



January 11, 2023

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Petitions Clerk
IAPMO Board of Directors
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Dear IAPMO Board Members:

Petitioner: Daikin U.S. Corporation

Re: Petition of Decision Docket 09-24, UMC Item #138, Public Comment #1

Action Being Sought: Reject UMC Item 138, Public Comment #1.

Hearing Requested: Yes, a Hearing is Requested for This Petition.

Supporting Arguments: This Petition is being filed in view of the following procedural violations and substantive effects, which threaten the integrity of the code development process and urgently warrant Board intervention.

- I. The Standards Council improperly disregarded the decision and vote of the IAPMO membership, in contravention to IAPMO's consensus process and ANSI objectives.
 - a. ANSI Essential Requirements stipulate that the process must lack dominance.
- II. The Standards Council and the Technical Committee failed to provide sufficient technical justification in adopting PC#1, in contravention to IAPMO's Regulations Governing Committee Projects.
 - a. The standards Council's reason for denying the appeal was in error and failed to understand the impact of the Public Comment.
- III. The Standards Council's adoption of PC#1 violates ANSI's Essentials Requirements to harmonize the UMC with other ANSI standards.
- IV. The Standards Council's decision results in a conflict within the Uniform Mechanical Code.
- V. The Standards Council violated its procedures by allowing opponents of the membership's vote to provide rebuttal testimony out of order and after the conclusion of the Standards Council's questioning period.

Introduction

We respectfully request IAPMO's Board of Directors, in view of IAPMO procedures and ANSI's Essential Requirements, 1) **uphold** the IAPMO membership's vote against PC#1 and 2) **overturn** the decision of the Mechanical Technical Committee and Standards Council to approve PC#1 for Item #138 (appeal 9-24).

We submit that the advancement of PC#1 was done in contravention of IAPMO procedures and could potentially lead to unintended consequences, such as making UMC inconsistent internally and with other standards.

I. The Standards Council improperly disregarded the decision and vote of IAPMO's membership, in contravention to IAPMO's consensus process and ANSI objectives.

IAPMO members—representing diverse industries and regions—traveled to Charlotte, North Carolina to attend the Annual Conference. There, 466 present, voting members made their voices heard by overwhelmingly voting to approve 21 modifications to the Mechanical Code. Despite these efforts, the Mechanical Technical Committee, decided to reject **EVERY** amendment proposed by IAPMO membership. It appears that a select group of the Mechanical Technical Committee chose, in mass, to completely go against long-standing IAPMO procedure by ignoring the membership's vote.

The membership's vote has always been accorded high regard within the organization, as is reflected by the Section 4-5 of the IAPMO Regulations. The membership listens to the testimony and decides for the good of the organization and the public. IAPMO touts the collective expertise of its membership in developing standards and the importance of participating and **voting** for that reason. IAPMO encourages industry experts to join as members to "become part of the code development process by having a voice and a **vote that counts.**" (IAPMO [website](#), "Why become a member" (emphasis added).) And IAPMO represents that "[a]s a member of IAPMO, you can become an integral part of the code development process by having a voice, which will in turn help shape the future of the Plumbing and Mechanical industry." According to IAPMO, it accomplishes its important objectives by "drawing from the **knowledge of members** whose expertise stems directly from the Plumbing and Mechanical industry." (*Id.* (emphasis added).) And IAPMO has explained that its "consensus-based model code development process opens ourselves up to the **genius of the entire community** and to the sunlight of the communities we serve through our open and transparent process." (IAPMO [website](#), "The IAPMO Group" (emphasis added).) Yet, for these proposals, IAPMO has set aside that collective expertise—and the "genius" of the community—by rejecting the votes of its many members and the valuable perspectives they bring.

a. ANSI Essential Requirements stipulate that the process must lack dominance.

By setting aside the membership's votes, the Standards Council undermined an important ANSI required objective for code development: No authority, leadership, or influence should dominate to the exclusion of fair and equitable consideration of other viewpoints. Here, the Standards Council gave outsized deference to the position of a smaller subset of commentators, and it disregarded the membership without meaningful testimony and evidence to do so.

Of the 21 Technical Committee members voting against the IAPMO membership vote, 11 were not present at the Association Technical Meeting to hear the testimony and witness the vote even though this is a requirement of the Technical Committee. And the arguments made by the Technical Committee

for not adhering to the membership's vote seem based more on opinion rather than technical or policy reasoning. During the vote of the Mechanical Technical Committee following the Association Technical Meeting, the reasons provided for voting against the membership vote were as follows: 13 members stated, "I agree with the original TC decision;" 7 members stated in part, "Gypsum is not a material that shall be used to convey air. There are no published duct construction standards for Gypsum;" and only 1 member addressed the content of the Public Comment and stated, "I feel concealed spaces should not be used as ducts or plenums."

During testimony on the automatic appeal, three individuals testified in opposition to the decision of the membership. These same three individuals were the only ones to testify against each and every one of the automatic appeals. One individual admitted during testimony that he was not present at the Association Technical Meeting and noted that he had not heard the discussion on this Public Comment by the IAPMO membership.

There is a diverse makeup of the IAPMO membership. With over 450 members voting, consensus is essential. However, three individuals provided the only testimony against the diverse IAPMO membership. As a result, the Standards Council decision does not represent a consensus, and appears to have ignored the will of IAPMO membership.

II. The Standards Council and the Technical Committee failed to provide sufficient technical justification in adopting PC#1, in contravention to IAPMO's Regulations Governing Committee Projects.

When rejecting the membership's vote, Paragraph 4-4.6.3 of the IAPMO Regulations Governing Committee Projects requires the Technical Committee to articulate reasoning "[that] shall be sufficiently detailed so as to convey the TC's rationale for its action so that rebuttal may, if desired, be offered when the Committee presents its Technical Committee Report to the Association for consideration."

However, there was no technical justification provided as to safety hazards or public hazards with the use of concealed space plenums. No documentation identifying the hazards of the use of plenums in buildings was presented to the Mechanical Technical Committee or Standards Council. This is a violation of Sections 4-1, 4-3.3, and 4-4.5 of the IAPMO Regulations Governing Committee Projects.

The original Item 138 had the following substantiation: "ASHRAE recommends all HVAC ducts are made to a standard. There is no standard for using building materials as ductwork. The Gypsum Association does not recommend or have a standard to make ducts out of gypsum." There are several issues with this substantiation. First, it does not address the use of concealed space plenums. Second, two ANSI standards (NFPA 90A and NFPA 90B), which are referenced in Section 604.1, do include requirements for the use of gypsum as a duct.

During the testimony, at the automatic appeal hearing before the Standards Council, two of the three individuals testifying in opposition to the membership's vote failed to recognize that the code change (*i.e.*, the adoption of PC#1) would prohibit all plenums in concealed spaces. Instead, they believed that the change only related to the use of gypsum as a duct. In fact, one of the individuals stated, "I may be reading something wrong or different than other people, but this is eliminating Gypboard as a duct. That's the way I read this. And there is no standard for gypsum -- or Gypboard to be used or made into a duct. There's none at all. So I'm speaking in opposition [to the appeal], and I'll defer my time to other

people. Thank you.” And another individual testified, “I also speak in opposition to the proposal made...[T]here is no standard for the construction of gypsum products to be used in the application of ductwork. This change is needed to maintain the integrity and the safety provided by HVAC systems, and I stand by the TC's original decision to approve this back in May.” The third individual presented anecdotal comments about seeing rodent droppings and water build up in plenums above the ceiling, and that plenums are used for financial reasons without evidence.

a. The Standards Council's reason for denying the appeal was in error and failed to understand the impact of the Public Comment.

The reason provided by the Standards Council for their decision was, “During the hearing, those in support of the appeal asked the Council to consider the lack of data brought forth to support the comments/concerns shared by TC members regarding a life-safety issue. They also pointed to the brevity of the substantiation provided for Public Comment 1. Those in opposition advised there is no standard for gypsum to be used as a plenum, and that improper design can compromise air flow, the cleanliness of the system, and the health of those working on these systems. Upon hearing this testimony, the Council acknowledges the importance of both arguments, but is not moved to take an action contradicting the decision by the Technical Committee.”

The argument that “there is no standard for gypsum to be used as a plenum” was not a part of any presentation. The discussion by the opposition, and the statement by the proponent, was that there was no standard for the use of gypsum as a duct, not as a plenum. There are in fact many standards for the use of building materials in concealed space plenums, including standards that regulate gypsum for exposure in a plenum. These requirements are found in NFPA 90A, NFPA 90B, and the UMC.

The first sentence of Section 602.2 of the Uniform Mechanical Code reads, “Materials exposed within ducts or plenums shall be noncombustible or shall have a flame spread index not to exceed 25 and a smoke-developed index not to exceed 50, where tested as a composite product in accordance with ASTM E84 or UL 723.” Gypsum is permitted since it complies with the definition in Section 216.0 of noncombustible material. The definition identifies the standard that gypsum must meet to be considered noncombustible.

While the opponents to the automatic appeal and the Standards Council thought that the item would prohibit the use of gypsum as a duct, it does not. This was pointed out in the testimony by Julius Ballanco, P.E., and the letter he filed. This item does not impact Section 602.4.2 which is entitled, “Gypsum.” The section lists the requirements for the use of gypsum as a duct or within a plenum. This section will not be deleted based on the actions of Item 138.

III. The Standards Council's adoption of PC#1 violates ANSI's Essentials Requirements to harmonize UMC with ANSI standards.

