



December 14, 2022

To: Interested Parties

CC: Jim Kendzel, American Supply Association  
Harshad Inamdar, Rheem Manufacturing  
Stephen Spletzer, Chemours  
Joseph Freese, Parker Hannifin  
Julius Ballanco, JB Engineering and Code Consulting  
Marcus Elmar, Copper Development Association  
Dave Mann, Self  
Randy Young, Self  
Chris Ruch, NEMI

Re: IAPMO Standards Council Decision Docket #10-24  
Date of Decision: December 14, 2022  
Uniform Mechanical Code – Sections: 1109.4.2  
Item 208 Public Comment 2

To Whom It May Concern:

At their meeting on November 17, 2022, the IAPMO Standards Council considered the automatic appeal pertaining to Item 208 and the above referenced sections. This decision reflects the complete deliberation of the Council with respect to this item.

#### Summary of Technical Committee Actions

For a summary of actions taken, please refer to Exhibit A attached hereto.

#### Analysis of Appeal

This automatic appeal relates to Public Comment 2 of Item 208. That Item proposed: (1) adding to Section 1103.1.1 “Safety Group” in the Uniform Mechanical Code (UMC) a new Table 1103.1.1 “Refrigerant Safety Group Classifications,” (2) adding several new subsections with specific requirements for group A2L refrigerants for human comfort under section 1104.0 “Requirements for Refrigerant and Refrigeration System Use,” and (3) amending section 1104.6 “Applications for Human Comfort and for Nonindustrial Occupancies,” by removing a prohibition on use of A2L refrigerants in nonindustrial occupancy high-probability systems for human comfort.

At their meeting in 2021, the Mechanical Technical Committee (TC) sought to amend the proposed language to add various requirements, including that “All joints on refrigeration piping containing A2L refrigerant shall be brazed” with an exception for “male flared joint connections for system servicing.” However, on written ballot, this motion failed to achieve the necessary two-thirds majority vote to pass. In accordance with Section 4-3.5.2 of the Regulations Governing Committee Projects, a public comment was requested for this proposal.

Thereafter, multiple Public Comments were submitted regarding Item 208. Public Comment 1 requested that the code change proposal be accepted as originally submitted – that is, without the modifications sought by the TC in 2021. That comment was passed unanimously. Public Comment 2 (the subject of this appeal) sought to replace the original proposal with the addition of a new requirement in section 1109.4.2 “Joints in Concealed Locations” that would require that “all joints on refrigeration piping installed in concealed spaces shall be brazed.” At the meeting, a majority of the committee members expressed support for Public Comment 2. Upon written ballot of the Mechanical Technical Committee, the TC affirmed their decision to accept Public Comment 2.

At the Association Technical Meeting in Charlotte, the membership passed a motion to reject Public Comment 2, recommending removal of the brazing requirement in concealed locations. The TC did not accept this recommendation, resulting in a process-based recommendation to keep the language as added to the UMC by Public Comment 2, and in this automatic appeal.

On an appeal, the Standards Council accords great respect and deference to the development process prescribed in the ANSI-accredited IAPMO Regulations Governing Committee Projects. In conducting its review, the Council will overturn the result recommended through that process where a clear and substantial basis for doing so is demonstrated. The Council has reviewed the entire record concerning this appeal and has considered all the arguments raised by it including what was shared during oral testimony.

In the course of the appeal, the Standards Council heard testimony from those in favor of the appeal (that is, those in opposition to inclusion of a brazing requirement for “all joints on refrigeration piping installed in concealed spaces”) as well as those opposed to the appeal (in favor of the brazing requirement).

Proponents of the appeal emphasized the expanded breadth of Public Comment 2’s brazing requirement, noting that the TC’s original modification to Item 208 would have required brazing for “all joints on refrigeration piping *containing A2L refrigerant*” with an exception for “male flared joint connections for system servicing” while the change made by Public Comment 2 applies the brazing requirement to “*all joints on refrigeration piping installed in concealed spaces*” without exception (emphasis added throughout), and claiming this expansion was in violation of the Regulations at 4-4.6.2.1.

In looking at Regulation 4-4.6.2.1, it is clear that the “TC shall act on each Comment that is ...[r]elevant to the text proposed by the TC” and “[r]aises a question on material that is either new or proposed to be amended by the TC or is affected by a specific proposal.” Although those in support of the appeal claim a violation of the Regulations, the Council does not agree.

