

RP1-13

P2502.1

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2502.1 Existing building sewers and building drains. ~~Existing building sewers and drains shall be used in connection with new systems when found by examination and/or test to conform to the requirements prescribed by this document. Where the entire sanitary drainage system of an existing building is replaced, existing building drains under concrete slabs and existing building sewers that will serve the new system shall be internally examined to verify that the piping is sloping in the correct direction, is not broken, is not obstructed and is sized for the drainage load of the new plumbing drainage system to be installed.~~

Reason: Before the technical reasons for the changes in this section are provided, the PMGCAC wants to readers of PMGCAC proposals to understand that many of our proposals for changing the IRC are focused on language improvements and intent clarity that do not change the meaning of what the 2012 IRC (and earlier editions) have required. Much of the existing language in the plumbing chapters came from the old CABO codes. "Seasoned" code officials knew what this language intended and inspected based upon a wealth of knowledge gathered over the many years of development of those older codes. Our concern is for the newer code officials and inspectors who do not have this experience and more often than not, are being required to enforce the code just as it is written. If the code is not clear, a variety of interpretations result and all users of the code suffer the consequences. The code needs to actually state the intent in clear terms. Even though many people already "know" what is intended by a particular code section and don't think it necessary to make any changes, the development of the codes needs to consider all people who use the codes whether they are experienced or a newcomer. We hope that the readers of the PMGCAC proposals will carefully consider and approve our "editorial proposals" towards making a better code for the future.

Technical reason for Section P2502.1:

Use of "and/or" and "when" in code text is undesirable code format. What kind of "test"? The phrase "requirements prescribed by this document" is vague. Overall, the application of this section is unclear. The revised language provides clear, prescriptive requirements.

Consider a few situations that happen to houses. 1) A slab-on grade house burns down or is wind damaged such that only the remaining slab foundation will be used to re-construct a new building. Re-use of the building drain would be desirable to avoid extensive slab rework. 2) A house is completely razed or the entire plumbing drainage system of a house needs replaced such that only the building sewer remains. Re-use of the building sewer would be desirable to avoid extensive costs and possible complications for replacing the sewer (such as crossing a public street to connect to the public sewer). Why tear out good, serviceable building drains and building sewers for the sake of replacing with new material? The only way to know if existing building drains and existing building sewers are serviceable is to internally examine the piping for problems.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no.1 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2502.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The required internal examination would increase the cost of construction that is not justified.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: The original code language already required an "examination and/or test" for sewers and drains that are going to be "re-used". Thus, this proposal does not cause additional cost of construction. Because all the piping is below grade, how else could you examine the piping if not by video camera? Testing (assuming pressure testing) of the piping doesn't tell you if the pipe has back slope or obstruction issues. This section was originally put into the code because some code officials were forcing complete replacement of building drains below slabs and building sewers (and even some under concrete driveways and public streets) when a house was completely rebuilt. This section is being revised only to clarify what this section originally intended.

RP1-13

Final Action: AS AM AMPC_____ D

RP2-13
P2502.2

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2502.2 Additions, alterations or repairs. Additions, *alterations*, renovations or repairs to any plumbing systems shall conform to that required for a new plumbing system without requiring the existing plumbing systems to comply with all the requirements of this code. Additions, *alterations* or repairs shall not cause an existing system to become unsafe, insanitary or overloaded.

Minor additions, minor alterations, minor renovations and or minor repairs to an existing plumbing systems ~~shall be permitted that are performed in the same manner and arrangement as in the existing system but do not comply with this code, shall not create a hazardous condition and shall require approval by the building official.~~ provided that such repairs or replacement are not hazardous and are approved.

Reason: "Shall be permitted" is not mandatory code language. The existing second paragraph is really an exception to allow "old methods and arrangements", not compliant with the current code, to be used in certain situations that are determined to be not hazardous. For example, a drum trap on a bathtub is not allowed by current code. It's old technology but drum traps are not known to create a hazardous condition. Changing a defective drum trap over to a standard trap arrangement might prove to be very difficult and unnecessarily costly when a replacement with a new drum trap will work. An S-trap arrangement for an existing pedestal lavatory might be the only economical way to provide for a replacement trap to the lavatory because of the physical constraints. The previous S-trap installation worked successfully and is not a hazardous condition. The second sentence in this section provides appropriate relief for repair situations instead of forcing an extensive and costly event for what started off as a simple repair project. The revised language makes the intent clear.

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Cost Impact: The code change proposal will not increase the cost of construction.

P2502.2-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The term "minor" is not defined and is used too many times in the proposal. The committee believes that the phrase "shall be permitted" is mandatory language that is acceptable for the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: "Shall be permitted" is not mandatory code language. Granted, the phrase is used throughout the I-codes as if it was mandatory code language but the truth is that this phrase only means you are allowed to do something. Unless the code prohibits something, you are allowed to do anything you want without saying that you are permitted to do so. The phrase "shall be permitted" doesn't mandate anything and doesn't prohibit anything. This is unacceptable code language.

The term "minor" was added to alterations, renovations and repairs because there has been always the question as to whether "minor" was meant as an adjective for all those terms or just for additions. We believe "minor" applies to all those words. There is no definition for "minor" but that problem existed in the original code language. It is up to the code official to decide what is "minor" as it is difficult to prescribe what constitutes "minor" in every situation. This revised language does not change the intent of the original language. It just puts the intent in mandatory language code format.

RP2-13

Final Action: AS AM AMPC_____ D

RP3-13

P2503.4, P2503.4.1 (New), P2503.4.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Delete and substitute as follows:

~~**P2503.4 Building sewer testing.** The *building sewer* shall be tested by insertion of a test plug at the point of connection with the public sewer and filling the *building sewer* with water, testing with not less than a 10-foot (3048 mm) head of water and be able to maintain such pressure for 15 minutes.~~

P2503.4 Gravity-flow building sewer test. Gravity-flow *building sewer* piping shall be tested in accordance with Section P2503.4.1 or P2503.4.2. Plastic piping shall not be tested using air or gas.

P2503.4.1 Water test. The piping shall be filled with water. Additional water shall be forced into the piping to increase the pressure in the piping by not less than 10 feet of water column (4.3 psi) (30 kPa). The source of pressure shall be isolated and disconnected from the piping except where a standpipe is used to generate the test pressure. Where a standpipe is used to generate the test pressure, water shall not be added to the standpipe during the test observation period. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with the requirements of Section P2503.9.

P2503.4.2 Air test. The piping shall be pressurized with air to not less than 4.3 psi (30 kPa). The air pressure shall be retained in the piping and the air pressure source shall be disconnected from the piping. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with the requirements of Section P2503.9.

Reason: This section needs to apply *only* to gravity flow sewers to distinguish it from the testing requirements for forced flow sewers (another proposal by the PMGCAC. The testing requirements between the two types are vastly different.

Code language should not, in general, include unnecessary "instructions" for the performance of the work. For example, "insertion of a test plug at the point of connection to the..." is unnecessary as the requirement for pressurizing the piping automatically requires that the contractor make the necessary arrangements (such as plugging and capping) to be able to pressurize the piping. To the "public sewer" is inaccurate as a building sewer could terminate at a septic tank, a private sewer or a private waste treatment plant.

The existing code language requires that the "piping maintain the test pressure". This is archaic language because the piping doesn't "maintain" anything. What is intended is that the test pressure in the piping not decrease during the observation period. The code language is revised to more clearly state the condition for a successful test.

A common method for water testing is to attach a standpipe to the piping being tested and filling the piping and the standpipe with water so that the water in the standpipe produces the required test pressure in the piping. The test pressure is easily verified by measuring the height of the standpipe. A "loss of pressure" (indicating a leak) in the system *could* be determined by observing the water level in the standpipe. However, in many cases, observing the water level in the standpipe might require the inspector to climb a ladder to visually see the water level at the top of the standpipe. The inspector is now challenged as to how much of a drop in water level in the standpipe constitutes a test failure? At first, it might be easy to say "none". However, if a pressure gauge is connected to the system to determine pressure loss, the minimum "readability" of the gauge for this pressure range allows for *some* pressure loss (or drop in standpipe water level). For example, Section P2503.9 requires that the pressure gauge have increments of 0.1 psi. Therefore, the gauge can be read to an accuracy of half of the increment or 0.05 psi. In other words, where using a reasonably sized, typical dial pressure gauge, it would be very difficult to observe that the pressure gauge needle moved by an increment less than 0.05 psi. So, by reading a pressure gauge, the amount of pressure drop allowed in the system under test is 0.05 psi. This pressure converts to 1.4 inches of water column. So, theoretically, to be fair and equivalent to the reading of a pressure gauge (such as used for an air test), the water level in the test standpipe could drop 1.4 inches and still be considered acceptable. Some code officials will fail a water test on piping because of a *change in shape of the water meniscus in the standpipe!* This is not realistic, is unnecessarily restrictive and is not what is intended by the code. By requiring that a gauge be used for determining the success of a water test allows for the code official to remain in a safe location (not having to climb ladders) and provides for a reasonable allowance for leakage of a system that essentially experiences no pressure while in service.

Another way to pressurize the piping with water is to force water into the piping with a hydrostatic pump (usually a small hand pump). The current language doesn't seem to consider this method and some code officials might balk at this method just because they think the language requires a 10 foot standpipe full of water to generate the test pressure. The revised language is now open to

allow for water pressurization by a pump (typically a hand pump) instead of a standpipe.

A new section for *air testing* of gravity flow sewers is added as there is no technical reason why air cannot be used as a test medium provided that the piping is not of plastic material. Note that the test pressure is 4.3 psi to be the pressure equivalent to 10 feet head of water. In other sections of the current code, air test pressures are stated as 5 psi. As test gauges are required (see Section P2903.9) to have increments of 0.1 psi, there is no need to 'round' the test pressure up to 5 psi so that the pressure can be read on a gauge. For other code sections that use the 5 psi for air testing, other proposals are being offered to change the test pressure to 4.3 psi. There is no need (and it doesn't make sense) to air test at 5 psi when water testing is only required at 4.3 psi (10 feet of water head).

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Cost Impact: The code change proposal will not increase the cost of construction.

P2503.4-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal would increase cost because of additional labor needed to do the test. There is not adequate cost justification for this increase in cost.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify proposal as follows:

P2503.4 Gravity-flow building sewer test. Gravity-flow *building sewer* piping shall be tested in accordance with Section P2503.4.1 or P2503.4.2. Plastic, concrete and vitrified clay piping shall not be tested using air or gas.

Commenter's Reason: We don't understand the committee's reason as to why there would be additional labor to perform the test that has a gauge. Putting a test gauge on the system to be pressure tested is just a matter of have a fitting in place to attach the gauge. Putting a gauge in place for air testing isn't anything new so why would it be so much "additional labor" for attaching a gauge for a water test?

The important thing to realize is *that this language allows for water testing without the use of a 10-foot test head standpipe full of water!* The reasoning that proponents of RP4 used to support the elimination of any water test head pressure for sewers was that they were concerned about flooding the house if a test plug didn't hold. The water test method in this proposal allows for the use of hand hydrotest pump to generate the test pressure. By this method, if the test pressure "lets go", the release of water is very minimal - maybe a cup?

We don't agree with the committee that there would be an increase in cost because special gauges are now required. We believe that the committee was swayed by an opponent's testimony that this proposal *now* requires special test gauges that might be unobtainable and highly expensive. This is not true because the code has required that gauges used for testing meet Section P2503.8 ever since the 2003 edition of the IRC (and IPC). By now, all plumbing contractors should have the appropriate test gages at their shop or on the truck. This proposal did not add the specification for test gauges, it only points to the section that has required this type of gauge for 10 years. Installers use the same test gauges for air pressure tests for DWV systems. These gauges are not left at the site but are simply attached for the test observation period. These gauges are obtainable and are the same gauges used for air testing of building DWV system.

In this public comment, we are further modifying Section P2503.4 to add other types of sewer piping that must not be tested by air, that being concrete and vitrified clay. These products can become cracked during installation and applying air pressure could

result in a pipe failure which could send out projectiles that could cause injury, not unlike what could happen with air testing of plastic piping.

RP3-13

Final Action:

AS

AM

AMPC_____

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RP4-13
P2503.4

Proposed Change as Submitted

Proponent: Gary Kozan, CPD, Ridgeway Plumbing, representing Florida Association of Plumbing Heating Cooling Contractors (garyk@ridgewayplumbing.com)

Revise as follows:

P2503.4 Building sewer testing. The building sewer shall be tested by insertion of a test plug at the point of connection with the public sewer and filling the building sewer with water to the highest point thereof, testing with not less than a 10-foot (3048) head of water and be able to maintain such pressure for 15 minutes. The building sewer shall be watertight at all points. Forced sewer tests shall consist of pressurizing the piping to a pressure of not less than 5 psi (34.5 kPa) greater than the pump rating and maintaining such pressure for not less than 15 minutes. The forced sewer shall be watertight at all points.

Reason: Subjecting a gravity house sewer to a 10-foot head is both unnecessary and impractical. By the time the building sewer is able to be connected, the plumbing fixtures have often already been installed. That means that both ends of the sewer line must be plugged off in order to prevent the house from flooding. Leaks on house sewers are rare, considering that most are constructed with plastic pipe, are typically short, and contain few fittings and joints. Public sewer mains and branch laterals are not similarly tested.

This revised text is identical to that found in the other model plumbing code (UPC). It acknowledges the difficulties associated with pressure testing house sewers. It would be appropriate for the IRC to adopt this proven method.

This proposal also adds language for testing forced sewers, identical to that found in the IPC.

Cost Impact: This code change proposal will not increase the cost of construction.

P2503.14-RP-KOZAN.DOC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This method of testing is a safer, more logical way to perform the testing.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify proposal as follows:

P2503.4 Building sewer testing. The building sewer shall be tested by insertion of a test plug at the point of connection with the public sewer, and filling the building sewer with water and pressurizing the sewer to not less than 10-foot (3048 mm) head of water, to the highest point thereof. The test pressure shall not decrease during a period of not less than 15 minutes. The building sewer shall be watertight at all points.

Forced sewer tests shall consist of pressurizing the piping to a pressure of not less than 5 psi (34.5 kPa) greater than the pump rating and maintaining such pressure for not less than 15 minutes. The forced sewer shall be watertight at all points.

Commenter's Reason: Certainly, gravity sewer testing with water at practically zero pressure is "safer" (because the house won't flood when testing with a 10 foot stand pipe full of water and a test plug blows out) BUT does the test really prove anything? We understand that in normal service, a gravity building sewer experiences no pressure. However, the 10 foot water head test pressure is necessary to determine *the mechanical integrity of the joints*. For example, the installation might have a joint that is just "stuck together" without a coupling being tightened (hubless) or solvent welded (plastic); or a glued joint that might have squeezed the pipe partially out of the fitting socket before setting up. A little ground movement along with some invasive tree roots are going to eventually cause a root-clogging problem at these weak joints. The purpose of the 10 foot test head is not to necessarily duplicate an actual in-service condition but to ensure a level of quality for the workmanship. The 10-foot test head has been in the code for decades and there is not any technical justification for lowering the test pressure.

Plumbing contractors are usually inventive enough to know how to protect their own, and their customer's interests by making sure that homes and buildings will not be flooded during a building sewer test.

Note, however, we prefer RP3 as modified by our public comment over RP4 because of the following shortcomings of this RP4 proposal:

- 1) A test pressure for a forced sewer of 5 psi greater than the pump pressure rating is unnecessary. The pump cannot develop any more pressure than its rating so why test at a higher pressure?
- 2) The proposed language implies that a successful test on the sewer is where no observed leaks are found. How does the code official do that when the trench is muddy or where it might have rained a short time ago? Does the code official need to get down in the trench and look for evidence of leakage?
- 3) Why shouldn't an air test be acceptable for those piping systems that are not plastic, concrete or vitrified clay? The code allows air tests for drain, waste and vent piping (not plastic) so why not for sewers?
- 4) The original proposal does not require a period of time for the gravity test.

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RP4-13

Final Action: AS AM AMPC_____ D

RP6-13
P2503.5

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2503.5 DWV Drain, waste and vent systems testing. Rough-in and finished plumbing installations of drain, waste and vent systems shall be tested in accordance with Sections P2503.5.1 and P2503.5.2.

Reason: The use of acronyms in code text is undesirable. The section language needs to state what plumbing system requires testing because the section title is not code language. This is a simple editorial cleanup that doesn't change the intent or meaning of this section.

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Cost Impact: The code change proposal will not increase the cost of construction.

P2503.5-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This proposal is not necessary as acronyms are used in other parts of the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: This is a simple editorial cleanup of the language. We are perplexed as to why the committee didn't approve this because acronyms are generally problematic in code text.

RP6-13

Final Action:

AS

AM

AMPC_____

D

RP7-13

P2503.5.1, P2503.5.1.1 (New), P2503.5.1.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2503.5.1 Rough-in test plumbing. ~~DWV The rough-in piping for the drain, waste and vent systems shall be tested on completion of the rough piping installation by in accordance with Section P2503.5.1.1 or P2503.5.1.2 . Plastic piping shall not be tested using air or gas. water or for piping systems other than plastic, by air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed, as follows:~~

- ~~1. Water test. Each section shall be filled with water to a point not less than 10 feet (3048 mm) above the highest fitting connection in that section, or the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.~~
2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

P2503.5.1.1 Water test. The piping shall be filled with water. Additional water shall be forced into the piping to increase the pressure in the piping by not less than 10 feet (3048 mm) of water column (4.3 psi) (30 kPa). The source of pressure shall be isolated and disconnected from the piping except where a standpipe is used to generate the test pressure. Where a standpipe is used to generate the test pressure, water shall not be added to the standpipe during the test observation period. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with the requirements of Section P2503.9.

Exception: Vent piping that is within 10 feet (3048) below the elevation of the termination of the vent piping above a roof shall only be required to be filled with water and shall not be required to be pressurized by 10 feet (3048 mm) of water column (4.3 psi) (30 kPa).

P2503.5.1.2 Air test. The piping shall be pressurized with not less than 4.3 psi (30 kPa) of air. The air pressure shall be retained and the source of air pressure shall be disconnected from the piping. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This shall be held without introduction of additional air for a period of 15 minutes. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with the requirements of Section P2503.9.

Exception: The highest vent piping joint in a completed drain waste and vent system and the pipe above such point in the vent system shall not be required to be tested.

Reason: The existing section language has some convoluted language regarding a personnel safety-related prohibition, appears to allow testing using gases other than air which is equally dangerous to personnel, uses an acronym in the code language (an undesirable practice), has archaic terminology, fails to consider certain DWV piping arrangements that are now allowed by the code and, depending on a code official's interpretation, puts onerous and perhaps impossible demands on the inspector to visually inspect all of the pipe, fittings and connections for water leaks.

Water testing:

A common method for water testing is to attach a standpipe to the piping being tested and filling the piping and the standpipe with water so that the water in the standpipe produces the required test pressure in the piping. The test pressure is easily

verified by measuring the height of the standpipe. A "loss of pressure" (indicating a leak) in the system *could* be determined by observing the water level in the standpipe. However, in many cases, observing the water level in the standpipe might require the inspector to climb a ladder to visually see the water level at the top of the standpipe. The inspector is now challenged as to how much of a drop in water level in the standpipe constitutes a test failure? At first, it might be easy to say "none". However, if a pressure gauge is connected to the system to determine pressure loss, the minimum "readability" of the gauge for this pressure range allows for *some* pressure loss (or drop in standpipe water level). For example, Section P2503.9 requires that the pressure gauge have increments of 0.1 psi. Therefore, the gauge can be read to an accuracy of half of the increment or 0.05 psi. In other words, where using a reasonably sized, typical dial pressure gauge, it would be very difficult to observe that the pressure gauge needle moved by an increment less than 0.05 psi. So, by reading a pressure gauge, the amount of pressure drop allowed in the system under test is 0.05 psi. This pressure converts to 1.4 inches of water column. So, theoretically, to be fair and equivalent to the reading of a pressure gauge (such as used for an air test), the water level in the test standpipe could drop 1.4 inches and still be considered acceptable. Some code officials will fail a water test on piping because of a *change in shape of the water meniscus in the standpipe!* This is not realistic, is unnecessarily restrictive and is not what is intended by the code. By requiring that a gauge be used for determining the success of a water test allows for the code official to remain in a safe location (not having to climb ladders) and provides for a reasonable allowance for leakage of a system that essentially experiences no pressure while in service.

Another way to pressurize the piping with water is to force water into the piping with a hydrostatic pump (usually a small hand pump). The current language doesn't seem to consider this method and some code officials might balk at this method just because they think the language requires a 10 foot standpipe full of water to generate the test pressure. The revised language is now open to allow for water pressurization by a pump (typically a hand pump) instead of a standpipe.

The exception for P2503.5.1.1 is provided to accommodate the age old method of just filling the completed piping system to the overflow point at the vent terminal above the roof. (This is the same allowance that is in the current section language). Vent piping, especially so near to the opening to the outdoors, experiences negligible pressure in actual service so testing at not less than "10 feet of water column" is not critical. Simply filling this section of vent piping with water is good enough as it has been for decades.

Air testing:

This proposal adds the prohibition of the use of gas for testing plastic piping systems as someone could claim that they were not using air for testing but gas (such as nitrogen or carbon dioxide) for testing--the hazard (explosion of the piping) is still the same.

The test pressure of "5 psi of air" was changed to 4.3 psi to be equivalent to 10 feet head of water as it doesn't make sense to "penalize a system" with a higher test pressure just because of the test method chosen. The 5 psi air pressure was originally chosen because in the past, gauges with 1 psi increments were commonly used. Now, the code requires (Section P2503.9) that the pressure gauge have 0.1 psi increments so it is easily possible to pressurize with accuracy to 4.3 psi. There is no need (and it doesn't make sense) to air test at 5 psi when water testing is only required at 4.3 psi (10 feet of water head).

Test instruments using mercury are rarely, if ever anymore, used for plumbing system testing. Because of the environmental issues associated with a mercury spill from such test instruments, references to this type of test apparatus should be eliminated. The exception to Section P2503.5.1.2 is provided so that contractors will not have to climb roofs (sometimes very steep and slick) to "cap off" a vent pipe for a test and then return to the roof to uncapped the vent pipe after the test. Such work can be easily and safely performed in an attic space. In actual service, the vent system experiences negligible pressure at this point so testing of this final connection isn't critical. Let's not make the plumbers do something that we know is dangerous (accessing roofs).

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no. 6 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2503.5.1-RP-HALL-PMGCAC

Committee Action Hearing Results

The following is errata that was not posted to the ICC website.

P2503.5.1 Rough-in test plumbing. ~~DWV The rough-in piping for the drain, waste and vent systems shall be tested on completion of the rough piping installation by in accordance with Section P2503.5.1.1 or P2503.5.1.2 . Plastic piping shall not be tested using air or gas. water or for piping systems other than plastic, by air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed, as follows:~~

- ~~1. Water test. Each section shall be filled with water to a point not less than 10 feet (3048 mm) above the highest fitting connection in that section, or the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.~~

2.—Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

Committee Action:

Disapproved

Committee Reason: The language in the proposal is more confusing than the existing text. The proposal prohibits a commonly used test and there is no technical justification for this.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: Perhaps the committee was confused by the presence of errata, that being item 2 being left in the proposal. The water and air testing requirements for were already in the code. No test method is being deleted. The proposal made the requirements into sub-sections of the main section and provided clear and consistent wording. The wording of these two sub-sections is consistent with what we proposed in RP3 for water and air testing for sewers. The reasons in the original proposal provide a clear understanding of why we are revising the language.