The current UMC is harmonized with other ANSI documents and governmental consensus documents regarding the use of concealed space as plenums. The code is also consistent with these documents regarding the exposed materials within a plenum. The harmonization includes NFPA 90A, NFPA 90B, NFPA 5000, and the ICC International Building Code. These standards or documents allow the use of air ceiling plenums, underfloor plenums, and stud and joint space plenums. The acceptance of Public Comment #1 would result in creating an inconsistency between UMC and other ANSI standards as it prohibits every application of a concealed space plenum.

The removal of the harmonization between other ANSI standards would not be based on technical reasoning since none was provided. IAPMO procedures required technical justification for substantial changes to the code. ANSI Essential Requirements states, "ANSI-Accredited Standards Developers shall make a good-faith effort to resolve potential conflicts and to coordinate standardization activities intended to result in harmonized American National Standards." The Standards Council failed to meet these requirements.

IV. The Standards Council decision results in a conflict within the Uniform Mechanical Code.

The action of the Standards Council will also result in the UMC not being harmonized with itself. The resulting action will provide multiple conflicts within the code, which will result in confusion for the users of the code.

As identified by the Standards Council, Section 602.1 will be revised to read, "Materials used for duct systems shall comply with Section 602.2 through Section 602.7 as applicable. Concealed building spaces or independent construction within buildings shall not be permitted to be used as ducts or plenums."

The first exception to Section 602.2 allows return-air and outside-air plenums or concealed spaces within a dwelling unit. Yet, Section 602.1 states that you cannot use concealed spaces for a plenum.

Sections 602.2.1 through 602.2.4 list requirements for combustible materials exposed within a plenum. These sections indicate standard requirements for electrical wiring, fire sprinkler pipe, pneumatic tubing, and discrete products. This list of requirements will only confuse the code user as to whether a concealed space may be used as a plenum.

The definition of supply air or "Air, Supply" includes a reference to plenums and reads: Air being conveyed to a conditioned area through ducts or plenums from a heat exchanger of a heating, cooling, absorption, or evaporative cooling system. Plenum is defined in the code as: An air compartment or chamber including uninhabited crawl space areas above a ceiling or below a floor, including air spaces below raised floors of computer/data processing centers or attic spaces, to one or more ducts are connected and that forms part of either the supply-air, return-air, or exhaust-air system, other than the occupiable space being conditioned.

These two definitions further add confusion regarding whether a concealed space can be used as a plenum.

Section 607.0 addresses ventilated ceilings that are used for air supply. These spaces above the ceiling are defined as concealed spaces, which are being used as a plenum.

Section 608.0 is an entire section of the UMC listing requirements for the use of an under-floor space as a supply plenum in a dwelling unit. The underfloor space is a concealed space. These two sections, 602.1 and 608.0 are in conflict with one another.

Section 1104.2.3.2 is entitled, "Plenums". Similarly, Section 1201.1 addresses hydronic pipe located in a concealed space plenum. Section 1310.3.3.1 has requirements for gas piping exposed within a concealed space plenum. None of these sections are coordinated. These sections merely add to the conflict within the code.

The IAPMO Regulations require the Technical Committee to resolve conflicts. The Regulations further state that the Technical Correlating Committee shall resolve or recommend the resolution of conflicts

within the document. There has been no action from either committee to resolve the conflicts created by the judgment of the Standards Council. This is a violation of the IAPMO Regulations.

ANSI procedures require a good-faith effort to resolve all potential conflicts. The Standards Council did not resolve the conflicts and did not exercise a good faith effort. A good faith effort would have been to accept the IAPMO membership vote that was the result of direct testimony regarding the conflicts that would be created by the acceptance of Public Comment #1.

V. The Standards Council violated its procedures by allowing opponents of the membership's vote to provide rebuttal testimony out of order and after the conclusion of the Standards Council's questioning period.

Standards Council has specific procedures to be followed by testifiers during automatic appeal hearings. The procedures identify a time limit for proponents of the appeal, followed by a time limit for the opponents to the appeal, and finally a time limit for the rebuttal of the opponents' testimony. Following the testimony by both sides, the Standards Council is permitted to ask questions.

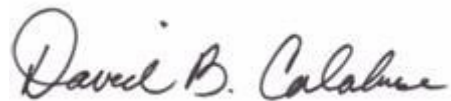
At the conclusion of the questions, one of the opponents interrupted the Chair and asked to speak again. The individual further testified in opposition to the automatic appeal. Following that person, another individual also interrupted the Chair and testified in opposition. This is a violation of the procedures of the Standards Council.

Conclusion

We encourage the Board to accept the vote of the membership by overturning the ruling of the Standards Council, rejecting Public Comment #1.

The integrity of the organization is challenged by the rejection of the membership vote at the Association Technical Meeting. IAPMO has long claimed, "become part of the code development process by having a voice and a vote that counts." For the vote to count, as stated by the association, the Board must vote in favor of the appeal.

Respectfully submitted,



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