Proponents of the appeal also emphasized that many areas in which fittings other than brazing are currently widely used, such as attics and drop ceilings, would qualify as “concealed spaces” in which brazing would be required if Public Comment 2 were accepted. They further noted that a brazing requirement effectively eliminates any refrigerant piping of materials that cannot be brazed, and a wide range of fitting techniques, including threaded fittings and soldering. Finally, proponents drew the Council’s attention to the overwhelming support for rejection of Public Comment 2 amongst IAPMO’s membership.

The Council does agree that the language in Public Comment 2 may be overly broad as it would prevent the installation, in concealed locations such as attics, of any refrigerant piping that could not be brazed, regardless of the flammability of the refrigerant to be conveyed.

Those speaking in opposition to the appeal discussed safety concerns with respect to the potential for leakage in joining methods other than brazing, arguing that any method that could leak should not be permitted in concealed locations. However, in rebuttal, proponents of the appeal highlighted

research showing the efficacy and safety of non-brazed joints, and pointed out that brazed joints were also subject to failure and leakage due to installer error, vibration, and other factors.

Upon consideration of the entire record, the Council agrees with the membership that Public Comment 2 should be rejected. Although there is no Regulations violation here, the Council is concerned that the language required by Public Comment 2 would prevent other acceptable, reliable methods of connections used in residential air conditioning systems regardless of the flammability class.

#### Final Decision

In consideration of the aforesaid, the Standards Council hereby grants the appeal. The effect of this decision is that the 2024 edition of the Uniform Mechanical Code will not include section 1109.4.2 “Joints in Concealed Locations” that requires joints on refrigeration piping installed in concealed spaces to be brazed.

Sincerely,



Gabriella Davis  
Secretary, Standards Council

cc: Heather Koffman, Executive VP, General Counsel  
Hugo Aguilar, Senior VP, Codes and Standards  
Taylor Duran, Staff Liaison  
Mechanical Technical Committee  
Standards Council

**\*NOTE:** Participants in IAPMO’s codes and standards making process are advised that limited review of this decision may be sought from the IAPMO Board of Directors. For the rules describing the available review and the method for petitioning the IAPMO Board of Directors for review, please consult Section 1-7 of the *IAPMO Regulations Governing Committee Projects* and the *IAPMO Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council*. **Notice of the intent to file such a petition must be submitted to the Petitions Clerk of the Board of Directors within 15 calendar days of the Date of Decision noted in the subject line of this letter.** As the *Uniform Mechanical Code* is designated as an American National Standard (ANS), any persons who have directly and materially affected interests by this decision have the right to appeal to ANSI in accordance with ANSI procedures.

## Exhibit A

### Summary of Technical Committee Actions Appeal Docket 10-24; Item #208 Public Comment 2 *2024 Uniform Mechanical Code, Section 1109.4.2*

The 2021 Report on Proposals (ROP) published the results of the first committee ballot on Item #208, a code change proposal requesting to add (1) section 1103.1.1 “Safety Group” in the Uniform Mechanical Code (UMC) a new Table 1103.1.1 “Refrigerant Safety Group Classifications,” (2) adding several new subsections with specific requirements for group A2L refrigerants for human comfort to section 1104.0 “Requirements for Refrigerant and Refrigeration System Use,” and (3) amend section 1104.6 “Application for Human Comfort and for Nonindustrial Occupancies,” by removing a prohibition on use of A2L refrigerants in nonindustrial occupancy high-probability systems for human comfort.

At the meeting, a majority of the committee members were in support of amending the proposal to add a sentence and exception to section 1104.6 “Group A2L Refrigerants for Human Comfort” that requires that “All joints on refrigeration piping containing A2L refrigerant shall be brazed” with an exception for “male flared joint connections for system servicing.” Upon written ballot of the Mechanical Technical Committee, the required two-thirds affirmative vote was not achieved by the Technical Committee. In accordance with Section 4-3.5.2 of the Regulations Governing Committee Projects, a public comment was requested for this proposal.

At their second meeting, the committee reviewed 9 comments on language relating to A2L for human comfort. Public Comment 2 sought to add a new section 1109.4.2 “Joints in Concealed Locations” that would require that “all joints on refrigeration piping installed in concealed spaces shall be brazed,” to replace the modification sought by the TC in 2021 for section 1104.6 “Group A2L Refrigerants for Human Comfort.” A majority of the committee members were in support of accepting Public Comment 2. Upon written ballot of the Mechanical Technical Committee, they affirmed their decision to accept Public Comment 2.

At the Association Technical Meeting Convention, a motion was made to reject Public Comment 2 which sought to add a new section 1109.4.2 “Joints in Concealed Locations” that states “all joints on refrigeration piping installed in concealed spaces shall be brazed.” The motion passed resulting in a membership recommendation to the Technical Committee to reject Public Comment 2. The effect of the membership recommendation was to reject the language in new section 1109.4.2 “Joints in Concealed Locations” that states “all joints on refrigeration piping installed in concealed spaces shall be brazed.”

