



UNITED STATES
 CONSUMER PRODUCT SAFETY COMMISSION
 4330 EAST WEST HIGHWAY
 BETHESDA, MD 20814

This document has been electronically approved and signed.

THIS MATTER IS SCHEDULED FOR A BALLOT VOTE.

DATE: April 17, 2013

TO: The Commission
 Todd A. Stevenson, Secretary

THROUGH: Stephanie Tsacoumis, General Counsel
 Kenneth R. Hinson, Executive Director

FROM: Patricia M. Pollitzer, Assistant General Counsel
 Barbara E. Little, Attorney, OGC

SUBJECT: Petition CP 11-1; Request for Standard for Gas Fireplaces with Glass Fronts

BALLOT VOTE Due: April 23, 2013

The U.S. Consumer Product Safety Commission (CPSC, Commission) received a request, dated May 23, 2011, from Carol Pollack-Nelson, Ph.D., asking that the CPSC initiate rulemaking to require safeguards on the glass fronts of vented gas fireplaces to protect consumers from burns received by coming into contact with the glass front. The request from Dr. Pollack-Nelson was docketed as a petition, CP 11-1, and a notice requesting comments was published in the *Federal Register* on June 8, 2011.

On March 27, 2012, the Commission voted to defer the petition for 6 months and directed staff to update the Commission on the progress of applicable standards developments involving protective barrier requirements at the end of the 6-month period. When staff provided a progress report in September 2012, the Commission voted to continue to defer the petition because the applicable standards had not yet been published. Because applicable voluntary standards that include protective barrier requirements have now been published, staff recommends that the Commission deny the petition.

Please indicate your vote on the following options:

I. Grant the petition.

 (Signature)

 (Date)

II. Defer the petition.

CPSC Hotline: 1-800-638-CPSC(2772) H CPSC's Web Site: <http://www.cpsc.gov>

(Signature)

(Date)

III. Deny the petition and direct staff to draft a letter of denial to the petitioner.

(Signature)

(Date)

IV. Take other action (please specify).

(Signature)

(Date)

Attachment: Staff Recommendations to the Commission on the Disposition of Petition CP 11-1,
Burn Hazards Associated with the Contact of Hot Glass Fronts of Vented Gas Fireplaces



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Memorandum

Date: April 17, 2013

TO : The Commission
Todd A. Stevenson, Secretary

THROUGH: Stephanie Tsacoumis, General Counsel
Kenneth R. Hinson, Executive Director

FROM : DeWane Ray, Assistant Executive Director
Office of Hazard Identification and Reduction

Ronald A. Jordan, Project Manager, Hot Glass Petition Team
Directorate for Engineering Sciences

SUBJECT : Staff Recommendations to the Commission on the Disposition of Petition CP 11-1,
Burn Hazards Associated with the Contact of Hot Glass Fronts of Vented Gas Fireplaces

I. Background

On May 23, 2011, Dr. Carol Pollack-Nelson of Independent Consulting, Inc., filed a petition requesting that the U.S. Consumer Product Safety Commission (CPSC or Commission) initiate rulemaking to require safeguards to protect consumers from burns caused by contact with the glass fronts of vented gas fireplaces. At the time of the request, the governing voluntary standards group for vented gas fireplaces, the American National Standards Institute (ANSI) Z21 Vented Gas Warm Air Heater Technical Advisory Group (TAG),¹ had not published any new provisions in the standards to address the issues raised in the petition. Dr. Pollack-Nelson's request was docketed as a petition, CP 11-1, and the Commission published a notice in the *Federal Register* on June 8, 2011, requesting public comments (76 Fed. Reg. 33179). The Hot Glass Team was established to review the public comments and other information related to this issue and provide a briefing package of its findings to the Commission.

The Hot Glass Team completed its work and submitted a briefing package to the Commission on March 21, 2012 (<http://www.cpsc.gov/PageFiles/91429/fireplace.pdf>). The team found that glass

¹ The Z21/83 Committee and the Canadian Standards Association (CSA)–America are Accredited Standards Developers (ASD) and are jointly accredited by the American National Standards Institute (ANSI) to develop standards for gas-fired appliances and accessories. The Z21/83 Committee establishes Technical Advisory Groups (TAGs) to develop performance and construction standards for particular product groups. Because United States and Canadian requirements are harmonized through Z21/83/CSA, these standards are designated to reflect that harmonization. Thus, the full US/Canadian designation for these standards are ANSI Z21.50•CSA 2.22, American National Standard/CSA Standard for Vented Gas Fireplaces, and ANSI Z21.88•CSA 2.33, American National Standard/CSA Standard for Vented Gas Fireplace Heaters.

fronts of vented gas fireplaces do pose a risk of severe burn injury not previously addressed by any of the governing voluntary standards (ANSI Z21.88-2009 and ANSI Z21.50-2007). The team also found that, although the issue was not raised in the petition, unvented gas fireplaces equipped with glass fronts pose similar burn injury risks. The team found that a barrier to prevent contact with a glass front would provide the greatest level of protection to consumers from intentional and accidental contact.

