INTERNATIONAL CODE COUNCIL
2012/2013 CODE DEVELOPMENT CYCLE
Group A (2012)

PROPOSED CHANGES TO THE
2012 EDITIONS OF THE

INTERNATIONAL BUILDING CODE®

INTERNATIONAL FUEL GAS CODE®

INTERNATIONAL MECHANICAL CODE®

INTERNATIONAL PLUMBING CODE®

INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE®

INTERNATIONAL CODE COUNCIL®

April 29th – May 8th, 2012
Sheraton Dallas Hotel
Dallas, TX

First Printing

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TABLE OF CONTENTS
(Group A)

PAGE

INTRODUCTION

The proposed changes published herein have been submitted in accordance with established procedures and are distributed for review. The publication of these changes constitutes neither endorsement nor question of them but is in accordance with established procedures so that any interested individuals may make their views known to the relevant code committee and others similarly interested. In furtherance of this purpose, the committee will hold an open public hearing at the date and place shown below for the purpose of receiving comments and arguments for or against such proposed changes. Those who are interested in testifying on any of the published changes are expected to be represented at these hearings.

This compilation of code change proposals is available in electronic form only. As part of ICC's green initiative, ICC will no longer print and distribute this document. The compilation of code change proposals will be posted on the ICC website, and CD copies will be distributed to all interested parties on our list.

2012 ICC CODE DEVELOPMENT HEARINGS

These proposed changes will be discussed in public hearings to be held on April 29th, 2012 through May 8th, 2012 at the Sheraton Dallas Hotel, Dallas, Texas. The code committees will conduct their public hearings in accordance with the schedule shown on page xxix.

REGISTRATION AND VOTING

All members of ICC may vote on any assembly motion on proposed code changes to all International Codes. **For identification purposes, eligible voting members must register, at no cost, in order to vote.** The registration desk will be open in the lobby of the convention center according to the following schedule:

Saturday, April 28th	4:00 pm to 6:00 pm
Sunday, April 29th through Tuesday, May 8th	7:30 am to 5:00 pm

Council Policy #28-Code Development (page xii) requires that ICC's membership records regarding ICC members reflect the eligible voters 10 days prior to the start of the Code Development Hearings. This process includes new as well as changes to voting status. Section 5.7.4 of CP #28 (page xix) reads as follows:

> **5.7.4 Eligible Voters:** All members of ICC in attendance at the public hearing shall be eligible to vote on floor motions. Each member is entitled to one vote, except that each Governmental Member Voting Representative in attendance may vote on behalf of its Governmental Member. Code Development Committee members shall be eligible to vote on floor motions. Application, whether new or updated, for ICC membership must be received by the Code Council ten days prior to the commencement of the first day of the public hearing.

As such, new membership applications as well as renewal applications must be received by ICC's Member Services Department by April 18th, 2012. These records will be used to verify eligible voter status for the Code Development Hearings. Members are strongly encouraged to review their membership records for accuracy well in advance of the hearings so that any necessary changes are made prior to the April 18th, 2012 deadline. For information on application for new membership and membership renewal, please go to www.iccsafe.org/membership/join.html or call ICC Member Services at 1-888-ICC SAFE (422-7233)

It should be noted that a corporate member has a single vote. Only one representative of a corporate member will be issued a voting badge. ICC Staff will be contacting corporate members regarding who the designated voting representative will be.

ADVANCED REGISTRATION

You are encouraged to advance register by filling out the registration form available at www.iccsafe.org/springhearings.

CODE DEVELOPMENT PROCESS CHANGES

As noted in the posted Advisory Statement of February 4, 2009, the revised Code Development Process includes maintaining the current 3-year publication cycle with a single cycle of code development between code editions. The schedule for the 2012/2013 Code Development Cycle is the first schedule for the revised code development process (see page ix).

PROCEDURES

The procedures for the conduct of the public hearing are published in *Council Policy #28-Code Development (CP#28)* ("Procedures") on page xii. The attention of interested parties is specifically directed to Section 5.0 of the Procedures. These procedures indicate the conduct of, and opportunity to participate in the ICC Code Development Process. Please review these procedures carefully to familiarize yourself with the process.

There have been a number of revisions to the procedures. Included among these revisions are the following:

Section 1.6: **Recording.** This section was revised to clarify that ICC maintains sole ownership in the content of the hearings and has the right to control its subsequent distribution. In addition, the technology references were updated, using the term "recording" to replace "videotaping".

Section 2.4 **Emergency Procedures.** This section was revised create a 'metric' to aid in the determination of when an issue rises to the level of concern appropriate to an emergency amendment. Furthermore, it now stipulates a process by which a proposed Emergency Amendment is reviewed by the ICC Codes and Standards Council who is responsible for the implementation and oversight of ICC's Code Development Process.

Section 3.3.1 & Section 6.4.1 **Proponent.** An e-mail address for each code change/public comment proponent will be published in the monograph, unless the proponent requests otherwise.

Section 3.3.5.3 & Section 6.4.5 **Substantiation.** ICC evaluates whether substantiating material is germane, but the amendment makes it clear that ICC does not in all circumstances evaluate substantiating material for quality or accuracy.

Section 3.3.5.6 **Cost Impact.** The proponent should submit information that supports their claim regarding cost impact. Any information submitted will be considered by the code development committee. This language is intended to emphasize the need to provide information on how the proposed change will affect the cost of construction.

Section 3.6.3.1 If a proposed new standard is not submitted in at least draft form, the corresponding code change proposal shall be considered incomplete and shall not be processed.

Section 4.5.1 **Standards referenced in the I-Codes.** The deadline for availability of updated referenced standards and receipt by the Secretariat is December 1st of the third year of each code cycle. For the 2012/2013 cycle, the deadline is December 1st, 2014.

Section 5.2.2 **Conflict of interest.** The original language, “Violation thereof shall result in the immediate removal of the committee member from the committee.” was removed because there was no mechanism to enforce it. The recourse for someone who feels this section has been violated is to appeal.

Section 5.4.2 **Open meetings.** A provision has been added that stipulates that participants shall not advocate a position on specific code changes with Committee Members other than through the methods provided in this policy.

Section 5.4.3
&
Section 7.3.3 **Presentation of Material at the Public Hearing.** All participants are to make it clear what interests they are representing. This disclosure provides additional information upon which to evaluate the testimony.

Section 5.7 **Assembly consideration.** A successful assembly action will no longer be the initial motion at the Final Action Consideration.

Section 5.7.3 **Assembly action.** A successful assembly action shall be a majority vote of the votes cast by eligible voters, rather than a 2/3 majority (see below).

Section 5.7.4 **Eligible voters.** This section is revised to clarify that each member, including Governmental Member Voting Representatives, gets only one vote.

Section 7.4 **Eligible voters.** This section requires that all Governmental Membership applications must be received by April 1 of the year of the Final Actions for a Governmental Member to be eligible to vote at the Final Action Hearings.

ASSEMBLY ACTION

The procedures regarding assembly action at the Code Development Hearings have been revised (see Section 5.7 of CP #28 on page xix). Some important items to note regarding assembly action are:

- A successful assembly action now requires a simple majority rather than a 2/3 majority.
- After the committee decision on a code change proposal is announced by the moderator, any one in the assembly may make a motion for assembly action.
- After a motion for assembly action is made and seconded, the moderator calls for a floor vote in accordance with Section 5.7.2. *No additional testimony will be permitted.*
- A code change proposal that receives a successful assembly action will be placed on the Final Action Hearing Agenda for individual consideration.

MULTIPLE PART CODE CHANGE PROPOSALS

It is common for ICC to receive code change proposals for more than one code or more than 1 part of a code that is the responsibility of more than one committee. For instance, a code change proposal could be proposing related changes to the text of IBC Chapter 4 (IBC-General), IBC Chapter 7 (IBC-Fire Safety), and the IFC Chapter 27 (IFC). When this occurs, a single committee will now hear all of the parts, unless one of the parts is a change to the IRC, in which case the respective IRC committee will hear that part separately.

GROUP A AND GROUP B CODE CHANGES

Starting with this 2012/2013 Code Development Cycle, for the development of the 2015 Edition of the I-Codes, there are two groups of code development committees and they will meet in separate years. The groupings are as follows:

Group A Codes (Heard in 2012)	***Group B Codes (Heard in 2013)***
International Building Code Committees: *IBC-Fire Safety (Chapters: 7, 8, 9, 14, 26 and App. D)* *IBC-General (Chapters: 2-6, 12, 13, 27-34, App. A, B, C, F, H, K)* *IBC-Means of Egress (Chapters: 10, 11 and App. E)* *IBC-Structural (Chapters: 15-25 and App. G,I, J, L, M)*	*Administrative Provisions (Chapter 1 all codes except IRC and IECC, referenced standards administrative updates, and designated definitions)* *Administrative Code Committee*
International Fuel Gas Code *IFGC Committee*	*International Energy Conservation Code (see note 1)* *Commercial Energy Committee* *Residential Energy Committee*
International Mechanical Code *IMC Committee*	*International Existing Building Code* *IEBC Committee*
International Plumbing Code *IPC Committee*	*International Fire Code* *IFC Committee*
International Private Sewage Disposal Code *IPC Committee*	*International Green Construction Code Committees:* *IGCC—Energy/Water Committee (Chapters: 6 and 7)* *IGCC—General Committee (Chapters:2-5, 8-11 and Append)*
	International Performance Code (see note 2) *ICC Performance Code Committee*
	International Property Maintenance Code *IPMC/IZC Committee*
	International Wildland-Urban Interface Code *IFC Committee*
	International Zoning Code *IPMC/IZC Committee*
	International Residential Code Committees: *IRC-B (Chapters: 1-10 and App. E, F, G,H, J, K, L, M, O)* *IRC-M/P (Chapters: 12-33 and App. I, P)*
	International Swimming Pool and Spa Code *ISPSC Committee*

NOTE:

1. Residential Energy Committee is responsible for Chapter 11 of the IRC and the Residential Provisions of the IECC.
2. In anticipation of minimal code change activity, a ICC Performance Committee has not been appointed. Any changes will be considered by the IFC Committee.

GROUP A CODE DEVELOPMENT COMMITTEE RESPONSIBILITIES

Some sections of the International Codes have a letter designation in brackets in front of them. For instance, Section 301.1.4 of the IEBC has a [B] in front of it, meaning that this section is the responsibility of one of the IBC Code Development Committees (in this case, IBC-S).

Code change proposals submitted for such code sections that have a bracketed letter designation in front of them will be heard by the respective committee responsible for such code sections. Because different committees will meet in different years, some proposals for a given code will be heard by a committee in a different year than the year in which the primary committee for this code meets.

Note that there are several code change proposals in the IBC-Structural hearing order that are changes to the International Existing Building Code (marked with prefix "EB"). These are proposed changes to sections of the existing building code that are the responsibility of the IBC-Structural Code Development Committee.
A complete summary of the Group A and Group B Code Development Committees' responsibilities can be view at the ICC Website: http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/GroupA-B_CDC-Responsibilities.pdf.

