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**JULIUS A. BALLANCO, P.E.**  
President

October 13, 2008

Ms. Gaby Davis  
Secretary of the Standards Council  
IAPMO  
5001 E. Philadelphia St.  
Ontario, CA 91761-2816

Dear Gaby:

RE: Appeal of Item 146 of UPC

Please consider this as a follow-up to the letter I sent, dated July 11, 2008. On behalf of Sure Seal, Inc. I am filing this appeal of Item 146 proposed to the Uniform Plumbing Code. The information regarding the appeal is, as follows:

Appellant: Julius Ballanco, P.E., CPD  
President  
JB Engineering and Code Consulting, P.C.  
1661 Cardinal Drive  
Munster, IN 46321

On Behalf of: Sure Seal, Inc.

Item Appealed: ROC Item 146, Uniform Plumbing Code

Committee

Recommendation: At the Denver Hearings, the Committee voted to approve this item. In the subsequent letter balloting of the Committee, voting on this item received a majority vote, but did not receive a two-thirds majority.

Relief Sought: Acceptance of Item 146

The following narrative provides the argument setting forth the grounds for the appeal. It should be noted that this appeal is being filed on a timely basis, within 20 days of the final action hearing in Atlanta, Georgia.

The Plumbing Technical Committee originally rejected this change at the first meeting. This rejection was at my request since the standard had not been completed prior to the meeting. The reason stated for the rejection was that the standard was not completed.

At the second meeting of the Plumbing Technical Committee, the standard was completed and properly circulated to the Committee. The TC voted, at the meeting, to approve the change. During the letter ballot phase, the change did not receive a two-thirds approval. The TC members that voted against the approval did not provide proper technical justification for their vote. Paragraph 4-3.5.1 requires proper technical justification for any negative vote by TC members (including in letter ballots). The TC members that voted against this change violated procedure by not providing proper technical justification. It should be noted that many of the comments in the negative ballots were taken directly from the letter from Mr. Lott from JL Industries. I reported on this letter in my letter to you, dated July 11, 2008.

The propose change would modify the code, as follows:

**1007.0 Trap Seal Protection.**

~~Floor drain or similar traps directly connected to the drainage system and subject to infrequent use shall be protected with a trap seal primer, except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction. Trap seal primers shall be accessible for maintenance. Floor drains and traps subject to evaporation due to infrequent use shall be protected with a water supplied trap seal primer, drainage supplied trap seal primer, or floor drain trap seal protection device. Water supplied trap seal primers shall be accessible for maintenance.~~

This modification would remove the allowance for the authority having jurisdiction to rule that protection of a trap seal is not necessary. Trap seal protection would be required for all traps that have infrequent use. This would increase the health and safety of the building by requiring the maintenance of the water trap seal.

This modification would also clarify that there are three approved methods of protecting the trap seal: a water supplied trap seal primer, a drainage supply trap seal primer, and a floor drain trap seal protection device.

I will review each comment submitted by the TC members and provide the reason why the comment is not technically justified.

**ADLER:** I vote to reject the Technical Committee's Accept as Submitted. The proposal to allow mechanical trap seals in floor drains instead of trap primers should be rejected because it would reduce safety and endanger public health. Test studies have shown that mechanical trap seals can and do fail in the open position, allowing dangerous sewer gas to enter the living area. Floor drains with trap primers, on the other hand, are more effective and less likely to fail.

This proposal directly contradicts the recommendation contained within the World Health Organization (WHO) report. In its report on SARS and other diseases transmitted by sewage, WHO emphasized the extreme importance of water trap seals to ensure that pathogens do not re-enter the living area. It is well known what occurred in 2003 with the SARS plague. This outbreak originated in Hong Kong, spread worldwide and resulted in diseases and deaths. Because of these facts, the report expressly recommends that mechanical devices should not be used due to their risk for failure.

Response: Mr. Adler states that this change permits a mechanical trap seal. This change does not. The change allows three options for protecting a water trap seal. A water trap seal is always required. All

three methods of protecting the trap seal are mechanical. Hence, the comment is incorrect since Mr. Adler is clearly unaware that the change requires a water trap seal. There is nothing in the proposed text to allow a mechanical trap.

