.6 Low temperature operation *34*
5.7 Marking material adhesion and legibility *35*

6 Manufacturing and production tests *35*

Annex A (Normative) — Items unique to Canada *36*
Annex B — Table of conversion factors *37*

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

Interprovincial Gas Advisory Council

A. Ali	Government of Nunavut Community & Government Services, Iqaluit, Nunavut, Canada *Category: Government and/or Regulatory Authority*	
R. Brousseau	Régie du Bâtiment du Québec, Montréal, Quebec, Canada	*Alternate*
M.E. Davidson	Province of New Brunswick Dept of Public Safety, Fredericton, New Brunswick, Canada *Category: Government and/or Regulatory Authority*	
D. Eastman	Service NL, Newfoundland & Labrador, St. John's, Newfoundland and Labrador, Canada *Category: Government and/or Regulatory Authority*	
W. Lock	British Columbia Safety Authority (BCSA), New Westminster, British Columbia, Canada *Category: Government and/or Regulatory Authority*	
S.C. Manning	Alberta Municipal Affairs Safety Services, Edmonton, Alberta, Canada *Category: Government and/or Regulatory Authority*	
J.R. Marshall	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada *Category: Government and/or Regulatory Authority*	
R. McRae	Government of the NWT Public Works & Services, Yellowknife, Northwest Territories, Canada *Category: Government and/or Regulatory Authority*	
V. Pao	Office of the Fire Commissioner, Winnipeg, Manitoba, Canada *Category: Government and/or Regulatory Authority*	
B.W. Reid	Department of Environment, Energy and Forestry, Charlottetown, Prince Edward Island, Canada *Category: Government and/or Regulatory Authority*	
J. Renaud	Régie du bâtiment du Québec, Montréal, Quebec, Canada *Category: Government and/or Regulatory Authority*	

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

D.C. Stewart	Department of Labour and Advanced Education, Halifax, Nova Scotia, Canada *Category: Government and/or Regulatory Authority*	
I. Tilgner	Human Resources and Skills Development Canada, Gatineau, Quebec, Canada *Category: Government and/or Regulatory Authority*	
G. Tremblett	Service NL, Newfoundland & Labrador, St. John's, Newfoundland and Labrador, Canada	*Alternate*
C. Valliere	Alberta Municipal Affairs Safety Services, Edmonton, Alberta, Canada	*Alternate*
D. Young	Yukon Government, Whitehorse, Yukon Territory, Canada *Category: Government and/or Regulatory Authority*	

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

CSA Technical Committee on Gas Appliances and Related Accessories

Z.J. Fraczkowski	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada *Category: Government and/or Regulatory Authority*	*Chair*
D. Baxter	Enbridge Gas Distribution, Thorold, Ontario, Canada *Category: User Interest*	*Vice-Chair*
A. Abdel-Rehim	A.O. Smith Enterprises Ltd, Fergus, Ontario, Canada	*Associate*
P.A. Baker	Maxitrol Company, Hamilton, Ontario, Canada *Category: Producer Interest*	
J. Boros	Rheem Sales Co Inc AKA Rheem Manufacturing Co, Montgomery, Alabama, USA *Category: Producer Interest*	
T. Brennan	Natural Resources Canada, Ottawa, Ontario, Canada	*Associate*
C. Côté	Gaz Métro Inc., Montréal, Quebec, Canada *Category: User Interest*	
C. Gibbs	Guelph, Ontario, Canada *Category: General Interest*	
A. Gould	Reliance Comfort Ltd. Partnership dba Reliance Home Comfort, Cambridge, Ontario, Canada *Category: User Interest*	
E. Grzesik	Mississauga, Ontario, Canaada *Category: General Interest*	
D.N. Hird	SaskPower, Regina, Saskatchewan, Canada *Category: Government and/or Regulatory Authority*	