Prior to completion of staff's briefing package, the Vented Gas Warm Air Heater TAG completed draft requirements for comprehensive protective barrier coverage for vented gas fireplaces and fireplace heaters and an aggressive schedule to publish a final standard as early as July 2012. Thus, staff recommended that the Commission defer making a decision on the petition to allow for completion of a voluntary standard. On March 27, 2012, the Commission voted unanimously (4-0) to defer the petition for 6 months to allow the voluntary standards process to continue and directed staff to update the Commission at the end of the 6-month period on the progress of standards developments in ANSI Z21.88, "ANSI Standard for Vented Gas Fireplace Heaters," ANSI Z21.50, "ANSI Standard for Vented Gas Fireplaces" and other applicable ANSI standards.

Staff provided the Commission an update on the status of the standards development process for protective barriers on September 18, 2012 (<http://www.cpsc.gov/PageFiles/143931/glassfront.pdf>). In that update, staff reported that no significant changes had been made to the draft protective barrier coverage during the Z21/83's letter ballot and recirculation ballot processes. The essential provisions of the protective barrier coverage in ANSI Z21.50 and Z21.88 are:

1. A requirement that a gas fireplace whose glass front temperatures exceed 172°F, be provided with a protective barrier; and
2. A requirement that a protective barrier: (a) not allow contact with a glass front, and (b) not pose a contact burn hazard.

The standards also require enhanced warnings to inform consumers of the risks associated with contacting the glass front. Staff believes that these requirements are comprehensive, and as written, should be effective in reducing the risk of severe contact burn injuries. Staff also reported that publication of the protective barrier requirements had been delayed from July 2012—the date originally specified by Canadian Standards Association (CSA) and the Hearth, Patio, and Barbeque Association (HPBA)—to January 2013. HPBA requested an effective date of January 2015 from CSA to allow its members time to handle any backlog created by the new requirements and to acquire and become proficient with the use of thermesthesiometers.² Staff recommended in the September 2012 update that the Commission continue to defer making a decision on the petition until staff was able to confirm that the protective barrier requirements had been published. The Commission agreed with staff's recommendation, and staff has continued to participate in and monitor the standards development process for protective barriers for vented and unvented gas fireplaces.

² A thermesthesiometer is the device selected by the Z21 Vented Gas Warm Air Heater TAG to evaluate the burn hazard potential of protective barriers. Functional requirements for thermesthesiometers are specified in *ASTM Practice for Determination of Skin Contact Temperature from Heated Surfaces Using a Mathematical Model and Thermesthesiometer*, ASTM C1057.

In this memorandum, staff is providing information on the progress made in the development of protective barrier requirements in the governing voluntary standards for vented gas fireplaces and the anticipated extent of compliance with these voluntary standards. Staff also is recommending that the Commission deny Petition CP 11-1 based on the protective barrier requirements added to the voluntary standards for vented gas fireplace heaters (ANSI Z21.88) and for vented gas fireplaces (ANSI Z21.50) and on the likelihood of substantial compliance with the standards.

II. Status of protective barrier requirements for vented gas fireplaces

As of September 2012, when CPSC staff submitted its status report to the Commission, draft requirements for protective barriers had been approved first by the ANSI Z21 Vented Gas Warm Air Heater TAG, and then by the ANSI Z21/83 Technical Committee (TC), through a letter ballot process. Because there were two disapproving letter ballot votes on the draft protective barrier coverage, CSA rules required that the Z21/83 Technical Committee return the disapproving votes with comments to Z21/83 TC members for the recirculation ballot vote process. According to CSA staff, the purpose of the recirculation ballot process was to allow the approving Z21/83 TC members to hear the disapproving votes and comments and to change their votes, if persuaded by the disapproving votes and comments. The draft protective barrier requirements were upheld during the recirculation ballot process and received final approval by the Z21/83 Technical Committee on July 17, 2012.

The newly approved protective barrier requirements were published in the following editions of ANSI Z21.88 and ANSI Z21.50:

- ANSI Z21.88a-2012/CSA 2.33a-2012, Addenda to the Fifth Edition of ANSI Z21.88-2009 • CSA 2.33-2009, Vented gas fireplace heaters; and
- ANSI Z21.50-2012/CSA 2.22-2012, Vented gas fireplaces.

Both standards were published in December 2012 and have effective dates of January 1, 2015. With the publication of these standards, the requests of the petitioner have been met.