Following the Association Technical Meeting Convention, the Technical Committee was issued a ballot on whether they agreed with the membership’s recommendation. On this, their final ballot, the committee did not achieve the necessary two-thirds majority affirmative vote. The final ballot tally reported a vote of 9 agree and 19 disagree.

The Regulations Governing Committee Projects at Section 4-6.1 states:

#### **4-6.1 Recommended Amendments.**

(c) If the Association recommended amendment is not approved by the TC...such action of the Committee shall be deemed to be a recommendation that the portion of the Report modified by the Association recommended amendment be returned to the TC; the remainder of the Report stands as recommended by the Association; and any existing text to which the returned portion pertains shall stand. The TC...shall be balloted on whether the resulting Document is suitable; and if it is determined that it is not suitable, the issue shall be automatically docketed as an appeal to the Standards Council who shall determine whether and in what form the document shall be issued...

The issue was docketed as an appeal for the Standards Council.

## IAPMO Regulations Governing Committee Projects Section 1-7

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### 1-7 Petitions to the Board of Directors.

**1-7.1 General.** The Standards Council has been delegated the responsibility for the administration of the codes and standards development process and the issuance of Documents. However, where extraordinary circumstances requiring the intervention of the Board of Directors exist, the Board of Directors may take any action necessary to fulfill its obligations to preserve the integrity of the standards development process. Anyone seeking such intervention of the Board of Directors may petition the Board of Directors concerning Standards Council action on any matters. Such petitions shall be filed and processed in accordance with the Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council.

**1-7.2 Notice of Intent to File the Petition.** Anyone wishing to petition the Board of Directors concerning a Standards Council action related to the issuance of a document, shall file a Notice of Intent to File a Petition within 15 days following the Standards Council action. A Standards Council action related to the issuance of a document includes any action of the Council that issues or returns a Document or that affects the text of a Document. Petitions concerning other Standards Council actions shall be filed within a reasonable period of time.

**1-7.3 Effect of Filing.** The filing of a Petition will not serve to stay the effective date of a Document or a Tentative Interim Amendment unless the Chief Executive Officer of the Association or the Board of Directors acts, pursuant to 4-7.2 or 5-6, to delay the effective date. Any Petition pending at the time a Document or Tentative Interim Amendment becomes effective will be treated as a Petition to withdraw the Document or Tentative Interim Amendment.

**1-8 Use of Visual Aids and Demonstrations Before the Standards Council or Board of Directors.** The policy for the use of visual aids and physical demonstrations to the Standards Council and Board of Directors shall be the same as that required for TCCs, TCs, and Task Groups, in accordance with 3-3.3.3(e) and 3-3.3.3(f).

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### IAPMO Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council

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ADOPTED BY THE IAPMO BOARD OF DIRECTORS SEPTEMBER 4, 2000. Amended in January 2007.

#### **Section 1 Scope of and Authority for these Regulations.**

- (a) These regulations have been issued by the Board of Directors pursuant to its authority under Article 5, 6 and 8 of the IAPMO Bylaws.
- (b) These regulations set forth the procedures to be used for the filing and processing of all petitions to the Board of Directors filed pursuant to 1-7 of the Regulations Governing Committee Projects.
- (c) The Board of Directors can amend these regulations from time to time and waive or supplement, in whole or in part, at any time or times at its discretion.
- (d) For the purposes of these regulations, the Standards Council Secretary, or such other person as the Chair of the Board of Directors may appoint, shall act as a petitions clerk.

**Section 2 Subcommittees of the Board of Directors.** Unless the Board of Directors otherwise orders, the authority to consider and make recommendations on the disposition of a petition by the Board of Directors shall be delegated to a subcommittee of the Board of Directors, which shall be appointed, in accordance with 2.1 of these regulations. Subcommittees shall be appointed by the Chair of the Board of Directors.

**2-1 Composition of Subcommittees.** Subcommittees shall consist of three or more members of the Board of Directors. The criteria for selection and appointment of subcommittee members shall be as follows:

(a) A subcommittee member shall be a person who can decide the petition on the merits in an impartial manner.

(b) A subcommittee member shall not have any conflict of interest. (A conflict of interest is defined as any situation in which a decision on a petition could substantially and materially affect the member's financial or business interest.)

(c) Each subcommittee member shall, to the extent practicable, represent diverse interests within the association.

In making a decision of whether or not to serve on a subcommittee, the member may consult with the IAPMO general counsel.