ANALYSIS STATEMENTS

Various proposed changes published herein contain an "analysis" that appears after the proponent's reason. These comments do not advocate action by the code committees or the voting membership for or against a proposal. The purpose of such comments is to identify pertinent information that is relevant to the consideration of the proposed change by all interested parties, including those testifying, the code committees and the voting membership. Staff analyses customarily identify such things as: conflicts and duplication within a proposed change and with other proposed changes and/or current code text; deficiencies in proposed text and/or substantiation; text problems such as wording defects and vagueness; background information on the development of current text; and staff's review of proposed reference standards for compliance with the Procedures. Lack of an analysis indicates neither support for, nor opposition to a proposal.

REFERENCE STANDARDS

Proposed changes that include the addition of a reference to a new standard (i.e. a standard that is not currently referenced in the I-Codes.) will include in the proposal the number, title and edition of the proposed standard. This identifies to all interested parties the precise document that is being proposed and which would be included in the referenced standards chapter of the code if the proposed change is approved. Section 3.6.3.1 of CP #28 now requires that a code change proposal will not be processed unless a consensus draft of the standard has been provided. Proponents of code changes which propose a new standard have been directed to forward copies of the standard to the Code Committee. An analysis statement will be posted on the ICC website providing information regarding standard content, such as enforceable language, references to proprietary products or services, and references to consensus procedure. The analysis statements for referenced standards will be posted on or before March 28th, 2012. This information will also be published and made available at the hearings.

REFERENCED STANDARDS UPDATES

Administrative updates of any standards already referenced in any of the I-Codes will be contained in a code change proposal for consideration by the Administrative Code Development Committee. The Administrative Code Development Committee is a Group B committee which will conduct hearings on the administrative provisions (Chapter 1 and certain definitions) of all I-Codes, and the referenced standards update. Therefore, this committee will conduct its code development hearing during the code development hearings in 2013.

It should be noted that, in accordance with Section 4.5.1 of CP #28 (see page xvi), standards promulgators will have until December 1, 2014 to finalize and publish any updates to standards in the administrative update. If the standard update is not finalized and published by December 1, 2014, the respective I-Codes will be revised to reference the previously listed year edition of the standard.

MODIFICATIONS

Those who are submitting a modification for consideration by the respective Code Development Committee are required to submit a Copyright Release in order to have their modifications considered (Section 3.3.4.5 of CP #28). It is preferred that such release be executed in advance – the form is at http://www.iccsafe.org/cs/codes/publicforms.htm. Copyright release forms will also be available at the hearings. Please note that an individual need only sign one copyright release for submittals of all code change proposals, modifications, and public comments in this code change cycle for which the individual might be responsible. **Please be sure to review Section 5.5.2 of CP #28 for the modification process.** The Chair of the respective code development committee rules a modification in or out of order. That ruling is final, with no challenge allowed. The proponent submitting a modification is required to supply 20 printed copies. The minimum font size must be 16 point.

Example:

Original code change proposal.

The original code change proposal requested the following change to Section 305.3 of one of our I-Codes: (Note that the example is fictional.)

G10-12
305.13

Proponent: John West representing self

Revise as follows:

305.3 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good and clean condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster~~,~~ ~~decayed wood~~ and other defective surface conditions shall be corrected. Surfaces of porous materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated in an approved manner.

Exception: Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.

Proposed modification:

A modification to the code change proposal is proposed:

1. To add “and sanitary” after “clean” in the first sentence.
2. To add “or water permeable” after “porous” in the third sentence.
3. Delete “in an approved manner.” in the last sentence.
4. Delete the proposed new exception.

The modification should read as follows. Note that the font style is Ariel, and the font size is 16 pt. The ~~cross out,~~ underline format is removed from the text of the original proposal and the requested revisions in the original proposal are made and shown as original text. The modification to the original proposal is shown with ~~cross out,~~ underline format applied to the changes proposed in the modification.

Example of proposed modification:

G10-12
305.13

Proponent: Sam Sumter representing self

Modify the proposal as follows:

305.3 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good, ~~and~~ clean and sanitary condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster and other defective surface conditions shall be corrected. Surfaces of porous or water permeable materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated ~~in an approved manner~~.

> ~~**Exception:** Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.~~

Note: *The modification should be able to be shown on the overhead screen on a single page. Only show the pertinent part of the code change proposal that shows the intended revisions. The entire code change proposal need not be shown.*

CODE CORRELATION COMMITTEE

In every code change cycle, there are code change proposals that are strictly editorial. The Code Correlation Committee approves all proposals deemed editorial. A list of code correlation committee actions are shown at the end of this document (CCC-1).

ICC WEBSITE – WWW.ICCSAFE.ORG

This document is posted on the ICC Website, www.iccsafe.org. While great care has been exercised in the publication of this document, errata to proposed changes may occur. Errata, if any, will be identified in updates posted prior to the Code Development Hearings on the ICC website at http://www.iccsafe.org. Users are encouraged to periodically review the ICC Website for updates to the 2012/2013 Code Development Cycle-Group A (2012) Proposed Changes. Additionally, analysis statements for code changes which propose a new referenced standard will be updated to reflect the staff review of the standard for compliance with Section 3.6 of the Procedures.

PROPONENT CONTACT INFORMATION

For most of the code change proposals, an e-mail address for the proponent has been provided.

2012/2013 ICC CODE DEVELOPMENT SCHEDULE

STEP IN CODE DEVELOPMENT CYCLE	DATE	
	2012 – Group A Codes IBC, IFGC, IMC, IPC, IPSDC (See Notes)	**2013 – Group B Codes Admin, ICCPC, IEBC, IECC, IFC, IgCC, IPMC, ISPSC, IRC, IWUIC, IZC (See Notes)**
2012 EDITION OF I-CODES PUBLISHED	April 30, 2011	
DEADLINE FOR RECEIPT OF APPLICATIONS FOR ALL CODE COMMITTEES	June 1, 2011 (updated to July 1 for IECC and IRC – Energy; August 1 for IgCC and ISPSC)	
DEADLINE FOR RECEIPT OF CODE CHANGE PROPOSALS	January 3, 2012	January 3, 2013
WEB POSTING OF "PROPOSED CHANGES TO THE I-CODES"	March 12, 2012	March 11, 2013
DISTRIBUTION DATE OF "PROPOSED CHANGES TO THE I-CODES" (CD only)	April 2, 2012	April 1, 2013
CODE DEVELOPMENT HEARING (CDH)	April 29 – May 6, 2012 Sheraton Dallas Hotel Dallas, TX	April 21 – 28, 2013 Sheraton Dallas Hotel Dallas, TX
WEB POSTING OF "REPORT OF THE PUBLIC HEARING"	June 8, 2012	May 31, 2013
DISTRIBUTION DATE OF "REPORT OF THE PUBLIC HEARING" (CD only)	June 29, 2012	June 21, 2013
DEADLINE FOR RECEIPT OF PUBLIC COMMENTS	August 1, 2012	July 15, 2013
WEB POSTING OF PUBLIC COMMENTS "FINAL ACTION AGENDA"	September 10, 2012	August 28, 2013
DISTRIBUTION DATE OF PUBLIC COMMENTS "FINAL ACTION AGENDA" (CD only)	October 1, 2012	September 16, 2013
FINAL ACTION HEARING (FAH)	October 24 – 28, 2012 Oregon Convention Center Portland, OR	October 2 – 9, 2013 Atlantic City Convention Center Atlantic City, NJ
ANNUAL CONFERENCES	October 21 – 24, 2012 Oregon Convention Center Portland, OR	September 29 – October 2, 2013 Atlantic City Convention Center Atlantic City, NJ

Notes:

- Be sure to review the "Group A and Group B Code Development Committee Responsibilities" posted at www.iccsafe.org/responsibilities which identifies committee responsibilities which are different than Group A and Group B codes which may impact the applicable code change cycle and resulting code change deadline.
- The International Green Construction Code (IgCC) and International Swimming Pool and Spa Code (ISPSC) to undergo a full cycle of code development in 2011 resulting in 2012 editions published in March/2012
- Group B "Admin" includes code change proposals submitted to Chapter 1 of all the I-Codes except the ICCPC, IECC and IRC and the administrative update of referenced standards in the 2012 I-Codes
- Start 2015/2016 Code Development Cycle with Group A code change proposals due January 5, 2015

2012/2013 STAFF SECRETARIES

GROUP A (2012)

IBC-Fire Safety **Chapters 7, 8, 9, 14, 26**	**IBC-General** **Chapters 1-6, 12, 13, 27-34**	**IBC-Means of Egress** **Chapters 10, 11**	**IBC-Structural** **Chapters 15-25**
Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	BethTubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org	Kim Paarlberg ICC Indianapolis Field Office 1-888-ICC-SAFE, ext 4306 FAX: 708/799-0320 kpaarlberg@iccsafe.org	Alan Carr ICC NW Resource Center 1-888-ICC-SAFE, ext 7601 FAX: 425/637-8939 acarr@iccsafe.org
IFGC	**IMC**	**IPC/IPSDC**	
Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	

GROUP B (2013)

ADMINISTRATIVE **Chapter 1** **All Codes Except IRC**	**IEBC**	**IECC-Commercial**	**IECC-Residential**
Kim Paarlberg ICC Indianapolis Field Office 1-888-ICC-SAFE, ext 4306 FAX: 708/799-0320 kpaarlberg@iccsafe.org	BethTubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org	Dave Bowman ICC Chicago District Office 1-888-ICC-SAFE, ext 4323 FAX: 708/799-0320 dbowman@iccsafe.org	Dave Bowman ICC Chicago District Office 1-888-ICC-SAFE, ext 4323 FAX: 708/799-0320 dbowman@iccsafe.org
IFC	**IgCC-General**	**IgCC-Energy/Water**	**ICC PC**
Bill Rehr/ Beth Tubbs ICC Chicago District Office 1-888-ICC-SAFE, ext 4342 FAX: 708/799-0320 brehr@iccsafe.org btubbs@iccsafe.org	Allan Bilka ICC Chicago District Office 1-888-ICC-SAFE, ext 4326 FAX: 708/799-0320 abilka@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	BethTubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org
IPMC	**IRC-Building**	**IRC Mechanical**	**IRC Plumbing**
Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	Larry Franks/ Dave Bowman ICC Birmingham District Office 1-888-ICC-SAFE, ext 5279 FAX: 205/592-7001 lfranks@iccsafe.org dbowman@iccsafe.org	Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org
ISPSC	**IWUIC**	**IZC**	
Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	Bill Rehr ICC Chicago District Office 1-888-ICC-SAFE, ext 4342 FAX: 708/799-0320 brehr@iccsafe.org	Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	

COMMITTEE A
ASSIGNMENT CROSSOVER LIST—WITHIN THE IBC

The 2012/2013 Staff Secretaries assignments on page x indicate which chapters of the International Building Code are generally within the responsibility of each IBC Code Committee. However, within each of these IBC Chapters are subjects that are most appropriately maintained by another IBC Code Committee. For example, the provisions of Section 403.5 deal with means of egress from high-rise buildings. Therefore, even though Chapter 4 is within the responsibility of the IBC – General Committee, this section would most appropriately be maintained by the IBC – Means of Egress Committee. The following table indicates responsibilities by IBC Code Committees other than the main committee for those chapters, for code changes submitted for the 2012 portion (Group A) of the 2012/2013 Cycle.

