

STANDARD INFORMATION

Standard Number: ANSI Z21.72 / CSA 11.2

Standard Name: Portable Type Gas Camp Stoves

Standard Edition and Issue Date: 4th Edition dated November 1, 2019

Date of Revision: November 1, 2019

Date of Previous Revision of Standard: 3rd Edition dated January 1, 2016

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **December 1, 2021**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revise requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revise requirements.

Overview of Changes:

- addition of requirement to address operating in environments with low operating temperatures
- addition of requirement for remote cylinders using compressed gas
- addition of requirement to address testing with blended fuels
- addition of requirement for minimum melting temperature for valve materials
- addition of requirement to address testing with blended fuels
- revision to maximum input for portable type gas stoves

Specific details of new/revise requirements are found in table below.

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Client Action:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revise paragraphs noted in the attached or explain why these new/revise requirements do not apply to your product (s).

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i>
4	Info	Construction
4.1	Info	General construction and assembly
		<i>New clause added;</i>
4.1.9		A part threaded into the fuel-handling system of the appliance at any point, such as a valve stem or closure plug, shall be constructed to prevent removal by manual means or by using ordinary tools.
		<i>New clause added;</i>
4.1.10		Valve bodies, regulators, casings, and other parts intended to maintain gas tightness to the atmosphere shall be made of materials having a melting point of not less than 800°F (427 °C). Shaft seals, gaskets, and lubricants shall be exempt from this Clause.
		<i>New clause added;</i>
4.1.11		Disposable butane fuel cylinder(s) shall be specified by the manufacturer and tested with the appliance for listing. The appliance shall be marked with the model number of the cylinder found to be acceptable and recommended by the manufacturer along with the instructions. If the manufacturer wishes that more than one model of cylinder be specified for use, each model number of cylinders shall be evaluated with the listed appliance.
		<i>New clause added;</i>
		Disposable butane fuel cylinders
4.1.12		a) A disposable butane gas fuel cylinder(s) supplied with a camp stove, or recommended for use with an appliance in the markings and operation instructions, and tested with the cooking appliance, shall comply with the Department of Transportation (DOT) 2P, 2Q or Special Permitted requirements as evidenced by appropriate markings on the cylinder. b) A disposable 2P and 2Q butane gas fuel cylinder(s) shall comply with the requirements specified in the Standard for Nonrefillable (Disposable) Type Metal Container Assemblies for Butane, UL 147B. c) An appliance employing disposable butane cylinders shall have provision for no more than two fuel cylinders. If more than one fuel cylinder is used, each cylinder shall be connected to and serve a separate burner, and the fuel cylinders shall not be joined together with a manifold. d) An appliance shall be constructed to provide secure attachment of the disposable fuel cylinder to the appliance.



CLAUSE	VERDICT	COMMENT
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4.7 Info **Gas pressure regulators**

New clause added;

For propane stoves, the inlet of the pressure regulation shall be fitted for attachment to:

4.7.7

- a) a CGA No. 791 Cylinder Connection Device and complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25, or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL 2061;
 - b) a CGA No. 810 Cylinder Connection Device and complying with the Standard for Cylinder Connection Devices, ANSI Z21.81 • CSA 6.25, or the Standard for Adapters and Cylinder Connection Devices for Portable LP-Gas Cylinder Assemblies, UL 2061; or
 - c) a CGA No. 600 Cylinder Connection Device as specified in the Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI/CGA-V-1.
- For appliances for use with butane and/or propane/butane mixtures, the cylinder connection need not be of the Type No. 600 if the unit is for use with an UL 147B cylinder specified by the manufacturer of the appliance.

Warning information has changed, see updated warning below:

4.13

<p>⚠ WARNING</p> <p>FIRE OR EXPLOSION HAZARD</p> <p>If you smell gas:</p> <ol style="list-style-type: none">1. Do not attempt to light appliance.2. Make sure appliance is in the off position.3. Extinguish any nearby flame(s).4. Shut off cylinder fuel supply valve if so equipped, or if equipped with a disposable fuel cylinder, disconnect cylinder.5. Leave the area immediately.6. Allow gas to dissipate 5 minutes.7. If gas smell has dissipated from the area, of the appliance, and fuel supply, follow gas connection procedures.8. If you smell gas again, follow steps 1–6 and have appliance serviced. <p>Failure to follow these instructions could result in fire or explosion, which could cause property damage, personal injury, or death.</p>

The letters used for the boxed warnings above shall be boldfaced type having a minimum uppercase letter height of 0.120 in (3.05 mm). The minimum vertical spacing between lines of type shall be 0.046 in (1.17 mm). * Lowercase letters shall be compatible with the uppercase letter size specification.

* This letter height and line spacing correspond to 12-point type.



CLAUSE	VERDICT	COMMENT
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These instructions shall include:

a) For all stoves:

v) directions to explain that if a removable drip pan and grate are provided with an appliance employing a 2P or 2Q disposable butane canister located inside the body of the appliance, the drip pan and grate must be used and positioned in the proper position; that the hazard to the user and property if the parts are not properly used and positioned may be a fire and/or explosion; and a pictorial representation of the proper position and improper position shall also be included;

xii) The butane fuel container shall comply with DOT 2P or 2Q requirements and shall be listed to the Standard for Nonrefillable (Disposable) Type Metal Container Assemblies for Butane, UL 147B.

e) “Do not leave ~~it~~ this appliance unattended while the appliance is in operation; keep children and pets away from the appliance at all times.”

f) The minimum environmental temperature for safe storage and operation of the appliance shall be stated. The suitability of this statement shall be examined by the testing agency with respect to the listing of the gas carrying components utilized.

4.14	Info	Marking
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Gas stoves shall bear a Class IIIB marking on which is clearly and permanently marked with:

4.14.3

i) identification of this Standard by indicating the edition of the standard with the following marking: “CSA/ANSI Z21.72 • CSA 11.2 (year) Camp Stove”; and

Warning information has changed, see updated warning below:

4.14.4

 DANGER	CARBON MONOXIDE HAZARD
	<p>This appliance can produce carbon monoxide which is poisonous and has no odor.</p> <p>Using it in an enclosed space can kill you.</p> <p>Never use this appliance in an enclosed space such as a camper, tent, car or home.</p>

New clause added;

4.14.7

For propane/butane mixtures and butane fuel, canisters shall be specified by the manufacturer and tested with the appliance. The appliance and instructions shall be marked with the model number of the canister recommended by the manufacturer and placed in the instructions.



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
4.14.8		If a removable, assembled, one-piece drip pan and grate is provided with an appliance employing a 2P or 2Q disposable butane canister, which is located inside the body of the appliance and meets all three specifications of Clause 5.12.1, a Class IIIA label shall be attached to the underside of the drip pan that pictorially shows the correct and incorrect placement of the assembly on the appliance. The incorrect assembly shall have an "X" or line through the assembly indicating it is incorrectly placed. The plate shall include the "DANGER" and "!" marks. The minimum size print shall have a height of 0.012 in (3.05 mm).
		<i>New clause added;</i>
4.14.9		For an appliance utilizing a 2P or 2Q disposable butane canister located inside the body of the appliance, and if the drip pan and grate are shipped with the appliance in an inverted position, a Class VI label (Tag) shall be placed on the inverted assembly explaining the proper position of the assembly and the possible hazard if operated in the inverted position. The label shall explain to the user to remove the label upon use of the appliance.
		<i>New clause added;</i>
4.14.10		For an appliance employing a 2P or 2Q disposable butane canister located inside the body of the appliance, a clearly legible Class IIIA label shall be attached to either the exterior of the appliance so that the label is readable in the normal operating mode or attached to the interior of the burner box compartment, which instructs the user to use the drip pan and grate assembly provided.
5	Info	Performance
		In conducting the performance tests specified herein, gas with characteristics approximately as follows shall be used.
		Propane gas — 2500 btu/ft ³ (94.7 MJ/m ³) or 21551 Btu/lb (50.13 MJ/kg) 1.53 Relative Density
		Butane gas — 3260 btu/ft ³ (124 MJ/m ³) or 21190 Btu/lb (49.29 MJ/kg) 2.00 Relative Density
5.2		Stoves for use with propane gas shall be tested with HD-5 propane fuel.
		These requirements also cover appliances equipped with a self-contained butane gas fuel supply. The fuel container is of the non-refillable type and has a maximum capacity of more than 4 fluid ounces (118 ml) but no more than 10 fluid ounces (296 ml) of butane. The maximum capacity in pounds of water is 1.08 lb (0.49 kg). A stove may employ no more than two fuel containers. The fuel container is removable and replaceable in normal use. The butane fuel container shall comply with DOT 2P or 2Q requirements and shall be listed to the Standard for Nonrefillable (Disposable) Type Metal Container Assemblies for Butane, UL 147B.



CLAUSE	VERDICT	COMMENT
		<p>A stove for use with propane/butane mixtures shall be tested with the gas specified by the manufacturer. If more than one canister is approved for use, each model number of canister shall be provided by the manufacturer for testing. If more than one gas composition ratio or canister is to be approved for use, each gas composition ratio or canister shall be tested with the appliance at the discretion of the testing agency.</p> <p><u>For stoves using disposable butane canisters, the test shall be run with the gas supply recommended by the manufacturer (see Clause 4.1.11). If more than one canister supplier is specified, the most critical fuel source shall be used, i.e., the one having the highest heat content per pound of fuel.</u></p>
		<p>Temperatures of handles and knobs</p> <p>The temperatures on carrying handles, valve handles, <u>thermostat knobs, and any other knobs, touch pads, or handles employed during normal cooking operations</u> shall not exceed 40°F (22.2 °C) above room temperature for metallic handles and 60°F (33.3 °C) for nonmetallic handles after operating the stove for a period of one hour at increased pressure in a normal room temperature. Carrying handles shall be in a rest position.</p>
5.6		
		<p>Wall, floor, ceiling, and component temperatures</p> <p><u>The temperature of an integral LP cylinder(s) shall be monitored and at no time shall the cylinder temperature exceed 125°F (51.67 °C) while the appliance is operating or after the appliance is turned off. Cylinder temperature shall be measured as an average of four equally spaced thermocouples mounted to the cylinder vapor space.</u></p> <p>The maximum temperature on walls, and overhead combustible construction shall not exceed 194°F (90 °C) [normal ambient temperature 77°F (25 °C) plus 117°F (65 °C) rise] and the maximum temperature on the floor shall not exceed 167°F (75 °C) [normal ambient 77°F (25 °C) plus 90°F (50 °C) rise] when the stove is tested at the manufacturer's specified clearances under the following Method of Test. <u>The maximum component temperatures shall also be determined during this test. Labels and gas carrying components shall not exceed their maximum allowable limitations (see Clauses 4.1.7 and 4.1.8).</u></p> <p>Method of Test</p> <p>The stove shall be placed in a partial enclosure as shown in Figure 2, Typical fire wall corner, at the minimum side and top clearances specified by the manufacturer. Horizontal clearances shall be measured from the burner casing and vertical clearances and shall be measured from the center of the burner.</p>
5.8		



CLAUSE	VERDICT	COMMENT
		<p>The stove shall be fired at normal gas pressure and at the manufacturer's rated input. Water-filled utensils 7-1/2 in (191 mm) in diameter shall be placed over each burner. The test shall be conducted until equilibrium conditions are attained. <u>The duration of the test shall be conducted under equilibrium conditions with the appliance operating at the manufacturer's stated input rate using the fuel source specified by the manufacturer.</u></p> <p><u>For an appliance employing 2P and 2Q canisters mounted internally within the body of the appliance, the above test shall be performed with a 9-1/2 in (24.13 cm) diameter pot(s) containing 5 lb (2.27 kg) of water. In addition to the measurement of wall, floor, ceiling, and component temperatures, the fuel cylinder and cylinder valve temperatures shall not exceed 125°F (51.5 °C at any location and cylinder valve. Tank pressure regulator temperatures shall not exceed 130°F (54.5 °C). Thermocouples shall be placed on the valve and regulator where these components are most likely to be subject to heat and on the exterior wall of the canister in contact with the surface containing the liquid fuel during the full duration of the test period but not in contact with any heat conduction plate supplied by the manufacturer used for maintaining vaporization.</u></p> <p><u>Equilibrium conditions shall be accomplished by replacement of the fuel cylinders throughout the duration of the test. The replacement of the fuel cylinders shall be done when the pressure at the manifold drops by 33 percent from the starting pressure (an approximate 20 percent drop in input). The replacement of fuel cylinders shall be done as required to obtain and maintain equilibrium.</u></p> <p><u>The label required per Clause 4.14.9 shall be evaluated during the conduct of the Wall, Floor, Ceiling, and Component Temperature test and the measured temperature shall not exceed the allowable temperatures outlined for the label class and listed adhesive temperature chosen. If the manufacturer uses a Class II or Class I label, no temperature evaluation is needed.</u></p>
5.9		<p><i>New section added;</i></p> <p>Ignition</p>
5.9.1		<p>Ignition of the burner shall be accomplished by the following means:</p> <ul style="list-style-type: none">a) a manually lit match;b) a manually activated ignition system that is activated separately from the process of establishing gas flow to the main burner(s). Such a system shall comply with the Standard for Manually Operated Piezo-Electric Spark Gas Ignition Systems and Components, ANSI Z21.77 • CSA 6.23; orc) a battery operated electric ignition system complying with the Standard for Manually Operated Electric Gas Ignition System and Components, ANSI Z21.92 • CSA 6.29.



CLAUSE	VERDICT	COMMENT
5.9.2		A stove shall not employ a standing pilot for ignition of the top burners.
5.9.3		Temperatures of ignition devices shall not exceed those for which the devices are designed as determined during conduct of Clause 5.8, Wall, floor, ceiling, and component temperatures.
5.9.4		The maximum temperature of a battery used to operate an ignition system shall not exceed 165°F (73.89 °C) as determined during conduct of Clause 5.8, Wall, floor, ceiling, and component temperatures.
Prevention of overheating of fuel canisters		
5.10	Info	This Clause is applicable only to appliances that use disposable fuel canisters of the 2P and 2Q type located within the body of the appliance.
<i>New clause added;</i>		
With the appliance fully assembled, if an assembled drip pan and grate:		
a) can be inverted; and		
b) when the drip pan and grate assembly is inverted and sits level or at a maximum of 2.5 degrees of tilt as measured diagonally from the most raised corner; and		
c) the controls and the fuel source can be used with the inverted assembly.		
The following Method of Test shall be conducted to evaluate the fuel canister temperature and component temperatures.		
5.10.1		Method of Test
Clause 5.8, Wall, Floor, Ceiling, and Component Temperature Test shall be conducted with the grate assembly inverted and using a 9.5 in (24.13 cm) diameter pot containing 5 lb (2.27 kg) of water placed on the inverted assembly. A full fuel canister shall be installed in the stove before performing the test. The temperature of the fuel canister, gas pressure regulator, and gas valve assembly shall be carefully monitored throughout the test. The length of the test shall only be for one fuel canister load. All other conditions of the test shall remain unchanged. The same temperature allowable as specified in Clause 5.8 shall apply.		
CUSTOMERS PLEASE NOTE: This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.		