Additionally, Mr. Adler is incorrect in stating that this contradicts the recommendation of the World Health Organization report. In fact, this change supports the World Health Organization report by mandating protection of a water seal trap. This change is also consistent with a report presented at the SARS Symposium sponsored by IAPMO and the World Plumbing Council. (See DVD #2, SARS Symposium Series) During the Symposium, it was reported how the UPC and other Plumbing Codes do not have proper protection requirements for water trap seals. During the presentation, the three options for protecting a water trap seal were presented with a statement that the code needs to mandate such protection. It was also pointed out that the code allows the inspector to not install protection. Hence, this proposal is completely consistent with the recommendations from the SARS Symposium and the World Health Organization report, whereas the current code is not.

**BRINK:** This proposal does not responsibly take into consideration public health and safety. By allowing mechanical trap seals, that have a reputation for failing, in floor drains rather than trap primers, the risk of sewer gases permeating living space is drastically increased thereby exposing the public to potential diseases transmitted by sewage.

Response: Mr. Brink also believes this change permits mechanical trap seals. This proposal does not allow mechanical trap seals. See the response to Mr. Adler's comment. Contrary to the comments, this proposed change increases the protection of public health by preventing the escape of sewer gas.

**BROWN, P:** I vote to reject the Technical Committee's Accept as Submitted. The proposal to allow mechanical trap seals in floor drains instead of trap primers should be rejected because it would reduce safety and endanger public health. Test studies have shown that mechanical trap seals can and do fail in the open position, allowing dangerous sewer gases to enter the living area. Conversely, floor-drains with trap primers are proven to be effective to provide proper health and safety to building occupants.

This proposal directly contradicts the recommendation contained within the World Health Organization (WHO) report. In its report on SARS and other diseases transmitted by sewage, WHO emphasized the extreme importance of water trap seals to ensure that pathogens do not re-enter the living area. It is well known what occurred in 2003 with the SARS plague. This outbreak originated in Hong Kong, spread worldwide and resulted in diseases and deaths. Because of these facts, the report expressly recommends that mechanical devices should not be used due to their risk for failure.

Response: Mr. Brown also believes this change permits mechanical trap seals. This proposal does not allow mechanical trap seals. See the response to Mr. Adler's comment. Similarly, this proposal is completely consistent with the World Health Organization report. Again, see the response to Mr. Adler's comment.

**COLLINGS:** I am not in favor of the use of these devices I have seen in lieu of a trap primer. We have seen failures on similar devices in different applications that have become sticky and have failed. These devices can be a little slow to open although not causing much build up before they do. They are also easily removable which can leave you without trap seal protection.

Response: Mr. Collings did not identify what he was referring to as “these devices” The proposed change removes the ability of the authority having jurisdiction from not requiring trap seal protection. This increases public health and safety. Mr. Collings also states that similar devices have become sticky and have failed. It is readily recognized that water supply trap seal primers have failed. They have failed at a high rate. For that reason, they are required to be accessible in the proposed code text so they can be maintained.

Of the three devices identified in the code change, only trap seal protection devices are tested by the standard for failure. They are also tested for every possible means of failure. As a result, they will have the highest level of performance of the three allowable devices. I did not believe it was appropriate to only specify one type of device, since the other two devices have been used and performed well, if properly maintained.

**FABRA:** I voted to reject the technical committee’s accept as submitted. Trap primers are a proven and effective method of installation and serves the purpose of the intent of the code to protect the public health and safety. Allowing mechanically trap seals in floor drains would reduce safety and endanger public health due to failure based off of test studies conducted by JL Industries.

The SARS epidemic was a perfect example of how loss of trap seal causes sickness and death and should not be taken lightly; by allowing a mechanical device which has been tested and can fail in the open position, allowing dangerous sewer gases to enter the living area. This proposal directly contradicts the recommendation contained in the report of the World Health Organization (WHO).

Response: Mr. Fabra also believes this change permits mechanical trap seals. This proposal does not allow mechanical trap seals. See the response to Mr. Adler’s comment. Similarly, this proposal is completely consistent with the World Health Organization report. Again, see the response to Mr. Adler’s comment.

JL Industries did not do any test studies on floor drain trap seal protection devices. See my appeal letter, dated July 11, 2008. JL Industries could not have possibly had a listed floor drain trap seal protection device tested since the product was not even available at the time of their letter and implied testing.

**FEEHAN:** I am voting in rejection to the committee’s action. At the time of the vote, I did not realize that the product that this change would allow a plastic membrane. This new product may work for a while, but we have no control as to what happens after the AHJ has left the building. Water added to a trap is the best way to ensure that sewer gases do not enter a building.

Response: Ms. Feehan indicates that she was unaware that one of the products has a plastic membrane. In fact, one of the products has an elastomeric membrane. (The other two products can also have plastic components.) This information was provided to the TC. All Committee members received a copy of the standard. What Ms. Feehan fails to address is the fact that the standard regulates the performance of the device, including testing for long-term performance. These devices are also tested for failure, whereas other trap seal devices are not. Hence, the quality control is higher, providing a much higher level of protection of public health. (It should be noted that Ms. Feehan is no longer listed as a member of the Plumbing TC.)

**FISCHER:** I vote negative on the Committee action on Item 146 for the following reasons: A reliance on a mechanical trap seal to provide protection against the escape of sewer gases is a reduction in safety provided by a water trap seal. Tests have shown that this method of trap seal can and does fail in the open position, allowing dangerous sewer gases to enter an occupied area. The World Health Organization (WHO) report emphasized the importance of water trap seals. The report also recommends against mechanical trap seals because of their risk of failure.

Response: Mr. Fischer also believes this change permits mechanical trap seals. This proposal does not allow mechanical trap seals. See the response to Mr. Adler's comment. Similarly, this proposal is completely consistent with the World Health Organization report. Again, see the response to Mr. Adler's comment.

**HAMILTON:** I vote to reject the Technical Committee's Accept as Submitted. The proposal to allow mechanical trap seals in floor drains instead of trap primers should be rejected because it would reduce safety and endanger public health. Test studies have shown that mechanical trap seals can and do fail in the open position, allowing dangerous sewer gases to enter the living area. Conversely, floor-drains with trap primers are proven to be effective to provide proper health and safety to building occupants. This proposal directly contradicts the recommendation contained within the World Health Organization (WHO) report. In its report on SARS and other diseases transmitted by sewage, WHO emphasized the extreme importance of water trap seals to ensure that pathogens do not re-enter the living area. It is well known what occurred in 2003 with the SARS plague. This outbreak originated in Hong Kong, spread worldwide and resulted in diseases and deaths. Because of these facts, the report expressly recommends that mechanical devices should not be used due to their risk for failure.

Response: Mr. Hamilton also believes this change permits mechanical trap seals. This proposal does not allow mechanical trap seals. See the response to Mr. Adler's comment. Similarly, this proposal is completely consistent with the World Health Organization report. Again, see the response to Mr. Adler's comment.

**LEVAN:** I have voted negatively on the TC's action to approve as submitted. The addition of an elastomeric device to protect the trap seal is not supported by the technical details supplied to the TC. Elastomeric gaskets or devices are subject to frequent contact with all sorts of waste materials conveniently discharged into the nearest floor drain. The elastomeric material must be resistant to these waste materials. The product standard in my opinion is insufficient to assure the material used will continue to offer the same protection, as current code requires.

Response: Mr. Levan indicates that the technical details were not supplied to the TC. That is incorrect. I sent each TC member a copy of the standard for trap seal protection devices. The elastomeric membrane material is subject to testing that simulates the worst case condition of waste materials. The standard has the following requirements:

### 3.9 Physical Test of Membrane

#### 3.9.1 Purpose

This test shall determine the suitability of the membrane material when exposed to the environment of a sanitary drainage system.

3.9.2 Procedure

The membrane of the floor drain trap seal protection device shall be subjected to the tests specified in Table 3.

Table 3

Property	Conditions	ASTM Method	Test Performance Requirements
Ozone Resistance	72 hrs @ 104° F (40°C) & 25 pphm ozone	D 1149	No visible cracks
Water Absorption	48 hrs @ 158° F (70°C)	D 471	Max weight gain of 20%
Chemical Reagents	Complete immersion for 72 hrs	D 543	Gain in weight no greater than 10%, No weight loss
Weather-o- meter	One cycle 4 hrs UV* @140°F (60°C) 4 hrs Condensation @ 122°F (50°C) 500 hrs	G 53	Max. 50% loss in tensile strength and ultimate elongation
Split Tear	Die C Sample	D 624	Min. 0.25 kn/m Min. 0.17 kn/m (Silicone rubber)
Low Temperature Brittleness	Non-brittle 3 minutes	D 2137 Method A	Non-brittle at -40°F (-40°C)

\* The lamps shall be UV-B lamps with peak emissions at 313 Nm.