SECTION	CHAPTER MAINTAINED BY	SECTION MAINTAINED BY	CODE CHANGE PROPOSALS
403.5	IBC-General	IBC-Means of Egress	E4, E7
405.7.1	IBC-General	IBC-Means of Egress	E3
411.7	IBC-General	IBC-Means of Egress	E3
1508.1	IBC-Structural	IBC-Fire Safety	FS178
3401.2	IBC-General	IBC-Structural	S90
3406.1.3	IBC-General	IBC-Means of Egress	E4
3406.4	IBC-General	IBC-Means of Egress	E4
3411.8.4	IBC-General	IBC-Means of Egress	E4
3411.8.15	IBC-General	IBC-Means of Egress	E211

CP# 28-05 CODE DEVELOPMENT

Approved: **9/24/05**
Revised: **10/29/11**

CP # 28-05 is an update to *ICC's Code Development Process for the International Codes* dated May 15, 2004.

1.0 Introduction

1.1 Purpose: The purpose of this Council Policy is to prescribe the Rules of Procedure utilized in the continued development and maintenance of the International Codes (Codes).

1.2 Objectives: The ICC Code Development Process has the following objectives:

1.2.1 The timely evaluation and recognition of technological developments pertaining to construction regulations.

1.2.2 The open discussion of proposals by all parties desiring to participate.

1.2.3 The final determination of Code text by public officials actively engaged in the administration, formulation or enforcement of laws, ordinances, rules or regulations relating to the public health, safety and welfare and by honorary members.

1.3 Code Publication: The ICC Board of Directors (ICC Board) shall determine the title and the general purpose and scope of each Code published by the ICC.

1.3.1 Code Correlation: The provisions of all Codes shall be consistent with one another so that conflicts between the Codes do not occur. Where a given subject matter or code text could appear in more than one Code, the ICC Board shall determine which Code shall be the primary document, and therefore which code development committee shall be responsible for review and maintenance of the code text. Duplication of content or text between Codes shall be limited to the minimum extent necessary for practical usability of the Codes, as determined in accordance with Section 4.4.

1.4 Process Maintenance: The review and maintenance of the Code Development Process and these Rules of Procedure shall be by the ICC Board. The manner in which ICC codes are developed embodies core principles of the organization. One of those principles is that the final content of ICC codes is determined by a majority vote of the governmental and honorary members. It is the policy of the Board that there shall be no change to this principle without the affirmation of two-thirds of the governmental and honorary members responding.

1.5 Secretariat: The Chief Executive Officer shall assign a Secretariat for each of the Codes. All correspondence relating to code change proposals and public comments shall be addressed to the Secretariat.

1.6 Recording: Individuals requesting permission to record any meeting or hearing, or portion thereof, shall be required to provide the ICC with a release of responsibility disclaimer and shall acknowledge that ICC shall retain sole ownership of the recording, and that they have insurance coverage for liability and misuse of recording materials. Equipment and the process used to record shall, in the judgment of the ICC Secretariat, be conducted in a manner that is not disruptive to the meeting. The ICC shall not be responsible for equipment, personnel or any other provision necessary to accomplish the recording. An unedited copy of the recording shall be forwarded to ICC within 30 days of the meeting. Recordings shall not otherwise be copied, reproduced or distributed in any manner. Recordings shall be returned to

ICC or destroyed upon the request of ICC.

2.0 Code Development Cycle

2.1 Intent: The code development cycle shall consist of the complete consideration of code change proposals in accordance with the procedures herein specified, commencing with the deadline for submission of code change proposals (see Section 3.5) and ending with publication of final action on the code change proposals (see Section 7.6).

2.2 New Editions: The ICC Board shall determine the schedule for publishing new editions of the Codes. Each new edition shall incorporate the results of the code development activity since the last edition.

2.3 Supplements: The results of code development activity between editions may be published.

2.4 Emergency Procedures:

2.4.1 Scope: Emergency actions are limited to those issues representing an immediate threat to health and safety that warrant a more timely response than allowed by the Code Development Process schedule.

2.4.2 Initial Request: A request for an emergency action shall be based upon perceived threats to health and safety and shall be reviewed by the ICC Codes and Standards Council for referral to the Board of Directors for action with their analysis and recommendation.

2.4.3 Board and Member Action: In the event that the ICC Board determines that an emergency amendment to any Code is warranted, the same may be adopted by the ICC Board. Such action shall require an affirmative vote of at least two-thirds of the ICC Board.

The ICC membership shall be notified within ten days after the ICC Boards' official action of any emergency amendment. At the next Annual Business Meeting, any emergency amendment shall be presented to the members for ratification by a majority of the ICC Governmental Member Representatives and Honorary Members present and voting.

All code revisions pursuant to these emergency procedures and the reasons for such corrective action shall be published as soon as practicable after ICC Board action. Such revisions shall be identified as an emergency amendment.

Emergency amendments to any Code shall not be considered as a retro-active requirement to the Code. Incorporation of the emergency amendment into the adopted Code shall be subjected to the process established by the adopting authority.

3.0 Submittal of Code Change Proposals

3.1 Intent: Any interested person, persons or group may submit a code change proposal which will be duly considered when in conformance to these Rules of Procedure.

3.2 Withdrawal of Proposal: A code change proposal may be withdrawn by the proponent (WP) at any time prior to Final Action Consideration of that proposal. A withdrawn code change proposal shall not be subject to a public hearing, motions, or Final Action Consideration.

3.3 Form and Content of Code Change Submittals: Each code change proposal shall be submitted separately and shall be complete in itself. Each submittal shall contain the following information:

3.3.1 Proponent: Each code change proposal shall include the name, title, mailing address, telephone number, and email address of the proponent. Email addresses shall be published with the code change proposals unless the proponent otherwise requests on the submittal form.

3.3.1.1 If a group, organization or committee submits a code change proposal, an individual with prime responsibility shall be indicated.

3.3.1.2 If a proponent submits a code change on behalf of a client, group, organization or committee, the name and mailing address of the client, group, organization or committee shall be indicated.

3.3.2 **Code Reference:** Each code change proposal shall relate to the applicable code sections(s) in the latest edition of the Code.

3.3.2.1 If more than one section in the Code is affected by a code change proposal, appropriate proposals shall be included for all such affected sections.

3.3.2.2 If more than one Code is affected by a code change proposal, appropriate proposals shall be included for all such affected Codes and appropriate cross referencing shall be included in the supporting information.

3.3.3 **Multiple code change proposals to a code section.** A proponent shall not submit multiple code change proposals to the same code section. When a proponent submits multiple code change proposals to the same section, the proposals shall be considered as incomplete proposals and processed in accordance with Section 4.3. This restriction shall not apply to code change proposals that attempt to address differing subject matter within a code section.

3.3.4 **Text Presentation:** The text proposal shall be presented in the specific wording desired with deletions shown struck out with a single line and additions shown underlined with a single line.

3.3.4.1 A charging statement shall indicate the referenced code section(s) and whether the proposal is intended to be an addition, a deletion or a revision to existing Code text.

3.3.4.2 Whenever practical, the existing wording of the text shall be preserved with only such deletions and additions as necessary to accomplish the desired change.

3.3.4.3 Each proposal shall be in proper code format and terminology.

3.3.4.4 Each proposal shall be complete and specific in the text to eliminate unnecessary confusion or misinterpretation.

3.3.4.5 The proposed text shall be in mandatory terms.

3.3.5 **Supporting Information:** Each code change proposal shall include sufficient supporting information to indicate how the proposal is intended to affect the intent and application of the Code.

3.3.5.1 **Purpose:** The proponent shall clearly state the purpose of the proposed code change (e.g. clarify the Code; revise outdated material; substitute new or revised material for current provisions of the Code; add new requirements to the Code; delete current requirements, etc.)

3.3.5.2 **Reasons:** The proponent shall justify changing the current Code provisions, stating why the proposal is superior to the current provisions of the Code. Proposals which add or delete requirements shall be supported by a logical explanation which clearly shows why the current Code provisions are inadequate or overly restrictive, specifies the shortcomings of the current Code provisions and explains how such proposals will improve the Code.

3.3.5.3 **Substantiation:** The proponent shall substantiate the proposed code change based on technical information and substantiation. Substantiation provided which is reviewed in accordance with Section 4.2 and determined as not germane to the technical issues addressed in the proposed code change may be identified as such. The proponent shall be notified that the proposal is considered an incomplete proposal in accordance with Section 4.3 and the proposal shall be held until the deficiencies are corrected. The proponent shall have the right to appeal this action in accordance with the policy of the ICC Board. The burden of providing substantiating material lies with the proponent of the code change proposal. All substantiating material published by ICC is material that has been provided by the proponent and in so publishing ICC makes no representations or warranties about its quality or accuracy.

3.3.5.4 **Bibliography:** The proponent shall submit a bibliography of any substantiating material submitted with the code change proposal. The bibliography shall be published with the code change and the proponent shall make the substantiating materials available for review at the appropriate ICC office and during the public hearing.

3.3.5.5 **Copyright Release:** The proponent of code change proposals, floor modifications and public comments shall sign a copyright release reading: "I hereby grant and assign to ICC all rights in copyright I may have in any authorship contributions I make to ICC in connection with any proposal and public comment, in its original form submitted or revised form, including written and verbal modifications submitted in accordance Section 5.5.2. I understand that I will have no rights in any ICC publications that use such contributions in the form submitted by me or another similar form and certify that such contributions are not protected by the copyright of any other person or entity."

3.3.5.6 **Cost Impact:** The proponent shall indicate one of the following regarding the cost impact of the code change proposal: 1) the code change proposal will increase the cost of construction; or 2) the code change proposal will not increase the cost of construction. The proponent should submit information that supports their claim. Any information submitted will be considered by the code development committee. This information will be included in the bibliography of the published code change proposal.

3.4 **Number:** One copy of each code change proposal, two copies of each proposed new referenced standard and one copy of all substantiating information shall be submitted. Additional copies may be requested when determined necessary by the Secretariat to allow such information to be distributed to the code development committee. Where such additional copies are requested, it shall be the responsibility of the proponent to send such copies to the respective code development committee. A copy of the code change proposal in electronic form is preferred.

3.5 **Submittal Deadline:** Each code change proposal shall be received at the office of the Secretariat by the posted deadline. Such posting shall occur no later than 120 days prior to the code change deadline. The submitter of a proposed code change is responsible for the proper and timely receipt of all pertinent materials by the Secretariat.

3.6 **Referenced Standards:** In order for a standard to be considered for reference or to continue to be referenced by the Codes, a standard shall meet the following criteria:

3.6.1 **Code References:**

3.6.1.1 The standard, including title and date, and the manner in which it is to be utilized shall be specifically referenced in the Code text.
3.6.1.2 The need for the standard to be referenced shall be established.

3.6.2 **Standard Content:**

3.6.2.1 A standard or portions of a standard intended to be enforced shall be written in mandatory language.
3.6.2.2 The standard shall be appropriate for the subject covered.
3.6.2.3 All terms shall be defined when they deviate from an ordinarily accepted meaning or a dictionary definition.
3.6.2.4 The scope or application of a standard shall be clearly described.
3.6.2.5 The standard shall not have the effect of requiring proprietary materials.
3.6.2.6 The standard shall not prescribe a proprietary agency for quality control or testing.
3.6.2.7 The test standard shall describe, in detail, preparation of the test sample, sample selection or both.
3.6.2.8 The test standard shall prescribe the reporting format for the test results. The format shall identify the key performance criteria for the element(s) tested.
3.6.2.9 The measure of performance for which the test is conducted shall be clearly defined in either the test standard or in Code text.
3.6.2.10 The standard shall not state that its provisions shall govern whenever the referenced standard is in conflict with the requirements of the referencing Code.
3.6.2.11 The preface to the standard shall announce that the standard is promulgated according to a consensus procedure.

3.6.3 Standard Promulgation:

3.6.3.1 Code change proposals with corresponding changes to the code text which include a reference to a proposed new standard or a proposed update of an existing referenced shall comply with this section. The standard shall be completed and readily available prior to Final Action Consideration based on the cycle of code development which includes the proposed code change proposal. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If a new standard is not submitted in at least draft form, the code change shall be considered incomplete and shall not be processed. Updating of standards without corresponding code text changes shall be accomplished administratively in accordance with Section 4.5.

3.6.3.2 The standard shall be developed and maintained through a consensus process such as ASTM or ANSI.

4.0 Processing of Proposals

4.1 Intent: The processing of code change proposals is intended to ensure that each proposal complies with these Rules of Procedure and that the resulting published proposal accurately reflects that proponent's intent.

4.2 Review: Upon receipt in the Secretariat's office, the code change proposals will be checked for compliance with these Rules of Procedure as to division, separation, number of copies, form, language, terminology, supporting statements and substantiating data. Where a code change proposal consists of multiple parts which fall under the maintenance responsibilities of different code committees, the Secretariat shall determine the code committee responsible for determining the committee action in accordance with Section 5.6.

4.3 Incomplete Proposals: When a code change proposal is submitted with incorrect format, without the required information or judged as not in compliance with these Rules of Procedure, the Secretariat shall notify the proponent of the specific deficiencies and the proposal shall be held until the deficiencies are corrected, with a final date set for receipt of a corrected submittal. If the Secretariat receives the corrected proposal after the final date, the proposal shall be held over until the next code development cycle. Where there are otherwise no deficiencies addressed by this section, a proposal that incorporates a new referenced standard shall be processed with an analysis of referenced standard's compliance with the criteria set forth in Section 3.6.

4.4 Editorial: The Chief Executive Officer shall have the authority at all times to make editorial and format changes to the Code text, or any approved changes, consistent with the intent, provisions and style of the Code. An editorial or format change is a text change that does not affect the scope or application of the code requirements.

4.5 Updating Standards:

4.5.1 Standards referenced in the I-Codes: The updating of standards referenced by the Codes shall be accomplished administratively by the Administrative code development committee in accordance with these full procedures except that the deadline for availability of the updated standard and receipt by the Secretariat shall be December 1 of the third year of each code cycle. The published version of the new edition of the Code which references the standard will refer to the updated edition of the standard. If the standard is not available by the deadline, the edition of the standard as referenced by the newly published Code shall revert back to the reference contained in the previous edition and an errata to the Code issued Multiple standards to be updated may be included in a single proposal.

4.6 Preparation: All code change proposals in compliance with these procedures shall be prepared in a standard manner by the Secretariat and be assigned separate, distinct and consecutive numbers. The Secretariat shall coordinate related proposals submitted in accordance with Section 3.3.2 to facilitate the hearing process.

4.7 Publication: All code change proposals shall be posted on the ICC website at least 30 days prior to the public hearing on those proposals and shall constitute the agenda for the public hearing. Code change proposals which have not been published shall not be considered.

5.0 Public Hearing

5.1 Intent: The intent of the public hearing is to permit interested parties to present their views including the cost and benefits on the code change proposals on the published agenda. The code development committee will consider such comments as may be presented in the development of their action on the disposition of such proposals. At the conclusion of the code development committee deliberations, the committee action on each code change proposal shall be placed before the hearing assembly for consideration in accordance with Section 5.7.

5.2 Committee: The Code Development Committees shall be appointed by the Board of Directors.

5.2.1 Chairman/Moderator: The Chairman and Vice-Chairman shall be appointed by the Steering Committee on Councils from the appointed members of the committee. The ICC President shall appoint one or more Moderators who shall act as presiding officer for the public hearing.

5.2.2 Conflict of Interest: A committee member shall withdraw from and take no part in those matters with which the committee member has an undisclosed financial, business or property interest. The committee member shall not participate in any committee discussion on the matter or any committee vote. A committee member who is a proponent of a proposal shall not participate in any committee discussion on the matter or any committee vote. Such committee member shall be permitted to participate in the floor discussion in accordance with Section 5.5 by stepping down from the dais.

5.2.3 Representation of Interest: Committee members shall not represent themselves as official or unofficial representatives of the ICC except at regularly convened meetings of the committee.

5.2.4 Committee Composition: The committee may consist of representation from multiple interests. A minimum of thirty-three and one-third percent (33.3%) of the committee members shall be regulators.

5.3 Date and Location: The date and location of each public hearing shall be announced not less than 60 days prior to the date of the public hearing.

5.4 General Procedures: *The Robert's Rules of Order* shall be the formal procedure for the conduct of the public hearing except as a specific provision of these Rules of Procedure may otherwise dictate. A quorum shall consist of a majority of the voting members of the committee.

5.4.1 Chair Voting: The Chairman of the committee shall vote only when the vote cast will break a tie vote of the committee.

5.4.2 Open Meetings: Public hearings of the Code Development Committees are open meetings. Any interested person may attend and participate in the Floor Discussion and Assembly Consideration portions of the hearing. Only eligible voters (see Section 5.7.4) are permitted to vote on Assembly Considerations. Only Code Development Committee members may participate in the Committee Action portion of the hearings (see Section 5.6). Participants shall not advocate a position on specific code changes with Committee Members other than through the methods provided in this policy.

5.4.3 Presentation of Material at the Public Hearing: Information to be provided at the hearing shall be limited to verbal presentations and modifications submitted in accordance with Section 5.5.2. Each individual presenting information at the hearing shall state their name and affiliation, and shall identify any entities or individuals they are representing in connection with their testimony. Audio-visual presentations are not permitted. Substantiating material submitted in accordance with Section 3.3.4.4 and other material submitted in response to a code change proposal shall be located in a designated area in the hearing room and shall not be distributed to the code development committee at the public hearing.

5.4.4 Agenda Order: The Secretariat shall publish an agenda for each public hearing, placing individual code change proposals in a logical order to facilitate the hearing. Any public hearing attendee may move to revise the agenda order as the first order of business at the public hearing, or at any time during the hearing except while another proposal is being discussed. Preference shall be given to grouping like subjects together, and for moving items back to a later position on the agenda as opposed to moving items forward to an earlier position. A motion to revise the agenda order is subject to a 2/3 vote of those present and voting.

5.4.5 Reconsideration: There shall be no reconsideration of a proposed code change after it has been voted on by the committee in accordance with Section 5.6; or, in the case of assembly consideration, there shall be no reconsideration of a proposed code change after it has been voted on by the assembly in accordance with Section 5.7.

5.4.6 Time Limits: Time limits shall be established as part of the agenda for testimony on all proposed changes at the beginning of each hearing session. Each person requesting to testify on a change shall be given equal time. In the interest of time and fairness to all hearing participants, the Moderator shall have limited authority to modify time limitations on debate. The Moderator shall have the authority to adjust time limits as necessary in order to complete the hearing agenda.

5.4.6.1 Time Keeping: Keeping of time for testimony by an individual shall be by an automatic timing device. Remaining time shall be evident to the person testifying. Interruptions during testimony shall not be tolerated. The Moderator shall maintain appropriate decorum during all testimony.

5.4.6.2 Proponent Testimony: The Proponent is permitted to waive an initial statement. The Proponent shall be permitted to have the amount of time that would have been allocated during the initial testimony period plus the amount of time that would be allocated for rebuttal. Where the code change proposal is submitted by multiple proponents, this provision shall permit only one proponent of the joint submittal to be allotted additional time for rebuttal.

5.4.7 Points of Order: Any person participating in the public hearing may challenge a procedural ruling of the Moderator or the Chairman. A majority vote of the eligible voters as determined in Section 5.7.4 shall determine the decision.

5.5 Floor Discussion: The Moderator shall place each code change proposal before the hearing for discussion by identifying the proposal and by regulating discussion as follows:

5.5.1 Discussion Order:

1. *Proponents.* The Moderator shall begin by asking the proponent and then others in support of the proposal for their comments.
2. *Opponents.* After discussion by those in support of a proposal, those opposed hereto, if any, shall have the opportunity to present their views.
3. *Rebuttal in support.* Proponents shall then have the opportunity to rebut points raised by the opponents.
4. *Re-rebuttal in opposition.* Opponents shall then have the opportunity to respond to the proponent's rebuttal.

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5.5.2 Modifications: Modifications to proposals may be suggested from the floor by any person participating in the public hearing. The person proposing the modification is deemed to be the proponent of the modification.

5.5.2.1 Submission and Written Copies. All modifications must be written, unless determined by the Chairman to be either editorial or minor in nature. The modification proponent shall provide 20 copies to the Secretariat for distribution to the committee.

5.5.2.2 Criteria. The Chairman shall rule proposed modifications in or out of order before they are discussed on the floor. A proposed modification shall be ruled out of order if it:

1. is not legible, unless not required to be written in accordance with Section 5.5.2.1; or

2. changes the scope of the original proposal; or
3. is not readily understood to allow a proper assessment of its impact on the original proposal or the code.

The ruling of the Chairman on whether or not the modification is in or out of order shall be final and is not subject to a point of order in accordance with Section 5.4.7.

5.5.2.3 **Testimony.** When a modification is offered from the floor and ruled in order by the Chairman, a specific floor discussion on that modification is to commence in accordance with the procedures listed in Section 5.5.1.

5.6 **Committee Action:** Following the floor discussion of each code change proposal, one of the following motions shall be made and seconded by members of the committee.

1. Approve the code change proposal as submitted (AS) or
2. Approve the code change proposal as modified with specific modifications (AM), or
3. Disapprove the code change proposal (D)

Discussion on this motion shall be limited to Code Development Committee members. If a committee member proposes a modification which had not been proposed during floor discussion, the Chairman shall rule on the modification in accordance with Section 5.5.2.2 If a committee member raises a matter of issue, including a proposed modification, which has not been proposed or discussed during the floor discussion, the Moderator shall suspend the committee discussion and shall reopen the floor discussion for comments on the specific matter or issue. Upon receipt of all comments from the floor, the Moderator shall resume committee discussion.

The Code Development Committee shall vote on each motion with the majority dictating the committee's action. Committee action on each code change proposal shall be completed when one of the motions noted above has been approved. Each committee vote shall be supported by a reason.

The Code Development Committee shall maintain a record of its proceedings including the action on each code change proposal.