III. Status of protective barrier requirements for unvented gas fireplaces

As noted above, CPSC staff had found that unvented gas fireplaces equipped with glass fronts pose similar burn injury risks as vented gas fireplaces with glass fronts. While working on the requirements for vented gas fireplaces, CPSC staff also developed and sent a proposal to the ANSI Z21.11.2 TAG on May 14, 2012, requesting that protective barrier requirements be adopted into the ANSI Z21.11.2 for unvented decorative gas fireplaces and unvented gas fireplace heaters (TAB A). Staff attended a Z21.11.2 TAG meeting on June 15, 2012, to advocate for the development of a protective barrier requirement. The TAG accepted the proposal as “Information Only” and stated that it would be more prudent for them to take action on the proposal after the protective barrier requirements were adopted for vented fireplaces. No technical issues or concerns were raised by any of the TAG members about any of the provisions in the proposed coverage. A representative of HPBA indicated that:

1. Only approximately 5 percent of unvented fireplaces might have glass temperatures exceeding 172 degrees F. Of those, the majority have already adopted approved barriers³; and
2. The Z21.11.2 TAG is likely to adopt protective barrier coverage.

The unvented heater TAG is scheduled to meet in July 2013, and the CSA Group has indicated that protective barrier coverage will be on the agenda for that meeting.⁴ Staff will plan to participate in that meeting in order to continue advocating for protective barrier coverage in Z21.11.2.

IV. Adequacy of the Voluntary Standards

In the March 21, 2012, briefing package to the Commission on CP 11-1, CPSC staff found that:

- Given the range of temperatures attainable by the exterior surfaces of their glass fronts, vented and unvented gas fireplaces pose a risk of severe burn injury; and
- An intervention to prevent contact with a glass front would provide the greatest level of protection to consumers from intentional and accidental contact.

Staff also found that to address the hazard, an intervention would need to:

1. Prevent the glass front exterior temperature from reaching those threshold temperatures that cause severe burns; or
2. Provide a barrier that prevents contact with the glass front. The barrier would also need to be designed in a manner that:
 - a) Prevents the barrier surface or points of contact from reaching the Threshold A limits⁵; or
 - b) Is made of a material that prevents rapid heat transfer to human skin.

The petitioner requested that the Commission initiate rulemaking to require safeguards, including a protective barrier over the glass front, to protect consumers from the contact burn hazard. Staff believes that a glass front or barrier that meets these criteria could effectively eliminate the risk of contact burns from the glass front of a gas fireplace.

The primary features of the newly published protective barrier requirements for ANSI Z21.88 and ANSI Z21.50 are:

1. A requirement that a gas fireplace whose glass front temperatures exceed 172°F, be provided with a protective barrier; and
2. A requirement that a protective barrier: (a) not allow contact with a glass front, and (b) not pose a contact burn hazard.

It is CPSC staff's opinion that all of the features of the new protective barrier requirements satisfy the petitioner's request and are in agreement with staff's findings. Therefore, staff believes that the new standards will be effective in reducing the risk of severe burn associated with the contact with

³ TAB B. E-mail from T. Stroud, HPBA to R. Jordan, U.S. CPSC, April 3, 2013.

⁴ TAB C. E-mail from L. Federspiel, CSA Group to R. Jordan, U.S. CPSC, February 27, 2013.

⁵ The threshold temperatures at which irreversible contact burns occur. These temperatures are provided in Figure 1, *ASTM Standard Guide for Heated System Surface Conditions that Produce Contact Burn Injuries, ASTM C1055*.

the glass front of vented gas fireplaces. HPBA has also developed informational materials to educate consumers to the risks associated with contacting hot glass fronts and the importance of having a protective barrier in place. That material is provided at HPBA's website at: www.hpba.org/safety-information/safefireplacetips/fireplace-and-stove-glass-safety/?searchterm=safety. Staff also believes that if adopted into ANSI Z21.11.2, Standard for Unvented Gas Heaters, these requirements should be equally effective in reducing the risk of severe burn associated with a person's contact with the glass front of unvented decorative gas fireplaces and unvented gas fireplace heaters.

V. Compliance with Voluntary Standards

The Hearth, Patio, and Barbeque Association (HPBA) is a trade association that represents the hearth products, patio, and barbeque industries in North America. HPBA's hearth product members manufacture, import, distribute, sell, install, and service factory-built fireplaces, gas log sets, and fireplace inserts. According to HPBA:

“Most manufacturers of gas fireplaces are HPBA members . . .” and account for approximately “. . . 90 percent of all hearth appliance shipments.” In order to be marketed and sold in the United States, gas appliances, including gas fireplaces, must comply with local, state, regional, or national building codes. In order to comply with the building codes, gas fireplaces must be certified to national performance and safety standards, such as the ANSI Z21 set of gas appliance standards and Underwriters Laboratories standards.”