RP7-13

Final Action: AS AM AMPC____ D

RP8-13
P2503.5.1

Proposed Change as Submitted

Proponent: Gary Kozan, CPD, Ridgeway Plumbing, representing Florida Association of Plumbing Heating Cooling Contractors (garyk@ridgewayplumbing.com)

Revise as follows:

P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or for piping systems other than plastic, by air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed, as follows:

1. Water test. Each section shall be filled with water to a point not less than ~~40~~ 5 feet (~~3048~~ 1524 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.
2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 KPa) or 10 inches of mercury column (34 KPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

Reason: When testing a DWV system, the actual head pressure is not nearly as critical as the visual nature of the test. 10-foot head tests are commonly verified by the inspector "shaking the stack." If water splashes out, the system is considered to be watertight. Mirrors and ladders are seldom used. Lowering the fill stack to 5 feet enables both the installer and the inspector to put eyeballs on the water level inside the pipe. Seeing is believing.

There is nothing magical about a 10-foot head. The reality is a 10-foot (4.34 psi) head test is unlikely to reveal any leaks or defects that would not be detected by a 5-foot (2.17 psi) head test. Many jurisdictions favor the 5-foot head test as superior overall to a 10-foot head test. Florida, for example, adopted the 5-foot head test statewide more than ten years ago. It is time for the IRC to recognize this common sense approach.

Cost Impact: This code change proposal will not increase the cost of construction.

2503.5.1-RP-KOZAN.DOC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This is a good, common sense change because it is hard for inspectors to see the water level in a 10 foot tall standpipe.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Disapproval.

Commenter's Reason: With respect to ensuring integrity of the piping installation, we see no technical justification for lowering the test pressure. And with the water level in the test standpipe now being easily visible, then the inspector could interpret a slight change in the *meniscus* of the water as a reason to reject the installation. What if the water level drops by 1/8 inch over a 15 minute

period? Is that reason enough for failure? Granted, the existing language of this section leaves the door open for such problems, but to lower the top of the test standpipe for easy visibility opens the door even wider for disputes. (Note that our RP7 proposal offers a way to make water tests fair for both parties).

The purpose of the 10 foot test head is not to necessarily duplicate an actual in-service condition but to ensure a level of quality for the workmanship. The 10 foot water head test pressure is necessary to determine the mechanical integrity of the joints. For example, the installation might have a joint that is just 'stuck together' without a coupling being tightened adequately (hubless) or solvent welded (plastic); or a solvent welded joint that might have squeezed the pipe partially out of the fitting socket before setting up. A 10 foot head will find more of these installation problems.

The 10 foot test head *could* be representative of a real condition in a building. Consider a home with a basement (or in Florida, a ground level garage under a raised first floor) with a building drain below the basement floor level, but no fixtures on that floor level. The sewer clogs and backs up to the lowest fixture on the first floor. The building drain and a portion of the stack in the basement (or Florida garage) are now under a pressure that exceeds 5 foot of water head.

The 10-foot test head has been in the code for decades and coincides with typical home construction having 8-foot ceiling heights. We can see no technical justification for lowering the test pressure.

This public comment is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC). The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes.

RP8-13

Final Action: AS AM AMPC_____ D

RP9-13

P2503.5.2, P2503.5.2.1 (New), P2503.5.2.2 (New), P2503.5.2.2.1 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2503.5.2 Finished test plumbing. After the plumbing fixtures ~~have been~~ are set installed, and their traps filled with water and any air admittance valves installed, a test in accordance with Section P2503.5.2.1 shall be performed. ~~Where required by the *building official*, one or more tests in accordance with P2503.5.2.2 shall be performed.~~ their connections shall be tested and proved gas tight and/or water tight as follows:

P2503.5.2.1 Water leakage tightness. ~~Each~~ Fixtures shall be operated while exposed piping, fixture and faucet connections are observed for leaks. The test shall be successful where there is not any evidence of water leakage. ~~filled and then drained. Traps and fixture connections shall be proven water tight by visual inspection.~~ This section shall not be construed as requiring the building official to witness the operation of all fixtures.

P2503.5.2.2 Gas leakage tightness. ~~Only when required by the local administrative authority *building official*, testing in accordance with Section P2503.5.2.2.1 or P2503.5.2.2.2 shall be performed.~~ a final test for gas tightness of the DWV system shall be made by the smoke or peppermint test as follows:

P2503.5.2.2.1 Smoke test. ~~Introduce~~ A pungent, thick smoke ~~into the system shall be forced into the drainage, waste and vent system, on the downstream side of traps, using a pressure of 1 inch water column (249 Pa) or less.~~ After the smoke appears at the outdoor vent terminals, such the terminals shall be temporarily sealed to prevent smoke leakage and the piping shall be pressurized to 1-inch water column (249 Pa) by a continuous source of air, and a pressure equivalent to a 1-inch water column (249 Pa) shall be applied and maintained for a test period of not less than 15 minutes. The test shall be successful where there is not any smoke observed inside the building during an observation period of 15 minutes. Smoke generating materials such as bombs, canisters and flares shall not be placed into the drain, waste and vent system piping.

P2503.5.2.2.2 Peppermint test. All but one outdoor vent terminal of the piping shall be temporarily sealed to prevent odor leakage. ~~Two~~ introduce 2 ounces (59 mL) of oil of peppermint shall be poured into the open outdoor vent terminal followed by ~~into the system.~~ Add 10 quarts (9464 mL) of hot water. ~~and seal all vent terminals. The vent terminal shall be temporarily sealed gas tight. The test shall be successful where the odor of peppermint is not detected in the building during an observation period of 15 minutes. The odor of peppermint shall not be detected at any trap or other point in the system. Persons who have performed the addition of oil and hot water to the system shall not enter the building until after the observation period.~~

Reason: This section has some convoluted language, some archaic terminology and fails to address certain important specifics of the test methods such as making sure air admittance valves are installed. The revised language makes the intent clear. The last sentence of Section P2503.5.2.1 allows the building official to randomly select (or select none) of the fixtures to operate during inspection so as to not waste precious time for inspection. The plumbing installer should have already performed a final leak test of all fixtures before inspection. The plumbing installer is responsible for finding and resolving any leaks before and after inspection. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no. 7 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2503.5.2-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal is too lengthy. Plumbers know what they are doing and don't need a handbook to instruct them on how to do testing.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: The only lengthy parts of the proposal were the sections about gas leakage tests (smoke and peppermint testing). Those tests are so rarely used (mostly for resolving problems after the building is occupied) that there really does need to be specifics on how to do these tests properly. Many plumbing contractors might not need to do such tests for many, many years so they will be unfamiliar with how to do them correctly when the time comes. Building officials might also be unfamiliar with how such tests are to be correctly performed.

The "everyday parts" of this proposal are very short (Sections P2503.5.2 and P2503.5.2.1) and are no longer than the existing code. The key updates are that air admittance valves are to be installed and that "each" fixture does not have to be operated and observed by the building official – he or she can arbitrary pick any fixture to operate or not pick any. Ultimately, the plumbing contractor will be called by the builder or homeowner if there are any leaks after the building is occupied and will be responsible for repairing such problems. The code official's final inspection has more to do with making sure that fixtures are installed in a correct manner and that the required backflow protection is provided.

We are certain that the strike-out-and-underline format was really confusing to the committee. The following shows the final code format:

P2503.5.2 Finished test. After the plumbing fixtures installed, traps filled with water and any air admittance valves installed, a test in accordance with Section P2503.5.2.1 shall be performed. Where required by the *building official*, one or more tests in accordance with P2503.5.2.2 shall be performed.

P2503.5.2.1 Water leakage. Fixtures shall be operated while exposed piping, fixture and faucet connections are observed for leaks. The test shall be successful where there is not any evidence of water leakage. This section shall not be construed as requiring the building official to witness the operation of all fixtures.

P2503.5.2.2 Gas leakage. Only when required by the *building official*, testing in accordance with Section P2503.5.2.2.1 or P2503.5.2.2.2 shall be performed.

P2503.5.2.2.1 Smoke test. A pungent, thick smoke shall be forced into the drainage, waste and vent system, on the downstream side of traps, using a pressure of 1 inch water column (249 Pa) or less. After the smoke appears at the outdoor vent terminals, the terminals shall be temporarily sealed to prevent smoke leakage and the piping shall be pressurized to 1-inch water column (249 Pa) by a continuous source of air. The test shall be successful where there is not any smoke observed inside the building during an observation period of 15 minutes. Smoke generating materials such as bombs, canisters and flares shall not be placed into the drain, waste and vent system piping.

P2503.5.2.2.2 Peppermint test. All but one outdoor vent terminal of the piping shall be temporarily sealed to prevent odor leakage. Two ounces (59 mL) of oil of peppermint shall be poured into the open outdoor vent terminal followed by 10 quarts (9464 mL) of hot water. The vent terminal shall be temporarily sealed gas tight. The test shall be successful where the odor of peppermint is not detected in the building during an observation period of 15 minutes. Persons who have performed the addition of oil and hot water to the system shall not enter the building until after the observation period.

RP9-13

Final Action:

AS

AM

AMPC_____

D

RP10-13

P2503.7, P2503.7.1 (New), P2503.7.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2503.7 Water-supply-service and distribution systems testing. ~~Upon completion of The water service piping system and water distribution piping system -supply system or section of it, system or portion completed shall be tested and proved tight under a water pressure of not less than the working pressure of the system or, for piping systems other than plastic, by an air test of not less than 50 psi (345 kPa) in accordance with Section P2503.7.1 or P2503.7.2. This pressure shall be held for not less than 15 minutes. The water used for tests shall be obtained from a potable water source. Plastic piping shall not be tested using air or gas.~~

P2503.7.1 Water test. ~~The piping shall be filled with potable water. The water in the piping system shall be pressurized to not less than the working pressure of the system. The pressure shall be retained and the source of pressure shall be isolated from the piping being tested. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with requirements of Section P2503.9.~~

P2503.7.2 Air test. ~~The piping shall be pressurized with not less than 50 psi (345 kPa) of air. The pressure shall be retained in the piping and the source of air pressure shall be disconnected from the piping. The test shall be successful where there is not any change in pressure gauge indication during an observation period of 15 minutes. The pressure gauge shall comply with requirements of Section P2503.9.~~

Reason: This section has some convoluted language, some archaic terminology and fails to address certain important specifics of the test methods. The revised language makes the intent clear. Compressed gas was added to the plastic piping prohibition because someone could claim that they were not using air. Some people might say "Why have a pressure gauge to check for leaks when testing with water? You'll be able to see the leaks". Consider a water service line in a muddy trench. Or it starts to rain on the trench. Or the water distribution system of a large multi-story house. Or the house is not rain tight and there is rainwater dripping everywhere. Does the building official want to go around checking for drips? That's the plumbers responsibility if the system doesn't hold pressure. The pressure gauge method for inspection provides a single point for building official to look at.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no. 8 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2507.5.7-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal is too lengthy. The language is better off being left alone because it will be consistent with the IPC.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: The existing section was expanded to separate the water and air testing requirements so the proposal does appear to be "lengthy". However, we do not feel that "too lengthy" is a valid reason to reject a proposal when the purpose of the proposal is to simply clarify the intent of rather convoluted existing code language. This proposal does not make any technical changes other than to require that the source of pressure be disconnected from the piping for the test.

The first section of the proposal is hard to read with strike-out-and-underline format. Here's what it will look like if approved:

P2503.7 Water service and distribution systems test. The water service piping system and water distribution piping system shall be tested in accordance with Section P2503.7.1 or P2503.7.2. Plastic piping shall not be tested using air or gas.

RP10-13

Final Action: AS AM AMPC____ D

RP12-13

P2602.1, P2602.2, Chapter 14

Proposed Change as Submitted

Proponent: Dan Buuck, National Association of Home Builders (NAHB); David Hall CFM, Georgetown Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

SECTION P2602 INDIVIDUAL WATER SUPPLY AND SEWAGE DISPOSAL

P2602.1 General. The water-distribution and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public water supply or sewer system, respectively, if available. When either a public water supply or sewer system, or both, are not available, or connection to them is not feasible, an individual water supply or individual (private) sewage-disposal system, or both, shall be provided. Individual water supplies shall be constructed in accordance with state and local laws or in accordance with ANSI/NGWA-01-07.

P2602.2 Flood-resistant installation. In flood hazard areas as established by Table R301.2(1):

1. Water supply systems shall be designed and constructed to prevent infiltration of floodwaters.
2. Pipes for sewage disposal systems shall be designed and constructed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

Add new standard to Chapter 14 as follows:

National Ground Water Association
601 Dempsey Road
Westerville, OH 43081-8978

NGWA

ANSI/NGWA-01-07 Water Well Construction Standard

Reason: The IRC currently refers the user to the IPC for requirements regarding well construction, as it does for all plumbing not addressed in the IRC (P2601.1). Does it make sense to have code language regarding wells when many states and counties have laws that regulate their construction? The provisions for wells in the IPC are also incomplete and spread out through several sections of the code making tracking difficult. This proposal is a simple change that clarifies where to go for well construction requirements—either your local regulations or an ANSI standard.

The Water Well Construction Standard is expected to complete the ANSI process and be published by the end of summer 2013.

Cost Impact: The code change proposal will not increase the cost of construction.

P2602.1-RP-BUUCK-HALL-PMGCAC

Committee Action Hearing Results

For staff analysis of the content of ANSI/NGWA-01-07 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf>

Committee Action: **Approved as Submitted**

Committee Reason: This proposal fills in the gap where state or local law might not exist for private wells.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Dan Buuck, CBO, National Association of Home Builders (NAHB) representing the National Association of Home Builders (NAHB) (dbuuck@nahb.org) and Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment

Modify the proposal as follows:

P2602.1 General. The water-distribution and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public water supply or sewer system, respectively, if available. When either a public water supply or sewer system, or both, are not available, or connection to them is not feasible, an individual water supply or individual (private) sewage-disposal system, or both, shall be provided. Individual water supplies shall be constructed in accordance with the applicable state and local laws or, Where the construction of individual water supplies is not regulated by state or local laws, such individual water supplies shall be constructed in accordance with ANSI/NGWA-01-07.

Commenter's Reason: Although the proposal was approved as submitted at the committee action hearings in Dallas, some committee members felt the section needed additional language to clarify that the ANSI/NGWA standard could not preempt state and local laws. This public comment adjusts the language to require that NGWA-0-07 be the fallback requirement if there are no state or local laws controlling the construction of individual water supplies.

RP12-13

Final Action: AS AM AMPC_____ D

RP13-13

P2603.2.1, P2603.2.1.1 (New), P2603.2.1.2 (New), P2603.2.1.3 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2603.2.1 Protection against physical damage. ~~In concealed locations where piping, other than cast iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1-1/2 inches (38 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage). Such plates shall cover the area of the pipe where the member is notched or bored and shall extend not less than 2 inches (51 mm) above sole plates and below top plates. Where piping will be concealed within light-frame construction assemblies, the piping shall be protected against penetration by fasteners in accordance with Sections P2603.2.1.1 through P2603.2.1.3.~~

Exception: Cast iron piping and galvanized steel piping shall not be required to be protected.

P2603.2.1.1 Piping through bored holes or notches. Where piping is installed through holes or notches in framing members and the piping is located less than 1 ½ inches (38 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the pipe shall be protected by shield plates that cover the width of the pipe and the framing member and that extend 2 inches (51 mm) to each side of the framing member. Where the framing member that the piping passes through is a bottom plate, bottom track, top plate or top track, the shield plates shall cover the framing member and extend 2 inches (51 mm) above the bottom framing member and 2 inches (51 mm) below the top framing member.

P2603.2.1.2 Piping in other locations. Where the piping is located within a framing member and is less than 1 ½ inches (38 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the piping shall be protected by shield plates that cover the width and length of the piping. Where the piping is located outside of a framing member and is located less than 1 ½ inches (38 mm) from the nearest edge of the face of the framing member to which the membrane will be attached, the piping shall be protected by shield plates that cover the width and length of the piping.

P2603.2.1.3 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).

Reason: This proposal provides clear requirements of where shield plates are needed. Section P2603.2.1 uses the term "light frame construction assemblies" to describe wall, floor and roof assemblies that can be made up from either wood members or light frame, cold formed steel members.

Section P2603.2.1.1 covers applications where piping runs perpendicular to a framing member and passes through a bored hole or notch in the framing member. This text is nearly the same as what is currently in the IRC. If the piping is within 1 ½ inches of the face of the member where wall ceiling or floor membranes will be attached, then the piping is required to be protected by a shield plate that covers the width of the piping by the width of the framing member plus 2 inches on either side of the framing member. Protection of the piping on either side of the framing member is needed because it is too easy for a membrane/fastener installer to miss the framing member's fastening face or penetrate the member at an angle and hit the piping that is just outside of the framing member.

Section P2603.2.1.1 also covers the application where piping runs perpendicular to and penetrates top and bottom plates, or top and bottom tracks. Protection of the piping above the bottom framing member (or below the top framing member) is needed because it is too easy for a membrane/fastener installer to miss the framing member's fastening face or penetrate the member at an angle and hit the piping just outside of the framing member. The code fails to address the situation where piping is run within the C-channel of a metal stud or joist and it also fails to address piping run parallel to a framing member.

Section P2603.2.1.2 covers applications where the piping runs alongside of a framing member or in the case of a light frame, cold formed steel framing member, piping that runs parallel to the length of and within the framing member (in other words, within the channel section). If the piping is within 1 ½ inches of the face of the member where wall, ceiling or floor membranes will be

attached, then the piping is required to be protected by a shield pate that covers the width of the piping by the length of piping that is within the 1 ½ inch proximity of the framing member's fastening face. Piping that is located behind the fastening face of the member and within 1 ½ inches of the fastening face of the member obviously needs protection from fastener penetration. Piping that is located adjacent to and within 1 ½ inches of the fastening face of the member needs protection because it is too easy for a membrane/fastener installer to miss the framing member's fastening face or penetrate the member at an angle and hit the piping that is just outside of the framing member.

The opposition to this proposal for the IPC was related to the requirement to protect the length of piping that is run parallel to a framing member and within 1 ½ inches from the member face to which wall board will be screwed or nailed. The concern was expressed that it would be difficult to protect the pipe for its full length, making the assumption that the pipe ran from the bottom plate up through the top plate in walls. First of all, it is unlikely that an installer would install piping from plate to plate that close to the stud, since it would be nearly impossible to drill holes that close to the stud. Secondly, the obvious way to avoid installing protection for the pipe is to simply keep it at least 1 ½ inches away from the framing member. With a little planning, the installation of pipe protection could be easily avoided.

This proposal was approved for the 2015 IFGC.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will increase the cost of construction.

P2603.2.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This proposed language would create more problems than it is trying to solve. In slab on grade construction where framing is installed after the piping installed, the plumber would have no control on the location of the framing with respect to the piping.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: The same proposal was Approved as Submitted for both the Mechanical and Fuel Gas portions of the IRC. This proposal should be approved for consistency in the IRC.

RP13-13

Final Action:

AS

AM

AMPC ____

D

RP16-13
P2603.3

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Delete and substitute as follows:

~~**P2603.3 Breakage and corrosion.** Pipes passing through concrete or cinder walls and floors, cold-formed steel framing or other corrosive material shall be protected against external corrosion by a protective sheathing or wrapping or other means that will withstand any reaction from lime and acid of concrete, cinder or other corrosive material. Sheathing or wrapping shall allow for movement including expansion and contraction of piping. The wall thickness of material shall be not less than 0.025 inch (0.64 mm).~~

P2603.3 Protection against corrosion. Metallic piping, except for cast iron, ductile iron and galvanized steel, shall not be placed in direct contact with steel framing members, concrete or masonry. Metallic piping shall not be placed in direct contact with corrosive soil. Where sheathing is used to prevent direct contact, the sheathing material thickness shall be not less than 0.008 inch (8 mil) (0.203 mm) and shall be made of plastic. Where sheathing protects piping that penetrates concrete or masonry walls or floors, the sheathing shall be installed in a manner that allows movement of the piping within the sheathing.

Reason: One clear intent of this code section is to protect metallic piping from direct contact with concrete, masonry, corrosive soils and cold formed steel framing members as direct contact could cause exterior corrosion of the piping. However, it is not clear exactly what the sentence "Sheathing or wrapping shall allow for movement including expansion and contraction of piping" is intended to mean. Committee comments from the 2012 IPC hearings on a similar proposal seem to indicate that where sheathing or wrapping (presumably with plastic materials) are used to protect a pipe passing through concrete (such as a pipe below a slab coming up through and cast in the slab), the sheathing must allow for some "give" between the pipe and the concrete or masonry.

The wall thickness of the sheathing material is in question. To our knowledge, no one is using this thick of material and jurisdictions are not enforcing the requirement for 0.025 inch (25 mils) thick material. Much thinner plastic sheathing materials are commonly being used across the country for decades without any reported adverse effects. Cast iron and ductile iron manufacturers recommend, for corrosive soil conditions, the use of either 0.008 inch thick low density polyethylene sheathing or 0.004 inch thick, high strength cross laminated polyethylene sheathing for corrosive soil conditions. For small metallic pipes such as copper tubing (1/2" to 1 1/4") passing through concrete or masonry, plumbing supply houses normally stock 0.004 and .006 inch thick low density "flat tube" plastic sheathing materials and that is what is being used. To make it easy, requiring 0.008 inch thick material for all types of metallic piping is reasonable.

The revised language improves understanding what the code intends.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 11 on the PMGCAC IRC-P list. For PMGCAC member reference, this was item no. 10 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2603.3-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposed language is much more clear than the existing and allows thinner sheathing material which has been used without any problems for years.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Pennie L. Feehan, Pennie L. Feehan Consulting representing Copper Development Association (penniefeehan@me.com) requests Disapproval.

Commenter's Reason: The original code section referred to piping passing through foundations, floors, and walls. This proposal implies pipe incased in, supported by, or lying on will need protection. As an example, strapping or supporting horizontal pipe to a concrete wall would require protection. The cost of construction will be increased because of additional labor and materials to comply with this section. If the sheathing thickness is the issue, then that should be changed.

RP16-13

Final Action: AS AM AMPC_____ D

RP19-13
P2605.1

Proposed Change as Submitted

Proponent: Michael Cudahy, Plastic Pipe and Fittings Association representing the Plastic Pipe and Fittings Association (mikec@cmservnet.com)

Revise as follows:

TABLE P2605.1
PIPING SUPPORT

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
Cross-linked polyethylene (PEX) pipe, <u>1 inch and smaller</u>	2.67 (32 inches)	10b
Cross-linked polyethylene (PEX) pipe, <u>1 ¼ inch and larger</u>	<u>4</u>	<u>10^b</u>

(Portions of table and footnotes not shown remain unchanged)

Reason: PEX tubing, like other materials currently in the table, is being made in larger diameters that are stiffer and require less support.

Cost Impact: None

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The code currently lacks support information for larger sizes of PEX pipe so this information is needed in the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Larry Gill, IPEX USA LLC, requests Approval as Modified by this Public Comment.

TABLE P2605.1
PIPING SUPPORT

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
Cross-linked polyethylene (PEX) pipe, 1 inch and smaller	2.67 (32 inches)	10 ^b
Cross-linked polyethylene (PEX) pipe, 1 ¼ inch and larger	4	10 ^b
Polyethylene of Raised Temperature (PE-RT) pipe, <u>1 inch and smaller</u>	<u>2.67</u> <u>(32 inches)</u>	<u>10^b</u>
Polyethylene of Raised Temperature (PE-RT) pipe, <u>1 ¼ inch and larger</u>	<u>4</u>	<u>10^b</u>

Commenter's Reason: Support values for PEX were added to the IRC and approved. PE-RT support spacing is already in the IRC but we need to make the above noted changes to clarify that there are different support spacing's for 1 inch and smaller and 1 ¼ inch and larger. If approved, the values for PEX and PE-RT would match.