5.7 **Assembly Consideration:** At the conclusion of the committee's action on a code change proposal and before the next code change proposal is called to the floor, the Moderator shall ask for a motion from the public hearing attendees who may object to the committee's action. If a motion in accordance with Section 5.7.1 is not brought forward on the committee's action, the results of the public hearing shall be established by the committee's action. If a motion in accordance with Section 5.7.1 is brought forward and is sustained in accordance with Section 5.7.3, both the committee's action and the assemblies' action shall be reported as the results of the public hearing.

5.7.1 **Floor Motion:** Any attendee may raise an objection to the committee's action in which case the attendee will be able to make a motion to:

1. Approve the code change proposal as submitted from the floor (ASF), or
2. Approve the code change proposal as modified from the floor (AMF) with a specific modification that has been previously offered from the floor and ruled in order by the Chairman during floor discussion (see Section 5.5.2) or has been offered by a member of the Committee and ruled in order by the Chairman during committee discussion (see Section 5.6), or
3. Disapprove the code change proposal from the floor (DF).

5.7.2 **Discussion:** On receipt of a second to the floor motion, the Moderator shall place the motion before the assembly for a vote. No additional testimony shall be permitted.

5.7.3 **Assembly Action:** A successful assembly action shall be a majority vote of the votes cast by eligible voters (See 5.7.4).

5.7.4 **Eligible Voters:** All members of ICC in attendance at the public hearing shall be eligible to vote on floor motions. Each member is entitled to one vote, except that each Governmental Member Voting Representative in attendance may vote on behalf of its Governmental Member. Code Development Committee members shall be eligible to vote on floor motions. Application, whether new or updated, for ICC membership must be received by the Code Council ten days prior to the commencement of the first day of the public hearing.

5.8 **Report of the Public Hearing:** The results of the public hearing, including committee action and successful assembly action, shall be posted on the ICC website not less than 60 days prior to Final Action Consideration except as approved by the ICC Board.

6.0 Public Comments

6.1 **Intent:** The public comment process gives attendees at the Final Action Hearing an opportunity to consider specific objections to the results of the public hearing and more thoughtfully prepare for the discussion for Final Action Consideration. The public comment process expedites the Final Action Consideration at the Final Action Hearing by limiting the items discussed to the following:

6.1.1 Consideration of items for which a public comment has been submitted; and

6.1.2 Consideration of items which received a successful assembly action at the public hearing.

6.2 **Deadline:** The deadline for receipt of a public comment to the results of the public hearing shall be announced at the public hearing but shall not be less than 30 days from the availability of the report of the results of the public hearing (see Section 5.8).

6.3 **Withdrawal of Public Comment:** A public comment may be withdrawn by the public commenter at any time prior to Final Action Consideration of that comment. A withdrawn public comment shall not be subject to Final Action Consideration. If the only public comment to a code change proposal is withdrawn by the public commenter prior to the vote on the consent agenda in accordance with Section 7.3.4, the proposal shall be considered as part of the consent agenda. If the only public comment to a code change proposal is withdrawn by the public commenter after the vote on the consent agenda in accordance with Section 7.3.4, the proposal shall continue as part of the individual consent agenda in accordance with Section 7.3.5, however the public comment shall not be subject to Final Action Consideration.

6.4 **Form and Content of Public Comments:** Any interested person, persons, or group may submit a public comment to the results of the public hearing which will be considered when in conformance to these requirements. Each public comment to a code change proposal shall be submitted separately and shall be complete in itself. Each public comment shall contain the following information:

6.4.1 **Public comment:** Each public comment shall include the name, title, mailing address, telephone number and email address of the public commenter. Email addresses shall be published with the public comments unless the commenter otherwise requests on submittal form. If group, organization, or committee submits a public comment, an individual with prime responsibility shall be indicated. If a public comment is submitted on behalf a client, group, organization or committee, the name and mailing address of the client, group, organization or committee shall be indicated. The scope of the public comment shall be consistent with the scope of the original code change proposal, committee action or successful assembly action. Public comments which are determined as not within the scope of the code change proposal, committee action or successful assembly action shall be identified as such. The public commenter shall be notified that the public comment is considered an incomplete public comment in accordance with Section 6.5.1 and the public comment shall be held until the deficiencies are corrected. A copyright release in accordance with Section 3.3.4.5 shall be provided with the public comment.

6.4.2 **Code Reference:** Each public comment shall include the code change proposal number and the results of the public hearing, including successful assembly actions, on the code change proposal to which the public comment is directed.

6.4.3 **Multiple public comments to a code change proposal.** A proponent shall not submit multiple public comments to the same code change proposal. When a proponent submits multiple public comments to the same code change proposal, the public comments shall be considered as incomplete public comments and processed in accordance with Section 6.5.1. This restriction shall not apply to public comments that attempt to address differing subject matter within a code section.

6.4.4 Desired Final Action: The public comment shall indicate the desired final action as one of the following:

1. Approve the code change proposal as submitted (AS), or
2. Approve the code change proposal as modified (AM) by one or more specific modifications published in the Results of the Public Hearing or published in a public comment, or
3. Disapprove the code change proposal (D)

6.4.5 Supporting Information: The public comment shall include in a statement containing a reason and justification for the desired final action on the code change proposal. Reasons and justification which are reviewed in accordance with Section 6.4 and determined as not germane to the technical issues addressed in the code change proposal or committee action may be identified as such. The public commenter shall be notified that the public comment is considered an incomplete public comment in accordance with Section 6.5.1 and the public comment shall be held until the deficiencies are corrected. The public commenter shall have the right to appeal this action in accordance with the policy of the ICC Board. A bibliography of any substantiating material submitted with a public comment shall be published with the public comment and the substantiating material shall be made available at the Final Action Hearing. All substantiating material published by ICC is material that has been provided by the proponent and in so publishing ICC makes no representations or warranties about its quality or accuracy.

6.4.6 Number: One copy of each public comment and one copy of all substantiating information shall be submitted. Additional copies may be requested when determined necessary by the Secretariat. A copy of the public comment in electronic form is preferred.

6.5 Review: The Secretariat shall be responsible for reviewing all submitted public comments from an editorial and technical viewpoint similar to the review of code change proposals (See Section 4.2).

6.5.1 Incomplete Public Comment: When a public comment is submitted with incorrect format, without the required information or judged as not in compliance with these Rules of Procedure, the public comment shall not be processed. The Secretariat shall notify the public commenter of the specific deficiencies and the public comment shall be held until the deficiencies are corrected, or the public comment shall be returned to the public commenter with instructions to correct the deficiencies with a final date set for receipt of the corrected public comment.

6.5.2 Duplications: On receipt of duplicate or parallel public comments, the Secretariat may consolidate such public comments for Final Action Consideration. Each public commenter shall be notified of this action when it occurs.

6.5.3 Deadline: Public comments received by the Secretariat after the deadline set for receipt shall not be published and shall not be considered as part of the Final Action Consideration.

6.6 Publication: The public hearing results on code change proposals that have not been public commented and the code change proposals with public commented public hearing results and successful assembly actions shall constitute the Final Action Agenda. The Final Action Agenda shall be posted on the ICC website at least 30 days prior to Final Action consideration.

7.0 Final Action Consideration

7.1 Intent: The purpose of Final Action Consideration is to make a final determination of all code change proposals which have been considered in a code development cycle by a vote cast by eligible voters (see Section 7.4).

7.2 Agenda: The final action consent agenda shall be comprised of proposals which have neither an assembly action nor public comment. The agenda for public testimony and individual consideration shall be comprised of proposals which have a successful assembly action or public comment (see Sections 5.7 and 6.0).

7.3 Procedure: *The Robert's Rules of Order* shall be the formal procedure for the conduct of the Final Action Consideration except as these Rules of Procedure may otherwise dictate.

7.3.1 Open Meetings: Public hearings for Final Action Consideration are open meetings. Any interested person may attend and participate in the Floor Discussion.

7.3.2 Agenda Order: The Secretariat shall publish an agenda for Final Action Consideration, placing individual code change proposals and public comments in a logical order to facilitate the hearing. The proponents or opponents of any proposal or public comment may move to revise the agenda order as the first order of business at the public hearing, or at any time during the hearing except while another proposal is being discussed. Preference shall be given to grouping like subjects together and for moving items back to a later position on the agenda as opposed to moving items forward to an earlier position. A motion to revise the agenda order is subject to a 2/3 vote of those present and voting.

7.3.3 Presentation of Material at the Public Hearing: Information to be provided at the hearing shall be limited to verbal presentations. Each individual presenting information at the hearing shall state their name and affiliation, and shall identify any entities or individuals they are representing in connection with their testimony. Audio-visual presentations are not permitted. Substantiating material submitted in accordance with Section 6.4.4 and other material submitted in response to a code change proposal or public comment shall be located in a designated area in the hearing room.

7.3.4 Final Action Consent Agenda: The final action consent agenda (see Section 7.2) shall be placed before the assembly with a single motion for final action in accordance with the results of the public hearing. When the motion has been seconded, the vote shall be taken with no testimony being allowed. A simple majority (50% plus one) based on the number of votes cast by eligible voters shall decide the motion.

7.3.5 Individual Consideration Agenda: Upon completion of the final action consent vote, all proposed changes not on the final action consent agenda shall be placed before the assembly for individual consideration of each item (see Section 7.2).

7.3.6 Reconsideration: There shall be no reconsideration of a proposed code change after it has been voted on in accordance with Section 7.3.8.

7.3.7 Time Limits: Time limits shall be established as part of the agenda for testimony on all proposed changes at the beginning of each hearing session. Each person requesting to testify on a change shall be given equal time. In the interest of time and fairness to all hearing participants, the Moderator shall have limited authority to modify time limitations on debate. The Moderator shall have the authority to adjust time limits as necessary in order to complete the hearing agenda.

7.3.7.1 Time Keeping: Keeping of time for testimony by an individual shall be by an automatic timing device. Remaining time shall be evident to the person testifying. Interruptions during testimony shall not be tolerated. The Moderator shall maintain appropriate decorum during all testimony.

7.3.8 Discussion and Voting: Discussion and voting on proposals being individually considered shall be in accordance with the following procedures:

7.3.8.1 Allowable Final Action Motions: The only allowable motions for final action are Approval as Submitted, Approval as Modified by one or more modifications published in the Final Action Agenda, and Disapproval.

7.3.8.2 Initial Motion: The Code Development Committee action shall be the initial motion considered.

7.3.8.3 Motions for Modifications: Whenever a motion under consideration is for Approval as Submitted or Approval as Modified, a subsequent motion and second for a modification published in the Final Action Agenda may be made (see Section 6.4.3). Each subsequent motion for modification, if any, shall be individually discussed and voted before returning to the main motion. A two-thirds majority based on the number of votes cast by eligible voters shall be required for a successful motion on all modifications.

7.3.8.4 Voting: After dispensing with all motions for modifications, if any, and upon completion of discussion on the main motion, the Moderator shall then ask for the vote on the main motion. If the motion fails to receive the majority required in Section 7.5, the Moderator shall ask for a new motion.

7.3.8.5 Subsequent Motion: If the initial motion is unsuccessful, a motion for one of the other allowable final actions shall be made (see Section 7.3.8.1) and dispensed with until a successful final action is achieved. If a successful final action is not achieved, Section 7.5.1 shall apply.