In their comments on Petition CP 11-1, HPBA asserted:

“There will be high levels of compliance. The ANSI standard is applicable to the entire gas fireplace industry and is incorporated in building codes and standards. Retailers and conformity assessment organizations will require compliance. Further, the violation of a voluntary standard may be relevant in product liability litigation. The existing requirements in the standards achieve virtually total, industry-wide compliance, and there is no reason to believe that anything will be different with safety guards and related requirements.”

Staff agrees with HPBA on this matter and continues to believe that, given these conditions for market entry and participation, a framework exists that will help to ensure conformance of these products to the voluntary standards. Since protective barrier provisions have been adopted into ANSI Z21.88 and ANSI Z21.50, staff believes that manufacturers who certify to these two standards will conform to any new protective barrier requirements. If the protective barrier requirements are adopted into ANSI Z21.11.2, staff believes that manufacturers who certify to that standard will also conform to any new protective barrier requirements.

VI. Options.

1. Grant petition CP 11-1 and begin rulemaking; or
2. Deny petition CP 11-1; or
3. Defer decision on petition CP 11-1 for 6-months to allow the voluntary standards process to take place for unvented gas fireplaces; specifically, for the TAG to develop a schedule establishing a standard.

VII. Recommendations

Staff recommends that the Commission deny Petition CP 11-1, for the following reasons:

1. Voluntary standards that include protective barrier requirements have been approved and published for vented gas fireplace heaters (ANSI Z21.88) and for vented gas fireplaces (ANSI Z21.50).
2. The protective barrier requirements are comprehensive and should be effective in reducing the risk and occurrence of burns from contacting the hot surface of vented gas fireplace glass fronts.
3. The likelihood of substantial compliance in the United States is high because local and regional building codes require that gas appliances be certified to a nationally recognized performance and safety standard in order for a permit to be issued.
4. Protective barrier requirements are scheduled to be considered by the voluntary standards group that develops standards for unvented decorative gas fireplaces and unvented gas fireplace heaters (ANSI Z21.11.2).
5. Substantial compliance is also likely to be high for unvented gas fireplaces because:
 - a. Only approximately 5% of unvented fireplaces might have glass temperatures exceeding 172 degrees F. Of those, the majority have already adopted approved barriers.; and
 - b. The Z21.11.2 TAG is likely to adopt protective barrier coverage.

TAB A

STANDARDS PROPOSAL FORM

MAIL, FAX OR E-MAIL TO:

Lorraine Federspiel
CSA STANDARDS
8501 East Pleasant Valley Road,
Cleveland, OH, U.S. 44131
Fax: (216) 520-8979
lorraine.federspiel@csa-america.org

DATE: April 30, 2012 NAME: Ronald Jordan

ADDRESS: 5 Research Place, Rockville, MD 20850

TELEPHONE NUMBER: (301) 987-2219

REPRESENTING (Please indicate organization, company or self): U.S. Consumer Product Safety Commission

1. a) Title of Standard: ANSI Z21.11.2, American National Standard for Gas-Fired Room Heaters, Volume II, Unvented Room Heaters

b) Section/Paragraph Number and Title: 1.2.7, 1.21.1, 1.21.2, 1.22.2, 1.22.7, 2.10.4, 2.11.1, 2.11.2, 2.11 through 2.25, and Part IV, Definitions

2. Proposal Recommends: (check on New Text Revised Text Deleted Text

3. Proposal (Include proposed wording change(s)* or identification of wording to be deleted. If proposed wording change(s) is not original, provide source.):

-See attachments. The proposal was obtained from the Review and Comment text developed by the Z21 Vented Gas Warm Heater TAG for ANSI Z21.88 and Z21.50.

4. Statement of Rationale for Proposal:

The risk of irreversible burns from contact with the glass fronts of vented gas fireplaces and vented gas fireplace heaters was effectively addressed by the protective barrier coverage developed and sent out for review and comment in December 2011, by the Z21 Vented Gas Warm Heater TAG for ANSI Z21.50 and Z21.88. However, unvented decorative gas fireplaces and unvented gas fireplace heaters were not included in that coverage because they are governed by a separate standard, ANSI Z21.11.2. Amid analysis of available information during the recent petition request of the CPSC to develop a mandatory rule requiring safeguards for glass fronts of vented gas fireplaces, CPSC staff found that unvented decorative gas fireplaces and unvented gas fireplace heaters governed by ANSI Z21.11.2, and that are equipped with glass fronts, pose similar risks of irreversible burns if contacted. Review of Section 2.10, Glass Fronts, and Table XII, Maximum Temperatures for Glass, of Z21.11.2, indicates that the maximum allowable temperatures and the calculations and test methodology used to determine these temperatures are identical to those found in ANSI Z21.50 and Z21.88 for vented gas fireplaces and fireplace heaters. Given this, CPSC staff believes that the exterior surface temperature of glass fronts on unvented gas fireplace heaters and unvented

decorative gas fireplaces will exceed the threshold temperatures specified in ASTM C1055 that cause irreversible burns. CPSC staff believes that adoption of the protective barrier requirements developed for vented gas fireplaces will provide the same level of protection against irreversible burns from contact with unvented gas fireplace heaters and unvented decorative gas fireplaces.