RP19-13

Final Action: AS AM AMPC ____ D

RP23-13
P2607.1, P2607.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2607.1 ~~General Pipes penetrating roofs.~~ ~~Where a pipe penetrates a roof, a flashing of lead, copper, galvanized steel or an *approved* elastomeric material shall be installed in manner that prevents water entry into the building. Counterflashing into the opening of pipe serving as a vent terminal shall not restrict reduce the required internal cross-sectional area of the vent pipe to less than the internal cross-sectional area of one pipe size smaller. any vent, and exterior wall penetrations shall be made water tight. Joints at the roof, around vent pipes, shall be made water tight by the use of lead, copper or galvanized iron flashings or an *approved* elastomeric material.~~

Add new text as follows:

P2607.2 Pipes penetrating exterior walls. Where a pipe penetrates an exterior wall, a waterproof sealant shall be applied at the joint between the wall and the pipe, on the exterior of the wall.

Reason: The phrase “made water tight” is archaic language. The existing section needs to be broken into two sections for clarity. Additional wording makes the intent clear. Counterflashing will *always* reduce the inside cross-sectional area of the vent pipe so the issue is how much reduction is acceptable. An area that is not less than one pipe smaller seems reasonable.

The new section just separates the wall sealing requirement out of the previous section and makes the language clear.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 15 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2607.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposed language provides needed clarity on how large an opening is needed when peening over flashing into the vent termination.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Forest Hampton III, Oatey Co., requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P2607.2 Pipes penetrating exterior walls. Where a pipe penetrates an exterior wall, a waterproof sealant shall be applied at the joint between the wall and the pipe, on the exterior of the wall: a waterproof seal shall be made on the exterior of the wall by one of the following methods:

1. A waterproof sealant applied at the joint between the wall and the pipe.
2. A flashing of an approved elastomeric material.

Commenter's Reason: Flat sidewall elastomeric flashings that are made from equivalent materials as elastomeric roof flashing are available in the field for use in sidewall penetrations.

RP23-13

Final Action: AS AM AMPC_____ D

RP26-13
P2609.3

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2609.3 Plastic pipe, fittings and components. All plastic pipe, fittings and components, including brass fittings, shall be third-party certified as conforming to NSF 14.

Reason: Testing and certification requirements were added to NSF 14 to provided dezincification resistant brass fittings for plastic piping systems. NSF 14 was changed to reflect these requirements as a result of widespread failure of brass fittings and a large number of law suits across the United States. This proposed change to the IRC is required to update the language in the code to be consistent with changes to NSF 14. The current language could be interpreted to mean that only plastic fittings need comply with NSF 14, which the CAC does not believe is the intent.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 76 (added after 15DEC2012) on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2609.3-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The existing language already includes fittings for plastic pipe. This change singles out one type of material.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: We believe that the issue of dezincification of brass components is a serious issue and that the code needs to require that brass fittings be dezincification resistant.

Public Comment 2:

Pennie L. Feehan, Pennie L. Feehan Consulting representing Copper Development Association (penniefeehan@me.com) requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P2609.3 Plastic pipe, fittings and components. All plastic pipe, fittings and components, including ~~brass~~copper alloy fittings, shall be third-party certified as conforming to NSF 14.

Commenter's Reason: Changing brass to copper alloy is consistent with other approved proposals. Dezincification testing and certification requirements were added to NSF 14 for plastic piping systems. NSF 14 was changed to reflect these requirements as a result of widespread failure of brass fittings and a large number of law suits across the United States. This proposed change to the IRC is required to update the language in the code to be consistent with changes to NSF 14.

RP26-13

Final Action: AS AM AMPC_____ D

RP31-13

P2701.2 (New), P2705.1, P2705.1.1 (New), P2705.1.2 (New), P2705.1.3 (New), P2705.1.4 (New), P2705.1.5 (New), P2705.1.6 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2701.2 Fixture fitting mounting surfaces. Integral fixture-fitting mounting surfaces on manufactured plumbing fixtures or plumbing fixtures constructed on site shall meet the design requirements of ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.1.

P2705.1 General. The installation of fixtures shall conform be in accordance with Sections P2705.1.1 through P2705.1.6. to the following:

P2705.1.1 Floor-outlet and floor-mounted fixtures. ~~1. Floor-mounted or~~ and floor-outlet fixtures shall be secured to the drainage connection and fastened to the floor or fastened to a water closet flange that is fastened to the floor. ~~where so designed, by screws, bolts, washers, nuts and similar fasteners of copper, brass or other corrosion-resistant material. Fasteners shall be of corrosion-resistant material and shall be screws or bolts.~~

P2705.1.2 Wall-hung fixtures. ~~2. Wall-hung fixtures shall be rigidly supported by the wall or where a fixture carrier is provided, supported by the carrier. The piping connected to the fixture shall not provide support for the fixture. so that strain is not transmitted to the plumbing system.~~

P2705.1.3 Sealing required. ~~3. Where fixtures come in contact with walls and floors, the contact area shall be water tight. Joints formed where fixtures come in contact with walls or floors shall be sealed water tight.~~

~~4. Plumbing fixtures shall be usable.~~

P2705.1.4 Clearances. ~~5. Water closets, lavatories and bidets.~~ A water closet, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition or vanity or closer than 30 inches (762 mm) center-to-center between adjacent fixtures. ~~There shall be~~ A clearance of not less than a 21-inches (533 mm) shall be provided in front of a water closet, lavatory or bidet to any wall, fixture or closed door.

P2705.1.5 Interference with doors and windows. ~~6. The location of plumbing piping, plumbing fixtures or plumbing equipment shall not interfere with the operation of doors or and windows.~~

P2705.1.6 Flood hazard areas. ~~7. In flood hazard areas as established by Table R301.2(1), plumbing fixtures shall be located or installed in accordance with Section R322.1.7.~~

~~8. Integral fixture-fitting mounting surfaces on manufactured plumbing fixtures or plumbing fixtures constructed on site, shall meet the design requirements of ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.1.~~

Reason: The items in this section are a mixture of subjects and should be separated into separate sections. Numerous clarifications have been added to make the each section clearer. The term "rigidly" is vague and unenforceable. Item 4 is covered by the requirements in P2705.1.4 and elsewhere in the code. Item number 8 doesn't belong under installation and should be located in Section P2701 (that is why new Section P2701.2 has been added).

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or

portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 21 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2701.2 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposal language is much more confusing than the existing language and doesn't simplify the code.

Assembly Action:

Approved as Submitted

Individual Consideration Agenda

This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action of Approved as Submitted by the Floor.

RP31-13

Final Action:

AS

AM

AMPC___

D

RP36-13
P2701.1

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2701.1 Quality of fixtures. Plumbing fixtures, faucets and fixture fittings ~~shall be constructed of approved materials,~~ shall have smooth impervious surfaces, shall be free from defects and shall not have concealed fouling surfaces., ~~and shall conform to the standards cited in this code. Plumbing fixtures shall be provided with an adequate supply of potable water to flush and keep the fixtures in a clean and sanitary condition without danger of backflow or cross connection.~~

Reason: The current code text is very old and comes from a time where there were not many standards existed for plumbing fixtures and fittings. According to the first sentence of this section, the code official must approve materials, even those that are in compliance with the standards referenced in the code. The first sentence is revised to make a general statement about the quality of fixtures. The last sentence has nothing to do with quality of fixtures. The subject matter is covered adequately elsewhere in the code so this sentence needs removed.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 18 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2707.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

P2701.1 Quality of fixtures. Plumbing fixtures, faucets and fixture fittings shall have smooth impervious surfaces, shall be free from defects, and shall not have concealed fouling surfaces and shall conform to the standards cited in this code.

Commenter's Reason: Approved proposals RP36 and RP28 are in conflict with one another because RP36 deletes a section of text that RP28 is modifying. This public comment corrects the problem by making this proposal in agreement with what RP28 accomplishes. The change in RP28 is prudent and we agree with its intent.

RP36-13

Final Action:

AS

AM

AMPC ____

D

RP37-13
P2708.3

Proposed Change as Submitted

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self.
(eosann@nrdc.org)

Revise as follows:

P2708.3 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1016 or ASME A112.18.1/CSA B125.1. Shower control valves shall provide thermal shock protection for the rated flow rate of the installed showerhead or a flow rate of 1.5 gpm ± 0.1 gpm (5.75 L/m ± 0.35 L/m), whichever is less. The high limit stop shall be set to limit the water temperature to not greater than 120°F (49°C). Each valve shall be factory marked with the manufacturer's minimum rated flow, and such marking shall be in an accessible position so as to make inspection readily possible following installation. In-line thermostatic valves shall not be used for compliance with this section.

Reason: The thermal protection afforded by shower valves can be compromised if the flow rate of the showerhead is less than the flow rate for which the protective components of the valve have been designed. As noted by Martin and Johnson (2008) (as cited in Codes and Standards Enhancement Initiative (CASE), "Multi-Head Showers and Lower-Flow Shower Heads," 2013 California Building Energy Efficiency Standards, California Utilities Statewide Codes and Standards Team, September 2011), combinations of valves and shower heads were tested to determine whether pressure-compensating valves and thermostatic valves rated for 2.5gpm would perform adequately at lower flow rates. The tests included 22 shower valves from six manufacturers, and the valves were assessed on their ability to maintain water temperature within certain bounds for a given time after a change in pressure event, as described by the ASSE 1016-2005 standard for shower valves. The results indicated that a significant share of shower valves rated for 2.5 gpm failed to provide the thermal protection specified by ASSE 1016 when tested at lower flow rates. As summarized in the CASE report (p. 15): "These results indicate that shower valve temperature maintenance is strongly affected by flow rate, and that new showers with lower-flow shower heads would have to be installed with valves that are designed for 2.0 and lower flow rates."

Showerheads with maximum flow rates below 2.5 gpm are widely available on the market today, and simple replacement of a showerhead is typically not subject to code. Since shower valve components are located behind finished walls, replacement of showerheads is likely to be more frequent than replacement of shower valves. This proposed change seeks to reduce the likelihood that consumers replacing a showerhead will compromise the thermal protection offered by a building subject to this code by ensuring that shower valves can fully accommodate showerheads with lower flow rates than the current maximum federal standard of 2.5 gpm. The current EPA WaterSense specification for showerheads has a maximum flow rate of 2.0 gpm, and many showerheads are already available with flow rates between 2.0 and 1.5 gpm. As manufacturers continue to innovate with more water- and energy-efficient showerheads, the code change proposed here will help ensure that new buildings built to this code can safely accommodate showerheads with lower flow rates that may be selected by building occupants in future years.

Note that this language does not require that the showerhead itself have a flow rate of 1.5 gpm, but simply that the shower valve provide the thermal protection called for under the recognized standard when tested at a flow rate as low as 1.5 gpm. In the event that the showerhead selected for initial installation has a flow rate of less than 1.5 gpm, the minimum rated flow if the shower valve must match the flow rate of the showerhead.

The marking requirement is necessary to facilitate inspection. To the extent that the mark is permanent, it will provide a point of reference for building occupants to consider when changing showerheads in future years.

Cost Impact: Conforming products are on the market today without a significant cost premium. The code change proposal will not increase the cost of construction.

P2708.3-RP-OSANN.DOC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The required marking of this proposal is not going to solve the problem after initial installation when the showerhead is replaced.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Edward R. Osann, Natural Resources Defense Council representing himself (eosann@nrdc.org) requests Approval as Modified by this Public Comment

Modify the proposal as follows:

P2708.3 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1016 or ASME A112.18.1/CSA B125.1. Shower control valves shall provide scald and thermal shock protection for the rated flow rate of the installed showerhead or a flow rate of 1.5 gpm \pm 0.4 gpm (5.75 L/m \pm 0.35 L/m), whichever is less. The high limit stop shall be set to limit the exiting water temperature to not greater than 120°F (49°C). ~~Each valve shall be factory marked with the manufacturer's minimum rated flow, and such marking shall be in an accessible position so as to make inspection readily possible following installation.~~ In-line thermostatic valves shall not be used for compliance with this section.

P2708.3.1 Shower valve marking. Each shower control valve shall be factory marked with the valve's minimum rated flow, and such marking shall be located so as to be readily visible in accordance with one or more of the following conditions:

1. prior to installation of the escutcheon associated with the valve
2. after installation of the escutcheon associated with the valve
3. through an access opening provided for servicing the valve

Commenter's Reason: Current language in the code is inadequate to ensure that the health and safety protection provided by a shower mixing valve is not diminished by mismatching the rated flow of the valve with the flow rate of the showerhead during installation. The committee's disapproval of the proposal focused on the inadequacy of the proposal's marking requirement, while overlooking the need for the code to ensure that these components are properly matched when initially installed. The 2012 Uniform Plumbing Code is more protective of health and safety in this regard. This comment revises the original proposal by including a more workable marking requirement and a more simplified requirement to properly match the valve and showerhead during installation.

This comment proposes changes to the original submittal as follows:

1. Removes the requirement that all shower valves provide thermal protection at flow rates as low as 1.5 gpm, while retaining the requirement that a valve's rated flow for thermal protection be compatible with the design flow rate of the installed showerhead.
2. Eliminates the requirement for the flow rate marking to be visible on the escutcheon and instead only requires the marking to be visible under any one of the following 3 conditions:
 - a. prior to installation of the escutcheon associated with the valve,
 - b. after installation of the escutcheon associated with the valve, or
 - c. through an access opening for servicing the valve.
3. Provides additional clarity to the text.

Two additional points of note:

1. The 2012 Uniform Plumbing Code, Section 408.3, contains similar provisions as to 'matching' valve and showerhead flow rates as follows:

"Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection for the rated flow of the installed showerhead." The IRC should be no less protective of health and safety than the UPC.
2. The two relevant product standards (ASSE 1016-2011/ASME A112.1016-2011/CSA B125.16-11 for shower control valves and ASME A112.18.1-2011/CSA B125.1-11 for showerheads) both provide for marking of flow rates on their respective packaging. Showerheads are required to be marked with their flow rate; however, the 1016 standard does not require shower control valves to be marked with the minimum rated flow. Both standards also *recommend* on their packaging that showerhead and shower control valve be matched as to flow rate.

As noted in the original proposal on shower control valves, the thermal protection afforded by shower valves can be compromised if the flow rate of the showerhead is less than the flow rate for which the protective components of the valve have been designed. Results of Martin and Johnson (2008), cited in the original proposal, indicate that a significant share of shower

valves rated for 2.5 gpm failed to provide the thermal protection specified by ASSE 1016 when tested at lower flow rates. Showerheads with maximum flow rates below 2.5 gpm are widely available on the market today. The current U.S. EPA WaterSense specification for showerheads has a maximum flow rate of 2.0 gpm, and over 800 WaterSense showerheads (from 45 manufacturers) are already available with flow rates between 2.0 and 1.5 gpm. Given the findings of the studies, the WaterSense specification, and current manufacturing trends, matching of showerheads to shower control valves is more essential to user health and safety than was the case previously.

Note that this language does not require that the showerhead or the shower control valve be set by code at some predetermined flow rate. Rather, this language simply provides that the valve be rated to provide thermal protection at the flow rate of the showerhead being installed. In the event that a consumer or building owner decides to replace an aging showerhead on an existing shower, this language also assures that the flow rate of the previously installed shower control valve is readily visible either upon removal of the escutcheon covering that valve or through an access opening.

RP37-13

Final Action: AS AM AMPC____ D

RP41-13
P2712.1.1 (New)

Proposed Change as Submitted

Proponent: Christopher Salazar, Penguin Toilets LLC., representing Penguin Toilets LLC.

Add new text as follows:

P2712.1.1 Overflow protection. Where a water closet is installed in a location where an overflow of the water closet will cause damage to the building, the building shall be protected from water damage by one of the following:

1. A water closet listed to provide overflow protection.
2. A floor drain installed within same area as the water closet.
3. A method of protection *approved* by the building official.

Reason: To be in compliance with IRC section 101 .3: (to provide minimum standards to safeguard life or limb, health, property and public welfare) Toilet overflow (BLACKWATER spill) has not been addressed in the current code. Different from a grey water spill, a black water spill pose an unhealthy environment and is a very expensive event to mediate/repair. Adding this section into the code provides an additional safeguard to health, property and public welfare thus improving this code.

Cost Impact: Code change proposal will not increase the cost of construction. Cost impact is none too little depending on method of protection.

P2712.1.1 (NEW)-RP-SALAZAR.DOC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The technology of these types of water closets is not proven. This is not something that needs to be forced by the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Christopher Salazar, Penguin Toilets representing Penguin Toilets (chris@penguintoilets.com) requests Approval as Submitted.

Commenter's Reason: The committee did not address how to deal with black water. The committee also felt this new code provision would be proprietary.

As submitted by the original proposal this offers a simple way to address black water spills. Note: black water spills are hazardous to human health and safety which costs insurance companies millions of dollars to fix.

This is not proprietary code change because there are multiple ways to address this subject.

RP41-13

Final Action:

AS

AM

AMPC_____

D

RP44-13
P2717.2, P2717.3

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2717.2 Sink and dishwasher. The combined discharge from a sink and dishwasher shall be served by ~~are permitted to discharge through a single trap of not less than 1 1/2 inches (38 mm) in nominal diameter trap.~~ The discharge pipe from the dishwasher shall be increased in size to not less than 3/4 inch (19 mm) inside diameter and before shall be connected ing with to a wye fitting in to the sink tailpiece. The waste discharge pipe from the dishwasher waste line shall rise and be securely fastened or held in a position to at the underside of the counter before connecting to the wye sink tailpiece.

P2717.3 Sink, dishwasher and food waste grinder. The combined discharge from a sink, dishwasher, and food waste grinder shall be served by a single trap of not less than ~~is permitted to discharge through a single 1 1/2 inch (38 mm) in nominal diameter trap.~~ The discharge pipe from the dishwasher shall be increased in size to not less than 3/4 inch (19 mm) inside diameter and shall before connecting with to a wye fitting between the discharge of the food-waste grinder and the trap inlet. Alternatively, the discharge pipe from the dishwasher shall connect or to the head of the food waste grinder. The dishwasher discharge pipe waste line shall rise and be securely fastened or held in a position to at the underside of the counter before connecting to the wye sink tail piece or the head of the food waste grinder.

Reason: The term "is permitted" is not mandatory code language. The proper term for a food grinder is a food waste grinder. The term "securely" is unenforceable. The term "or held in a position" was added primarily because the existing language seems to imply that the discharge pipe *has to be fastened* to the underside of the counter. This is a problem with granite countertops. The intent is that the piping be routed to the underside of the countertop and be held in some manner at that point. A common way to accomplish this is to drill a hole in the cabinet wall between the dishwasher and the sink cabinet, at the top of the cabinet wall (if the cabinet wall goes up to the underside of the countertop. Sometimes, the cabinet wall is not as tall and there a small gap. Then route the dishwasher discharge pipe through the hole or over the top of the cabinet wall. No fastening is needed (as it is very difficult to get into the cabinet and reach up between the sink and the cabinet wall to install a "fastener"). Intelligent routing is all that is necessary. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 27 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2717.2-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The 3/4 inch inside diameter will not match up to the sink tailpiece fitting connection.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2717.2 Sink and dishwasher. A sink and dishwasher are permitted to discharge through a single 1 1/2 inches (38 mm) trap. The discharge pipe from the dishwasher shall be increased to not less than 3/4 inch (19 mm) in diameter and shall be connected with a wye fitting to the sink tailpiece. The dishwasher waste line shall rise and be securely fastened to the underside of the counter before connecting to the wye sink tailpiece. The combined discharge from a dishwasher and a one- or two- compartment sink, with or without a food waste disposer, shall be served by a trap of not less than 1 1/2 inches (38 mm) in outside diameter. The dishwasher discharge pipe or tubing shall rise to the underside of the counter and be fastened or otherwise held in that position before connecting to the head of the food waste disposer or to a wye fitting in the sink tailpiece.

P2717.3 Sink, dishwasher and food grinder. The combined discharge from a sink, dishwasher, and grinder is permitted to discharge through a single 1 1/2 inch (38 mm) trap. The discharge pipe from the dishwasher shall be increased to not less than 3/4 inch (19 mm) in diameter and shall before connect with a wye fitting between the discharge of the food waste grinder and the trap inlet, or to the head of the food grinder. The dishwasher waste line shall rise and be securely fastened to the underside of the counter before connecting to the sink tail piece or the food grinder.

Commenter's Reason: The committee reason for disapproval caused us to dig deeper into what the standards indicate for tubular sink tailpieces with dishwasher connection branches. The code referenced standards are ASME A112.18.2/CSA B125.2 (covering metal and plastic waste fittings) and ASTM F409 (covering only plastic fittings). The ASME/CSA standard does not indicate dimensions for the dishwasher connect branch. The ASTM standard indicates an outside diameter of either 5/8 inch or 7/8 inch. A survey of several manufacturers' product lines of both metallic and plastic tubular sink tailpieces with dishwasher connection branches reveals a number of available configurations, some of which do not comply with 3/4 inch diameter (*note that even the ASTM F409 standard doesn't comply with the 3/4 inch diameter!*). Our conclusion is that the size of the dishwasher connection branch should not be indicated in these code sections. The standards for these fittings are already covered by Table P2701.1 (for Plumbing fixture waste fittings). The manufacturers of these fittings are obviously coordinating design of their products to meet the requirements for a variety of dishwasher discharge pipe, hose and tubing connections. The installer simply has to provide the correct fitting for the application or use an adapter/connector to make the connection. The wye's tube size is not critical and does not need to be specified – industry takes care of this. This revised proposal eliminates a size indication conflict in the code that has existed for many editions.

Upon further examination of the original proposal, we determined that the two sections could be easily combined as they are virtually identical. In this public comment, the wording has been greatly simplified. We changed the size of the trap to outside diameter to encompass tubular size traps. Also note that a clarification was added to indicate that the "sink" could have one- or two- compartments. There was some concern expressed within the PMGCAC that "sink" might only mean a single compartment sink when in fact, two compartment sinks, with or without a food waste disposer, and with a dishwasher have been installed in this manner for decades.

Some may object to being so specific about limiting the number of compartments that can be handled by the single trap arrangement. With the trend of higher end residential kitchens using "quasi-commercial" plumbing fixtures in the kitchen, we have concerns that a 1-1/2 inch tubular trap might not be able to pass enough flow if 3 (or more) compartment sinks are discharging at the same time that the dishwasher is discharging (let alone if a disposer is forcing waste into the system). Because we only know that a 2 compartment arrangement work, based on extensive field use, we didn't want to relax the limit to accommodate all multi-compartment sinks. We leave that discussion for future code change proposals.

RP44-13

Final Action: AS AM AMPC____ D

RP45-13
P2718.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Add new text as follows:

P2718.2 Water connection. The water supply to an automatic clothes washer shall be protected against backflow by an air gap complying with ASME A112.1.3 or A112.1.2 that is installed integrally within the machine or a backflow preventer in accordance with Section P2902.

Reason: The requirement for automatic clothes washing machines to comply with ASSE 1007 (covering the requirement for an internal air gap on the water supply) was removed from the 2012 code because ACW manufacturers are no longer certifying their machines to ASSE 1007. Standards that they do comply with, ASME A112.1.3 or A112.1.2 are being included in this section so that inspectors are able to verify that the ACWs have an integral backflow protection. A similar proposal to the IPC was Approved as Submitted.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 28 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2718.2 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: These standards needed because ASSE discontinued the ASSE 1007 standard.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Pennie L. Feehan, Pennie L. Feehan Consulting representing Copper Development Association (penniefeehan@me.com) requests Disapproval.

Commenter's Reason This proposal is unenforceable by a field inspector. In most cases the washer and dryers are not on site at the final inspection. Would the contractor need to provide a clothes washer at final inspection?

RP45-13

Final Action: AS AM AMPC____ D

RP46-13
P2722.2

Proposed Change as Submitted

Proponent: Len Swatkowski, Plumbing Manufacturers International (PMI), representing Plumbing Manufacturers International (lswatkowski@pmihome.org)

Revise as follows:

P2722.2 Operation for hot water. Faucets and bath tub mixing valves having two separate control handles for hot and cold water shall be installed with the left-hand handle controlling the hot water flow. Left-hand orientation shall be determined from the position of the user when using the plumbing fixture or in the case of a bathtub, the position of the user when in the tub. Fixture fittings supplied with both hot and cold water shall be installed and adjusted so that the left-hand side of the water temperature control represents the flow of hot water when facing the outlet. Shower and tub/shower mixing valves conforming to ASSE 1016 or ASME A112.18.1/CSA B125.1 shall have markings on the device that indicate the handle position for hot water flow.

~~**Exception:** Shower and tub/shower mixing valves conforming to ASSE 1016 or ASME A112.18.1/CSA B125.1, where the water temperature control corresponds to the markings on the device.~~

Reason: There have been calls from a number of code officials about how to apply this code section to these "side control" faucets. Technically, because the control does not have a left side and does not cause hot water to flow when moving a lever to the left, some code officials are calling this a non-compliant faucet. This language will correct the misinterpretation.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: The proponent indicated in his proposal submission that the standards shown in this code section, ASSE 1016 and ASME A112.18.1/CSA B125.1 have been recently harmonized into standard ASSE 1016-2011/ASME A112.1016-2011/CSA B125.16-11. The proponent's request for updating the standard for this section has been processed and will be included in a proposal for all standard updates that will be heard by the ADMIN committee in proposal ADM 62-13.

P2722.2-RP-SWATKOWSKI.DOC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This language is easier to understand and it clarifies how tub only faucets need to be installed.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Disapproval.

Commenter's Reason: The proposed new language seems to further confuse the issue. Why are we now calling the control a handle? The control is not always a handle. The existing language was clear and does not need to be changed.

RP46-13

Final Action:

AS

AM

AMPC_____

D

RP47-13
P2725 (New), P2725.1 (New)

Proposed Change as Submitted

Proponent: Jeremy Brown, NSF International (brown@nsf.org)

Add new text as follows:

SECTION P2725
NON-LIQUID SATURATED TREATMENT SYSTEMS

P2725.1 General. Materials, design, construction and performance of non-liquid saturated treatment systems shall comply with NSF 41.

Add new standard to Chapter 44:

NSF
NSF 41-11 Non-Liquid Saturated Treatment Systems

Reason: NSF/ANSI-41 *Non-liquid Saturated Treatment Systems* is the American National Standard for the materials, design, construction and performance of composting toilets treating residential black water. Composting Toilets are a viable alternative are a viable alternative to traditional water closets and offer advantages of low water consumption. NSF/ANSI 41 is currently required in the IGCC.

Cost Impact: This code change proposal will not increase the cost of construction.

Analysis: A review of the standards proposed for inclusion in the code, CSA 22.2 No. 130 and UL 515 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1 2013.

P2725(NEW)-RP-BROWN.DOC

Committee Action Hearing Results

Committee Action: **Disapproved**

Committee Reason: Composting toilets should only be in the IgCC, not in the IRC.

Assembly Action: **Approved as Submitted**

Individual Consideration Agenda

This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action of Approved as Submitted by the Floor.

RP47-13
Final Action: AS AM AMPC____ D

RP49-13
P2801.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Add new text as follows:

P2801.2 Drain valves. Drain valves for emptying shall be installed at the bottom of each tank-type water heater and hot water storage tank. The drain valve inlet shall be a ¾ inch nominal iron pipe size and the outlet shall be provided with a male garden hose thread.

(Renumber subsequent sections)

Reason: The new language proposed provides for minimum requirements for water heater drain valves. Drain valves are necessary for draining water (and sediment) out of the tank. Yes, we know that it would be rare for a storage water heater or hot water storage tank to not be provided with a drain valve BUT if the code doesn't require it, the manufacturers (or installers) could save costs by eliminating the valve (they could claim that the tank could be drained by pumping from the inlet or outlet of the tank.) The IPC has had the valve requirement for a long time. The IRC needs to have the same coverage. A similar proposal to the 2015 IPC was Approved as Submitted.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 29 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2801.2 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This requirement needs to be stated in the code to back up what water heater manufacturers already provide for tank type water heaters.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P2801.2 Drain valves. Drain valves for emptying shall be installed at the bottom of each tank-type water heater and hot water storage tank. The drain valve inlet shall be not less than ¾ inch nominal iron pipe size and the outlet shall be provided with a male garden hose thread.

Commenter's Reason: Additional wording is needed to allow the drain valve to be not less than 3/4" so that a larger drain valve could be provided if needed or supplied with the water heater. With the current wording an inspection agency may disapprove a drain valve that is larger than 3/4". The term garden is jargon and is struck as the term hose thread is clear enough.

RP49-13

Final Action:

AS

AM

AMPC_____

D

RP51-13
P2801.5

Proposed Change as Submitted

Proponent: Jim Whitehead, IPS Corporation.

Revise as follows:

P2801.5 Required pan. Where a storage tank-type water heater or hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. galvanized steel pan having a material thickness of not less than 0.0236 inch (0.6010 mm) (No. 24) gage or a lesser gage number,
2. aluminum not less than 0.030 inch (0.8 mm) in thickness,
3. plastic not less than 0.036 inch (0.9 mm) in thickness
4. ~~other pans approved materials for such use.~~

~~Listed pans shall comply with CSA LC3. A plastic pan shall not be installed beneath a gas-fired water heater.~~

Reason: Aluminum and plastic water heater pans are frequently and commonly installed all across the United States even though the code doesn't currently include these materials as an option. I know this is a fact because IPS and other manufacturers produce and sell *tens of thousands* of aluminum and plastic water heater pans every year. In most areas, building officials really don't care what material the pan is made of, just as long as there is a pan. So why not make the code match what is current practice for many areas? Let's face it-a galvanized steel pan is ugly. It eventually gets rusty looking. The top edges, if not hemmed, are sharp (a cutting hazard) and the square corners are hard to seal. The top of the square corners can puncture things (like human flesh and the bottoms of jugs). THEN you want to require that galvanized steel pan to be installed in a finished area like a indoor utility room or a laundry room in a home? The home owner just doesn't want it.

Yes, the existing section currently says "or other pans approved for such use". But does the building official really need to be spending the time approving "other pans" for use on a job-by-job basis? In reality, when the building official shows up to inspect, the pan is in place (beneath a water heater that is plumbed and filled with water). Is that the time for the building official to be making a decision about whether the pan material is *approved*? This proposal will eliminate the questions and free up building official time in order to deal with more important issues.

So if aluminum pans and plastic pans are being *approved* (and again we know that they must be as *tens of thousands* of these pans are sold every year), then there needs to be some criteria for these types of pans. The thicknesses indicated for aluminum and plastic materials have been determined to be at least equivalent to the galvanized steel with regard to deflection (of the sides of the pan) and puncture resistance. NOT ALL MANUFACTURERS OF ALUMINUM AND PLASTIC PANS HAVE CONSIDERED THIS IN THEIR SELECTION OF MATERIAL THICKNESSES. And we are positive that some building officials have developed a bad opinion about allowing the use of aluminum and plastic because of their experiences with competitor's products that use lighter weight materials than what is proposed. There are at least a few of us responsible manufacturers who produce quality aluminum and plastic pans that meet the proposed requirements. Based upon our field surveys of our pans in use, these thicknesses provide for a durable product that remains serviceable, corrosion free and good looking for the life of a typical water heater if not two water heater lives.

"Listed pans shall comply with CSA LC3" is being deleted because there is not any pan produced in the United States that complies with that standard. When this standard was introduced into to the code, there was a product, available to the market, that met this standard. The standard was actually developed around this pan/stand design. Furthermore this standard was developed using the stand/pan in combination. Most pans are placed directly on the floor and not elevated on a stand. Also, the product was discontinued because of design problems. (The product was a combination elevation stand and pan assembly). CSA withdrew the standard in November 2011. There is not a need to have this standard in the code any longer and we don't want someone trying to bring a product to the market that meets this standard. Obviously, the standard isn't up to snuff because the products made to the standard didn't work out. The standard needs to be deleted from the code.

The last line about prohibiting the use of a plastic pan under a gas fired water heater is simple common sense. Although we have not heard of any problems with the use of our plastic pans for gas water heaters, the radiant heat coming from the bottom of a gas fired water heater could make a plastic pan more susceptible to puncturing (such as might be caused by the legs of a water heater). The Uniform Plumbing Code has this prohibition so the same prohibition in the I-codes seems appropriate.

Cost Impact: The code change proposal will not increase the cost of construction. In fact, factory-made aluminum and plastic water heater pans are, by far, much more economical than a galvanized steel pan that is made in a local sheet metal shop.

P2801.5-RP-WHITEHEAD

Committee Action Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

P2801.5 Required pan. Where a storage tank-type water heater or hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) 24 gage or a lesser gage number,
2. ~~aluminum not less than 0.030 inch (0.8 mm) in thickness,~~
3. plastic not less than 0.036 inch (0.9 mm) in thickness
4. other approved materials.

A plastic pan shall not be installed beneath a gas-fired water water heater.

Committee Reason: The modification allows for more options for drain pans. The overall reason for approving the proposal is agreement with the proponent's reason statement.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jim Whitehead, IPS Corporation representing IPS Corporation (Jim.whitehead@ipscorp.com) requests Approval as Submitted.

Commenter's Reason: Based on sound technical reasoning, we request that our original proposal be Approved as Submitted instead of the Committee approved modification (that was suggested from a proposed floor modification). The members should realize that a pan of 0.0236" aluminum is more likely to being damaged if stepped on, or punctured/torn by the legs of a water heater (as found on some gas fired models). Such damage could result in a pan leak which could cause failure of the floor beneath the water heater, possibly causing the water heater to fall over. Other industries recognize that aluminum has a lower tensile strength than steel and therefore, when converting from a steel design to an aluminum design, thicker material is necessary in order to maintain the integrity of the product. Specifying an aluminum material to be the *same* thickness as a steel material is not technically logical. As a manufacturer of water heater pans for over 30 years, IPS recognizes the importance of providing a product that will withstand the rigors of installation and long term service. The 0.030" thick material for aluminum pans has proven to be the minimum acceptable thickness for durability. Many companies such as ours have standardized on this thickness. We have witnessed many problems with aluminum pans made of 0.0236" thick (and thinner) material made by some of our competitors. We know that reducing the aluminum material thickness to be more competitive with manufacturers of those thinner material pans is **not** a viable solution. If it was, we and other manufacturers like us would have already reduced the thickness to match theirs. Again, based upon our 30 years of experience of our pans and our (thinner material) competitor's pans, allowing 0.0236 inch aluminum material would be significantly lowering the bar for safety.

RP51-13

Final Action:

AS

AM

AMPC _____

D

RP52-13
P2801.5.1

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2801.5.1 Pan size and drain. The pan shall be not less than 1½ inches (38 mm) deep and shall be not less than 3 inches (76 mm) greater in diameter than the diameter of the water heater or hot water storage tank. ~~be of sufficient size and shape to receive all dripping or condensate from the tank or water heater.~~ The pan shall be drained by an indirect waste drain pipe connected to the pan. The drain pipe shall be of not less than ¾ inch (19 mm) nominal diameter. ~~Piping for safety pan drains and shall be of any of the these materials listed indicated in Table P2905.5. Pipe fittings for the drain pipe shall be in accordance with Section P2905.6 except that insert-type fittings shall not be installed in the drain piping.~~

Reason: This section needs to include the horizontal dimension of the pan with respect to the water heater. Some installations have been observed where the pan exactly fits the bottom of the water heater. This does not allow any space for water in the pan to flow to the pan drain on the side of the pan. The drain is now specifically required to be on the side of the pan so that it is less likely to become blocked. The improved wording also prevents a water heater from being located in the pan where the water heater blocks the drain outlet on the side of the pan. The 3 inches over sizing was based on the same pan requirement in the mechanical code for HVAC units. The struck language in the first sentence is archaic and vague. The existing language also failed to identify what fittings should be used for drain piping. The new language corrects this omission. While the existing language specifies the type of pipe to be used, it doesn't specify the fittings. The last sentence is added to clarify the fittings that must be used. Note the restriction against using insert fittings...the ¾ inches minimum size is already small enough without putting insert fittings in the piping to further reduce the diameter. Such reductions in internal diameter could catch lint and rust particles that could easily block flow.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 32 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2801.5.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: There is not any evidence that bigger pans are needed as not many catastrophic water heater failures actually occur.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

P2801.5.1 Pan size and drain. The pan shall be not less than 1 1/2 inches (38 mm) deep. The pan horizontal dimension and shall be not less than 3-inches (76 mm) greater in diameter than the diameter of the water heater or hot water storage tank. Where the flat bottom of a tank will rest directly on the bottom of the pan, the pan dimension shall be not less than 1 inch (25.4 mm) larger than the tank diameter. The drain outlet in the pan shall not be blocked by a tank in the pan or any materials in the pan used to raise a tank above the bottom of a pan.

The pan shall be drained by drain pipe connected to the pan. The drain pipe shall be not less than 3/4 inch (19 mm) nominal diameter and shall be of any of the materials indicated in Table P2905.5. Pipe fittings for the drain pipe shall be in accordance with Section P2905.6 except that insert-type fittings shall not be installed in the drain piping.

Commenter's Reason: Our original intent for specifying a pan size was to eliminate the ambiguous phrase "sufficient size and shape". Another intent was to prevent a situation where the supplied (especially a round) pan was of the same diameter as the bottom of diameter of a flat bottomed tank (typically a standard electric water heater or hot water storage tank) resulting in a side drain outlet of the pan being blocked so there was not a flow path for the escaping water to travel to the drain outlet.

Since we made the original proposal, additional concerns came to us about the trend of future water heaters and hot water storage tanks having thicker insulation (thanks to the federal energy laws). In the situation of replacing an existing water heater, any requirement for a pan to be larger in size than the outside of the tank could present installation problems. For example, the water heater in a narrow closet. Therefore, this public comment changes the proposed language for pan size to only require the pan to be as large as the outside of the (insulated) tank. It also adds a requirement that the water heater not be "offset" in the pan such that the drain outlet not be blocked. In other words, don't position the water heater in the pan up against the drain pan outlet. Or, if the drain is on the bottom of the pan, don't place a flat bottom tank right on top of the drain (the installer can raise the tank by placing the tank on suitable "risers"). While it should be *common sense* to make sure that the drain outlet isn't blocked, putting it in the code provides the basis for the code official to reject careless installations that could result in installed pans not doing what they were intended to do (to catch and drain the leaking water)

The added exception language "except where the flat bottom of a tank will rest directly on the pan," requires some (minimal) "flow path" around the tank in that situation. However, if for some reason the pan cannot be 1 inch larger than the tank (this obviously being a *really* tight fit installation), then the installer could always raise the flat bottom tank slightly (or more) above the pan bottom by placing the tank on pieces of "suitable" material (such as metallic plates, concrete cap blocks or bricks) so that the escaping water can flow *under* the tank to the drain outlet.

RP52-13

Final Action: AS AM AMPC____ D

RP54-13
P2803.1, P2803.2 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2803.1 Relief valves required. Storage water heaters and hot water storage tanks. Appliances and equipment used for heating water or storing hot water shall be protected against over-pressure and over-temperature conditions by one of the following methods:

1. A separate pressure-relief valve and a separate temperature-relief valve ~~;~~ or
2. A combination pressure- and temperature-relief valve.

P2803.2 Instantaneous fuel-gas fired water heater relief valve. A fuel-gas fired instantaneous water heater shall be protected against over-pressure conditions by a pressure relief valve. The valve shall be located on the cold water inlet piping to the heater at a point that is downstream of all external valves except where the heater manufacturer's instructions require the valve be located elsewhere.

(Renumber subsequent sections)

Reason: In Section P2803.1, the terms "appliances and equipment" is not specific to the coverage that is intended by the code. Chapter 28 is about water heaters. Example: an electric hot drinking-water unit (under a kitchen sink) is an appliance that heats and stores water. The section never says what the heaters or tanks are being protected against. Adding "over-pressure" and "over temperature" clarifies this.

A question that is often asked is whether existing Section P2803.1 applied to instantaneous ("tankless") water heaters as it is impossible to install a temperature relief valve (in accordance with Section P2803.4) as there is no tank! A new section is added to cover gas instantaneous ("tankless") water heaters. The fuel gas-fired instantaneous water heater industry is waffling about whether a pressure relief valve is required and most have in their instructions "it's up to the local code official or jurisdiction". Many questions come up about this and code officials are not sure what to do. We need to settle the debate by simply requiring the pressure relief valve at least for the gas-fired tankless water heaters. Note that electric instantaneous water heaters are exempt from having a PRV by the UL listing for those products. While the code *could* be written to require PRVs for electric tankless water heaters, it is impractical to install PRVs for the small electric units (think of the one fixture, under the cabinet type) and then the issue is where to route the discharge pipe. Generally, the gas instantaneous ("tankless") water heaters are for the whole building and are installed in a basement, garage or other location (outside) where routing of the PRV pipe is no more difficult than it is for a storage tank water heater.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 34 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2803.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This proposal doesn't address small tankless water heaters. The manufacturer's instructions take precedence.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: The committee wanted "small tankless" units to be addressed. We can only assume that the committee's comment meant electric instantaneous (tankless) units as small as point-of-use type units.

The committee's comment that "the manufacturer's instructions take precedence" deserves a reiteration of what was in our reason statement in the original proposal:

"The fuel gas-fired instantaneous water heater industry is waffling about whether a pressure relief valve is required and most have in their instructions "it's up the local code official or jurisdiction". Many questions come up about this and code officials are not sure what to do. We need to settle the debate by simply requiring the pressure relief valve, at least, for the gas-fired tankless water heaters."

With respect to electric tankless water heaters, the requirements for pressure relief valves by the manufacturers (and the standard for listing for these products, UL499) is even more muddy than it is for gas-fired instantaneous tankless water heaters. Electric instantaneous (tankless) water heater manufacturers are stating the following in their instruction manuals:

"This unit is not required by UL to have a Pressure and Temperature safety relief valve (PTRV). You should check with local codes to find out if one is required in your area."

"Tankless water heaters such as the <model name> are not required to be equipped with a Pressure and Temperature Relief Valve (except in Massachusetts)."

"Tankless water heaters such as the <model name> are not required to be equipped with a pressure and temperature relief valve (p&t). If the local inspector will not pass the installation without a p&t, it should be installed on the hot water outlet side of the unit."

Recent discussions with listing and labeling agencies about electric tankless water heaters revealed that *some* designs of electric tankless water heaters are required to have "pressure relief devices". Some of these devices are integral to the product design, are not mentioned in the unit's instructions and provide no way to connect a discharge pipe to route the discharge to a safe location. Some electric tankless water heaters *do* require a traditional pressure relief valve but the listing requires that the valve be factory-installed prior to shipment.

And keep in mind the *practicality* of requiring pressure relief valves for ALL electric instantaneous (tankless) units. Consider a unit serving one lavatory in a powder room that is in the middle of the home. Where will the discharge pipe from the relief valve be routed to? Trying to determine which electric tankless water heaters needs to have a pressure relief valves is too difficult to unravel. The original proposal only addressed gas-fired tankless water heaters for good reason – this subject related to electric tankless water heaters is too complex to address at this time.

We believe it is prudent to approve the original proposal simply because a gas-fired appliance that has to potential to rapidly heat water constitutes a safety hazard. Designers and installers need consistent guidance everywhere that the code is adopted so that the decision as to whether a pressure relief valve is needed is not made on a jurisdiction to jurisdiction basis.

RP54-13

Final Action: AS AM AMPC_____ D

RP57-13

P2901.1, P2901.2 (New), P2901.2.1 (New), P2901.2.2 (New), P2901.2.3 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2901.1 Potable water required. Potable water shall be supplied to plumbing fixtures and plumbing appliances in dwelling units shall be supplied with potable water in the amounts and pressures specified in this chapter except where treated rainwater, treated gray water or municipal reclaimed water is supplied to water closets, urinals and trap primers. Where a nonpotable water distribution systems is installed, the nonpotable system shall be identified by color marking, metal tags or other appropriate method. Where color is used for marking, purple shall be used to identify municipally reclaimed water, rainwater and graywater distribution systems. Nonpotable water outlets that could inadvertently be used for drinking or domestic purposes shall be posted.

P2901.2 Identification of nonpotable water systems. Where nonpotable water systems are installed, the piping conveying the nonpotable water shall be identified either by color marking, metal tags or tape in accordance with Sections P2901.2.1 through P2901.2.2.3.

P2901.2.1 Signage Required. All nonpotable water outlets such as hose connections, open ended pipes, and faucets shall be identified with signage that reads as follows: "Non-potable water is utilized for [application name]. Caution: non-potable water. DO NOT DRINK."The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches in height and in colors in contrast to the background on which they are applied. In addition to the required wordage, the pictograph shown in Figure P2901.2.1 shall appear on the signage required by this section.



FIGURE P2901.2.1
Pictograph – DO NOT DRINK

P2901.2.2 Distribution Pipe Labeling and Marking. Non-potable distribution piping shall be of the color purple and shall be embossed or integrally stamped or marked with the words: "CAUTION: NONPOTABLE WATER – DO NOT DRINK" or shall be installed with a purple identification tape or wrap. Pipe identification shall include the contents of the piping system and an arrow indicating the direction of flow. Hazardous piping systems shall also contain information addressing the nature of the hazard. Pipe identification shall be repeated at intervals not exceeding 25 feet (7620 mm) and at each point where the piping passes through a wall, floor or roof. Lettering shall be readily observable within the room or space where the piping is located.

P2901.2.2 .1 Color. The color of the pipe identification shall be discernable and consistent throughout the building. The color purple shall be used to identify reclaimed, rain and gray water distribution systems.

P2901.2.2 .2 Lettering Size. The size of the background color field and lettering shall comply with Table P2901.2.2.2.

**TABLE P2901.2.2.2
SIZE OF PIPE IDENTIFICATION**

<u>PIPE DIAMETER (inches)</u>	<u>LENGTH BACKGROUND COLOR FIELD (inches)</u>	<u>SIZE OF LETTERS (inches)</u>
<u>¾ to 1 ¼</u>	<u>8</u>	<u>0.5</u>
<u>1 ½ to 2</u>	<u>8</u>	<u>0.75</u>
<u>2 ½ to 6</u>	<u>12</u>	<u>1.25</u>
<u>8 to 10</u>	<u>2</u>	<u>2.5</u>
<u>over 10</u>	<u>32</u>	<u>3.5</u>

For SI: 1 inch = 25.4 mm.

P2901.2.2 .3 Identification Tape. Where used, identification tape shall be at least 3 inches wide and have white or black lettering on purple field stating “CAUTION: NON-POTABLE WATER – DO NOT DRINK”. Identification tape shall be installed on top of non-potable rainwater distribution pipes, fastened at least every 10 feet to each pipe length and run continuously the entire length of the pipe.

Reason: The phrase “in *dwelling units* shall be supplied with water in the amounts and pressures specified in this chapter” is not necessary because the code already spells out the requirements in other sections.

Water distribution systems of other than potable water are being installed in buildings and the code needs to require marking of the piping and signage for the outlets for safety reasons. The basis for this new language is text from the IgCC and is written to be in alignment with the IgCC requirements. A similar proposal to the 2015 IPC was Approved as Modified by Public Comment. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 36 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will increase the cost of construction

P2901.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: This is necessary for the safety of the public when nonpotable water is being used in the building.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P2901.2.1 Signage Required. All nonpotable water outlets such as hose connections, open ended pipes, and faucets shall be identified with signage that reads as follows: "Non-potable water is utilized for [application name]. Caution: non-potable water. DO NOT DRINK."The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches in height and in colors in contrast to the background on which they are applied. In addition to the required wordage, the pictograph shown in Figure P2901.2.1 shall appear on the signage required by this section. The requirements of this section shall not be construed to require signage for water closets and urinals utilizing nonpotable water for flushing.

Commenter's Reason: The proposed additional language is to make it clear that no signage is required for water closets or urinals that are being supplied with a non potable water source. The existing language could be interpreted that signage is required for water closets and urinals using a non potable water source however we feel that this was not the intent of this language and want to make it clear that such signage is not required specifically for these two fixtures.

RP57-13

Final Action: AS AM AMPC_____ D

RP64-13
P2902.3.3

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2902.3.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CSA B64.3. These devices shall be ~~designed for the outlet to be permitted to be installed where~~ subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

Reason: The term “shall be permitted” is not mandatory code language. The section was reworded to eliminate the term. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 40 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2902.3.3-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action: **Diapproved**

Committee Reason: The term “design” shouldn’t be in the section. The standard for the product covers the design.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2902.3.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012 or CSA B64.3. ~~These devices shall be permitted to be installed where subject to continuous pressure conditions.~~ The relief opening shall discharge by air gap and shall be prevented from being submerged.

Commenter’s Reason: We are simply trying to remove the “shall be permitted” from the section. But after review of the sentence having “shall be permitted” in it, we see no value of the sentence in the code. The sentence is really not clear in its intent. The installer must follow the installation instructions for the product so it is unnecessary for this sentence to remain in the code.

RP64-13

Final Action: AS AM AMPC_____ D

RP66-13
P2902.3.4

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2902.3.4 Pressure vacuum breaker assemblies. Pressure vacuum breaker assemblies shall conform to ASSE 1020 or CSA B64.1.2. Spill-resistant vacuum breaker assemblies shall comply with ASSE 1056. These assemblies ~~are shall be~~ designed for the outlet to be subject to installation under continuous pressure conditions. ~~where the critical level is installed at the required height.~~ Pressure vacuum breaker assemblies shall not be installed in locations where spillage leakage of water from the assembly could cause damage to the structure.

Reason: The third sentence is in non-mandatory language and the critical height has nothing to do with the assembly's capability to accept pressure on the outlet of the assembly. The term "spillage" is vague (spillage of what?) and doesn't truly say what the intent is.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 41 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2902.3.4-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The committee preferred RP67.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2902.3.4 Pressure vacuum breaker assemblies. Pressure vacuum breaker assemblies shall conform to ASSE 1020 or CSA B64.1.2. Spill-resistant vacuum breaker assemblies shall comply with ASSE 1056. ~~These assemblies are designed for installation under continuous pressure conditions.~~ Pressure vacuum breaker assemblies shall not be installed in locations where spillage leakage of water from the assembly could cause damage to the structure.

Commenter's Reason: We are simply trying to remove the "shall be permitted" from the section and clarify the meaning of "spillage". But after review of the sentence having "shall be permitted" in it, we see no value of the sentence in the code. In fact, the sentence could lead someone to believe that the device is suitable for protection under a backpressure condition. Table P2902.3 indicates that these devices offer protection against only backsiphonage conditions. The installer must follow the installation instructions for the product so it is unnecessary for this sentence to remain in the code. The term "spillage" is slang so the last sentence is modified to really say what is intended so that these devices are not inadvertently installed in an area where leakage of water would create an issue.

RP66-13

Final Action: AS AM AMPC____ D

RP68-13
P2902.3.5

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2902.3.5 Reduced pressure principle backflow prevention assemblies. Reduced pressure principle backflow prevention assemblies and reduced pressure principle fire protection backflow prevention assemblies shall conform to ASSE 1013, AWWA C511, CSA B64.4 or CSA B64.4.1. Reduced pressure detector fire protection backflow prevention assemblies shall conform to ASSE 1047. ~~These devices assemblies shall be designed for the outlet to be permitted to be installed where~~ subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.

Reason: The term "shall be permitted" is not mandatory code language. The language was revised to make the intent clear. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 42 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2902.3.5-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action: **Disapproved**

Committee Reason: The term "design" shouldn't be in the section. The standard for the product covers the design.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2902.3.5 Reduced pressure principle backflow prevention assemblies. Reduced pressure principle backflow prevention assemblies and reduced pressure principle fire protection backflow prevention assemblies shall conform to ASSE 1013, AWWA C511, CSA B64.4 or CSA B64.4.1. Reduced pressure detector fire protection backflow prevention assemblies shall conform to ASSE 1047. ~~These devices shall be permitted to be installed where subject to continuous pressure conditions.~~ The relief opening shall discharge by air gap and shall be prevented from being submerged.

Commenter's Reason: We are simply trying to remove the "shall be permitted" from the section. But after review of the sentence having "shall be permitted" in it, we see no value of the sentence in the code. The sentence is not really clear in its intent. The installer must follow the installation instructions for the product so it is unnecessary for this sentence to remain in the code.

RP68-13

Final Action:

AS

AM

AMPC_____

D

RP69-13
P2902.3.6

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2902.3.6 Double check-valve assemblies. Double check-valve assemblies shall conform to ASSE 1015, CSA B64.5, CSA B64.5.1 or AWWA C510. Double detector check-valve assemblies shall conform to ASSE 1048. These ~~devices-assemblies~~ shall be designed for the outlet to be subject to ~~capable of operating under~~ continuous pressure conditions.

Reason: The last sentence doesn't really say what is intended. The revision corrects the problem.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 43 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2902.3.6-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action: **Disapproved**

Committee Reason: The term "design" shouldn't be in the section. The standard for the product covers the design.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2902.3.6 Double check-valve assemblies. Double check-valve assemblies shall conform to ASSE 1015, CSA B64.5, CSA B64.5.1 or AWWA C510. Double detector check-valve assemblies shall conform to ASSE 1048. ~~These devices shall be capable of operating under continuous pressure conditions.~~

Commenter's Reason: We are simply trying to remove the "shall be permitted" from the section. But after review of the sentence having "shall be permitted" in it, we see no value of the sentence in the code. The sentence is not really clear in its intent. The installer must follow the installation instructions for the product so it is unnecessary for this sentence to remain in the code.

RP69-13

Final Action: AS AM AMPC_____ D

RP75-13
P2902.5.1

Proposed Change as Submitted

Proponent: Michael S. Moss, representing American Backflow Prevention Association
(msmoss@utah.gov)

Revise as follows:

P2902.5.1 Connections to boilers. ~~The potable supply to the boiler shall be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CSA B64.3. Where conditioning chemicals are introduced into the system,~~ The potable water connection to a boiler shall be protected by an *air gap* or a reduced pressure principle backflow prevention assembly complying with ASSE 1013, CSA B64.4 or AWWA C511.

Reason: These assemblies are designed and sold for high-health hazard installations according to manufacturer specification sheets. They are adequate for chemical additions or injections. Reduced pressure principle backflow *preventer* corrected to reduced pressure principle backflow *prevention assembly* to provide consistent terminology throughout the code for reference and comparison.

Cost Impact: The code change proposal will not increase the cost of construction.

P2902.5.1-RP-MOSS

Committee Action Hearing Results

Committee Action:

Approved as Modified

Modify the proposal as follows:

P2902.5.1 Connections to boilers. The potable supply to the boiler shall be permitted to be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CSA B64.3. Where conditioning chemicals are introduced into the system, the potable water connection to a boiler shall be protected by an *air gap* or a reduced pressure principle backflow prevention assembly complying with ASSE 1013, CSA B64.4 or AWWA C511.

Committee Reason: The modification puts backflow preventers covered by ASSE 1012 back into the code for this application. The overall proposal provides consistency that is needed.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Michael S. Moss of the American Backflow Prevention Association (msmoss@utah.gov) requests Approval as Modified by this Public Comment

Further modify proposal as follows:

P2902.5.1 Connections to boilers. Where chemicals will not be introduced into a boiler, the potable water supply to the boiler shall be ~~permitted to be equipped with~~ protected from the boiler by a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012 or CSA B64.3. ~~Where conditioning chemicals are will be introduced into the a boiler system,~~ the potable water supply connection to the boiler shall be protected from the boiler by an *air gap* or a reduced pressure principle backflow prevention assembly complying with ASSE 1013, CSA B64.4 or AWWA C511.

Commenter's Reason: In reviewing the language of the floor proposal submitted during the Committee Action Hearings, I recognize the need to reword this proposal to make it clearly mandatory language. Also my intent is to ensure that the proposal provides adequate and appropriate protection based upon addition of chemicals into the boiler system. I recommend that this proposal be accepted and approved as modified.

RP75-13

Final Action: AS AM AMPC_____ D

RP78-13
P2902.5.6 (New)

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Add new text as follows:

P2902.5.6 Yard hydrants. The potable water supply to a frost proof yard hydrant having a stop-and-waste valve located underground or below grade shall be protected against backflow by a reduced pressure principle backflow prevention assembly.

Reason: There is no way to know what type of health hazard the stop and waste opening of a yard hydrant will be exposed to. The contaminants could include lawn fertilizer, animal wastes, garden fertilizer or septic tank effluent. The code currently lacks coverage for what type of backflow protection is necessary for this application which has some code officials choosing simple a dual check valve which is only suitable for low hazard. This is an accident waiting to happen. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 53 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will increase the cost of construction.

P2902.5.6 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This proposal is much too restrictive as it requires a specific backflow device for a supplying a yard hydrant.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

P2902.5.6 Yard hydrants. The potable water supply to a frostproof freezeproof yard hydrant having a stop-and- waste valve located underground or below grade shall be protected against backflow by a backflow preventer with intermediate atmospheric vent, a pressure vacuum breaker assembly, a spill-resistant vacuum breaker assembly or a reduced pressure principle backflow prevention assembly.

Commenter's Reason: As the committee indicated, they wanted more options for backflow protection. This public comment provides options. We have changed "frostproof" to "freezeproof" to be in alignment with existing Section P2903.9.5 terminology.

RP78-13

Final Action:

AS

AM

AMPC ____

D

RP81-13
Table P2903.2

Proposed Change as Submitted

Proponent: Edward R. Osann, Natural Resources Defense Council, representing himself (eosann@nrdc.org)

Revise as follows:

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION
FOR PLUMBING FIXTURES AND FIXTURE FITTINGS^b

PLUMBING FIXTURE OR FIXTURE FITTING	PLUMBING FIXTURE OR FIXTURE FITTING MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	2.2 <u>1.5</u> gpm at 60 psi
Shower head ^a	2.5 <u>2.0</u> gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	4.6 <u>1.3</u> gallons per flushing cycle ^c

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

- a. A hand-held shower spray is also a shower head.
- b. Consumption tolerances shall be determined from referenced standards.
- c. The effective flush volume for a dual-flush water closet is defined as the composite, average flush volume of two reduced flushes and one full flush.

Reason: The maximum flow rates and water consumption levels in the current Table P2903.2 for water closets, shower heads, and lavatory faucets equate to nationwide standards enacted nearly 20 years ago. In December, 2010, the US Department of Energy determined that states were no longer preempted from adopting more stringent efficiency standards for these products. (*Federal Register*, Vol. 75, No. 245, December 22, 2010, p. 80289; this document is attached).

Today, fixtures and fittings that perform well at flush volumes and flow rates lower than the values in Table P2903.2 are widely available. Since 2006, the establishment of the WaterSense voluntary labeling program for water efficient products and services by the Environmental Protection Agency has provided a framework for the recognition of products that are substantially more efficient than minimum federal requirements while maintaining full functionality and customer satisfaction. WaterSense criteria were established for tank-type toilets (1.28 gpf) in 2007; lavatory faucets (1.5 gpm @ 60 psi) in 2007; and showerheads (2.0 gpm @ 80 psi) in 2010. Manufacturers have responded by bringing large numbers of models to market that meet or exceed WaterSense specifications. Based on the most recent reports by WaterSense partners, the following figures regarding the number of WaterSense labeled models available as of December 2012 indicate the widespread availability and commercial viability of plumbing products that are more efficient than the federal minimum standards shown in the current Table P2903.2:

- Tank-type water closets 1,475 models from 87 brands
- Lavatory faucets and accessories 5,207 models from 134 brands
- Showerheads 808 models from 45 brands

With the pace of introduction of new models that meet WaterSense specifications, it is reasonable to expect that these figures will be substantially larger by 2015.

Improving the water efficiency of water closets, shower heads, and lavatory faucets in new residential construction will save future building owners money and reduce the likelihood of municipal water and wastewater capacity constraints that can lead to moratoria on new connections.

NRDC estimates that nationwide adoption of the values in this proposal in all newly constructed single-family homes, effective 2016, can be expected to yield substantial additional savings of resources and dollars, as follows:

- 110 million gallons of water per day in 2030;
- 3,200 1,644 Gigawatt-hours of electricity per year in 2030;
- 118 million therms of natural gas per year in 2030; and
- Cumulative savings for consumers of \$632 million through 2030.

Cost Impact: While the costs of plumbing fixtures and fittings vary greatly due to style, trim, colors, and materials, the incremental cost of greater efficiency alone for products meeting the flush volumes and flow rates contained in this proposal is negligible. This code change proposal will not increase the cost of construction.

Committee Action Hearing Results

Committee Action:

Disapproved

Modify the proposal as follows:

Committee Reason: Older drainage systems might not be able to handle the lower flows allowed by this proposed table. This belongs in the IgCC.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Edward R. Osann, Natural Resources Defense Council on behalf of self (eosann@nrdc.org); Julius Ballanco, JB Engineering and Code Consulting, P.C (JBENGINEER@aol.com); John Koeller, Koeller and Company (koeller@earthlink.net); and Harry Misuriello, American Council for an Energy-Efficient Economy (misuriello@verizon.net) request Approval as Modified by this Public Comment

Modify the proposal as follows:

**TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION
FOR PLUMBING FIXTURES AND FIXTURE FITTINGS^b**

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	1.5 gpm at 60 psi
Shower head ^a	2.0 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	1.3 gallons per flushing cycle ^{c,d}

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A hand-held shower spray is also a shower head.

b. Consumption tolerances shall be determined from referenced standards.

c. The effective flush volume for a dual-flush water closet is defined as the composite, average flush volume of two reduced flushes and one full flush.

d. The maximum flow shall be 1.6 gallons per flushing cycle for water closets connected to the sanitary drainage system of an existing building.

Commenter's Reason: The committee's stated reason for disapproval, "Older drainage systems might not be able to handle the lower flows allowed by this proposed table," is addressed by adding an exception to the new standard for water closet installations in existing buildings that might be subject to code. As the committee implies, drainage from new water closets operating at 1.3 gpf in newly-constructed one- and two family homes is not an issue. These products have achieved widespread acceptance in the US market. In 2011, over half of all tank-type toilets sold in the US were certified to meet the EPA WaterSense specification of 1.28 gpf, according to the EPA. In order to achieve the WaterSense label, a product must "Perform as well or better than their less efficient counterparts." A number of ratings reports, including those published by *Consumer Reports* and the City of Austin, Texas (as well as unpublished reports from the cities of Eugene, Oregon and Los Angeles, California) consistently identify toilets and showerheads that operate at the flows identified in this proposal as receiving good to excellent ratings.

It is also important to note that the Plumbing Manufacturers Institute (PMI) identified the very same flow rates and water consumption levels as proposed here in its own "PMI PRODUCT WATER EFFICIENCY POSITIONS: Residential Products &

Applications," published in August 2012 (available at:
http://www.pmihome.org/files/PMI_Water_Efficiency_Sustainability_Statement.pdf).

The proposed changes -- lavatory faucets at 1.5 gpm and showerheads at 2.0 gpm) are identical to PMI's position statement; the proposed change to 1.3 gpf for water closets is the rounded equivalent to PMI's suggested 1.28 gpf. PMI identified 2014 as the appropriate timing for a 1.28 gpf requirement for water closets; January, 2010 as appropriate timing for lavatory faucets at 1.28 gpm; and August, 2012 for showerheads at 2.0 gpm. As the changes proposed here would be implemented in the 2015 IRC base code, with likely field applicability in 2016 at the earliest, this proposal fully accommodates the timetable identified by PMI as acceptable to the plumbing industry.

RP81-13

Final Action: AS AM AMPC_____ D

RP83-13

P2903.4, P2903.4.1, P2903.4.2

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

~~**P2903.4 Thermal expansion control.** A means for controlling increased pressure caused by thermal expansion shall be installed where required in accordance with Sections P2903.4.1 and P2903.4.2. Where a storage water heater is supplied with cold water that passes through a check valve, pressure reducing valve or backflow preventer, a thermal expansion tank shall be connected to the water heater cold water supply pipe at a point that is downstream of all check valves, pressure reducing valves and backflow preventers. Thermal expansion tanks shall be sized in accordance with the tank manufacturer's instructions and shall be sized such that the pressure in the water distribution system shall not exceed that required by Section P2903.3.1.~~

~~**P2903.4.1 Pressure-reducing valve.** For water service system sizes up to and including 2 inches (51 mm), a device for controlling pressure shall be installed where, because of thermal expansion, the pressure on the downstream side of a pressure-reducing valve exceeds the pressure-reducing valve setting.~~

~~**P2903.4.2 Backflow prevention device or check valve.** Where a backflow prevention device, check valve or other device is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.~~

Reason: Any location there is a pressure reducing device, a check valve or a backflow preventer in the cold water piping to a storage-type water heater, a means to compensate for thermal expansion must be installed. This is typically accomplished with an expansion tank. Other methods for relieving thermal expansion pressure, such additional relief valves, waste water for the life of the system. Thermal expansion tanks are required by most storage water heater manufacturers to protect the water heater. Expansion tank manufacturers typically size their tanks so that the water distribution system pressure will remain just shy of the pressure required to open a 150 psi water heater relief valve. This will allow the system pressure to exceed the maximum pressure intended by Section P2903.3.1, which is unacceptable. A similar proposal for the 2015 IPC was Approved as Submitted.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 47 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will increase the cost of construction.

P2903.4-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This would prevent the use of other devices to prevent thermal expansion pressure increase that have been used successfully in the past.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: This proposed language is already cast for the 2015 IPC. Do you really want to have the IRC have different requirements for controlling thermal expansion than the IPC? This will lead to confusion so we urge approval of this proposal.

RP83-13

Final Action: AS AM AMPC_____ D

RP84-13
P2903.7

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2903.7 Size of water-service mains, branch mains and risers. The size of the water service pipe shall be not less than 3/4 inch (19 mm) diameter. The size of water service mains, branch mains and risers shall be determined according to water supply demand [gpm (L/m)], available water pressure [psi (kPa)] and friction loss caused by the water meter and *developed length* of pipe [feet (m)], including *equivalent length* of fittings. ~~The sizes of piping in of each a water distribution system shall be determined according to by design methods conforming to acceptable accepted engineering practice, such as those methods in Appendix P and shall Such methods shall be approved. by the code official.~~

Reason: The code should never direct or refer the reader to an appendix. What is “acceptable” ? What is intended is “accepted”. See definition for *accepted engineering practice* in the IPC. The material in the appendix is not normally adopted and in many cases, does not exist in the adopted code of a jurisdiction. The reference needs to be deleted. “Approved by the building official” is redundant. *Approved* already means approval by the building official.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 48 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2903.7-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: An appendix should not be referred to by the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

David Beahm, County of Warren, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Disapproval.

Commenter’s Reason: The Code already clearly defines that acceptable engineering design practices may be used to meet this requirement, but it also allows the code official direct guidance that Appendix P is considered an acceptable method of compliance without having to have other documents. This Code change does nothing more than remove a reference to Appendix P that some code officials rely on for the justification for it to be used.

RP84-13

Final Action:

AS

AM

AMPC____

D

RP88-13
P2903.9.1

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2903.9.1 Service Main water valves. Each *dwelling unit* shall be provided with an accessible, full-open main water shutoff valve near within 18 inches (457 mm) the entrance of where the water service pipe enters the structure at a foundation wall or where the water service extends above the floor of a concrete slab-on-grade. The valve shall be of a full open type having nominal restriction to flow, with provision for drainage such as a bleed orifice or installation of a separate drain valve. Additionally, Where the supply of water for the structure is from a public water main, a valve shall be provided between the end of the utility-owned water supply pipe and the beginning of the water service pipe. shall be valved at the curb or lot line in accordance with local requirements.

Reason: The terms “near” and “nominal restriction” are vague and unenforceable. The term “bleed orifice” and “valved” are slang terminology. The word “additionally” is unnecessary.

The industry seems to understand what constitutes a “full open” valve. The dimension of 18 inches for the location of the valve is offered to the Development Committee as a starting point for specifying the proximity of the valve to the entrance into the structure. The Committee can easily change this dimension if it chooses. The point in specifying a distance is to provide better guidance and more leeway than simply stating “at” the entrance.

A “bleed orifice” on a main water shut off valve is used so rarely that if it did get used many years after installation, the orifice is frequently useless because it is clogged and corroded. It is wishful thinking to believe that a modern water distribution system can be completely drained through a “bleed orifice” (or a drain valve) at the main water valve. Many jurisdictions have not enforced this feature for many years. The IPC contains no such requirement.

The last line is revised to remove slang terminology (“valved”).

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 49 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2903.9.1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproval

Committee Reason: This proposal appears to add an additional, unnecessary valve to the system and the dimension for locating the valve is too restrictive.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Replace proposal as follows:

Revise as follows:

P2903.9.1 Service Main water valve. Each *dwelling unit* shall be provided with an accessible, full-open main water shutoff valve, near the entrance of the water service. For water supplied by a water utility, the location of the valve shall be at any point between the utility point-of-delivery and the first branch connection of the water distribution system for the *dwelling unit*. The required valve shall not be utility-owned. For individual water supply systems, the valve shall be located at any point between the source of water pressure such as a pressure tank, and the first branch connection of the water distribution system for the *dwelling unit*. The valve shall be of a full-open type having nominal restriction to flow, with provision for drainage such as a bleed orifice or installation of a separate drain valve. Additionally, the water service shall be valved at the curb or lot line in accordance with local requirements.

Commenter's Reason: In our original proposal, the public hearing committee tried to modify the proposed "too restrictive" 18 inch dimension to 5 feet but that modification was not successful. After discussion among the members of the PMGCAC and with a few interested parties, we believe that attempting to put *any* dimension in this section is futile – there are just too many arrangements to consider. One dimension just can't fit all circumstances. Therefore, we propose new language for location of the valve to provide for the widest latitude for all possible circumstances and geographic regions.

The fourth sentence was added because for individual water supply systems (such as a well system) we believe there needs to be clarification that the required valve needs to be between the source of pressure and the first branch of the water distribution system. Putting a valve in the water service pipe from the well to the pressure tank isn't what is intended because the pressure tank can deliver a fair amount of water after the pump is isolated from the tank. The intent of having a main water valve is to be able to shut off the water pressure quickly for emergencies and service work.

The first part of the second to the last sentence of the existing text was struck out because "full open" is an understood term to most plumbers. In the past, a full-open valve meant a full-port gate valve. In recent years, full-port ball valves are more commonly used for full-open valve applications.

The second part of the second to the last sentence of the existing text was struck out because, as stated in the original proposal, requiring a "bleed orifice" on a main water shut off valve (or a separate drain valve) is useless in the majority of situations. The main water valve might not be in a location (such as in a wall) where the bleed orifice cannot be easily directed into a bucket. If a bleed orifice was used many, many years after installation of the valve, the orifice is frequently useless because it is clogged and corroded. Use of the bleed orifice usually results in having to replace the valve. And, where the valve is located underground, having a bleed orifice (or a separate drain valve) below grade would violate the intent of Section P2903.9.5 (Potable water openings below grade are prohibited). It is wishful thinking to believe that a modern water distribution system can be completely drained through a "bleed orifice" (or a drain valve) at the main water valve. Many jurisdictions don't appear to be enforcing the "bleed orifice" or "separate drain valve" requirement. The topic of winterizing water supply systems in buildings is far more extensive than a simple requirement for a drain point. Note that the IPC contains no requirement for a water system drain point.

The last sentence was struck out because the water utility is going to supply a valve at the utility point-of-delivery as part of a water meter or as a curb stop accessed through a "buffalo box" or "B-box", as some call it. There is no need for the code to discuss this valve because the utility supplies that valve. In some jurisdictions, it is illegal for anyone, other than the utility, to operate their valve (especially if that valve is upstream of a meter). The code should not allow a utility-owned valve to serve as the code-required valve. We added the third sentence to make this clear.

RP88-13

Final Action: AS AM AMPC____ D

RP89-13
P2903.9.2

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2903.9.2 Water heater valve. A *readily accessible* full open valve shall be installed in the cold-water supply pipe to each water heater, ~~at or near~~ Such valve shall be within 18 inches (457 mm) of the water heater.

Reason: The term “near” is vague and unenforceable. The term “at” is too restrictive. The dimension of 18 inches for the location of the valve is offered to the Development Committee as a starting point for specifying the proximity of the valve to the water heater. The Committee can easily change this dimension if it chooses. The point in specifying a distance is to provide better guidance and more leeway than simply stating “at” or “near” the entrance.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 50 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P2903.9.2-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: The dimension for locating the valve is too restrictive.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter’s Reason: Most of the time, an installer is going to put the valve right at the water heater, as we believe, is the right location. The dimension of 18 inches is not overly restrictive. Yes, there could be situations where the installer might want to put a valve in some other location for easy access by the homeowner. For example, an installer putting a water heater in an attic might want to put a valve that can be accessed from the floor below so that the homeowner can easily turn off water to the water heater. Such valves would be in addition to the required “at” the water heater. Having the valve “at” the water heater allows service personnel to perform maintenance and repairs quickly and easily without having to go up and down stairs or travel some distance away from the water heater to turn the water off and on. Note that the 18 inch dimension is NOT indicated as a developed pipe length. The required valve could be located anywhere within 18 inches of the water heater. For example, the 18 inch requirement

would not preclude locating the valve alongside of and at some distance from the top of a storage tank water heater that was on an elevation stand in a garage so that the valve would be within easy reach for the homeowner.

RP89-13

Final Action: AS AM AMPC____ D

RP93-13
P2903.9.5

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P2903.9.5 Outlets and stop-and-waste valves prohibited below grade. Potable water outlets and ~~combination~~ stop-and-waste valves shall not be installed underground or below grade. Freezeproof yard hydrants that drain the riser into the ground ~~are~~ shall be considered to be stop-and-waste valves.

Exception: Installation of freezeproof yard hydrants that drain the riser into the ground shall be permitted provided that ~~if~~ the potable water supply to such hydrants is protected upstream of the hydrants in accordance with Section P2902.5.6 and the hydrants are permanently identified as nonpotable outlets by *approved* signage ~~that reads as~~ having the followings words: "CAUTION, NONPOTABLE WATER. DO NOT DRINK."

Reason: The term "combination" is not needed and confuses the intent of the section. The plumbing industry knows what a stop and waste valve is. Use of the phrase "shall be permitted" in the exception is frequently not acceptable but in this situation, it does work because specific conditions are required for such hydrant use. The term "if" needs to be changed to "provided that" in order to format the remainder of the statement as the conditions of installation. The last line is revised to because signs don't "read", they only have words printed on them.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 54 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will increase the cost of construction.

P2903.9.5-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproval

Committee Reason: The exception is referring to Section P2902.5.6 which doesn't exist in the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

P2903.9.5 Outlets and stop-and-waste valves prohibited below grade. Potable water outlets and stop-and-waste valves shall not be installed underground or below grade. Freezeproof yard hydrants that drain the riser into the ground shall be considered to be stop-and-waste valves.

Exception: Installation of freezeproof yard hydrants that drain the riser into the ground shall be permitted provided that the potable water supply to such hydrants is protected upstream of the hydrants in accordance with Section P2902.5.6 and the hydrants are permanently identified as nonpotable outlets by *approved* signage having the following words: "CAUTION, NONPOTABLE WATER. DO NOT DRINK".

Commenter's Reason: The committee was right in that there isn't a Section P2902.5.6. This public comment corrects the error.

RP93-13

Final Action: AS AM AMPC____ D

RP94-13
P2903.10

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Delete and substitute as follows:

P2903.10 Hose bibb shut off valve. ~~Hose bibbs subject to freezing, including the “frost proof” type, shall be equipped with an accessible stop-and-waste type valve inside the building so that they can be controlled and drained during cold periods.~~

~~**Exception:** Frostproof hose bibbs installed such that the stem extends through the building insulation into an open heated or semiconditioned space need not be separately valved (see Figure P2903.10).~~

P2903.10 Outdoor hose connection faucets. ~~Hose-connection faucets such as hose bibbs, sillcocks and lawn faucets that are located on the building and exposed to the outdoors shall have a stop-and-waste valve installed on the fixture supply pipe to the faucet. The stop-and-waste valve shall be accessible and shall be located in an area of the building where the valve is not subject to freezing.~~

Exceptions:

1. The stop-and-waste valve shall not be required where the winter design temperature indicated in Table R301.2.(1) is greater than 32°F (0° C).
2. The stop-and-waste valve shall not be required where the valve seat of the hose connection faucet is located in an area of the building that is not subject to freezing temperatures (see Figure P2903.10).

Reason: The hose bibb is not “equipped” with a stop-and-waste valve; the water supply pipe to the hose bibb is to have the stop and waste valve. Are hose bibbs really “controlled”? “Valved” is slang terminology. What is a “semiconditioned” space? The revised text eliminates improper language and makes the intent clear.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 55 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will increase the cost of construction.

P2903.10-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproval

Committee Reason: The proposed language is not clear. The existing language is clearer.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

P2903.10 Outdoor hose connection faucets. Hose-connection faucets such as hose bibbs, sillcocks and lawn faucets that are located ~~on the exterior~~ of the building and ~~subject to freezing exposed to the outdoors~~ shall have a stop-and-waste valve installed on the fixture supply pipe to the faucet. The stop-and-waste valve shall be accessible and shall be located in an area of the building where the valve is not subject to freezing.

Exceptions:

1. ~~The stop-and-waste valve shall not be required where the winter design temperature indicated in Table R301.2.(1) is greater than 32°F (0°C).~~
2. The stop-and-waste valve shall not be required where the valve seat of the hose-connection faucet is located in an area of the building that is not subject to freezing temperatures (see Figure P2903.10).

Commenter's Reason: We believe that the original proposal language is clearer than the existing language. We think that the real reason for committee disapproval was that they did not like having the specific conditions called out for where freezing conditions could exist. We have reworked the proposal to continue to allow for ambiguity as to where (geographically) freezing conditions will occur.

RP94-13

Final Action: AS AM AMPC ____ D

RP97-13

P2904 (New), P2904.1 (New), Table P2904.1 (New)

Proposed Change as Submitted

Proponent: Edward R. Osann, Natural Resources Defense Council, representing himself.
(eosann@nrdc.org)

Add new text as follows:

SECTION P2904 HOT WATER DISTRIBUTION SYSTEMS

P2904.1 Hot water pipe volume. The volume in the piping between the end of a *hot water fixture supply* and the piping connection to a *hot water* source shall not exceed 0.5 gallon (1.9 liters). The hot water source shall be a recirculating system pipe, a heat-traced pipe or a water heater. The volume in the piping shall be calculated using the values in Table P2904.1.

TABLE P2904.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION PIPING

<u>LIQUID OUNCES OF WATER PER FOOT LENGTH OF HOT WATER TUBING</u>								
<u>Nominal Size (Inches)</u>	<u>Copper Type M</u>	<u>Copper Type L</u>	<u>Copper Type K</u>	<u>CPVC CTS SDR 11</u>	<u>CPVC SCH 40</u>	<u>PEX-AL-PEX ASTM F 1281</u>	<u>PE-AL-PE</u>	<u>PEX CTS SDR 9</u>
<u>3/8</u>	<u>1.06</u>	<u>0.97</u>	<u>0.84</u>	<u>N/A</u>	<u>1.17</u>	<u>0.63</u>	<u>0.63</u>	<u>0.64</u>
<u>1/2</u>	<u>1.69</u>	<u>1.55</u>	<u>1.45</u>	<u>1.25</u>	<u>1.89</u>	<u>1.31</u>	<u>1.31</u>	<u>1.18</u>
<u>5/8</u>	<u>2.49</u>	<u>2.31</u>	<u>2.22</u>	<u>N/A</u>	<u>N/A</u>	<u>2.12</u>	<u>2.12</u>	<u>1.72</u>
<u>3/4</u>	<u>3.43</u>	<u>3.22</u>	<u>2.90</u>	<u>2.67</u>	<u>3.38</u>	<u>3.39</u>	<u>3.39</u>	<u>2.35</u>
<u>1</u>	<u>5.81</u>	<u>5.49</u>	<u>5.17</u>	<u>4.43</u>	<u>5.53</u>	<u>5.56</u>	<u>5.56</u>	<u>3.91</u>
<u>1 1/4</u>	<u>8.70</u>	<u>8.36</u>	<u>8.09</u>	<u>6.61</u>	<u>9.66</u>	<u>8.49</u>	<u>8.49</u>	<u>5.81</u>
<u>1 1/2</u>	<u>12.18</u>	<u>11.83</u>	<u>11.45</u>	<u>9.22</u>	<u>13.20</u>	<u>13.88</u>	<u>13.88</u>	<u>8.09</u>
<u>2</u>	<u>21.08</u>	<u>20.58</u>	<u>20.04</u>	<u>15.79</u>	<u>21.88</u>	<u>21.48</u>	<u>21.48</u>	<u>13.86</u>

For SI: 1 inch = 25.4 mm, 1 liquid ounce = 0.0296 liters, 1.0 ounce = 0.00781 gallons, 0.5 gallon (1.9 liters) = 64.0 liquid ounces

Reason: Cold or tepid water in the initial draw from a hot water outlet is often unusable for its intended purpose, and is frequently purged, resulting in a waste of water, energy, and time for building occupants. Pipe insulation significantly reduces heat loss and helps to ensure that hot water gets to the user sooner. However, a complementary strategy is to reduce the volume of water contained in the hot water distribution system in the first place.

This proposal, which is comparable to the criteria adopted by the US EPA WaterSense for New Homes specification in 2009, establishes a maximum volume of 0.5 gallons for water in a hot water supply line, based on internal volumes specific to the piping material. By allowing the volume limitation to be computed from runs from recirculation loops, this provision allows designers additional flexibility in larger homes while effectively limiting the amount of cooled down water to be purged to 1/2 gallon per draw.

Cost Impact: This code change proposal is a design requirement that will not increase the cost of construction.

P2904 (NEW) #1-RP-OSANN.DOC

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: This is a water reducing proposal that would be better suited for the IgCC. Also, same comment as for RP95. The added cost of construction could not be afforded by some customers.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Edward R. Osann, Natural Resources Defense Council on behalf of self (eosann@nrdc.org) requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

SECTION P2904 HOT WATER DISTRIBUTION SYSTEMS

P2904.1 Hot water pipe volume. The volume in the piping between the end of a *hot water fixture supply* and the piping connection to a *hot water source* shall not exceed 0.5 gallon (1.9 liters). The volume of water in a service hot water system between the termination of a supply pipe to individual fixtures indicated in Section P2904.1.1 and the nearest source of hot water shall not exceed 128 ounces (3.8 liters). The hot water source shall be a recirculating system pipe, a heat-traced pipe or a water heater. The volume shall be the sum of the internal volumes of pipe, fittings, valves, meters and manifolds located between the hot water source and the fixture supply pipe termination. The volume in the piping shall be calculated using the values in Table P2904.1. The calculation of the internal volume of plumbing appurtenances and piping materials or dimensions not included in Table P2904.1 shall be documented and *approved*.

P2904.1.1 Scope. The volume limitation in Section P2904.1 shall apply to hot water supplied to all of the following fixtures:

1. lavatories
2. kitchen sinks
3. showers
4. combination tub-showers

**TABLE P2904.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION PIPING**

Nominal Size (Inches)	LIQUID OUNCES OF WATER PER FOOT LENGTH OF HOT WATER TUBING									
	Copper Type M	Copper Type L	Copper Type K	CPVC CTS SDR 11	CPVC SCH 40	CPVC SCH 80	PEX-AL-PEX Composite ASTM F 1281	PE-AL-PE	PE-RT SDR 9	PEX CTS SDR 9
3/8	1.06	0.97	0.84	N/A	1.17	N/A	0.63	0.63	0.64	0.64
1/2	1.69	1.55	1.45	1.25	1.89	1.46	1.31	1.34	1.18	1.18
5/8	2.49	2.31	2.22	N/A	N/A		2.12	2.12		1.72
3/4	3.43	3.22	2.90	2.67	3.38	2.74	3.39	3.39	2.35	2.35
1	5.81	5.49	5.17	4.43	5.53	4.57	5.56	5.56	3.91	3.91
1 1/4	8.70	8.36	8.09	6.61	9.66	8.24	8.49	8.49	5.81	5.81
1 1/2	12.18	11.83	11.45	9.22	13.20	11.38	13.88	13.88	8.09	8.09
2	21.08	20.58	20.04	15.79	21.88	19.11	21.48	21.48	13.86	13.86

For SI: 1 inch = 25.4 mm, 1 liquid ounce = 0.0296 liters, 1.0 ounce = 0.00781 gallons, 0.5 1 gallon (1.9 3.8 liters) = 64.0 128 liquid ounces

Commenter's Reason: In response to the committee's concern that the original proposal was too stringent for a minimum code, and after further discussion with builders, this public comment modifies the proposal in several important ways, most notably by increasing the maximum volume permitted within a hot water supply pipe to any individual fixture to 1 gallon (128 ounces), up from 1/2 gallon in the original proposal. Additionally, this comment simplifies and clarifies the original proposal in the following ways:

- Limits the applicability of the proposal to hot water piping serving three types of fixtures:
 - Showers and tub-shower combinations.

- Kitchen sinks.
- Lavatories.
- Conforms the table of internal volumes for various types and diameters of piping material to the values in Table E202.1 of the International Plumbing Code as approved for 2015.
- Clarifies that the permissible volume of water is to be calculated from the “nearest” source of hot water to an “individual” fixture.
- Removes reference to heat traced pipe as a source of hot water, an application more likely to be found in multifamily residential or commercial construction, and thus not germane here.
- Adds a sentence to clarify the inclusion of the internal volume of valves, manifolds, and similar devices that may be located on hot water piping between the nearest heat source and the termination of the supply pipe at a fixture.
- Adds a sentence to allow calculation of the internal volume of plumbing appurtenances such as manifolds and pipe materials or dimensions that are not included in the table, with documentation satisfactory to the code official.

The initial purging of cooled-down hot water that is insufficiently hot for its intended purpose results in a waste of water, energy, and time for building occupants. Pipe insulation significantly reduces heat loss and helps to ensure that hot water gets to the user sooner. However, a complementary strategy is to reduce the volume of water contained in hot water piping in the first place.

A 2009 paper authored by Robert Hendron of the National Renewable Energy Laboratory¹ and others quantified the waste of hot water in initial draws waiting for water to reach 105°F. Modeling the plumbing typical of a 3-bedroom, 2-bath, single-story home with a hot water distribution simulation tool found that an estimated 12 % of all hot water used on an annual basis is wasted. When viewed by fixture, the results are even more instructive:

- Showers – over 10 % wastage.
- Kitchen sinks – 18 % wastage.
- Lavatories – over 30 % wastage.

Purging at these fixtures is responsible for 95 % of the estimated total of nearly 3,000 gallons of hot water wastage annually. Of course, many new homes are built with more hot water outlets than this model's base case, and hot water distribution systems that are far less efficient. Nevertheless, this revision to RP97 will direct the attention of designers, installers, and code officials to the piping of fixtures that are responsible for most hot water waste.

The table in the proposal is simply a computational aid, to provide a handy, standardized reference for determining the volume of water per linear foot of pipe. The internal diameters of various types of piping material are different enough that including specific values for each type of pipe material is useful, helping designers find the desired combination of pipe length and permissible volume. Modifications to the table in this comment are simply to conform the Table to the values and materials already accepted for Table E202.1 in the IPC. Code officials we consulted viewed the table as helpful for inspection purposes as well.

The committee assumed, in its stated reason for disapproval, that this proposal would add construction costs. On the contrary, the hot water volume limit in the proposal can be achieved with attention to water heater placement and piping layout at the design stage, and need not require additional costs. The downsizing of pipe diameters and the substitution of piping materials with smaller internal diameters are additional strategies available to designers and installers. Reducing pipe length, reducing pipe diameter, and substituting composite piping material with smaller internal diameter each have the effect of reducing installation costs. And the designation of a recirculation system pipe as a heat source for purposes of calculating permissible hot water volume offers additional design flexibility for homes employing a recirculation system, an option often preferable to an additional water heater in a large home.

The IRC, as a minimum code, has a crucial role to play in curbing excessive waste of water and energy during the design and construction of new homes. An inefficient hot water distribution system is likely to remain in place for the life of the building, leaving owners without access to options that would have only been practical at the time of construction.

¹ Hendron, Robert, et al, “Potential for Energy Savings through Residential Hot Water Distribution System Improvements”, Proceedings of the 3rd International Conference on Energy Sustainability, San Francisco, CA, July 2009.

RP97-13

Final Action: AS AM AMPC____ D

RP98-13
P2904 (New), P2904.1 (New)

Proposed Change as Submitted

Proponent: Edward R. Osann, Natural Resources Defense Council, representing himself.
(eosann@nrdc.org)

Add new text as follows:

P2904
HOT WATER DISTRIBUTION SYSTEMS

2904.1 Hot or tempered water supply to fixtures. The developed length of hot water piping and tempered water piping from the end of a hot or tempered water *fixture supply* to the piping connection to a hot or tempered water source shall not exceed 50 feet (15 240 mm). The hot or tempered water source shall be a recirculating system pipe, a heat-traced pipe or a water heater.

Reason: This proposal sets a maximum length of 50 feet for hot (or tempered) water supply piping running from a heat source to any fixture. The language the first sentence is identical to Section 607.2 of the International Plumbing Code, which typically applies to much larger buildings than one- and two-family homes. Excessively long hot water piping results in excessive amounts of cooled water that must be purged before use, especially for showers and wash basins. For example, 70 feet of ¾ inch pipe contains nearly 2 gallons of water. At an average shower flow rate of 2.2 gallons per minute, a shower served by such a long pipe run would be running for over 50 seconds just to purge cold water from the hot water supply line, plus the additional time needed to warm the pipe between the heat source and the shower – all water, energy, and time wasted. A 50 foot limit will encourage money-saving choices about the placement of water heaters and hot water outlets in the design of large homes. This provision makes sense in the IPC and will make sense in the IRC as well.

The last line of the section simply ensures that when either recirculating systems or heat-traced piping are present, they are to be considered sources of hot or tempered water.

Cost Impact: This code change proposal is a design requirement that will not increase the cost of construction.

P2904 (NEW) #2-RP-OSANN.DOC

Committee Action Hearing Results

Committee Action:

Disapproval

Committee Reason: This proposal could require multiple water heaters and recirculation piping which would unnecessarily add to the cost of construction of a home.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Edward R. Osann, Natural Resources Defense Council on behalf of self (eosann@nrdc.org) Julius Ballanco, JB Engineering and Code Consulting, P.C (JBENGINEER@aol.com); Harry Misuriello, American Council for an Energy-Efficient Economy (misuriello@verizon.net) requests Approval as Submitted.

Commenter's Reason: The committee's stated reason for disapproval, that this proposal **could** [emphasis added] require multiple water heaters and recirculation piping, is speculation. The proposal sets a maximum length of 50 feet for hot (or tempered) water supply piping running from a hot water source to any fixture. This limit can be readily achieved with attention to water heater placement and piping layout at the design stage, and **does not require** multiple water heaters or recirculation piping. The

designation of a recirculation system pipe as a hot water source for purposes of calculating the 50-foot length limit is to provide design flexibility, not to require the installation of a recirculation system. Indeed, the language in the first sentence – “The developed length of hot water piping and tempered water piping from the end of a hot or tempered water fixture supply to the piping connection to a hot or tempered water source shall not exceed 50 feet (15 240 mm)” is identical to Section 607.2 of the International Plumbing Code (IPC), which typically applies to much larger buildings than one- and two-family homes. There is no evidence that this requirement in the IPC has led to any increase in development costs. Indeed, commercial buildings routinely use 50 feet or less for hot (or tempered) water supply piping from a hot water source. If this limitation can work in commercial buildings, it can certainly work in a residential setting. This provision makes sense in the IPC and will make sense in the IRC as well.

Excessively long hot water piping results in excessive amounts of cooled water that must be purged before use, especially for showers and wash basins. For example, 70 feet of ¾ inch pipe contains nearly 2 gallons of water. If connected to a tub-shower combination with an average shower flow rate of 2.2 gallons per minute, a shower served by such a long pipe run would be running for over 50 seconds just to purge cold water from the hot water supply line, plus the additional time needed to warm the pipe between the heat source and the shower – all water, energy, and time wasted. A 50 foot limit will encourage money-saving choices about the placement of water heaters and hot water outlets in the design of large homes.

RP98-13

Final Action:

AS

AM

AMPC____

D

RP105-13

Table P2905.4, P3004.3, Table P3302.1

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

**TABLE P2905.4
WATER SERVICE PIPE**

MATERIAL	STANDARD
Asbestos-cement pipe	ASTM C296

(Portions of table not shown are unchanged)

~~**P3003.4 Asbestos-cement.** Joints between asbestos-cement pipe or fittings shall be made with a sleeve coupling of the same composition as the pipe, sealed with an elastomeric ring conforming to ASTM D 1869.~~

**TABLE P3302.1
SUBSOIL DRAIN PIPE**

MATERIAL	STANDARD
Asbestos-cement pipe	ASTM C508

(Portions of table not shown are unchanged)

Reason: Asbestos cement pipe is no longer manufactured in North America. The potential health issues associated with asbestos make this piping material unsuitable for use. The material needs to be removed from the code. A similar proposal to the 2015 IPC was Approved as Submitted.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 58 on the PMGCAC IRC-P list.

Cost impact: The code change proposal will not increase the cost of construction.

P2905.4T #1-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approve as Submitted

Committee Reason: The material is no longer made in this country so there is no need to have it in the code.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Further modify proposal as follows:

**TABLE P3002.1(2)
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE**

PIPE	STANDARD
Asbestos-cement pipe	ASTM C 428

**TABLE P3002.2
BUILDING SEWER PIPE**

MATERIAL	STANDARD
Asbestos-cement pipe	ASTM C 428

**TABLE P3002.3
PIPE FITTINGS**

PIPE MATERIAL	FITTING STANDARD
Asbestos-cement	ASTM C 428

Commenter's Reason: We forgot to include the removal of asbestos-cement pipe from several tables in Chapter 30, Sanitary Drainage. This public comment corrects the oversight.

RP105-13

Final Action: AS AM AMPC____ D

RP114-13
P2905.14, Chapter 44

Proposed Change as Submitted

Proponent: Pennie L. Feehan, Pennie L. Feehan Consulting representing the Copper Development Association (penniefeehan@me.com)

Revise as follows:

P2905.14 Soldered and brazed joints. Soldered joints in copper and copper alloy tubing shall be made with fittings approved for water piping and shall conform to ASTM B 828. Surfaces to be soldered shall be cleaned bright. Fluxes for soldering shall be in accordance with ASTM B813 and shall become noncorrosive and non-toxic after soldering. Brazing fluxes shall be in accordance with AWS A5.31. ~~The joints shall be properly fluxed and made with approved solder. Solders and fluxes used in potable water-supply systems shall have a lead content of not greater than 0.2 percent. Fluxes shall conform to ASTM B 813.~~

Add standard to Chapter 44 as follows:

AWS

A5.31-2012 Specification for Fluxes for Brazing and Braze Welding

Reason: This proposal relocated existing sections, ensures copper and copper alloy systems are installed correctly and removes redundant language to aid the end user.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standards proposed for inclusion in the code, ASME A112.18.8 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1 2013.