7.3.9 Proponent testimony: The Proponent of a public comment is permitted to waive an initial statement. The Proponent of the public comment shall be permitted to have the amount of time that would have been allocated during the initial testimony period plus the amount of time that would be allocated for rebuttal. Where a public comment is submitted by multiple proponents, this provision shall permit only one proponent of the joint submittal to waive an initial statement.

7.3.10 Points of Order: Any person participating in the public hearing may challenge a procedural ruling of the Moderator. A majority vote of the eligible voters as determined in Section 5.7.4 shall determine the decision.

7.4 Eligible voters: ICC Governmental Member Representatives and Honorary Members in attendance at the Final Action Hearing shall have one vote per eligible attendee on all International Codes. Applications for Governmental Membership must be received by the ICC by April 1st of the applicable year in order for its designated representatives to be eligible to vote at the Final Action Hearing. Applications, whether new or updated, for governmental member voting representative status must be received by the Code Council thirty (30) days prior to the commencement of the first day of the Final Action Hearing in order for any designated representative to be eligible to vote. An individual designated as a Governmental Member Voting Representative shall provide sufficient information to establish eligibility as defined in the ICC Bylaws. The Executive Committee of the ICC Board, in its discretion, shall have the authority to address questions related to eligibility. Decisions of the Executive Committee shall be final and not appealable pursuant to CP 1, other than claims of fraud or misrepresentation, supported by reasonably credible evidence, that were material to the outcome of the Final Action Hearing.

7.5 Majorities for Final Action: The required voting majority based on the number of votes cast of eligible voters shall be in accordance with the following table:

Committee Action (see note)	**Desired Final Action**		
	AS	**AM**	**D**
AS	Simple Majority	2/3 Majority	Simple Majority
AM	2/3 Majority	Simple Majority to sustain the Public Hearing Action or; 2/3 Majority on additional modifications and 2/3 on overall AM	Simple Majority
D	2/3 Majority	2/3 Majority	Simple Majority

7.5.1 Failure to Achieve Majority Vote: In the event that a code change proposal does not receive any of the required majorities for final action in Section 7.5, final action on the code change proposal in question shall be disapproval.

7.6 Publication: The Final action on all proposed code changes shall be published as soon as practicable after the determination of final action. The exact wording of any resulting text modifications shall be made available to any interested party.

8.0 Appeals

8.1 Right to Appeal: Any person may appeal an action or inaction in accordance with CP-1.

2012 ICC CODE DEVELOPMENT CYCLE
CROSS INDEX OF PROPOSED CODE CHANGES

Some of the proposed code changes include sections that are outside of the scope of the chapters or the code listed in the table of 2012/2013 Staff Secretaries on page x. This is done in order to facilitate coordination among the International Codes which is one of the fundamental principles of the International Codes.

Listed in this cross index are proposed code changes that include sections of codes or codes other than those listed on page ix. For example, IBC Section 703.2.3 is proposed for revision in code change S70-12, which is to be heard by the IBC Structural Committee. This section of the IBC is typically the responsibility of the IBC Fire Safety Committee as listed in the table of 2012/2013 Staff Secretaries. It is therefore identified in this cross index. Another example is Section 905.4 of the International Fire Code. The International Fire Code is normally maintained by the IFC Committee, but Section 905.4 will be considered for revision in proposed code change E4-12 which will be placed on the IBC Means of Egress Committee agenda. In some instances, there are other subsections that are revised by an identified code change that is not included in the cross index. For example, numerous sections in Chapter 10 of the International Fire Code would be revised by the proposed changes to Chapter 10 of the IBC. This was done to keep the cross index brief enough for easy reference.

This information is provided to assist users in locating all of the proposed code changes that would affect a certain section or chapter. For example, to find all of the proposed code changes that would affect Chapter 7 of the IBC, review the proposed code changes in the portion of the monograph for the IBC Fire Safety Committee (listed with a FS prefix) then review this cross reference for Chapter 7 of the IBC for proposed code changes published in other code change groups. While care has been taken to be accurate, there may be some omissions in this list.

Letter prefix: Each proposed change number has a letter prefix that will identify where the proposal is published. The letter designations for proposed changes and the corresponding publications are as follows:

PREFIX	**PROPOSED CHANGE GROUP (see monograph table of contents for location)**
ADM	Administrative
E	International Building Code - Means of Egress
EB	International Existing Building Code
CE	International Energy Conservation Code – Commercial
RE	International Energy Conservation Code – Energy
F	International Fire Code
FG	International Fuel Gas Code
FS	International Building Code - Fire Safety
G	International Building Code – General
GEW	International Green Construction Code – Energy/Water
GG	International Green Construction Code – General
M	International Mechanical Code
PC	ICC Performance Code
P	International Plumbing Code
PSD	International Private Sewage Disposal Code
PM	International Property Maintenance Code
RE	International Residential Code - Building
RM	International Residential Code - Mechanical
RP	International Residential Code - Plumbing
S	International Building Code – Structural
SP	International Swimming Pool and Spa Code
WUIC	International Wildland-Urban Interface Code
Z	International Zoning Code

International Building Code		907.2.10.1	G71
		907.2.13.2	E4
101.4	G201	907.5.2.2	E4
101.4.7 (New)	G201	909.4.6	G32 Part II
104.11.3 (New)	FS73	909.9	S70
107.2.6	G198	909.18	S113, S117
110.3.5	S304	909.20	E4, E5
116.5	G201	909.21.7	S113
202	P27, P29	911.1.5	E4
403.5	E4, E7	1003.2	G62
404.6	FS41, FS99	Table 1004.1.2	G193
405.7.1	E3	1004.3	S90
410.6.1	E3	1005.7.2	G73
411.7	E3	1007.1	G237
414.7.2	E3	1007.6	G57
505.2.3	E7	1009.3	FS51, FS99
505.3	E101	1015.2.1	G85
703.2.3	S70	1015.4	G57
706.1	G103	1015.5	G57
707.5.1	E7	Table 1016.2	G32 Part I, G87
707.6	E4	1018.1	G31 Part I
707.7.1	E4	Table 1018.1	G32 Part I
709.5	G31 Part I	Table 1018.2	G32 part I
710.8	G32 Part I	1018.4	G32 Part I
711.4	E7	Table 1021.2(2)	G57
712.1.8	G32 Part I, G54, E7	1022.7	G85
712.1.12	E7	1027.1	G175
713.1	E4, E7	1203.1	M36, M37, M38, M39
713.14.1	G32 Part I, E110	1205.4	E4
713.14.1.2 (new)	G174 Part III	1207.1	E4
Table 716.5	G51, E4	1403.7	S102, S103
716.5.3	E3	1404.13 (New)	S309
717.5.5	G32 Part I	1507.16	G98
718.2.4	E4	1507.16.1	G98
722.5	S238	1508.1	FS178
Table 803.9	E4	1609.1.2	G199
901.5	S90	1808.7.3	G193
903.2.6	G31 Part II, G32 Part II	2103.15(New)	FS177
903.2.8	G31 Part II	2110.1.1	E4
903.2.8.1	G31 Part II	2303.1.4 (new)	G142 Part II
903.2.8.2 (new)	G31 Part II	2308.12.7	E4
903.2.8.2	G31 Part II	2405.3	G199
903.2.8.3 (new)	G31 Part II	2406.4	G193
903.3.1.3	G31 Part II	2406.4.5	G193
903.3.2	G32 Part II	2406.4.6	E4
905.3.3	E4	2406.4.7	E4
905.4	E4	2607.4	G199
906.2	G71	2609.4	G193, G199
Table 906.3(1)	G71	Table 2902.1.2 (New)	P27
Table 906.3(2)	G71	2902.2	P34
907.2.6	G32 Part II, G71	2902.3	P35
907.2.6.1	G31 Part II	2902.3.1	P36
907.2.6.4 (new)	G32 Part II	2902.3.5	P37

International Building Code (continued)

2902.4.1	P39
2902.6 (New)	P30
Table 2902.1.2 (New)	P27
3007.7	E110
3007.9	FS138
3008.7	E110
3008.9	FS138
3111.1	S3
3306.8	S90
3311.1	E4
3401.2	S90
3406.1.3	E4
3406.4	E4
3411.8.4	E4
3411.8.15	E211

International Fire Code

202	G1, G2, G11, G13, G31 Part I, G32 Part I, G43, G70
Definition of Group A	G27
Definition of Group B	G28, G29, G30
Definition of Group E	G27
Definition of Group I	G31 Part I, G32 Part I, G33, G34, G35, G36, G37
Definition of Group R	G31 Part I, G34, G36, G38, G39, G40, G41
Definition of Group S	G42
508.1.5	E4
604.2.16 (new)	G77
903.2.6	G31 Part II, G32 Part II
903.2.8	G31 Part II
903.2.8.1	G31 Part II
903.2.8.2 (new)	G31 Part II
903.2.8.2	G31 Part II
905.3.3	E4
905.4	E4
903.2.8.3 (new)	G31 Part II
903.3.1.3	G31 Part II
903.3.2	G32 Part II
906.2	G71
Table 906.3(1)	G71
Table 906.3(2)	G71
907.2.6	G32 Part II, G71
907.2.6.1	G31 Part II
907.2.6.4 (new)	G32 Part II
907.2.10.1	G71
907.2.13.2	E4
907.5.2.2	E4
909.4.6	G32 Part II
1003.2	G62
Table 1004.1.2	G193
1005.7.2	G73
1007.1	G237
1007.6	G57
1015.2.1	G85
1015.4	G57
1015.5	G57
Table 1016.2	G32 Part I, G87
1018.1	G31 Part I
Table 1018.1	G32 Part I
Table 1018.2	G32 part I
1018.4	G32 Part I
Table 1021.2(2)	G57
1022.7	G85
1027.1	G175
1104.6.1	E4
1104.9	E4
1104.10	E4
1104.12	E4
1104.16	E4
1104.20	E4
1104.21	E4
1104.23	E4
3313.1	E4
5005.4.4	E3
5704.2.9.4	E4
5706.5.1.12	E4

INTERNATIONAL PLUMBING CODE

202	G8, G193 Part IV, P3(HEARD BY IBC-S)
309.2	P20 (HEARD BY IBC-S)
403.3.3	G71
403.3.4	G71
403.5	G71
423.1	G193 Part IV
612.1	G193 Part IV
801.1	G193 Part IV
802.1.4	G193 Part IV

INTERNATIONAL MECHANICAL CODE

202	G8
304.11	E108
306.5.1	E4
403.2.1	G193 Part II
Table 403.3	G193 Part II
601.3	E228, E229
901.5	FG3

INTERNATIONAL MECHANICAL CODE (continued)	
901.6	FG3
926.2	FG38
926.3	FG38
1107.2	E4
1401.1	G193 Part II
INTERNATIONAL FUEL GAS CODE	
202	G8
306.5.1	E4
614.6	M71
Section 617	G193 Part III
617.1	G193 Part III
629.1	M169
INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE	
202	G8, P228 (HEARD BY IBC-S)
401.3.2	G193 Part IV
Table 406.1	G193 Part IV
Table 604.1(2)	G193 Part IV
Table 802.7.2	G193 Part IV
Table 802.8	G193 Part IV
INTERNATIONAL EXISTING BUILDING CODE	
Chapters 3 through 14	G205
202	G23, G24
402.1	G210
402.4	G211
403.1	G210, G212
403.3 (new)	G213 Part I
403.3.1 (new)	G213 Part I
403.3.2 (new)	G213 Part I
403.3.3 (new)	G213 Part I
403.4	G211
403.4.1(new)	G214
403.4.5 (new)	G215, G216, G217
403.5 (new)	G218
403.7 (new)	G219
403.7.1(new)	G219
403.7.2(new)	G219
403.7.3(new)	G219
404.1	G212
404.2 (new)	G220
404.2	G221 Part I
404.2.1	G211
404.2.2	G222
404.3	G223
404.3.1	G224 Part I
404.4	G222
404.2.3	G211, G212
404.5	G212
406.1	G225, G226
410.5.1(new)	G235
410.6	G235, G236, G237
410.7	G237, G238, G240
410.7.1	G240
410.8	G239, E211
410.8 (new)	G237
410.8.1 (new)	G237
410.8.4	G241
410.8.6	G242
410.8.9	G235, G236
410.8.11	G243
606.2.2	G221 Part II
606.2.3.1	G224 Part II
907.2	G213 Part II
907.2.1	G213 Part II
907.2.2	G213 Part II
1401.2	G244
1401.2.5	G245
1401.3.2	G246
Table 1401.3.2(new)	G246
1401.6	G244
1401.6.1	G101
1401.6.1.1	G101
1401.6.2	G101, G244
1401.6.2.1	G101
1401.6.4	G244
Table 1401.6.4	G244
1401.6.5	G244
Table 1401.6.5	G57, G244
1401.6.6	G51
1401.6.7	G244
1401.6.8	G244
Table 1401.6.8	G244
1401.6.8.1	G244
1401.6.9	G244
Table 1401.6.9	G244
1401.6.10	G244
Table 1401.6.10	G244
1401.6.11	G244
Table 1401.6.11	G244
1401.6.12	G244
Table 1401.6.12	G244
1401.6.12.1	G244
1401.6.16	G244
1401.6.16.1	G244
1401.6.17	G244
Table 1401.6.17	G244
1401.6.18	G244
Table 1401.6.18	G244
1401.6.20 (new)	G244
Table 1401.6.20 (new)	G244
1401.6.21 (new)	G244

INTERNATIONAL EXISTING BUILDING CODE (continued)	
Table 1401.6.21.1 (new)	G244
1401.6.21.1.1(new)	G244
1401.6.21.2(new)	G244
Table 1401.6.21.2(new)	G244
1401.6.21.2.1(new)	G244
1401.6.21.3(new)	G244
Table 1401.6.21.3	G244
1401.6.21.3.1(new)	G244
Table 1401.7	G244
1401.8	G244
Table 1401.8	G244

2012 GROUP A CODE DEVELOPMENT HEARING SCHEDULE
April 29 – May 8, 2012
Sheraton Dallas Hotel

Unless noted by "Start no earlier than X am," each Code Committee will begin immediately upon completion of the hearings for the prior Committee. Thus the actual start times for the various Code Committees are tentative. The hearing volume is higher than previous cycles. The schedule anticipates that the hearings will finish by the times noted as "Finish" for each track.

Please note that the hearing start on Sunday, April 29th has been revised from 10:00 am to 12:00 pm from the originally posted version. Prior to the hearings starting at noon on Sunday, the following is also scheduled:

- Membership Councils: 8:00 am – 10:00 am
- CDP ACCESS update (Expanding code development participation): 10:15 am – 11:15 am

For more information on the scheduling of these two activities, be sure to check the link to the Member Committees page on the ICC Website: http://www.iccsafe.org/membership/pages/committees.aspx

	Sunday April 29	Monday April 30	Tuesday May 1	Wednesday May 2	Thursday May 3
TRACK 1	Start 12 pm IBC - FS End 9 pm	Start 8 am IBC - FS End 9 pm	Start 8 am IBC - FS IBC – G (Start no earlier than 8 am) End 9 pm	Start 8 am IBC - G End 9 pm	Start 8 am IBC – G IBC - E (Start no earlier than 8 am) End 9 pm
TRACK 2	Start 12 pm IFGC IPC/IPSDC End 9 pm	Start 8 am IPC/IPSDC End 9 pm	Start 8 am IPC/IPSDC IMC (Start no earlier than 8 am) End 9 pm	Start 8 am IMC End 9 pm	Start 8 am IMC IEBC – S (Start no earlier than 8 am) IBC – S End 9 pm

	Friday May 4	Saturday May 5	Sunday May 6	Monday May 7	Tuesday May 8
TRACK 1	Start 8 am IBC - E End 9 pm	Start 8 am IBC – E End 9 pm	Start 8 am IBC – E Finish 12 pm		
TRACK 2	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC – S Finish 12 pm

Notes:
1. IEBC – S: Structural provisions in the IEBC to be heard by the IBC – Structural Code Committee.
2. Hearing times may be modified at the discretion of the Chairman.
3. Breaks will be announced. Lunch and dinner breaks planned for each track. There will not be a lunch break on Sunday, April 29th.

2012 PROPOSED CHANGES TO THE INTERNATIONAL CODES

CODE **PAGE**

2012 PROPOSED CHANGES TO THE INTERNATIONAL PLUMBING CODE

PLUMBING CODE COMMITTEE

Dave Cantrell, *Chair*
Chief Plumbing Inspector
Public Health – Seattle & King County
Seattle, WA

Charles E. Gerber, Vice Chair
Plumbing and Mechanical Inspector Supervisor
County of Henrico
Henrico, VA

John R. Addario, PE
Senior Building Construction Engineer
NYS Department of State, Division of Code Enforcement and Administration
Albany, NY

Paul R. Bladdick, MP
Vice President & Master Plumber
The LPB Co. Inc.
White Lake, MI

David DeBord, CPD, LEED-AP, ARCSA-AP
Rep: American Society of Plumbing Engineers
David E. DeBord
Plumbing and Fire Protection Engineer
Chicago, IL

Gene Paul Drake
Combination Building Inspector
City of McKinney
McKinney, TX

James C. Finley, PE
Rep: Plumbing-Heating-Cooling Contractors Association
President
C.N. Finley
New Orleans, LA

Robert G. Konyndyk
Chief, Plumbing Division, Bureau of Construction Codes, Dept. of Licensing and Regulatory Affairs
Lansing, MI

Paul Michelsohn, Jr.
Rep: National Association of Home Builders
President
Michelsohn & Daughter Const. Inc.
Anchorage, AK

Louis P. Pody
Rep: Southwestern Wisconsin Building Inspectors Association
Business Representative
Plumbers Local 75
Beloit, WI

John A. Robitaille, CBO
Certified Building and Site Inspector
Wilmington, DE

Carrie Rouleau-Cote
Building Inspector/Code Enforcement Officer
Town of Auburn, New Hampshire
Auburn, NH

Bob Scott, MP
Plumbing Inspector III
State of Colorado Examining Board of Plumbers
Denver, CO

Len Swatkowski
Technical Director
Plumbing Manufacturers International
Rolling Meadows, IL

Troy D. Vassos, Phd., PE
President & Senior Environmental Engineer
NovaTec Consultants, Inc.
Vancouver, Canada

Staff Secretariat:
Fred Grable, PE
Staff Engineer - Plumbing
International Code Council
Country Club Hills, IL

TENTATIVE ORDER OF DISCUSSION
2012 PROPOSED CHANGES TO THE
INTERNATIONAL PLUMBING/PRIVATE SEWAGE DISPOSAL CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IPC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes.

P = *International Plumbing Code*
PSD = *International Private Sewage Disposal Code*

P118-12: NUMBER NOT USED
P151-12: NUMBER NOT USED

P1-12
P2-12
P4-12
P5-12
P6-12
P7-12
P8-12
P9-12
P10-12
P11-12
P12-12
P13-12
P14-12
P15-12
P16-12
P17-12
P18-12
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P44-12
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P216-12
P217-12
P218-12
P219-12
P220-12
P221-12
P222-12
P223-12
P224-12
P225-12
P226-12
P227-12
P230-12

P1 – 12
202

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

Revise as follows:

BACKFLOW PREVENTER. A backflow prevention assembly, a backflow prevention device or other means or method to prevent backflow into the potable water supply.

Reason: This definition is used throughout the code. However, it does not define to the user of the code, how to specifically identify or apply proper "protection" to a use or connection. Industry standards differentiate between backflow prevention devices and backflow prevention assemblies. A backflow prevention assembly is a specific type of mechanical backflow prevention protection which is field testable and repairable in-line, with shutoff valves and test cock fittings.

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

P1-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 BACKFLOW PREVENTER-P-MOSS

P2– 12
202

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

Revise as follows:

CONTAMINATION. A~~n~~ high hazard or health hazard impairment of the quality of the potable water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids or waste.

Reason: The code does not define "high hazard" or health hazard, however, the term is used as a footnote for Table 608.1. This terminology is required to more correctly determine the type of backflow prevention assembly, backflow prevention device, means or method which is required for the protection of the water system to ensure protection of public health.

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

P2-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 CONTAMINATION-P-MOSS

P3 – 12
202

THIS CODE CHANGE PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE HEARING ORDER FOR THE IBC STRUCTURAL DEVELOPMENT COMMITTEE.

Proponent: John Ingargiola and Gregory Wilson, representing Department of Homeland Security, Federal Emergency Management Agency (john.ingargiola@dhs.gov, gregory.p.wilson@dhs.gov), Rebecca Quinn, RCQuinn Consulting, Inc., representing Federal Emergency Management Agency (rcquinn@earthlink.net).

Revise as follows:

[B] DESIGN FLOOD ELEVATION. The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map. <u>In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building's* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).</u>

Reason: This definition is controlled by the IBC; this proposal brings the IPC, IMC, IFGC, and IPSDC definitions in line with the term as defined by the IBC.

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

P3-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-P-DESIGN FLOOD ELEVATION-INGARGIOLA-WILSON.doc

P4 – 12
202

Proponent: James Paschal, Paschal Engineering representing himself (Jim@PaschalEngineering.com)

Revise as follows:

MECHANICAL JOINT. A connection between pipes, fittings, or pipes and fittings that is not screwed, caulked, threaded, soldered, solvent cemented, brazed, ~~or~~ welded, or heat-fused. A joint in which compression is applied along the centerline of the pieces being joined. In some applications, the joint is part of a coupling, fitting, or adapter.

Reason: Heat fusion is now a defined type of joint for plastic piping, and is considered separate from welding because there is not any additional filler material used in forming the joint. However, heat-fusion joints are not mechanical joints and as such should be excluded from the definition of mechanical joints.

Cost Impact: None

P4-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 MECHANICAL JOINT-P-PASCHAL

P5– 12
202

Proponent: Robert G. Konyndyk, Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan, representing The Bureau of Construction Codes (konyndykr@michigan.gov)

Revise as follows:

PLUMBING SYSTEMS. Includes the water ~~supply and~~ distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil, waste and vent pipes; ~~and sanitary and storm sewers~~ and building drains; in addition to their respective connections, devices and appurtenances within a structure or premises~~.~~; and the water service, building sewer and building storm sewer serving such structure or premises.