5. This proposal is original material.

This proposal is not original material. Its source (if known) is as follows:

The source was the Review and Comment text developed by the Z21 Vented Gas Warm Heater TAG for ANSI Z21.88 and Z21.50. The text was copied verbatim; only the Section and Paragraph numbers were changed to the corresponding sections of Z21.11.2

* (Note: Proposed wording and original material is considered to be the submitter's own idea, based on, or as a result of, his/her own experience, thought, or research, and to the best of his/her knowledge, is not copied from another source.)

I hereby assign to CSA and CSA America Inc., all worldwide right, title, and interest in, and to, the proposed change(s) or original material listed above, including, but not limited to, the copyrights thereon, and all subsidiary rights, including rights of publication in any and all media, therein.

Signature

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL.

=====

=====

Part 1: Construction

1.2 General Construction and Assembly

1.2.7 (NEW)

An appliance design having an outside glass viewing area temperature that exceeds 172°F (78°C), as measured in section 2.10.4, shall be provided with a barrier for the appliance glass viewing area.

The barrier shall be constructed to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage.

RATIONALE: The temperature limit of the outside glass viewing area is based on American National Standard For Household Cooking Gas Appliances, Z21.1, Table XII, Maximum Surface Temperature. The barrier is designed to mitigate burn hazards from the glass viewing area of a gas fireplace when, for example, young children or other persons at risk may be present.

A broad scope of residential and commercial applications was considered during development of revisions to the standard.

Applies existing requirement under 1.2.3 in American National Standard/CSA Standard For Vented Gas Fireplace Heaters, Z21.88/CSA 2.33, to a new device.

1.21. Instructions

1.21.1

Each appliance shall be accompanied by clear, concise printed instructions and diagrams adequate for proper field assembly, installation, maintenance, safe use, and operation.

The front cover or, in the absence of a cover, the first page, shall bear the following statements. They shall be boxed as shown:

(First Boxed Warning, unchanged.)

For a direct vent gas appliance for recreational vehicle installation:

(Second Boxed Warning, unchanged.)

For a direct vent convertible appliance installed as an OEM installation in a manufactured home (USA only) or mobile home (see 1.1.1-c):

(Third Boxed Warning, unchanged.)

For a direct vent gas appliance installed as an aftermarket installation in a manufactured home (USA only) or mobile home for use with natural gas only or liquefied petroleum (propane) gases only (see 1.1.1-d):

(Fourth Boxed Warning, unchanged.)

For a direct vent convertible appliance installed as an aftermarket installation in a manufactured home (USA only) or mobile home (see 1.1.1-c):

(Fifth Boxed Warning, unchanged.)

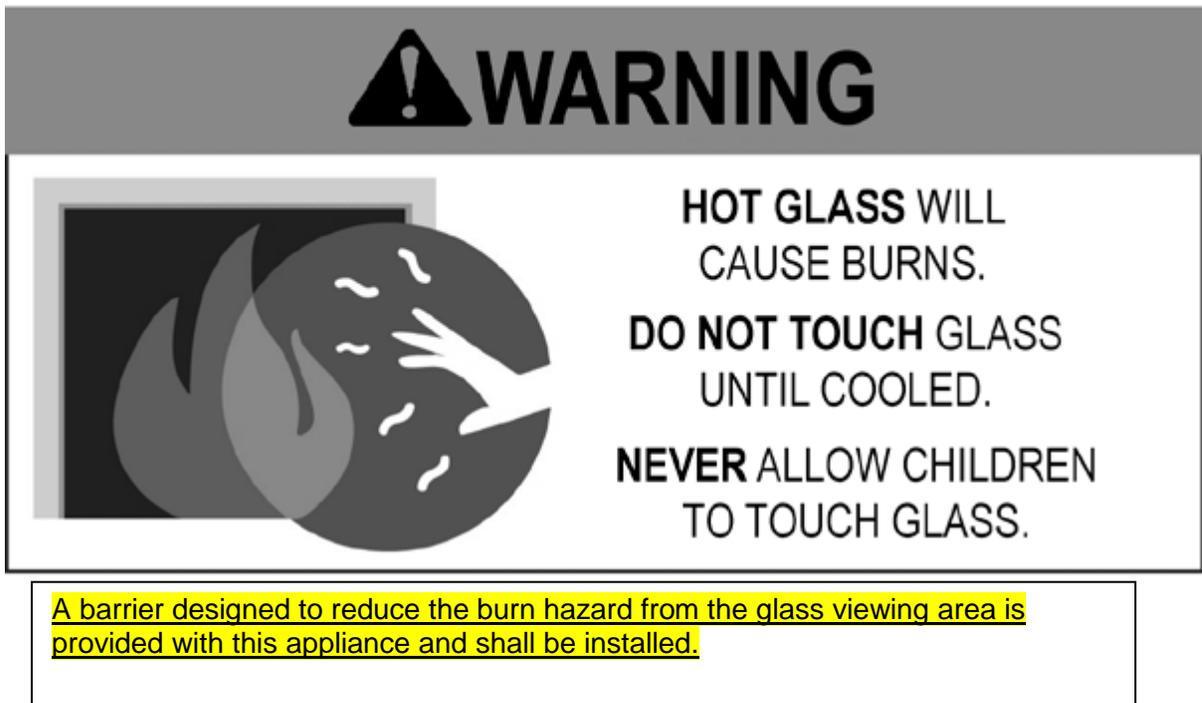
For a direct vent gas appliance installed as an OEM installation in a manufactured home (USA only) or mobile home for use with liquefied petroleum (propane) gas only (see 1.1.1-g):