**Section 3 The Scope of Review.** The petitioner shall generally confine the argument in the petition to matters that were presented below and shall not raise any new matters that could have but were not presented within the standards development process. A petition to the Board of Directors shall not be regarded as simply another opportunity to reargue a position that was rejected by the Standards Council. In considering a petition, the subcommittee shall give due deference to the judgment of the Standards Council and shall not intervene unless it can be demonstrated that extraordinary circumstances exist requiring the Board of Director's intervention to protect the integrity of the standards development process.

**Section 4 The Record.** In its consideration of the petition, the subcommittee shall have before it the entire record that was before the Standards Council, as well as all proceedings and decisions of the Standards Council on the issue. In addition, the subcommittee may consult any other records of the association that it deems pertinent to the issue, and the subcommittee may seek technical assistance from staff, the technical committee, or any other source or persons that it deems appropriate.

**Section 5 Notice of Intent to File the Petition.** Anyone wishing to petition the Board of Directors concerning a Standards Council action related to the issuance of a document, shall file a Notice of Intent to File a Petition within 15 days following the Standards Council action. A Standards Council action related to the issuance of a document includes any action of the Council that issues or returns a document or that affects the text of a document. Petitions concerning other Standards Council actions shall be filed within a reasonable period of time.

**Section 6 Filing and Contents of the Petition.**

(a) Within 15 days following the receipt of the notice of intent to file, or within such other time as the petitions clerk may allow, the petitioner shall file the petition together with 20 copies. The petition shall be no more than 10 pages in length and shall contain, in separately denominated sections, the following:

(1) Name, affiliation, and address of the petitioner;

(2) Statement identifying the particular Standards Council action to which the petition relates;

(3) Argument setting forth the grounds for the petition and, in particular, addressing why there exist extraordinary circumstances requiring the intervention of the Board of Directors (see the preceding Section 3 and 1-7 of the Regulations Governing Committee Projects); and

(4) Statement of the precise relief requested.

(b) Any part of the record related to the standards development process that is referenced or discussed in the petition should be clearly cited in the petition using available markings such as the title, author, date, and page of the record. Since the full record will be available to the subcommittee during its review, attachments and appendices shall not accompany the petition, unless express permission has been obtained from the petitions clerk.

## **Section 7 Consideration of the Petition.**

**7-1 Initial Review.** The petitions clerk may, at his or her discretion, arrange for initial review of the petition by meeting, correspondence, or telephone conference. If upon such initial review of the petition and any relevant portions of the record, the subcommittee determines that the petition has no merit, it may dismiss the petition.

**7-2 Full Review.** If initial review is not conducted, or, if upon such review, the subcommittee determines that further review is warranted, it shall afford the opportunity for responses to be filed by interested parties. Responses, together with 20 copies, shall be filed within 15 days or within such other time as the petitions clerk may allow.

(a) Responses shall be no more than 10 pages in length and shall contain, in separately denominated sections, the following:

(1) Name, affiliation, and address of the respondent;

(2) Statement identifying the petition to which the response relates and stating whether the respondent supports or opposes the petition; and

(3) Argument setting forth the grounds for opposing or supporting the petition and, in particular, addressing why there does or does not exist extraordinary circumstances requiring the intervention of the Board of Directors (see the preceding Section 3 and 1-7 of the Regulations Governing Committee Projects).

(b) Any part of the record related to the standards development process that is referenced or discussed in a response should be clearly cited in the response using available markings such as the title, author, date, and page of the record. Since the full record will be available to the subcommittee during its review, attachments and appendices shall not accompany the response, unless express permission has been obtained from the petitions clerk.

(c) So as to avoid unnecessary repetition and duplication of effort, parties are encouraged to file joint responses where possible and appropriate.

(d) Unless a hearing has been requested and granted by the subcommittee (see Section 8), the subcommittee shall, either by meeting or telephone conference, review and render a decision on the petition based on the written submissions of the parties and the record before it.

**Section 8 Requests for Hearings.** If the petitioner requests a hearing on the petition and that hearing is granted, the petitioner shall be assessed a filing fee of \$2,500 to be posted following the granting of the request. This fee may be reduced or waived by the Chief Executive Officer upon application of the petitioner if good cause for reducing or waiving the fee is presented. If a hearing is granted, the Procedures for Hearings shall be followed.

**Section 9 Waiver of Regulations.** Any of the deadlines or requirements set forth in these regulations may be waived by the subcommittee upon application of the petitioner or any other party for good cause shown, or in the discretion of the subcommittee.

**Section 10 Subcommittee Report to the Board of Directors.** The subcommittee shall file with the Board of Directors a written report concerning each petition that it has determined.