P2905.14-RP-FEEHAN.DOC

Committee Action Hearing Results

For staff analysis of the content of ASME A112.18.8 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf>

Committee Action:

Approved as Submitted

Committee Reason: Potable water piping can no longer be soldered, it has to be brazed based on the fact the material is used and the heat required to join piping. The proposal addresses this and provides the standard in which to use it by. It also addresses non-toxic and non-corrosive soldering.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P2905.14 Soldered and brazed joints. Soldered joints in copper and copper alloy tubing shall be made with fittings approved for water piping and shall conform to ASTM B 828. Surfaces to be soldered shall be cleaned bright. Fluxes for soldering shall be in accordance with ASTM B813 ~~and shall become noncorrosive and non-toxic after soldering.~~ Brazing fluxes shall be in accordance with AWS A5.31. The joints shall be properly fluxed and made with approved solder. Solders and fluxes used in potable water-supply systems shall have a lead content of not greater than 0.2 percent. Fluxes shall conform to ASTM B 813.

Commenter's Reason: ASTM B813 already requires fluxes to be non corrosive and non toxic after soldering. This additional language is not needed as how would an inspector verify this in the field?

RP114-13

Final Action: AS AM AMPC_____ D

**RP119-13
P2909 (New)**

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Add new section and text as follows:

**P2909
BRASS FITTINGS AND VALVES**

P2909.1 Brass fittings and brass valves for plastic piping systems. Where used as components of plastic piping systems and where made from copper alloys, brass fittings and brass valves shall comply with NSF14.

Reason: Dezincification of yellow brass fittings and valves has become an expensive and widespread problem. In Las Vegas alone there are 32,000 houses that are being re-piped at a cost in excess of \$300 million because of dezincification of brass fittings in PEX domestic water systems. Other parts of the country, e.g. southern California, Minnesota and Hawaii are also experiencing these failures. Failure of imported brass valves was experienced 20 years ago but corrective action taken at the time eliminated the problem. However, increasing use of imports by many companies and the deteriorating water quality in parts of the US has resulted in a 10 to 100-fold recurrence of this problem.

Since ASTM standards allow multiple copper alloys and the codes do not specifically define acceptable alloys for applications, some manufacturers choose an alloy based on cost. Brass valves and fittings made from these low-cost materials may be suitable for domestic water lines in Chicago, or drain lines, air lines or condenser water line in Las Vegas or San Diego but may fail in short order in a domestic water line in Las Vegas, San Diego or Honolulu and yet meet current codes.

This proposal provides a solution by clearly requiring compliance of all brass fittings and valves used in plastic piping systems to comply with the dezincification requirements of NSF 14. The dezincification test in NSF 14 has been accepted and used world-wide for over 30 years. The test is an effective, simple and inexpensive method for fitting and valve producers to sort corrosion-prone from corrosion-resistant alloys. Use of the dezincification performance standard in NSF 14 was developed and accepted by a broad base of fitting and valve producers and sellers. It provides a method to achieve the minimum material requirement necessary to prevent a repeat of the recent field failures that have resulted in class-action lawsuits.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 62 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: This code change proposal references NSF Standard 14, which is already referenced in the code. However, the proposed change to code text is written to correlate with a new edition of the standard NSF Standard 14-2010a, rather than the edition presently referenced in the code, which is the 2008e edition. The update to this standard will be considered by the Administrative Code Committee during the 2013 Code Development Cycle. Should this code change proposal be approved, but the update to the standard not be approved, the code text will revert to the text as it appears in the 2012 Edition of the Code.

P2909 #1 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Disapproval

Committee Reason: The subject of the proposal is already covered by Section P2609.3. The cost implications could be huge.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Submitted.

Commenter's Reason: We believe that the issue of dezincification of brass components is a serious issue that the code needs to require that brass fittings be dezincification resistant.

Public Comment 2:

Pennie L. Feehan, Pennie L. Feehan Consulting representing Copper Development Association (penniefeehan@me.com) requests Approval as Modified by this Public Comment

Modify the proposal as follows:

**P2909
BRASS COPPER ALLOY FITTINGS AND VALVES**

P2909.1 Brass Copper alloy fittings and brass copper alloy valves for plastic piping systems. Where used as components of plastic piping systems and where made from copper alloys, brass fittings and brass valves shall comply with NSF14.

Commenter's Reason: Changing brass to copper alloy is consistent with other approved proposals. Dezincification testing and certification requirements were added to NSF 14 for plastic piping systems. NSF 14 was changed to reflect these requirements as a result of widespread failure of brass fittings and a large number of law suits across the United States. This proposed change to the IRC is required to update the language in the code to be consistent with changes to NSF 14.

RP119-13

Final Action: AS AM AMPC____ D

RP141-13
P3010 (New), Chapter 44

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Add new text as follows:

SECTION P3010
REPLACEMENT OF UNDERGROUND SEWERS
BY PIPE BURSTING METHODS

P3010.1 General. This section shall govern the replacement of existing building sewer piping by pipe-bursting methods.

P3010.2 Applicability. The replacement of building sewer piping by pipe bursting methods shall be limited to gravity drainage piping of sizes 6 inches and smaller. The replacement piping shall be of the same nominal size as the existing piping.

P3010.3 Pre-installation inspection. The existing piping sections to be replaced shall be inspected internally by a recorded video camera survey. The survey shall include notations of the position of cleanouts and the depth of connections to the existing piping.

P3010.4 Pipe. The replacement piping shall be of extra high molecular weight PE3408 material and shall be manufactured with an SDR of 17 and in compliance with ASTM F 714.

P3010.5 Pipe fittings. Pipe fittings to be connected to the replacement piping shall be of extra high molecular weight PE3408 material and shall be manufactured with an SDR of 17 and in compliance with ASTM D2683.

P3010.6 Cleanouts. Where the existing building sewer did not have cleanouts meeting the requirements of this code, cleanout fittings shall be installed as required by this code.

P3010.7 Post-installation inspection. The completed replacement piping section shall be inspected internally by a recorded video camera survey. The video survey shall be reviewed and approved by the code official prior to pressure testing of the replacement piping system.

P3010.8 Pressure testing. The replacement piping system as well as the connections to the replacement piping shall be tested in accordance with Section P2503.4.

Add standards to Chapter 44 as follows:

ASTM F 714-06a Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) based on Outside Diameter.

D2683-04 Standard Specification for Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing.

Reason: The IRC lacks coverage concerning the replacement of sewer systems by pipe bursting methods. These methods are being widely used throughout the country. Proper guidance concerning this type of replacement provides additional value to the code. This proposal to the 2015 IPC was Approved as Modified by Public Comment. This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC). The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of

referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 69 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P3010 (NEW)-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action: Approved as Submitted

Committee Reason: The committee agreed with the proponent's reason statement.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Shawn Strausbaugh of Arlington County Virginia representing the ICC PMG Code Action Committee requests Approval as Modified by this Public Comment.

Modify the proposal as follows:

P3010.4 Pipe. The replacement piping shall be of ~~extra high molecular weight PE3408~~ and shall be manufactured with an SDR of 17 and in compliance with ASTM F 714.

P3010.5 Pipe fittings. Pipe fittings to be connected to the replacement piping shall be of ~~extra high molecular weight PE3408~~ and shall be manufactured with an SDR of 17 and in compliance with ASTM D2683.

Commenter's Reason: This proposal for the IPC was changed in the public comment period to remove the phrase "extra high molecular weight". We overlooked this in our original proposal and this public comment corrects this so that the IRC is coordinated with the IPC.

Public Comment 2:

Michael Cudahy of Plastic Pipe and Fitting Association (PPFA) representing the Plastic Pipe and Fitting Association (PPFA) (mikec@cmservnet.com) requests Approval as Modified by this Public Comment

Modify the proposal as follows:

P3010.4 Pipe. The replacement piping shall be of ~~extra high molecular weight~~ made of a high density polyethylene (HDPE) that conforms to cell classification number PE3408 material PE3608, PE4608 or PE4710 as indicated in ASTM F714. The pipe and shall be manufactured with an SDR of 17 and in compliance with ASTM F 714.

P3010.5 Pipe fittings. Pipe fittings to be connected to the replacement piping shall be made of extra high molecular weight a high density polyethylene (HDPE) that conforms to cell classification number PE3408 material PE3608, PE4608 or PE4710 as indicated in ASTM F714. The pipe fittings shall be manufactured with an SDR of 17 and in compliance with ASTM D2683.

Commenter's Reason: The section is a welcome addition to the code, but is in need of several updates to reflect current polyethylene nomenclature and materials.

The phrase "extra high molecular weight" has no meaning in this code, nor in the way the pipe resin is specified, and should be deleted. Changes to the methodology on how the classification numbers for polyethylene resin are specified have made the designation "PE3408" obsolete. Resins that could be used in this application include; PE3608, PE4608, and PE4710, which are the modern classification designations. SDR 17 pipe is the thinnest wall pipe that can be used.

RP141-13

Final Action: AS AM AMPC_____ D

RP149-13

P2704.1, P2727.2, P2717.3, P3002.1, P3201.6, P3201.6.1 (New), P3005.2.9, P3005.2.10, P3102.1

Proposed Change as Submitted

Proponent: Ron George, Certified Plumbing Designer, President, Plumb-Tech Design & Consulting Services LLC. (Ron@Plumb-TechLLC.com)

Revise as follows:

P2704.1 General. Slip joints shall be made with an *approved* elastomeric gasket and shall be installed only on the inlet and outlet of an inline sanitary waste valve, a trap outlet, a trap inlet and within the trap seal. Fixtures with concealed slip-joint connections shall be provided with an access panel or utility space not less than 12 inches (305 mm) in its smallest dimension or other *approved* arrangement so as to provide access to the slip connections for inspection and repair.

P2717.2 Sink and dishwasher. A sink and dishwasher are permitted to discharge through a single 1-1/2 inch (38 mm) inline sanitary waste valve in accordance with Section P3201.6.1 or a trap. The discharge pipe from the dishwasher shall be increased to not less than 3/4 inch (19 mm) in diameter and shall be connected with a wye fitting to the sink tailpiece. The dishwasher waste line shall rise and be securely fastened to the underside of the counter before connecting to the sink tailpiece.

P2717.3 Sink, dishwasher and food grinder. The combined discharge from a sink, dishwasher, and waste grinder is permitted to discharge through a single 1-1/2 inch (38.1 mm) inline sanitary waste valve in accordance with Section P3201.6.1 or a trap. The discharge pipe from the dishwasher shall be increased to not less than 3/4 inch (19 mm) in diameter and shall connect with a wye fitting between the discharge of the food-waste grinder and the trap inlet, the inline sanitary waste valve or to the head of the food grinder. The dishwasher waste line shall rise and be securely fastened to the underside of the counter before connecting to the sink tail piece or the food grinder.

P3002.3.1 Drainage. Drainage fittings shall have a smooth interior waterway of the same diameter as the piping served. All fittings shall conform to the type of pipe used. Drainage fittings shall have no ledges, shoulders or reductions which can retard or obstruct drainage flow in the piping. Threaded drainage pipe fittings shall be of the recessed drainage type, black or galvanized. Drainage fittings shall be designed to maintain one-fourth unit vertical in 12 units horizontal (2-percent slope) grade. This section shall not be applicable to tubular waste fittings used to convey vertical flow upstream of an inline sanitary waste valve in accordance with Section P3201.6.1 or the trap seal liquid level of a fixture trap.

P3101.2.1 Venting required. Every *trap* and trapped fixture shall be vented in accordance with one of the venting methods specified in this chapter. Inline sanitary waste valves in accordance with Section P3201.6.1 shall not be required to be vented.

P3201.6 Number of fixtures per A trap or inline sanitary waste valve required for each fixture.

Each plumbing fixture shall independently discharge to an inline sanitary waste valve in accordance with Section P3201.6.1 or to a trap, be separately trapped by a water seal trap. The vertical distance from the fixture outlet to the *trap* weir shall not exceed 24 inches (610 mm) and the horizontal distance shall not exceed 30 inches (762 mm) measured from the center line of the fixture outlet to the centerline of the inlet of the *trap*. The height of a clothes washer standpipe above a *trap* shall conform to Section P2706.2. Fixtures shall not be double trapped.

Exceptions:

1. Fixtures that have integral traps.
2. A single trap shall be permitted to serve two or three like fixtures limited to kitchen sinks, laundry tubs and lavatories. Such fixtures shall be adjacent to each other and located in the same room with a continuous waste arrangement. The trap shall be installed at the center fixture where three fixtures are installed. Common trapped fixture outlets shall be not more than 30 inches (762 mm) apart.
3. Connection of a laundry tray waste line into a standpipe for the automatic clothes-washer drain shall be permitted in accordance with Section P2706.2.1.

P3201.6.1 Inline sanitary waste valves. Inline sanitary waste valves shall comply with ASME A112.18.8. Such valves shall be installed only on fixture outlets having 1-1/4 inch (31.8mm) or 1-1/2 inch (38.1 mm) outside diameter tubular waste piping. Valves conveying the waste from a food waste disposer shall be installed only in a vertical orientation. Such valves shall not be installed on the outlet of a urinal. The valves shall be installed in a vertical orientation or a horizontal orientation. Where installed in a horizontal orientation, the valve body shall be oriented with the ribs on the exterior of the valve body located on the bottom of the valve. The valves shall be accessible.

P3005.2.9 Cleanout size. Cleanouts shall be the same nominal size as the pipe they serve up to 4 inches (102 mm). For pipes larger than 4 inches (102 mm) nominal size, the size of the cleanout shall be not less than 4 inches (102 mm).

Exceptions:

1. Inline sanitary waste valves in accordance with Section P3201.6.1, "P" trap connections with slip joints or ground joint connections, or stack cleanouts that are not more than one pipe diameter smaller than the drain served, shall be permitted.
2. Cast-iron cleanouts sized in accordance with the referenced standards in Table P3002.3, ASTM A 74 for hub and spigot fittings or ASTM A 888 or CISPI 301 for hubless fittings.

P3005.2.10 Cleanout equivalent. An inline sanitary waste valve in accordance with Section P3201.6.1, a fixture trap or a fixture with integral trap, readily removable without disturbing concealed piping shall be acceptable as a cleanout equivalent.

P3102.1 Required vent extension. The vent system serving each *building drain* shall have at least one vent pipe that extends to the outdoors. Sanitary drainage systems that do not have traps and have only inline sanitary waste valves in accordance with Section P3201.6.1 shall be provided with at least one vent.

Add new standard to Chapter 44 as follows:

ASME

A112.18.8–2009 In-Line Sanitary Waste Valves for Plumbing Drainage

Reason: There is a new ASME standard ASME A112.18.8 that has been developed for sanitary waste valves and there are products that have been tested to meet or exceed the standard's requirements. Last year elastomeric trap seal protection devices were added to the IPC. This device is similar, but limited to tubular drains in lieu of a p-trap. It is not subject to floor wax and debris that a floor drain will receive. The key sections of this proposal are Section P3201.6 and new Section P3201.6.1 that add an alternative to liquid seal traps. All other sections being modified are in support of adding this alternative to the code. Inline sanitary waste valves can only be used on fixtures that have 1-1/4 inch or 1-1/2 inch OD tubular waste outlets from fixtures, so their application is generally limited to sinks, lavatories and bathtubs. The testing requirements of the standard for inline sanitary waste valves are stringent. In many applications, inline sanitary waste valves offer better, more reliable protection (against sewer gas coming out of a fixture) than a liquid seal trap.

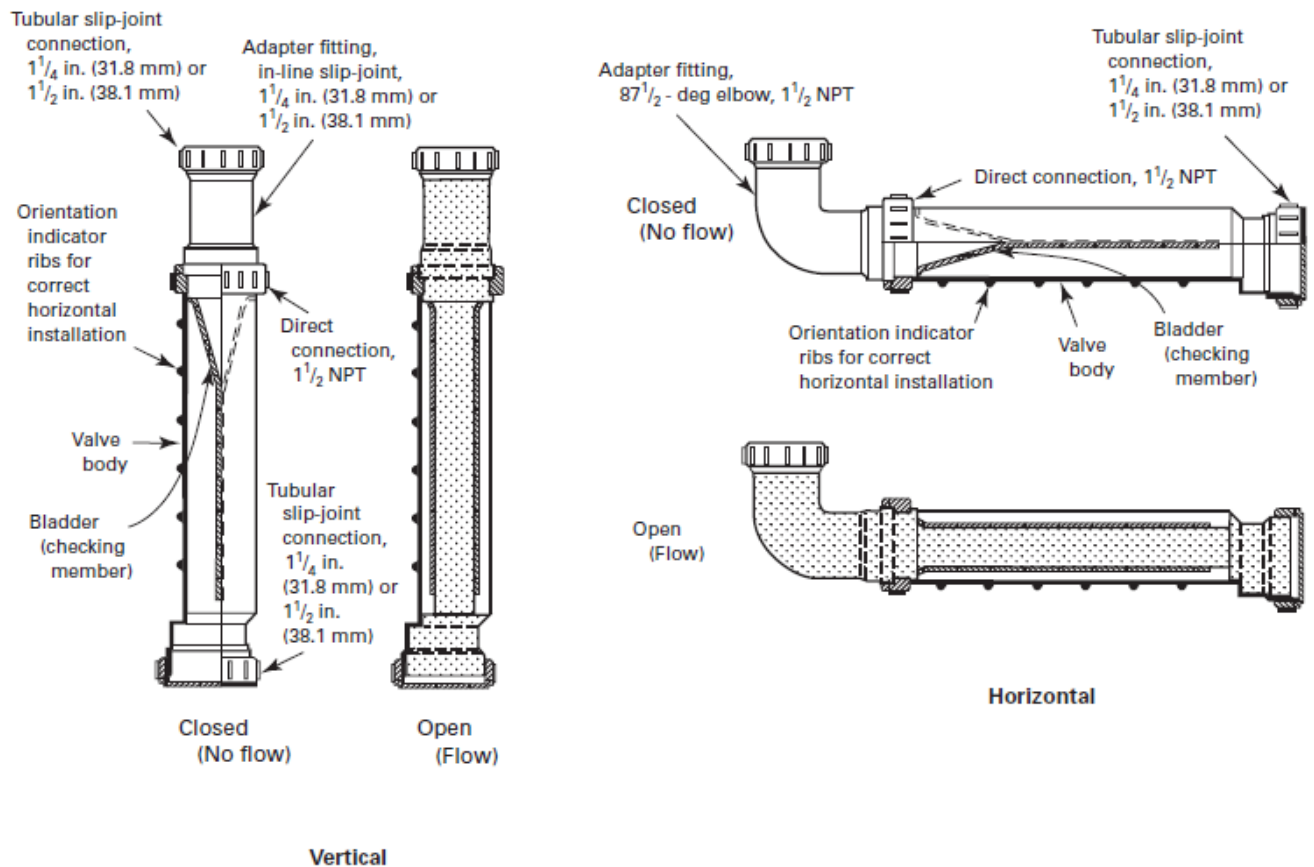
In-Line sanitary waste valves now have an Industry standard ASME A112.18.8–2009 titled: "In-Line Sanitary Waste Valves for Plumbing Drainage". These devices have been tested and certified by third party testing labs and they have been proven over many years of use to provide a reliable gas-tight seal when used in lieu of a p-trap. They provide a seal which is not dependent on operating conditions and is not affected by evaporation or siphonage. These valves are mainly used in situations where sanitary fixtures see only occasional use, where freezing conditions, low humidity, persistent high temperature conditions, or where there are

limited or confined space conditions. Examples include guest bathrooms, seasonal occupancy dwellings, manufactured housing and in remote cabins. Other common uses for this type of device are in Recreational Vehicles and boats for the freeze resistance and splash resistance. The performance requirements for the device are covered within the ASME A112.18.8 ANSI approved Standard, which includes a gas-tight seal test, flow rate test, long term cycling tests, a grease or lard test and many other chemical resistance and solids tests. These valves perform in a similar manner to a trap seal protection valve. Elastomeric type devices in the drainage system are already approved in the International Plumbing Code. In 2012 when the Trap Seal Protection Devices which comply with ASSE 1072 were approved for the 2015 International Plumbing Code at the final action hearings in Portland in 2012. These devices are very similar to trap seal protection valves except the ASME A112.18.8-2009 In-Line Sanitary Waste Valves for Plumbing Drainage limits their use to installations where a 1-1/4 inch or 1-1/2" tubular p-traps would normally be permitted. These devices are not intended for use on floor drains, water closets or similar fixtures.

The scope of the ASME A112.18.8 Standard establishes minimum requirements for materials in the construction of sanitary waste valves for use as an alternate to tubular p-traps, and prescribes minimum test requirements for the performance of the valve, together with methods of marking and identification. The ASME A112.18.8 Standard does not define the requirements for products to be used in urinals or water closets. It is not intended that products meeting this Standard will be used in a urinal or water closet.

ASME A112.18.8-2009

**Fig. 1 Typical Cross-Section
(For Illustrative Purposes Only)**



Testing includes the following tests:

- 3.1 Waterway Flow Rate
- 3.2 One-Way Sealing Performance of the Valve
- 3.3 Airway Flow Rate
- 3.4 Recovery From an Excess Back Pressure (Inversion) Condition
- 3.5 Leak Tightness
- 3.6 Thermal Cycling
- 3.7 Cyclic Fatigue
- 3.8 Resistance to Household Substances
- 3.9 Resistance to Chemicals and Solvents
- 3.10 Drop Test

3.11 Life Cycle

Section 4 of the Standard also covers Marking and Identification Instructions.

The valve shall be permanently and legibly marked with the following:

- (a) manufacturer's name
- (b) product name/brand name
- (c) nominal size of inlet and outlet
- (d) date of manufacture
- (e) predominant material
- (f) direction of flow indicator
- (g) indication of the orientation of the installation of the device

4.2 Instructions

The manufacturer shall provide instructions on packaging or accompanying literature indicating, where appropriate, both of the following:

- (a) the orientation of the installation of the device
- (b) limitations on the use and type of drain-cleaning chemicals and tools

TECHNICAL DESIGN GUIDE



Sanitary Waste Valve

- A HYGIENIC ALTERNATIVE TO CONVENTIONAL TRAPS

HepvO is a self sealing valve designed to close the waste connection below a sanitary fixture to prevent the escape of foul sewer air into the dwelling.

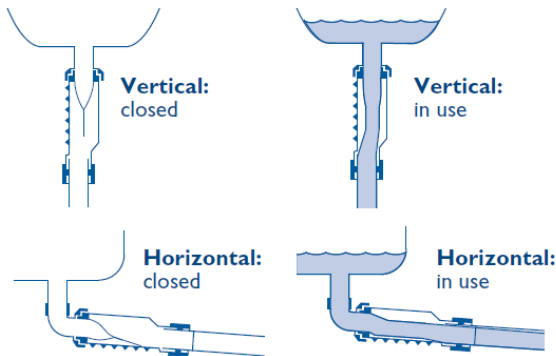
HepvO unlike conventional waste traps, does not rely on trapped water to create a seal. Water seals are prone to failure by Evaporation, Siphonage and other mechanisms. Instead, HepvO uses a self sealing membrane which performs the same function as a water seal trap but without the risk of depletion or freezing.

The HepvO Sanitary Waste Valve means enhanced plumbing design and system efficiency, without compromising performance or risking the escape of foul air into the living space from the drain or sewer.

HepvO - Operation

HepvO a Barrier between Living Space and the Drainage System.

Foul sewer gas must be prevented from entering the building. The loss of the water seal in a conventional trap can cause gurgling noises, objectionable smells, allow insect ingress, and has the potential to allow the spread of health hazards (such as SARS).



The HepvO Sanitary Waste Valve opens under the water pressure of a fixture emptying and closes to form a tight seal after the fixture has discharged.



HepvO - Product Features

- Dry Seal Technology - cannot fail by evaporation or siphonage
- Admits Air - Auxiliary Venting Not Required
- One Way Valve - Prevents Foul Odors

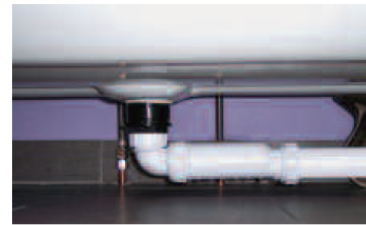
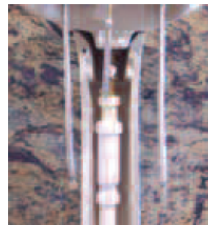
HepvO will out-perform a conventional trap by preventing the escape of foul air under excessive operating conditions up to 10 times greater than those normally experienced in a correctly designed Soil & Waste system. By comparison, conventional traps allow foul sewer air to bubble-through the seal at relatively low positive pressures.

In addition because HepvO does not trap water that may contain food scraps or other waste, microbiological growth of a fungal, bacterial or viral nature is less likely.

HepvO - Applications

- Lavatories
- Bath Tubs
- Sink
- Bidet
- Washing Machine
- Garbage Disposal (Vertical Only)
- Urinal (Vertical Only)*
- Air Conditioning Condensate*
- Overflow
- Dishwasher
- Shower

* applications outside the scope of the ASME/ANSI A112.18.8 Standard and approval

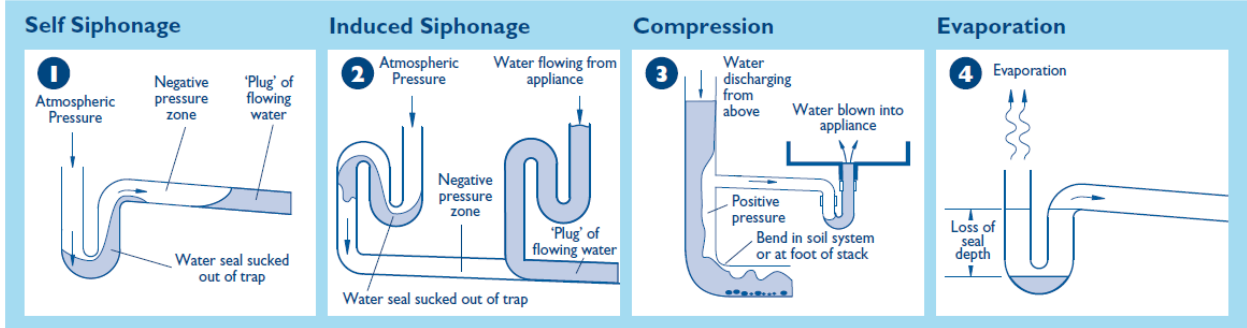


Minimizes the space required behind a lavatory or beneath a bath tub/shower tray.

Hep_vO - Design and Performance

The PROBLEM: Conventional waste traps work by having a water seal to prevent foul odors entering buildings. However a water trap can fail under a number of conditions.

The following diagrams show several problems that result in loss of water seal, gurgling and foul smells.

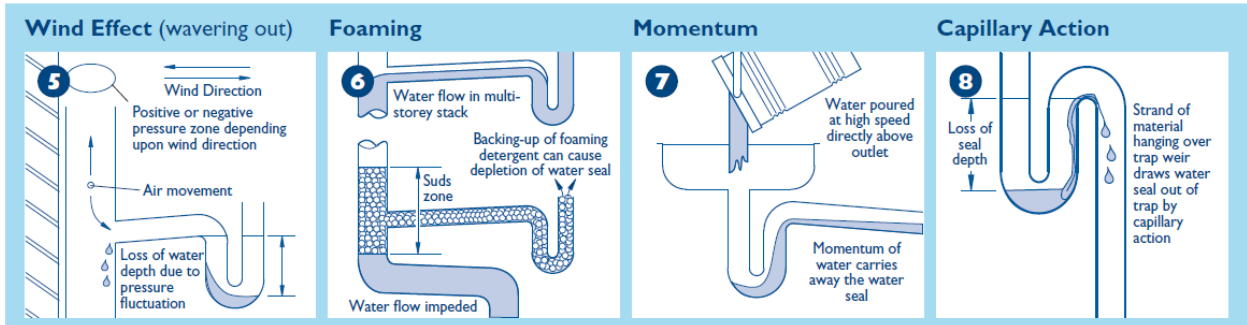


Self Siphonage: water flowing down the discharge pipe draws the water from the trap.

Induced Siphonage: the water seal is drawn out of the trap by water discharging from a fixture downstream (e.g. washing machine).

Compression: water is pushed out of the trap by a positive pressure caused by discharging of fixtures located above (e.g. WC).

Evaporation: water in the trap evaporates during periods of non-use (e.g. during vacation or when fixtures are not being used).

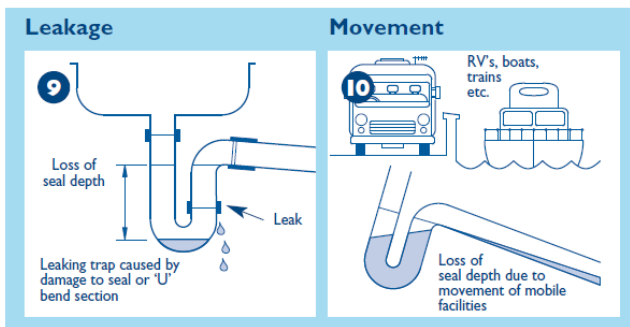


Wind Effect: air movement across the top of the Soil & Vent Pipe causes reciprocation of water in the trap and potential for loss of seal depth.

Foaming: agitation of waste water containing detergents in the Soil and Vent pipe creates foaming which pushes water out of the trap.

Momentum: waste water from a bowl or pail poured directly in to the waste outlet carries water out of the trap due to speed of discharge. This is also common with modern, funnel shaped basin designs.

Capillary Action: fibrous material retained in the trap and hanging over the weir draws water out of the trap.



Leakage: badly fitting or loose components and/or damaged seals can allow water to leak causing loss of seal depth.

Movement: In mobile facilities such as RV's and boats movement can cause potential for loss of water in the trap.

Hep_vO - The SOLUTION

When installed in accordance with manufacturer's instructions the unique Hep_vO Sanitary Waste Valve is the solution to all these problems.

Hep_vO provides a constant seal against sewer gas ingress, which is maintained under all normal operating conditions.

Hep_vO Sanitary Waste Valve actively eliminates negative pressure within the waste system by opening and allowing in fresh air until a state of equilibrium with atmosphere is reached.

Hep_vO Sanitary Waste Valve resists blockages, prevents nasty smells, gurgling sounds and stagnant water under all circumstances.

Hep_vO - Installation Benefits

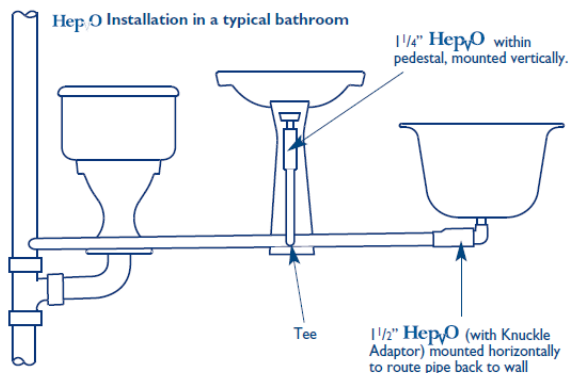
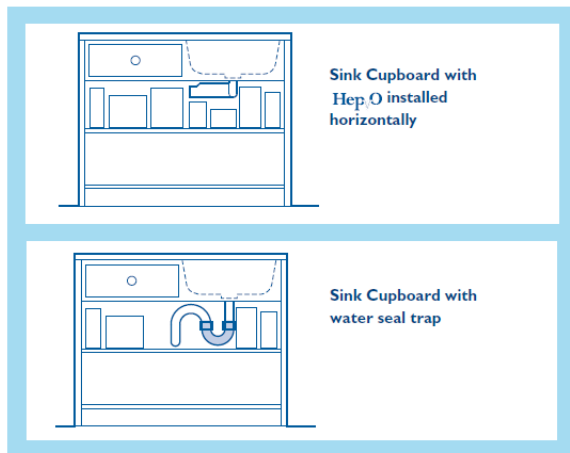
Hep_vO is a new concept in the prevention of foul air escaping into the building while actively eliminating negative pressure in soil and waste installations. It allows the designer greater flexibility on fixture and venting installation without compromising the performance of their sanitary seals.

System Simplification - Design Freedom and Economic Benefits

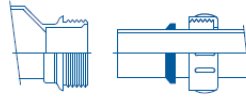
Regulations for waste system design set limits on length and slope of pipes and the number of fixtures which can be connected to a waste pipe in order to keep pressure fluctuations to a minimum. This may be rectified by the incorporation of vent pipes at appropriate design locations.

The incorporation of Hep_vO provides a good sanitary system offering minimum resistance to flow.

- 1 Compact design, flexibility of location and ability to actively eliminate negative pressure improves system performance.
- 2 A typical fixture will drain more quickly when a Hep_vO is installed compared to a p-trap installation. This helps keep downstream piping cleaner and reduces maintenance requirements.
- 3 There is no trap to vent distance limitations based on the slope of the pipe and the elevation of the vent connection.
- 4 Where necessary tight radius bends can be used, without fear of siphonage or compression.



Hep_vO - Installation & Maintenance



Capnut and sealing cone on pipe end ready for insertion of pipe into compression socket.

INSTALLATION

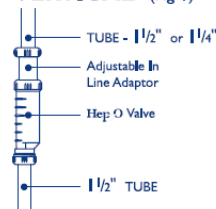
- 1 Cut the tube to length, allowing for the full compression socket depth, (preferably using an appropriate tube cutter).
- 2 If using plastic tube remove any loose material from the end. If using metallic tube remove any 'burr', and file if necessary to remove any external sharp edges. Mark the socket depth on the tube, and check that the tube section to be joined is free of any surface damage which may affect the joint seal.
- 3 Unscrew the cap from the outlet/inlet adaptor and slide the cap and rubber seal onto the tube.
- 4 Insert the tube end fully into the socket.
- 5 Slide the rubber seal and screwed cap up against the face of the socket, and tighten the cap by hand, (check that the cap is square to the body and does not 'cross-thread'), hand tight should be adequate to form a proper seal.
- 6 Threaded connections can be made to the inlet or outlet of the Hep_vO valve. At the outlet it is first necessary to remove the cap and rubber seal. If making connections to threaded components that do not have an integral seal (for example connection to DWV adaptors) PTFE/TEFLON tape should be applied to the thread prior to assembly.

MAINTENANCE

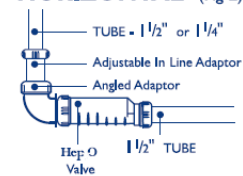
If mechanical devices such as spiral cables, rippers or water jetters are required to clear blockages in the waste system, the Hep_vO valve must be removed first.

It is good practice to rinse the Hep_vO valve with a little clean water before replacing it in the system.

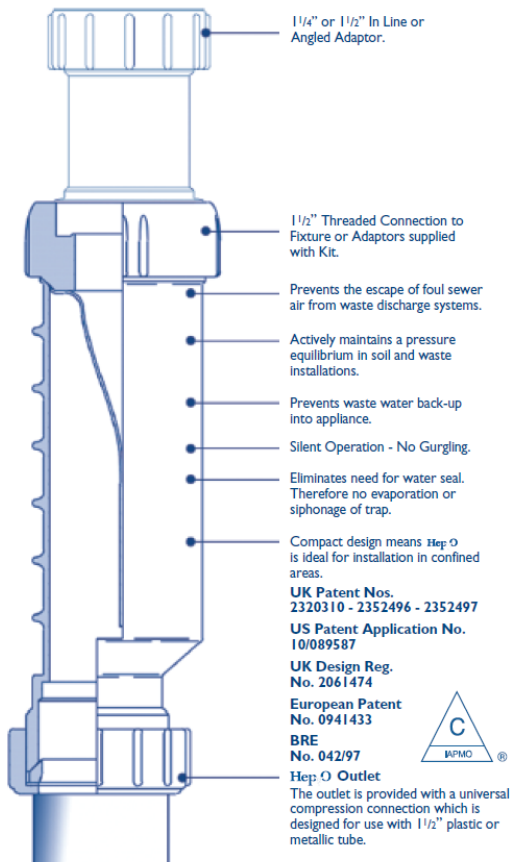
VERTICAL (Fig 1)



HORIZONTAL (Fig 2)



Hep_vO Valve Components



For further information on Hep_vO
and other Hepworth products visit:
www.hepworth.co.uk

For all Hep_vO enquiries email:
sales@a-s-m.com

Hepworth
PLASTICS

EDLINGTON LANE EDLINGTON
DONCASTER DN12 1BY ENGLAND UK
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Our policy is one of constant development.
Whilst this publication is accurate at the date of printing, specification/approvals
may be changed in the interest of continued improvement.

Frequently Asked Questions

- 1 Is Hep_vO used in addition to a conventional trap?**

NO, unlike other products which prevent foul odors entering the living space, Hep_vO is used instead of a conventional water-seal trap.
- 2 Will I still need to install auxiliary venting on waste pipe branches?**

NO, Hep_vO acts as a highly effective local air admittance device, removing the need for secondary venting.
- 3 Can I use acidic drain cleaning chemicals?**

YES, the Hep_vO valve is manufactured from a highly inert material and has passed extensive testing with a very wide range of chemicals including both acid and alkaline products.
- 4 Do I still need to connect each fixture on its own dedicated waste branch?**

NO, Hep_vO prevents induced siphonage between adjacent fixture traps so it is now possible to make multiple connections on the same branch. This can save yards of tubing or piping and gives great flexibility for locating fixtures and designing waste systems.
- 5 Hep_vO is a new product to me - how can I be confident that it will give a good installed performance?**

Hep_vO is new to the North American market but it is not a new product. It has been in volume production in the UK since 1997 and it is widely used in Europe, Australia and the Far East. It has attained numerous international approvals against very demanding standards and has achieved an enviable track record of trouble-free performance.
- 6 Will Hep_vO promote better hygiene by stopping the escape of foul sewer air into habitable spaces?**

YES - The valve has been proven to perform under conditions in which traditional water seal traps are vulnerable to failure. It will continue to perform under back pressures 10 times greater than those experienced in correctly designed soil and waste systems.
- 7 Does the air tight seal break down if a strand of cloth or hair collects in the strainer and falls down between the faces of the valve?**

NO - Hep_vO has undergone extensive foreign body testing (IAPMO IGC203-04). Tests show that the valve will maintain an air tight seal around an obstruction such as hair, fabric strands or spaghetti.
- 8 What is the life expectancy of Hep_vO?**

Installed correctly Hep_vO can be expected to have a life expectancy at least equivalent to current water sealed traps. In addition Hep_vO is guaranteed against defects in materials or manufacturing for a period of 3 years.
- 9 Will Hep_vO block easily for example if fat is discharged through it?**

NO - Extensive testing has shown that Hep_vO is less prone to blockage than traditional water seal traps. **Note: because the 'straight through' design of Hep_vO does not trap debris discharged through the waste fixture care should be taken with jewelry and other valuables.**
- 10 Will the seal be maintained even when the fixture hasn't been used for some time?**

YES - Hep_vO does not depend on a water seal and so it will continue to maintain a seal whether a fixture never gets used or is used very infrequently.
- 11 Does the valve make a noise?**

Under normal conditions Hep_vO operates silently, unlike normal traps that are prone to 'gurgle'
- 12 Will Hep_vO support microbiological growth?**

NO - The materials used to manufacture Hep_vO will not support microbiological growth for example mold and mildew.

TOLL FREE HELPLINE
800-241-5236

Hep_vO/USA/11/12/3528

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standards proposed for inclusion in the code, ASME A112.18.8 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2013.

P3201.1-RP-GEORGE.doc

Committee Action Hearing Results

For staff analysis of the content of ASME A112.18.8 relative to CP#28, Section 3.6, please visit:
<http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf>

Committee Action: **Approved as Submitted**

Committee Reason: This proposal provides another option for a p-trap where conditions are not favorable for installation of a p-trap.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Disapproval.

Commenter's Reason: The inline sanitary waste valve is a trap with moving parts which is prohibited by IRC section P3201.5. The proponent's reason statement compares this device to the trap seal protection device. These two devices are not the same and just because the trap seal protection device has been accepted into the 2015 IPC this does not mean these devices should also be accepted. The inline sanitary waste valve is the only means of preventing sewer gas from entering the structure as a trap seal protection device is secondary to the required trap. The trap seal protection device is intended to protect the trap seal from evaporation and not serve as the trap seal itself. The proponent also states that these devices have been proven over many years of use however the standard for these devices was only published in 2009.

RP149-13

Final Action: AS AM AMPC_____ D

RP152-13
P3201.7, Table P3201.7

Proposed Change as Submitted

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org)

Revise as follows:

P3201.7 Size of fixture traps. ~~Fixture Trap sizes for plumbing fixtures shall be sufficient to drain the fixture rapidly and not less than the size as~~ indicated in Table P3201.7. ~~Where the tailpiece of a plumbing fixture is larger than that indicated in Table P3201.7, the trap size shall be the same nominal size as the fixture tailpiece.~~ A trap shall not be larger than the drainage pipe into which the trap discharges.

TABLE P3201.7
REQUIRED SIZES OF TRAPS AND TRAP ARMS FOR PLUMBING FIXTURES

PLUMBING FIXTURE	REQUIRED TRAP SIZE MINIMUM (inches)
Lavatory	1 ¼ or 1 1/2
Water closet	<u>Note a</u>

Consult fixture standards for trap dimensions of specific bowls.

(Portions of table not shown remain unchanged)

Reason: "Sufficient to drain the fixture rapidly" is unenforceable language. The trap sizes in the table should not be minimum sizes but required sizes because too large of trap doesn't allow for proper scouring and cleaning action in the trap. The term "trap arm" is slang. As a water closet has an integral trap, it should not be listed in the table so footnote a was deleted.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 73 on the PMGCAC IRC-P list.

Cost Impact: The code change proposal will not increase the cost of construction.

P3201.7-RP-HALL-PMGCAC

Committee Action Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: The proposal provides necessary clarity for minimum trap size.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

David Beahm, Building Official Warren County Virginia, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) and VA Building Code Officials Association (VBCOA) (dbeahm@warrencountyva.net) requests As Modified by this Public Comment.

Modify the proposal as follows:

TABLE P3201.7
REQUIRED SIZES OF TRAPS FOR PLUMBING FIXTURES

PLUMBING FIXTURE	REQUIRED TRAP SIZE <u>MINIMUM</u> (inches)
Lavatory	1 ¼ or 1½

Commenter's Reason: The code change proposal as approved by the committee would in fact, further confuse what is intended by this section and table. By adding the word "required" and removing the word "minimum" in the table indicates this is what is required, but which is required for a lavatory, 1 ¼ or 1 ½ or possibly something larger because the added language indicates that if the tail piece is larger, the trap must be the same nominal size. This single item would now require three different sizes for the trap. By removing the proposed table language "required" and leaving "minimum in addition to removing the new size for the lavatory trap of 1 ½ the unintended consequences would not require three different sizes.

RP152-13

Final Action: AS AM AMPC____ D

RP155-13
P2905.9.1.2

Proposed Change as Submitted

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P2905.9.1.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions. Where such instructions require a primer to be used, and an approved primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F 493, shall be applied to joint surfaces. Where such instructions allow for a one step solvent cement, yellow or red in color and conforming to ASTM F 493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ASTM D 2846 or ASTM F 493. Solvent cement joints shall be permitted above or below ground.

Exception: A primer is not required where all of the following conditions apply:

- ~~1. The solvent cement used is third-party certified as conforming to ASTM F 493.~~
- ~~2. The solvent cement used is yellow in color.~~
- ~~3. The solvent cement is used only for joining ½ inch (12.7 mm) through 2 inch (51 mm) diameter CPVC pipe and fittings.~~
- ~~4. The CPVC pipe and fittings are manufactured in accordance with ASTM D 2846.~~

Reason: This section is currently very convoluted. The requirements can be simplified by referencing the pipe manufacturer's installation instructions. The installation instructions are part of the listing which is required by the code. This will also recognize changes to the listing of the joining method, rather than requiring constant changing of this section.

The current requirements are incorrect since UL lists ASTM F442 for joining with one-step solvent cement. Furthermore, UL lists the joining for pipe up to 3 inch in diameter. Neither requirement is addressed in the current code text. UL also requires the solvent cement to be red in color. Hence, when doing a multipurpose piping system, the CPVC solvent cement would have to be red in color.

Cost Impact: This change does not increase the cost of construction.

P2905.9.1.2-RP-BALLANCO.DOC

Committee Action Hearing Results

The code change is contained in the Updates to the 2013 Proposed Changes posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Submitted

Committee Reason: The proposal makes a needed cleanup of the language and informs the installer that a primer is not needed for smaller pipe sizes.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Disapproval.

Commenter's Reason: Based upon what was submitted as part of the original change the incorrect language is shown – The title of P2905.9.1.2 is CPVC plastic pipe. It is unclear if the intent was to change this language as it is not underlined or struck or if this was just an editorial omission. The proponents reason states ASTM F 442 is the joining method per a UL listing for one step solvent cementing however this standard is not included in the proposed change. Was it the intent of the proponent to input the ASTM F 442 standard into this revised section as it is stated that the UL lists ASTM F 442 as the joining method for one step solvent cement? Will this section of the code now conflict with the UL listing of a specific piping system?

RP155-13

Final Action: AS AM AMPC_____ D

RP157-13
P3111.1

Proposed Change as Submitted

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P3111.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, and lavatories. ~~A combination waste and vent systems shall not receive the discharge of a food waste grinder.~~

Reason: There is no technical justification for prohibiting a food waste grinder from discharging to a combination waste and vent system. A food waste grinder does not change the pressure in the piping system any differently than a sink operating without a food waste grinder. The food waste grinder will not impact the performance of the combination waste and vent system. A video was made showing the discharge from a food waste grinder. The video of the clear pipe shows the flow from a food waste grinder as being the same as the flow from the sink without a food waste grinder. Unfortunately, there is a mistaken belief that the discharge from a food waste grinder is a pumped waste.

Cost Impact: This change does not increase the cost of construction.

P3111.1-RP-BALLANCO.DOC

Committee Action Hearing Results

The code change is contained in the Updates to the 2013 Proposed Changes posted on the ICC website. Please go to <http://www.iccsafe.org/cs/codes/Documents/2012-2014Cycle/Proposed-B/00-CompleteGroupB-MonographUpdates.pdf> for more information.

Committee Action:

Approved as Submitted

Committee Reason: The proposal provides more flexibility for plumbing installations. The test results prove that the restriction against food waste disposers on combination waste and vent was not justified.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Shawn Strausbaugh, Arlington County, VA, representing VA Plumbing & Mechanical Inspectors Association (VPMIA) & VA Building Code Officials Association (VBCOA), requests Disapproval.

Commenter's Reason: The use of food waste grinder on a combination waste and vent system was not permitted due to the lower flow velocities of these system due to the piping being oversized and the fact that semi solid material will be introduced to this portion of the drainage system which could lead to a build up and possible reduction in the pipe size and venting capabilities of this sanitary drainage and vent system. The video viewed shows a brand new piping system which is does not replicate conditions of piping that may be encountered in existing structures or in structures that have been in use for a period of time. It is inherent that the inner pipe walls will accumulate materials over time and this is exacerbated due to the low flow velocities of the combination drain and vent system and if permitted the discharge of a food waste grinder will only make this situation worse.

RP157-13

Final Action:

AS

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