(Sixth and seventh Boxed Warning, unchanged.)

For a glass-fronted gas appliance, where the temperature of the glass viewing area outside surface exceeds the limits specified in 2.10.4, the following graphic warning and statement shall be shown:

***RATIONALE:** The temperature limit of the outside glass viewing area is based on Z21.1, Table XII. The use of Table XII is more specific than simply stating 95°F above room temperature by specifying room temperature variation.*

A barrier designed to reduce the burn hazard from the glass viewing area is provided with this appliance and shall be installed.



The Warning letter-type shall be a sans-serif font with a minimum letter height of the following:

The symbol and word, "WARNING," shall be boldfaced type having a minimum uppercase letter height of 0.498 in (12.65 mm)**; and

The words, as shown above, in the boxed statement 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).*

Lower case letters shall be compatible with the uppercase letter size specifications.

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

RATIONALE: To further inform the consumer of the availability of a barrier in the most prominent place in the instruction manual.

These instructions shall include:

(Remainder of text, unchanged.)

1.21.2

The printed instructions accompanying the appliance shall also include the following minimum information presented in a readily obvious and prominent manner, such as by being underlined, encircled, or printed in larger or different color type:

- a. "Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies."
- b. "Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition."
- c. "Young children should be carefully supervised when they are in the same room as the appliance. Toddlers, young children and others may be susceptible to accidental contact burns. A physical barrier is recommended if there are at risk individuals in the house. To restrict access to a fireplace or stove, install an adjustable safety gate to keep toddlers, young children and other at risk individuals out of the room and away from hot surfaces."
- d. For appliances requiring a barrier, as determined under section 2.10.4,
"A barrier designed to reduce the burn hazard from the glass viewing area is provided with this appliance and shall be installed."
- e. "If the barrier becomes damaged, the barrier shall be replaced with the manufacturer's barrier for this appliance."
- f. "Clothing or other flammable material should not be placed on or near the appliance."
- g. "Any safety screen, guard, or barrier removed for servicing the appliance, must be replaced prior to operating the appliance." (see 1.2.5).
- h. "Installation and repair should be done by a qualified service person. The

appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, et cetera. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.”

- i. The instructions for an appliance optionally for use with glass doors (or equivalent) shall state that, “Only doors certified with the appliance shall be used.”
- j. The instructions for an appliance not intended for use with glass doors (or equivalent) shall emphasize that the appliance is not for use with glass doors.

k. Where applicable, provide a means by which the consumer can identify the barrier. (such as graphic representation, clear description or reference marking).

RATIONALE: *To inform the consumer in a prominent place in the instruction manual that a barrier is provided with for units with glass temperatures exceeding 172°F and to make notification that a damaged barrier needs to be replaced and to provide means to identify the barrier.*

1.22 Markings

1.22.2

RATING PLATE(S). Each appliance shall bear a plate, or a combination of plates in proximity, of Class IIIA marking material located so as to be easily read when the appliance is in a normally installed position. A rating plate(s) applied to the inner surface of a control compartment door is considered acceptable. The following information shall appear on the plate(s):

(Present “a” through “t,” unchanged.)

u. Where applicable, “For use only with barrier(s) Part No(s). . Follow installation instructions.”

RATIONALE: *The appliance always carries a reference to its specific barrier so it is available to the consumer.*

1.22.7 (NEW)

INSTRUCTION PLATE. For a glass fronted gas appliance where the temperature of the glass viewing area outside surface exceeds 172°F (78°C) when measured in accordance with 2.10.4 the following graphic warning and statements shall be shown on a Class IIIA-2 Permanent Label.