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

D.R. Jamieson	GHP Group Inc, Oakville, Ontario, Canada *Category: Producer Interest*	
C.E. Jorgenson	British Columbia Safety Authority (BCSA), New Westminster, British Columbia, Canada *Category: Government and/or Regulatory Authority*	
S. Katz	S. Katz and Associates Inc., North Vancouver, British Columbia, Canada	*Associate*
J.R. Marshall	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada	*Associate*
J. Melling	SaskPower, Saskatoon, Saskatchewan, Canada	*Associate*
J. Overall	Union Gas Limited, Toronto, Ontario, Canada	*Associate*
T.W. Poulin	A.O. Smith Enterprises Ltd, Fergus, Ontario, Canada *Category: Producer Interest*	
G.B. Prociw	Union Gas Limited, Chatham, Ontario, Canada *Category: User Interest*	
E. Scott	British Columbia Safety Authority (BCSA), New Westminster, British Columbia, Canada	*Associate*
B.J. Swiecicki	National Propane Gas Association, Frankfort, Illinois, USA	*Associate*
M. Thomas	Natural Resources Canada CANMET Energy, Ottawa, Ontario, Canada	*Associate*

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

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

B.J. Swiecicki	National Propane Gas Association, Frankfort, Illinois, USA *Category: Gas Supplier*	*Chair*
M.W. Wilber	Crane Engineering, Plymouth, Minnesota, USA *Category: General Interest*	*Vice-Chair*
C.W. Adams	A.O. Smith Corporation, Milwaukee, Wisconsin, USA *Category: Manufacturer*	
S.R. Caudle	Southern California Gas Company, Los Angeles, California, USA	*Alternate*
M. Deegan	Clearwater Gas System, Clearwater, Florida, USA *Category: Government and/or Regulatory Authority*	
L. DeLaura	Sempra Energy Utility, Los Angeles, California, USA *Category: Gas Supplier*	
M. Diesch	Lennox International Inc, Carrollton, Texas, USA *Category: Manufacturer*	
J.M. Emmel	Virginia Tech, Blacksburg, Virginia, USA *Category: Consumer or User Interest*	
R.R. Frazier	ATMOS Energy, Arlington, Texas, USA *Category: Gas Supplier*	

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

D.M. Jakobs	Rheem Manufacturing Company Air Conditioning Division, Fort Smith, Arkansas, USA *Category: Manfacturer*	
R.A. Jordan	Consumer Product Safety Commission, Rockville, Maryland, USA	*Alternate*
F. Myers	PVI Industries LLC, Fort Worth, Texas, USA *Category: Manfacturer*	
G.J. Potter	Cambridge Engineering, Chesterfield, Missouri, USA *Category: Manfacturer*	
J.A. Ranfone	American Gas Association Inc., Washington, D.C., USA *Category: Gas Supplier*	
N.W. Rolph	Lochinvar LLC, Lebanon, Tennessee, USA	*Alternate*
G.A. Ruzicka	Lowe's Companies, Inc, Mooresville, North Carolina, USA *Category: General Interest*	
I. Sargunam	Bloomington, Indiana, USA *Category: General Interest*	
C. Souhrada	North American Association of Food Equipment Manufacturers, Chicago, Illinois, USA *Category: Manufacturer*	
T. Stroud	Hearth Patio & Barbecue Association, Seattle, Washington, USA *Category: General Interest*	
C. Suchovsky	Burner Technology Unlimited, Inc, Walton Hills, Ohio, USA *Category: General Interest*	
D.W. Switzer	Consumer Product Safety Commission, Rockville, Maryland, USA	*Associate*

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST

H. Virgil Brownsburg, Indiana, USA
Category: Consumer or User Interest

A.B. Wagner-Sherwin St. Louis Community College,
St. Louis, Missouri, USA
Category: Consumer or User Interest

M.B. Williams Association of Home Appliance Manufacturers (AHAM),
Washington, D.C., USA
Category: Manufacturer

R. Wozniak Underwriters Laboratories Inc.,
Melville, New York, USA
Category: Research/Testing

Documents
Document Sharing Hub
Copyright CSA America, Inc.
Provided by IHS under license with CSA/AM
No reproduction or networking permitted without license from IHS
Full document details: AGA Z21.41 2014
Licensee=University of Alberta/5966844001, User=rasoulivand, amir
Not for Resale, 01/13/2015 23:19:45 MST