

American National Standard/
CSA Standard for
**Portable Type
Gas Camp Lights**

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AMERICAN NATIONAL STANDARD
ANSI Z21.73-2011

CSA STANDARD
CSA 11.1-2011

Second Edition - 2011

This Standard is based on the Standard for
Portable Type Gas Camp Lights

ANSI Z21.73-2000 • CSA 11.1-2000,
Addenda ANSI Z21.73a-2001 • CSA 11.1a-2001, and
ANSI Z21.73b-2002 • CSA 11.1b-2002

APPROVED



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Preface

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of portable type gas camp lights. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on portable type gas camp lights. 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 portable type gas camp lights, 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 CSA America, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, or Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.

Safe and satisfactory operation of portable type gas camp lights 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*; 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 levels. 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 Portable Type Camp Lights

(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 gasfired 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.

The draft harmonized standard was based on current coverage from the American National Standard for Portable Camp Lanterns for Use with Propane Gas, Z21.73-1982, and the Canadian Standard for Portable Type Gas Camp Lights, CAN1-11.1-M79. On September 19, 1997 the Z21/(Interim CSA) Joint Gas Refrigerators and Portable Camping Equipment Subcommittee reviewed by letter ballot the first draft harmonized portable type gas camp lights standard. At its February 45, 1998 meeting, in light of comments received, the joint subcommittee agreed to adopt the revised draft standard for public review and comment. The revised draft camp lights standard was distributed for an industrial review during June 1998.

At its November 1998 meeting, the subcommittee assigned a task group to review the comments received and to revise the draft standard. At its June 1999 meeting, the joint subcommittee reviewed the revised draft standard prepared by the camping equipment task group and agreed to distribute substantive changes to the camp lights draft standard for another industry review. The substantive revisions to the draft standard were distributed for an industrial review during September 1999.

At its January 25-26, 2000 meeting, following reconsideration of the proposed draft standard for portable type gas camp lights, the joint gas refrigerators and portable camping equipment subcommittee recommended the proposed draft standard to the Accredited Standards Committee Z21/83 and the (Interim CSA) Standards Steering Committee for approval.

The proposed draft of the harmonized standard for portable type gas camp lights was approved by the Z21/83 Committee on April 13, 2000, and by the CSA Technical Committee by letter ballot dated March 10, 2000.

The first edition of the harmonized American National Standard • CSA Standard for Portable Type Gas Camp Lights was approved by the Canadian Interprovincial Gas Advisory Council (IGAC), on June 1, 2000, and by the American National Standards Institute, Inc. (ANSI), on September 14, 2000.

This, the second edition of the harmonized American National Standard/CSA Standard for Portable Type Gas Camp Lights was approved by the IGAC on August 23, 2011 and by ANSI on March 17, 2011.

The previous editions of the Standard for Portable Type Gas Camp Lights, and addenda thereto, approved by the IGAC and ANSI are as follows:

ANSI Z21.73-2000 • CSA 11.1 2000
ANSI Z21.73a-2001 • CSA 11.1a 2001
ANSI Z21.73b-2002 • CSA 11.1b 2002

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

ANSI Z21.73-2011 • CSA 11.1 2011

Note: This edition of Z21.73 • CSA 11.1 incorporates changes to Z21.73-2000 • CSA 11.1-2000 and addenda thereto. Changes 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 Portable Type Gas Camp Lights

Part I: Construction

1.1 Scope

1.1.1

This standard applies to portable type gas camp lights for use:

- a. With propane, butane, liquefied petroleum gas and any combination thereof; and
- b. Outdoors only.

1.1.2

Lights and components employing materials or having forms of construction differing from those detailed in these provisions may be examined and tested according to the intent of the provisions and if found to be satisfactorily equivalent, may be given recognition.

1.1.3

This standard applies to lights constructed entirely of new, unused parts.

1.1.4

All references to psi throughout this standard are to be considered gauge pressures unless otherwise specified.

1.1.5

All accessories recommended by the manufacturer for use with appliances certified to this standard shall be supplied and evaluated with the appliance.

1.1.6

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, except as noted in 1.11, Instructions, and 1.12.4.

1.1.7

Exhibit A, Items Unique to Canada, contains provisions that are unique to Canada.

1.1.8

Exhibit B, List of Referenced Standards, contains a list of standards specifically referenced in this standard, and sources from which these standards may be obtained.

1.2 General Construction And Assembly

1.2.1

Construction features and the quality of the workmanship shall be in conformity with acceptable engineering practices.

1.2.2

A gas light shall be easy to operate without the danger of burning hands or breaking the mantle, when using normal precautions. The light shall be easy to handle without the danger of cutting hands, when using normal precautions.

1.2.3

Bolts, nuts, and screws, except sheet-metal screws, used in the general assembly of the light shall have threads conforming to the *Standard for Unified Inch Screw Threads (UN and UNR Thread Form)*, ANSI/ASME B1.1 or the *Standard for Metric Screw Threads - M Profile*, ANSI/ASME B1.13M.