A barrier designed to reduce the burn hazard from the glass viewing area is provided with this appliance and shall be installed.

The Warning letter-type shall be a sans-serif font with a minimum letter height of the following:

The symbol and word,  "WARNING," shall be boldfaced type having a minimum uppercase letter height of 0.498 in (12.65 mm)**; and

The words, as shown above, in the boxed statement 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).* Lower case letters shall be compatible with the uppercase letter size specifications.

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

RATIONALE: *To further inform the consumer of the availability of a barrier in a prominent place on the appliance.*

Part II. Performance

2.10 Glass Fronts

2.10.4 (NEW)

Where the outside temperature of the glass viewing area surface exceeds the temperature of 172°F (78°C),* installed according to 2.17, Wall, Floor and Ceiling Temperatures, and operated to equilibrium, a provided barrier shall comply with burn hazard limits under 2.11, Burn Hazard Potential.

Method of Test

Evaluation of temperature criteria shall be performed using the outside temperatures of the glass viewing area surface, as determined in 2.10.1.

* The maximum temperatures specified are based on a 77°F (25°C) room temperature. When the room temperature is other than 77°F (25°C), the allowable temperatures shall be increased or decreased 1 degree for each 1 degree of room temperature greater or less than 77°F (25°C), within a range of 70–80 degrees F.

RATIONALE: *Manufacturers shall provide a barrier to cover the glass viewing area surface on gas fireplaces where high glass temperatures exist. A barrier covering the glass viewing area surface will reduce the risk of injury.*

The Method of Test provides a uniform performance-based method to determine the burn hazard protection of the barrier.

Rationale is based on the Standard For Household Cooking Gas Appliances, ANSI Z21.1 Table XII, Maximum Surface Temperature. It was decided to use the ambient temperatures of the Z21.88/CSA 2.33 standard since the 70°F-80°F range is a subset of the 68°F-86°F range of the Z21.1 standard and therefore more conservative.

2.11 Barrier Burn Hazard Potential (Other Than A Glass Barrier) (NEW)

2.11.1

A barrier, which is intended to prevent direct contact with the glass viewing area surface by the accessibility probe shown in Figure 17, Accessibility Probe, shall be designed to prevent contact with the glass viewing area surface having temperatures in excess of 172°F (78°C).*

Method of Test

The probe shall be applied: (1) with a force of 2.5 lb (11.1 N); and (2) in any possible configuration and to any depth that the size of an opening will permit. The probe shall be rotated or angled to any possible position before, during, or after insertion through the

opening. If necessary, the configuration shall be changed after the probe has been inserted through the opening.

Any glass surface the accessibility probe can contact with the barrier in place shall be measured according to section 2.10.1 to verify the glass surface temperature does not exceed 172°F (78°C).* Removal of the barrier may be required for measuring temperature.

* The maximum temperatures specified are based on a 77°F (25°C) room temperature. When the room temperature is other than 77°F (25°C), the allowable temperatures shall be increased or decreased 1 degree for each 1 degree of room temperature greater or less than 77°F (25°C), within a range of 70–80 degrees F.

RATIONALE: *The articulating finger accessibility probe is considered the most suitable instrument to evaluate the barrier for adequately preventing access to glass surfaces that present a burn hazard.*

This coverage was taken from Exhibit C, Items Unique to the United States, C.1.13, in ANSI Z21.88/CSA 2.33.

Rationale is based on the Standard For Household Cooking Gas Appliances, ANSI Z21.1 Table XII, Maximum Surface Temperature. It was decided to use the ambient temperatures of the Z21.88/CSA 2.33 standard since the 70°F-80°F range is a subset of the 68°F-86°F range of the Z21.1 standard and therefore more conservative.

2.11.2

A barrier shall be tested with the appliance in accordance with the Method of Test shown below.

Method of Test

An appliance with the barrier installed according to the manufacturer's instructions shall be installed according to 2.24, *Wall, Floor, and Ceiling Temperatures*, and operated until equilibrium is attained. The framework of the barrier that is not over the glass viewing area surface shall comply with the temperature requirements under section 2.26.1-a and -b, *Surface Temperatures*.

Using a thermal imaging camera, thermocouple array, or other temperature-sensing device, find the hottest point(s) for each different thermal mass on the barrier. The outside surface of the barrier at the hottest point(s) identified above shall be measured using a Thermesthesiometer,* or the prescribed Calculational Procedure, Method A, in the *ASTM Practice for Determination of Skin Contact Temperature from Heated Surfaces Using a Mathematical Model and Thermesthesiometer, ASTM C1057*.

