CSA Group

ANSI LC 4-2012
CSA 6.32-2012

Press-connect metallic fittings for use in fuel gas distibution systems

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AMERICAN NATIONAL STANDARD
ANSI LC 4-2012

CSA 6.32-2012

Second Edition – 2012
This Standard is based on the Standard for
Press-connect copper and copper alloy fittings for
use in fuel gas distribution systems
ANSI LC 4-2007 • CSA 6.32-2007

APPROVED

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Preface

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of press-connect metallic fittings for use in fuel gas distribution systems. It is the result of years of experience in the manufacturer, testing, installation, maintenance, inspection of research on press-connect metallic fittings. There are risks of injury to persons inherent within appliances and accessories that, if completely eliminated, would defeat the utility of the appliance or accessory. The provisions in this standard are intended to help reduce such risks while retaining the normal operation of the appliance or accessory.

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 press-connect metallic fittings for use in fuel gas distribution systems, the safety, construction and performance of which may exceed the various provisions specified herein. In is preparation, recognition has been given to the 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 CSA Group, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, or the Chairman of the CSA Group Gas Equipment Standards Technical Committee, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.

Safe and satisfactory operation of LC 4 Press Connect Metallic Fittings depends to a great extent upon its proper installation, use and maintenance. They 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.

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History Of The Development Of Standards For Press-connect metallic fittings for use in fuel gas piping systems

(This History is informative and is not part of the standard.)

In 2006, the Copper Development Association (CDI) asked CSA America, Inc. to initiate development of a Standard for Press Connect Copper and Copper Alloy Fittings for Use in Fuel Gas Distribution Systems.

Press connect copper and copper alloy fittings systems allow use of flexible, copper tube in conjunction with elevated gas pressures [up to 125 psi (862 kPa)]. Press connect fittings used in conjunction with copper tube, offer speed of installation, elimination of the need for precise on-site measuring, cutting and threading of piping sections, and elimination of the need for certain fittings such as elbows, tees and couplings.

As interest in using press connect copper and copper alloy fittings increased, there was some reluctance by local code authorities to accept systems not covered by a nationally recognized safety standard. Consequently, CSA America, Inc., in 2006, initiated formation of the LC 4 Technical Committee (TC) to oversee development of an American National Standard for Press Connect Copper and Copper Alloy Fittings for Use in Fuel Gas Distribution Systems.

The Technical Committee (TC) and its working group developing draft coverage, each met several times between January, 2006 and August, 2006. The first edition of the harmonized Z21/CSA Standard for Press-Connect Copper and Copper Alloy Fittings for Use in Fuel Gas Piping Systems was approved by the Canadian Interprovincial Gas Advisory Council in February, 2007 and by the American National Standards Institute in January, 2007.

In 2008, a recommendation was approved to assign the LC 4 standard to the Z21/83 Technical Committee, and reassign LC 4 Technical Committee as a Technical Advisory Group under the Z21/83 Technical Committee.

In 2010, the Z21/83 Technical Committee approved a proposal to expand the LC 4 standard's scope to include requirements for fittings and pipe/tube constructed of metallic materials other than copper and copper alloys. The Z21/CSA Joint Technical Advisory Group on Standards for Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Piping Systems met several times between September, 2010 and October, 2012. The CSA Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories approved the final draft of the standard on July 10, 2012. The Z21/83 Technical Committee approved the final draft of the standard on September 18, 2012 for submittal to the American National Standards Institute for approval.

This, the second edition of the harmonized Z21/CSA Standard for Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems, was approved by the Canadian Interprovincial Gas Advisory Council on December 3, 2012 and by the American National Standards Institute on October 4, 2012.

The previous edition of the Standard for Press-Connect Copper and Copper Alloy Fittings for Use in Fuel Gas Piping Systems approved by the Interprovincial Gas Advisory Council and American National Standard Institute, Inc. is as follows:

LC 4-2007 • CSA 6.32-2007

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

ANSI LC 4-2012 • CSA 6.32-2012.

Note:This, the second edition of LC 4 • CSA 6.32 incorporates changes to the 2007 edition of LC 4 • CSA 6.32. Changes are denoted by a vertical line in the margin.

LC 4-2012 • CSA 6.32-2012

Press-connect metallic fittings for use in fuel gas piping systems

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Contents

Interprovincial Gas Advisory Council 2

Z21/83 Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories 4

CSA Technical Committee on Gas Appliances and Related Accessories 7

Technical Advisory Group on Standards for Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems 8

1 Scope 9

2 Referenced standards 9

3 Definitions 10

4 Construction 11
- 4.1 Materials 11
- 4.2 General 13
- 4.3 Valves 13
- 4.4 Instructions 14
- 4.5 Marking 14

5 Performance 15
- 5.1 General 15
- 5.2 Leakage 16
- 5.3 Pressure capacity 16
- 5.4 Axial strength 16
- 5.5 Torsion 17
- 5.6 Bending strength 17
- 5.7 Impact strength 17
- 5.8 Resistance to loosening 18
- 5.9 Resistance to extreme temperature cycles 19
- 5.10 Resistance to freezing and thawing 20
- 5.11 Susceptibility of copper and copper alloy assemblies to stress corrosion cracking 20
- 5.12 Exposure to elevated temperatures 20
- 5.13 Non-metallic materials 21

6 Manufacturing and production tests 22

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ANSI LC 4-2012 • CSA 6.32-2012
Press-connect metallic fittings for use in fuel gas distibution systems

1 Scope

1.1
This standard applies to metallic (copper, steel and stainless steel) press-connect type fittings, and valves (hereafter referred to as fittings unless otherwise specified) for use with fuel gas systems intended for installation above ground, below ground, indoors and outdoors.

1.2
This standard applies to fuel gas systems rated for operating pressures not exceeding 125 psi (862 kPa).

1.3
This standard applies to fittings intended for use with fuel gas systems $^{3}/_{8}$ inch through 4 inch nominal size.

1.4
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. This document is based on yard/pound quantities with SI equivalents provided as a guide for making metric conversions.

1.5
Fittings and other components complying with the provisions of this standard shall be considered as having an ambient temperature range of minus 40°F (–40 °C) to 180°F (82.2°C).

1.6
This standard includes requirements to establish the suitability for use in concealed locations. (See Clause 3, Definitions)

2 Referenced standards

AMERICAN GAS ASSOCIATION
ANSI Z223.1/NFPA 54, National Fuel Gas Code

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASME B16.44, Manually Operated Metallic Gas Valves for use in Aboveground Piping Systems up to 5 PSI

ASME B16.33, Manually Operated Metallic Gas Valves for use in Gas Piping Systems up to 125 PSI

ASME B16.22, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

ASME B1.20.1, Pipe Threads, General Purpose, Inch

ASTM INTERNATIONAL
ASTM B16/B16M-05, Standard Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines