



ANSI Z21.17-1998
(reaffirmed 2019) •
CSA 2.7- M98
(reaffirmed 2019)

American National Standard/CSA Standard for Domestic Gas conversion Burners



Legal Notice for Standards

Canadian Standards Association and CSA America Standards, 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.



Standards Update Service

ANSI Z21.17-1998 • CSA 2.7-M98 November 1998

Title: *American National Standard/CSA Standard for Domestic Gas conversion Burners*

To register for e-mail notification about any updates to this publication

- go to store.csagroup.org
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2011281**.

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

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

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 Group's 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 Group's 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.

For further information on CSA Group services, write to
CSA Group
178 Rexdale Boulevard, Toronto, Ontario,
Canada M9W 1R3

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.

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

AMERICAN NATIONAL STANDARD
ANSI Z21.17-1998

CSA STANDARD
CSA 2.7-M98

DOMESTIC GAS CONVERSION BURNERS

First Edition - 1998

This Standard is based on
the Standards for

Domestic Gas Conversion Burners, ANSI Z21.17-1991
Addenda ANSI Z21.17a-1993
ANSI Z21.17b-1994

and

Domestic Gas Conversion Burners, CGA 2.7-M86
January 1989 (R1996)



November 10, 1998
American National Standards Institute, Inc.

APPROVED

IGAC

September 21, 1998
Interprovincial Gas Advisory Council
Effective in Canada April 1, 2000

Prepared by

INTERNATIONAL APPROVAL SERVICES
A Division of CSA
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

and

CANADIAN STANDARDS ASSOCIATION
178 Rexdale Boulevard
Etobicoke, Ontario
Canada M9W 1R3

Published - November 1998

Copyright © 1998

Canadian Standards Association

Permission is granted to republish material herein in laws or ordinances, and in regulations, administrative orders, or similar documents issued by public authorities. Those desiring permission for other republication should consult the Canadian Standards Association at the address noted above.

Copyright © 1998

International Approval Services

Permission is granted to republish material herein in laws or ordinances, and in regulations, administrative orders, or similar documents issued by public authorities. Those desiring permission for other republication should consult International Approval Services at the address noted above.

PREFACE

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of vented gas fireplace heaters. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on vented gas fireplace heaters 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 vented gas fireplace heaters, the safety construction and performance of which may exceed the various provisions specified herein. In its preparation, 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 Z21/83, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, or the Chairman of (Interim CSA) Gas Equipment Standards Steering Committee, 178 Rexdale Boulevard, Etobicoke, Ontario, Canada M9W 1R3.

Safe and satisfactory operation of vented gas fireplace heaters 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*; the *Natural Gas Installation Code, CAN/CGA-B149.1*; the *Propane Installation Code, CAN/CGA-B149.2*.

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.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute, Inc., require that action be taken to reaffirm, revise or withdraw this standard no later than five (5) years from the date of approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, Inc., 11 West 42nd Street, New York, N.Y. 10036, (212) 642-4900.

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 Standards Committee and the Interprovincial Gas Advisory Council normally stipulate an effective date for the standard.

HISTORY OF THE DEVELOPMENT OF THE STANDARD FOR DOMESTIC GAS CONVERSION BURNERS

(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.

At its August 22, 1995 meeting, the Z21 Subcommittee on Standards for Domestic Gas Conversion Burners reviewed a draft by-national standard for gas conversion burners which was subsequently distributed for review and comment December 1995.

The first draft harmonized standard was based on current coverage from the American National Standard for Domestic Gas Conversion Burners, ANSI Z21.17-1991, Addenda ANSI Z21.17a-1993 and Addenda ANSI Z21.17b-1994, plus the National Standard of Canada for Domestic Gas Conversion Burners, CAN/CGA 2.7-M86.

Following reconsideration and modification of the proposed draft standard, in light of comments received, the domestic gas conversion burner subcommittee by letter ballot dated November 15, 1997 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 conversion burners, as modified by the subcommittee, was approved by the Z21/83 Committee by letter ballot dated February 26, 1998, and by the (Interim CSA) Standards Steering Committee by letter ballot dated August 6, 1998.