Place the Thermesthesiometer on the hottest point(s), applying 10 lb (44.48 N) force. Record the Thermesthesiometer's output temperature at 5 seconds. The highest Thermesthesiometer reading shall be recorded.

The barrier passes this test if the Thermesthesiometer reading at 5 seconds does not exceed Threshold B, as per ASTM C1055 formula 4.2.3T_B that equals 58°C** (137°F), where T_B is the critical contact temperature for reversible epidermal injury, °C. (See *Figure 1, Temperature-Time Relationship for Burns, in ASTM C1055*).

* See National Bureau of Standards Technical Note 816 - Engineering and Construction Manual for an Instrument to Make Burn Hazard Measurements in Consumer Products.

**NOTE: The temperature under 2.11.2 is not to be considered a surface temperature; it is the reading from the Thermesthesiometer or the mathematical method in ASTM C1057.

RATIONALE: The ASTM Standards cited comprise a comprehensive available methodology that includes criteria for passing or failing based on skin contact with a heated surface that takes into account a broad scope of tissue and material thermodynamic and physical properties, as well as the relationship between time of contact and scientifically derived empirical value in the determination of burn hazard potential.

(Present 2.11, Oxygen Depletion Safety Shutoff Systems, through 2.25, Catalyst Quality, become 2.12 through 2.32 respectively, unchanged.)

Part IV. Definitions

Barrier: A physical element that is intended to limit exposure to burn hazards from contact with the glass viewing area surface.

Glass Viewing Area Surface: The outermost surface of exposed glass.

Threshold B: Critical contact skin temperature limit for reversible epidermal injury, as defined in *ASTM Guide for Heated System Surface Conditions that Produce Contact Burn Injuries, ASTM C1055*.

Thermesthesiometer: An instrument constructed in accordance with the National Bureau of Standards Technical Note 816 - Engineering and Construction Manual for an Instrument to Make Burn Hazard Measurements in Consumer Products, as defined in *ASTM Practice for Determination of Skin Contact Temperature from Heated Surfaces Using a Mathematical Model and Thermesthesiometer, ASTM C1057*.

RATIONALE: Definitions are included for aspects of the new proposed coverage.

TAB B

From: Tom Stroud <stroud@hpba.org>
Sent: Wednesday, April 03, 2013 3:06 PM
To: Jordan, Ronald
Cc: Rich Ali
Subject: Glass barrier requirements added to unvented appliance standard

As per our discussion several weeks ago and confirmed when we met last week, the unvented appliance standard committee was awaiting the final approvals for barriers on glass fronted fireplaces in CSA Z21.50 and Z21.88. Now that those approvals have gone through ANSI and IGAC, the Unvented Appliance Committee will address the adoption of those same requirements. Having said that, there is only a small portion of unvented fireplaces (approximately 5% from our information) that might have glass temperatures exceeding 172 degrees F. Of those, the majority have already adopted approved barriers. I will stay in contact to let you know when this will be discussed by the Unvented Appliance Committee and when they have approved it.

Thank you for your support on the issue of glass fronted fireplace barrier standards.

Tom

Thomas Stroud

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TAB C

From: Lorraine Federspiel <lorraine.federspiel@csagroup.org>
Sent: Wednesday, February 27, 2013 1:23 PM
To: Jordan, Ronald
Cc: Ronnie.Frazier@atmosenergy.com
Subject: RE:

Hi Ron,

We decided the Unvented Heater TAG will address the barrier coverage once the additional decorative element coverage is at the March 27 Vented Heater TAG meeting.

I have plans to have an Unvented Heater TAG meeting in July.

Lorraine Federspiel

Project Manager
CSA Group

T 216 524 4990

lorraine.federspiel@csagroup.org

From: Jordan, Ronald [<mailto:RJordan@cpsc.gov>]
Sent: Monday, February 25, 2013 6:02 PM
To: Ronnie.Frazier@atmosenergy.com
Cc: Lorraine Federspiel
Subject:
Importance: High

Hi Ronnie,

I hope all is well with you. Back in March 2012 I proposed that the Unvented Heater TAG adopt the draft protective barrier and related provisions, being considered for vented gas fireplaces (under ANSI Z21.88 and ANSI Z21.50), for unvented gas fireplaces under ANSI Z21.11.2. At their June 15, 2012 meeting, the TAG accepted my proposal as "Information Only" since the draft provisions for Z21.88 and Z21.50 had not been fully approved by the Z21/83 Technical Committee. No action would be taken for Z21.11.2 until the draft coverage for Z21.88 and Z21.50 was approved and finalized. Given that the protective barrier coverage for Z21.88 and Z21.50 has now been approved and finalized, does the Unvented Heater TAG plan take action on the protective barrier proposal?

Thanks and best regards,

Ron

Ronald A. Jordan
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