3.9.3 Criteria

Failure to pass the test in Table 3 shall result in rejection of the device.

These requirements are as stringent, or more so, than other materials exposed to waste materials, including no-hub gasket material. Mr. Levan's comments are incorrect, hence, he has not provided any justification for voting against the change.

**NIKRAVI:** I voted to reject the technical committee's accept as submitted. Trap primers are a proven and effective method of installation and serves the purpose of the intent of the code to protect the public health and safety. Allowing mechanically trap seals in floor drains would reduce safety and endanger public health due to failure based off of test studies conducted by JL Industries.

The SARS epidemic was a perfect example of how loss of trap seal causes sickness and death and should not be taken lightly; by allowing a mechanical device which has been tested and can fail in the open position, allowing dangerous sewer gases to enter the living area. This proposal directly contradicts the recommendation contained in the report of the World Health Organization (WHO).

Response: Mr. Nikravi also believes this change permits mechanical trap seals. This proposal does not

allow mechanical trap seals. See the response to Mr. Adler's comment. Similarly, this proposal is completely consistent with the World Health Organization report. Again, see the response to Mr. Adler's comment. As I have previously written, the JL Industries study is not a study at all of the products being identified in this proposed change.

**RODIO:** Trap flow protection devices should not be allowed. The documentation provided by Chuck Lott is persuasive. I also have concerns on the fact that they restrict flow. This code change appears to contradict other sections of the code.

Response: See my response to the letter from Chuck Lott which was improperly sent to the TC after the testimony was required to be presented. Mr. Rodio believes that the floor drain trap seal protection device will restrict flow. In fact, it is the floor drain cover that restricts flow. Because the cover restricts the flow, the test standard for floor drain trap seal protection devices requires the cover to be removed. The test requires the device to flow the full amount of a drain pitched 1/4 inch per foot flowing half full with a smoother roughness coefficient than the code uses for drainage pipe sizing. That is a greater amount than any floor drain will flow. Hence, there is no restriction in flow, as opined by Mr. Rodio.

Mr. Rodio states that this change appears to contradict other sections of the code, without identifying those sections. This is an inappropriate comment since there is no substance to the comment.

**SOSKIN:** I reject the Technical Committee's action to reject the Public Comment Assembly Action. This item does not enhance public health or safety.

Response: Mr. Soskin is incorrect in his statement. In fact, this change greatly enhances public health and safety. The change removes the arbitrary language which allows the authority having jurisdiction to ignore the requirements for protection of a trap seal subject to evaporation. The change also clearly identifies the three methods of protecting the trap seal from evaporation.

**TABAKH:** This item does not improve and enhance the public health and safety.

Response: Mr. Tabakh is incorrect. In fact, this change greatly enhances public health and safety. As previously stated, this change removes the arbitrary language which allows the authority having jurisdiction to ignore the requirements for protection of a trap seal subject to evaporation. The change also clearly identifies the three methods of protecting the trap seal from evaporation.

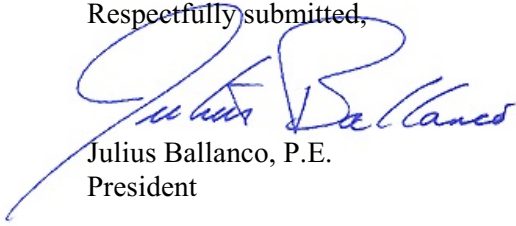
None of the TC members had technical comments that would justify their vote against Item 146. As I have identified, many have misconceptions regarding this change. This is disconcerting since it is the obligation of the TC members to become familiar with all of the technical aspects of every proposed change. Unfortunately, many of the TC members believed the false and incriminating comments made by Mr. Chuck Lott, which were improperly e-mailed to the TC after the date that all testimony was required to be presented to the TC.

I am disclosing that, as a member of the IAPMO TC, I abstained from voting on this item since I submitted the code change on behalf of Sure Seal, Inc. Sure Seal is a manufacturer of floor drain trap seal protection devices. Their product has recently been listed by IAPMO R&T as being in conformance with ASSE 1072.

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I look forward to a favorable decision by the Standards Council.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Julius Ballanco". The signature is stylized and cursive, with a large initial "J" and "B".

Julius Ballanco, P.E.  
President