1.2.4

Pipe threads shall conform with the *Standard for Pipe Threads, General Purpose (Inch)*, ANSI/ASME B1.20.1.

1.2.5

The light shall be of such construction as to be secure against displacement, distortion, warping, or other damage, and shall be supported to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage so as to assure continued compliance with these provisions. Such parts not permanently secured shall be designed so that they cannot be readily incorrectly assembled and cannot be improperly located or misaligned in removing or replacing during use, cleaning or other servicing.

1.2.6

If any indication is observed during the tests prescribed herein that the appliance will not continue to meet these provisions in normal usage, such supplementary tests shall be conducted that will provide safe and satisfactory service.

1.2.7

In submitting an appliance for test, the manufacturer must furnish a list of manufacturing tolerances applicable thereto and may have the appliance tested for compliance with these provisions in both extremes of tolerances specified.

1.2.8

Fasteners shall be corrosion-resistant and suitable for the particular application.

1.3 Stability

A light shall either be constructed to comply with 2.9, Stability, or it shall be fitted with a tip-over device that shall cause a complete shut-off of the gas, and shall require a manual reset function to restart the gas supply.

1.4 Materials

1.4.1

Metallic structural parts shall have a minimum thickness of 0.0195 in (0.4953 mm) or alternatively constructed of materials that have known and demonstrable properties that provide the superior strength and corrosion resistance required for good design.

1.4.2

Lights shall have a corrosion resistant finish.

1.4.3

Thread sealing compounds used in making joints shall be listed by a nationally recognized testing agency as suitable for use with propane and butane.

1.4.4

Lubricants used in valves and controls shall be of a type suitable for propane and butane service, and capable of withstanding the service conditions to which the lubricants are subjected.

1.4.5

Running threads shall not be used.

1.4.6

Resilient materials where used, shall be compatible with propane and butane at operating temperatures.

1.4.7

Construction materials shall be suitable for the fuel gas and temperature to which they will normally be exposed.

1.4.8

The globe shall not crack, craze nor break when subjected to the test specified in 2.7, Rain Test.

1.4.9

All nonmetallic, internal parts of gas controls shall not crack, harden, swell more than 25 percent, shrink more than 1 percent, lose more than 10 percent weight, or otherwise deteriorate sufficiently to permit leakage or cause malfunction when:

- a. Parts made of a compound affected by aging are exposed to air for 70 hours at 212°F (100°C); and
- b. Parts are immersed for 70 hours in normal hexane.

1.4.10

Aluminum tubing shall not be used as a gas conduit.

1.4.11

Piping employed as gas conduit shall comply with *Standard for Welded and Seamless Wrought Steel Pipe, ANSI/ASME B36.10M*, or the *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, ASTM A53*.

1.5 Burners

1.5.1

Burners or burner heads shall be designed for easy maintenance and cleaning, without the use of special tools.

1.5.2

The design and materials used in the construction of the burner shall be such that the burner will not sag, distort, melt, exhibit appreciable corrosion or damage to any protective coating sufficient to expose the base metal, or show leakage of gas during any of the tests specified herein.

1.5.3

Adjustable primary air control means shall not be used.

1.6 Orifices And Orifice Fittings

1.6.1

Only fixed orifices shall be provided.

1.6.2

Orifice fittings shall be positively secured to prevent misalignment.

1.6.3

Orifice spuds and orifice spud holders shall be made of materials having melting points of not less than 1000°F (538°C).

1.7 Manually Operated Gas Valves

1.7.1

Gas-fired lights shall be equipped with a manually operated gas valve on the light.

1.7.2

The design of handles for taper plug and resilient seal type valves shall be such that the marking of the "off" position is clearly and unmistakably indicated.

1.7.3

On needle type valves the direction of the open to closed rotation shall be clearly and unmistakably indicated to the user.

1.7.4

The marking specified in 1.7.2 and 1.7.3 shall be Class I, II, or IIIA as specified in 1.12.1.

1.7.5

All valves shall close in the clockwise rotation.

1.7.6

Needle valves shall be so designed that it is impossible to withdraw completely the valve stem in the normal operation of the valve.

1.7.7

Manually operated gas valves shall be investigated for seat and external leakage at the following conditions:

- a. Normal operating pressure at 0°F (-18°C), 23 psi (159 kPa) and 140°F (60°C), 290 psi (2000 kPa) when for use with unregulated propane;
- b. Normal operating pressure at 40°F (4.4°C), 3 psi (21 kPa) and 140°F (60°C), 78 psi (538 kPa) when for use with unregulated butane;
- c. Normal operating pressure at 0°F (-18°C), 40°F (4.4°C) and 140°F (60°C) when for use with unregulated propane/butane mixture, the pressures to be determined by the testing agency; and
- d. When regulated, 20 percent and 150 percent of the normal regulator outlet pressure setting at the above ambient temperatures (as applicable for the fuel).

The leakage shall not exceed 200 cm³/h when corrected to standard conditions.

1.7.8

Manually operated gas valve bodies shall have a burst strength of 550 psi (3792 kPa) at 70°F (21.1°C).