The first edition of the American National Standard/CSA Standard for Domestic Gas Conversion Burners was approved by the Canadian Interprovincial Gas Advisory Council on September 21, 1998, and by the American National Standards Institute, Inc., on November 10, 1998

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

ANSI Z21.17 • CSA 2.7-M98

INTERPROVINCIAL GAS ADVISORY COUNCIL

(September, 1998)

E.K. Taylor	(Chairman)	Ontario Technical Standards and Safety Authority
G. Williams	(Vice-Chairman)	SaskPower Corporation
B.E. Alberts	(Alternate Member)	SaskPower Corporation
D. Eastman		Newfoundland Government Service Centre
S. Katz		B.C. Ministry of Municipal Affairs
A. Leclerc	(Alternate Member)	Regie du batiment du Quebec
W.C. LaRose	(Alternate Member)	Alberta Labour
A. Mackay	(Alternate Member)	Government of the Northwest Territories
E. Marotta		Human Resources Development Canada
I.W. Mault		Manitoba Labour
R. McRae		Government of the Northwest Territories
W.G. Mitchell	(Alternate Member)	Human Resources Development
L. Osland	(Alternate Member)	Government of the Yukon Territory
M. O'Hearn		N.B. Dept.of Advanced Education & Labour
S. Pilon	(Alternate Member)	Nova Scotia Department of Labour
B. Reid		P.E.I. Department of Labour
I. Svorinich	(Alternate Member)	B.C. Ministry of Municipal Affairs
J. Samson		Regie du batiment du Quebec
T. Scott	(Alternate Member)	Technical Standards & Safety
D.C. Stewart		Nova Scotia Department of Labour
A. Shaw	(Alternate Member)	N.B. Dept.of Advanced Education & Labour
D. Warriner	(Alternate Member)	Manitoba Labour
D. Young		Government of Yukon Territory
R. Thurton	(Secretary)	Canadian Standards Association

ACCREDITED STANDARDS COMMITTEE Z21/83

—————•—————
DARYL L. HOSLER, Chairman

JAMES M. JONES, Vice Chairman

ALLEN J. CALLAHAN, Administrative Secretary (Non-Voting)

**REPRESENTING AIR-CONDITIONING
CONTRACTORS OF AMERICA:**

James P. Norris

**AMERICAN ASSOCIATION OF FAMILY AND
CONSUMER SERVICE:**

Frances Gailey

**REPRESENTING AMERICAN BOILER
MANUFACTURERS ASSOCIATION:**

Dan Christenson

**REPRESENTING AMERICAN GAS
ASSOCIATION:**

**Craig Christensen
W. Roselle Hamlett
Daryl Hosler
Robert A. Hauserman
Jack D. Rea
Donald L. Shrader
Matthew W. Wilber**

AMERICAN PUBLIC GAS ASSOCIATION:

Robert S. Cave

**ASSOCIATION OF HOME APPLIANCE
MANUFACTURERS:**

**Earl T. Rhinehart
Tom Riley (Alternate)**

CANADIAN GAS ASSOCIATION:

James M. Jones

CONSUMERS UNION:

George A. Papritz

FACTORY MUTUAL SYSTEM:

Armand V. Brandao

**REPRESENTING GAS APPLIANCE
MANUFACTURERS ASSOCIATION, INC.:**

**Charles W. Adams
Lorne B. Alden
Daniel J. Canclini
Albert B. Chamberlain
Jay R. Katchka
Gregory Lynch
Norman E. Mattson
Robert Mechling
James Mullen
Gary J. Potter
Drew Smith
Otto Vago (Alternate)
Daniel P. Werner**

GENERAL SERVICES ADMINISTRATION:

**Bruce Geren
Lee Harding (Alternate)**

INDIVIDUAL MEMBER:

R. Michael Martin

**INDUSTRIAL HEATING EQUIPMENT
ASSOCIATION:**

Robert Syring

**INTERNATIONAL ASSOCIATION OF
PLUMBING AND MECHANICAL OFFICIALS:**

Jerome Hendrickson

**NATIONAL ASSOCIATION OF PLUMBING,
HEATING, COOLING CONTRACTORS:**

**Terrel D. Moseley
Robert Kordulak (Alternate)
Allen Inlow (Alternate)**

**NATIONAL ASSOCIATION OF PROFESSIONAL
ENGINEERS:**

James F. Schmid

Accredited Standards Committee Z21 Membership

**REPRESENTING NATIONAL ELECTRICAL
MANUFACTURERS ASSOCIATION:**

**G. E. Willert
Alan R. Anderson (Alternate)
J. E. Martin (Alternate)**

**REPRESENTING NATIONAL FIRE
PROTECTION ASSOCIATION:**

Theodore C. Lemoff

**REPRESENTING NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY, U.S.
DEPARTMENT OF COMMERCE:**

Walter G. Leight

**REPRESENTING NATIONAL PROPANE GAS
ASSOCIATION:**

Bruce J. Swiecicki

**REPRESENTING NAVAL FACILITIES
ENGINEERING COMMAND, U.S.
DEPARTMENT OF THE NAVY:**

**Danny C. Mui
Thomas J. Harris (Alternate)**

UNDERWRITERS LABORATORIES:

Harvey Jones

**U.S. CONSUMER PRODUCT SAFETY
COMMISSION:**

Donald W. Switzer

**U.S. DEPARTMENT OF DEFENSE, OFFICE OF
THE ASSISTANT SECRETARY OF DEFENSE:**

Gregory E. Saunders

**U.S. DEPARTMENT OF HOUSING AND
URBAN DEVELOPMENT:**

Victor J. Ferrante

**INTERIM CSA
STANDARDS STEERING COMMITTEE
ON
GAS APPLIANCES AND
RELATED ACCESSORIES**

(August, 1998)

**J.M. Jones
B.E. Alberts
L. Bellini
E. Grzesik**

(Chairman)
(Alternate Member)

**C. Gibbs
A. Hindmarch
D.L. Hosler
G.T. Hooker
E.J. Hurd
S. Katz
T.C. Lemoff
M. Lio
L. Lightfoot
J. Marshall
T.L. Smith
R.G. Shorten
T. Thom
E.K. Taylor**

(Alternate Member)
(Alternate Member)
(Alternate Member)
(Alternate Member)

G.L. Williams

**Union Gas Limited
B.C. Ministry of Municipal Affairs
Gaz Metropolitan
Ontario Ministry of Energy, Science &
Technology
Consumers' Association of Canada
Galaxy Gas Products
Southern California Gas Company
Union Gas Limited
B.C. Ministry of Municipal Affairs
B.C. Ministry of Municipal Affairs
National Fire Protection Association
Habitechnica/Cons.Assoc.of Canada
Honeywell Limited
Consumers Gas
GSW Water Heating Company
Ron Shorten Associates
Canadian Standards Association
MCCR (Ontario) Technical Standards & Safety
Authority
SaskPower Corporation**

**SUBCOMMITTEE ON STANDARDS FOR
DOMESTIC GAS CONVERSION BURNERS**

TERRANCE C. SLABY, Chairman

REPRESENTING GAS COMPANIES:

Ed Angelone

REPRESENTING MANUFACTURERS:

**Lew Boyce
Richard A. Cunha
Gordon R. Dauley
Jay R. Katchka
Terrance C. Slaby**

CONTENTS

	Page
PART I. CONSTRUCTION	
1.1	Scope 1
1.2	Assembly 1
1.3	Air Duct Box 2
1.4	Combustion Air Controlling Means 3
1.5	Burners 3
1.6	Flame Spreaders 4
1.7	Primary Air Adjustment Means 5
1.8	Orifices and Orifice Fittings 5
1.9	Automatic Gas Ignition Systems and Pilot Filters 6
1.10	Manual Gas Valves 9
1.11	Gas Supply Lines 9
1.12	Gas Appliance Pressure Regulators 10
1.13	Automatic Valves 11
1.14	Bleeds and Vents 11
1.15	Electrical Equipment and Wiring 12
1.16	Motors and Blowers 12
1.17	Automatic Gas Shutoff Devices 12
1.18	Bolts and Screws 13
1.19	Instructions 13
1.20	Marking 17
1.21	Field Convertibility 20
 PART II. PERFORMANCE	
2.1	General 21
2.2	Test Gases 22
2.3	Test Pressures and Burner Adjustments 23
2.4	Combustion 24
2.5	Burner Operating Characteristics 25
2.6	Pilot Operating Characteristics 27
2.7	Pilot Burners and Safety Shutoff Devices 28
2.8	Direct Ignition Systems 32
2.9	Flame Spreader Temperatures 33
2.10	Manifold and Control Assembly Capacity 34
2.11	Draft Hoods 34
2.12	Safety Circuit Analysis 37
2.13	Marking Material Adhesion and Legibility 38
 EXHIBIT A. ITEMS UNIQUE TO THE U.S.A. 39	
EXHIBIT B. ITEMS UNIQUE TO CANADA 47	
EXHIBIT C. LIST OF REFERENCE STANDARDS 50	
 TABLES.	
Table I.	Minimum Acceptable Wall Thickness for Non-Ferrous Semi-Rigid Tubing 54
Table II.	Maximum Tubing and Fitting Temperatures 54
Table III.	Characteristics of Test Gases 54
Table IV.	Inlet Test Pressures 55

Contents (Continued)

	Page
Table V. Maximum Safety Control Timings	55
Table VI. Maximum Flame Spreader Temperatures	56
Table A-I	56
Table A-II. Minimum Average Thickness of Sheet-Metal Junction Boxes	57
Table A-III. Insulation Thickness of Factory Wiring Exposed in Air Duct Box	58
Table A-IV. Electrical Clearances, Inch (mm)	59
Table A-V. Maximum Allowable Rise Above Room Temperature for Various Component Parts	60
Table A-VI. Maximum Allowable Motor Winding Temperatures, °F (°C)	61

FIGURES.

Figure 1. Diagrams of Acceptable Control Systems Having Pilot Burners	63
Figure 2. Detail of Test Furnace Used for Testing Domestic Gas Conversion Burners	64
Figure 3. Detail of Round Test Boiler Used for Testing Domestic Gas Conversion Burners	64
Figure 4. Detail of Rectangular Test Boiler Used for Testing Domestic Gas Conversion Burners	64
Figure 5. Detail of Test Furnace Used for Testing Inshot Type Domestic Gas Conversion Burners	64
Figure 6. Match Test for Checking Draft When Adjusting Neutral Pressure Point	65

PART III. MANUFACTURING AND PRODUCTION TESTS	66
---	-----------

PART IV. DEFINITIONS	67
-----------------------------------	-----------

APPENDIX A. PERTINENT REFERENCES TO ANSI Y14.15	76
--	-----------

APPENDIX B. WIRE COLOR DESIGNATIONS	77
--	-----------

APPENDIX C. RECOMMENDED WIRE COLOR USAGE	78
---	-----------

APPENDIX D. PREFERRED GRAPHIC SYMBOLS OF COMMONLY USED ITEMS, EXTRACTED FROM ANSI/IEEE STANDARD 315, GRAPHIC SYMBOLS FOR ELECTRICAL AND ELECTRONICS DIAGRAMS, AND ABBREVIATIONS FOR THESE ITEMS	79
--	-----------

APPENDIX E. SAMPLE FAILURE MODES AND EFFECTS ANALYSIS FOR COMPONENT MISWIRING	81
--	-----------

APPENDIX F. TABLE OF CONVERSION FACTORS	82
--	-----------

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. (*ASTM E380* 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. 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 DOMESTIC GAS CONVERSION BURNERS**

**PART I
CONSTRUCTION**

1.1 SCOPE

1.1.1 This standard applies to newly produced domestic gas conversion burners constructed entirely of new, unused parts and materials and having input ratings at normal inlet test pressure of not more than 400,000 Btu per hour (117 228 W):

- 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 conversion burners for use with the above-mentioned gases is covered under Part I.

The performance of conversion burners for use with the above-mentioned gases is covered under Part II.

1.1.2 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.

1.1.3 Exhibit A contains provisions that are unique to the United States.

1.1.4 Exhibit B contains provisions that are unique to Canada.

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

1.1.6 All references to “psi” throughout this standard are to be considered gage pressures, unless otherwise specified.

1.2 ASSEMBLY

1.2.1 The general assembly of burners and accessories shall be of a neat and workmanlike character with all parts well fitted.