Reason: This code change revision will improve the code by providing greater clarity. The code proposal revision will not add or delete any of the current areas identified in the code. It will rearrange the items to enhance the understanding that water supplies, storm sanitary and storm sewers are located outside the structures. They are however identified in the code and remain critical to the operation of structures.

Cost Impact: The revision will not affect construction costs and may reduce construction planning costs.

P5-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 PLUMBING SYSTEMS-P-KONYNDYK

P6 – 12
202

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

Revise as follows:

POLLUTION. A~~n~~ low hazard or non-health hazard impairment of the quality of the potable water to a degree that does not create a hazard to the public health, but that does adversely and unreasonably affect the aesthetic qualities of such potable water supply for domestic use.

Reason: The code does not define "low hazard" or non-health, however, the term is used in Table 608.1 as a footnote. This terminology is required to more correctly determine the type of backflow prevention assembly, backflow prevention device, means or method which is required for the protection of the water system to ensure protection of public health.

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

P6-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 POLLUTION-P-MOSS

P7 – 12
202

Proponent: Windell F. Peters, representing the Georgia State Inspectors Association (windellf@bellsouth.net)

Revise as follows:

Public sewer. ~~A common sewer directly controlled by public authority.~~ <u>That part of the drainage system of pipes, installed and maintained by a city, township, county, public utility company or other public entity, and located on public property, in the street or in an approved dedicated easement of public or community use.</u>

Reason: The AHJ requires approval before work can be performed on any utilities under their control. The IPC references public sewer and water main numerous times. The current definition of Public Sewer does not adequately define the term. Water mains and public sewers are controlled by local government and located in an area controlled by them as well. The definition of public sewer should be as detailed as the current definition of water main
for clarity purposes.

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

P7-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 PUBLIC SEWER-P-PETERS

P8 – 12
202

Proponent: Dana Bres, P.E, U.S. Department of Housing and Urban Development representing the U.S. Department of Housing and Urban Development (dana.b.bres@hud.gov)

Add new definition as follows:

TANKLESS WATER HEATER. A non-storage water heating appliance or equipment that heats potable water on demand and supplies such water to the potable *hot water* distribution system.

Reason: Tankless water heaters are becoming more common in construction. The term is not defined although the term is used in section 501.6 and in proposed changes elsewhere. This definition would not include instantaneous point of use heaters as those systems would not supply hot water to the distribution system of a building.

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

P8-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 TANKLESS WATER HEATER-P-BRES

P9– 12
202

Proponent: Bob Adkins, Prince William County VA Representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (radkins@pwcgov.org)

Add new definition as follows:

<u>**TOILET FACILITY.** A room or space that contains not less than one water closet and one lavatory.</u>

Reason: A definition for "toilet facility" is needed. The term is found in the code 27 times but yet the never really provides a clear indication of what is intended in each case its mentioned.

Cost Impact: none

P9-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 TOILET FACILITY-P-ADKINS

P10 – 12
202

Proponent: Shawn Strausbaugh, Arlington County VA representing the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Add new definition as follows:

<u>**WASTE RECEPTOR.** A floor sink, standpipe, hub drain or a floor drain that receives the discharge of one or more indirect waste pipes.</u>

Reason: A definition for “waste receptor” is needed. The term is found in the code 24 times with no exact description. Also, see coordinated proposed change in Chapter 8 based on this definition.

Cost Impact: None

P10-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202 WASTE RECEPTOR (NEW)-P-STRAUSBAUGH

P11 – 12

202, 301.3, Chapter 13, Chapter 13 (New), Chapter 14 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new definitions as follows:

STORAGE TANK. A fixed container for holding water at atmospheric pressure for subsequent reuse as part of a plumbing or irrigation system.

RECLAIMED WATER. *Non-potable water* that has been derived from the treatment of wastewater by a facility or system licensed or permitted to produce water meeting the jurisdiction's water requirements for its intended uses. Also known as "Recycled Water."

ONSITE NON-POTABLE WATER REUSE SYSTEMS. Water systems for the collection, treatment, storage, distribution, and reuse of non-potable water generated onsite, including but not limited to graywater systems. This definition does not include rainwater harvesting systems.

DISTRIBUTION PIPE. Pressurized or non-pressure piping used within the plumbing system of a building to deliver rainwater or graywater from the *storage tank* or pump to the point of use.

COLLECTION PIPE. Unpressurized pipe used within the collection system that drains onsite non-potable water or rainwater to a storage tank by gravity.

ALTERNATE ON–SITE NON-POTABLE WATER. Non-potable water from other than public utilities, onsite surface sources and subsurface natural freshwater sources. Examples of such water are graywater, on-site reclaimed water, collected rainwater, captured condensate, and rejected water from reverse osmosis systems.

METER. A measuring device used to collect data and indicate water usage.

RAINWATER. Water from natural precipitation.

Revise as follows:

301.3 Connections to drainage system. Plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems required by Chapter 8.

> **Exception:** Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved ~~gray water~~ system in accordance with Chapter 13 and 14 ~~for flushing of water closets and urinals or for subsurface landscape irrigation~~.

Delete existing Chapter 13 and substitute as follows:

~~**CHAPTER 13**~~
~~**GRAY WATER RECYCLING SYSTEMS**~~

CHAPTER 13
NON-POTABLE WATER SYSTEMS

SECTION 1301

GENERAL

1301.1 Scope. The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment, and distribution of non-potable water. The use and application of non-potable water shall comply with laws, rules and ordinances applicable in the jurisdiction.

1301.2 Water quality. Non-potable water for each end use application shall meet the minimum water quality requirements as established for the intended application by the laws, rules and ordinances applicable in the jurisdiction. Where *non-potable* water from different sources is combined in a system, the system shall comply with the most stringent of the requirements of this code that are applicable to such sources.

1301.2.1 Residual disinfectants. Where chlorine is used for disinfection, the *non-potable* water shall contain not more than 4 mg/L of chloramines or free chlorine when tested in accordance with ASTM D1253. Where ozone is used for disinfection, the *non-potable* water shall not contain gas bubbles having elevated levels of ozone at the point of use.

1301.2.2 Filtration required. *Non-potable* water utilized for water closet and urinal flushing applications shall be filtered by a 100 micron or finer filter.

> **Exception:** Reclaimed water sources shall not be required to comply with the requirements of 1301.2.1 and 1301.2.2.

1301.3 Signage required. All non-potable water outlets such as hose connections, open ended pipes, and faucets shall be identified at the point of use for each outlet 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 1301.3 shall appear on the signage required by this section.

Figure 1301.3 – Pictograph DO NOT DRINK

1301.4 Permits. *Permits* shall be required for the construction, installation, *alteration*, and *repair* of non-potable water systems. *Construction documents*, engineering calculations, diagrams, and other such data pertaining to the non-potable water system shall be submitted with each application for *permit*.

1301.5 Potable water connections. Where a *potable* system is connected to a non-potable water system, the *potable* water supply shall be protected against backflow in accordance with Section 608.

1301.6 Approved components and materials. Piping, plumbing components, and materials used in the collection and conveyance systems shall be manufactured of material *approved* for the intended application and compatible with any disinfection and treatment systems used.

1301.7 Insect and vermin control. The system shall be protected to prevent the entrance of insects and vermin into *storage tanks* and piping systems. Any screen materials shall be compatible with contacting system components and shall not accelerate corrosion of system components.

1301.8 Freeze protection. Where sustained freezing temperatures occur, provisions shall be made to keep *storage tanks* and the related piping from freezing.

1301.9 Non-potable water storage tanks. Where used, non-potable water *storage tanks* shall comply with Sections 1301.9.1 through 1301.9.11.

1301.9.1 Sizing. The holding capacity of the *storage tank* shall be sized in accordance with the anticipated demand.

1301.9.2 Location. *Storage tanks* shall be installed above or below grade. Above grade *storage tanks* shall be protected from direct sunlight and shall be constructed using opaque, UV resistant, materials such as, but not limited to, heavily tinted plastic, fiberglass, lined metal, concrete, wood, or painted to prevent algae growth, or shall have specially constructed sun barriers including but not limited to installation in garages, crawlspaces, or sheds. *Storage tanks* and their manholes shall not be located directly under any soil or waste piping or any source of contamination.

1301.9.3 Materials. Where collected onsite, water shall be collected in an *approved* tank constructed of durable, nonabsorbent and corrosion-resistant materials. The *storage tank* shall be constructed of materials compatible with any disinfection systems used to treat water upstream of the tank and with any systems used to maintain water quality within the tank. Wooden *storage tanks* that are not equipped with a makeup water source shall be provided with a flexible liner.

1301.9.4 Foundation and supports. *Storage tanks* shall be supported on a firm base capable of withstanding the *storage tank's* weight when filled to capacity. *Storage tanks* shall be supported in accordance with the *International Building Code*.

1301.9.4.1 Ballast. Where the soil can become saturated, an underground *storage tank* shall be ballasted, or otherwise secured, to prevent the tank from floating out of the ground when empty. The combined weight of the tank and hold down ballast shall meet or exceed the buoyancy force of the tank. Where the installation requires a foundation, the foundation shall be flat and shall be designed to support the *storage tank* weight when full, consistent with the bearing capability of adjacent soil.

1301.9.4.2 Structural support. Where installed below grade, *storage tank* installations shall be designed to withstand earth and surface structural loads without damage and with minimal deformation when filled with water or empty.

1301.9.5 Makeup water. Where an uninterrupted supply is required for the intended application, *potable* or reclaimed water shall be provided as a source of makeup water for the *storage tank*. The makeup water supply shall be protected against backflow in accordance with Section 608. A full-open valve located on the makeup water supply line to the *storage tank* shall be provided. Inlets to *storage tank* shall be controlled by fill valves or other automatic supply valves installed so as to prevent the tank from overflowing and to prevent the water level from dropping below a predetermined point. Where makeup water is provided, the water level shall not be permitted to drop below the source water inlet or the intake of any attached pump.

1301.9.6 Overflow. The *storage tank* shall be equipped with an overflow pipe having a diameter not less than that shown in Table 606.5.4 The overflow pipe shall be protected from insects or vermin and shall be discharged in a manner consistent with storm water runoff requirements of the jurisdiction. The overlow piope shall discharge at a sufficient distance from the tank to avoid damaging the tank foundation or the adjacent property. Drainage from overflow pipes shall be directed so as not to freeze on roof walks. The overflow drain shall not be equipped with a shutoff valve. A cleanout shall be provided on each overflow pipe in accordance with Section 708.

1301.9.7 Access. A minimum of one access opening shall be provided to allow inspection and cleaning of the tank interior. Access openings shall have an *approved* locking device or other *approved* method of securing access. Below grade *storage tanks*, located outside of the *building*, shall be provided with either a manhole not less than 24 inches (610 mm) square or a manhole with an inside diameter not less than 24 inches (610 mm) . Manholes shall extend not less than 4 inches above ground or shall be designed to as to prevent water infiltration. Finished grade shall be sloped away from the manhole to divert surface water from the manhole. Each manhole cover shall be secured to prevent unauthorized access. Service ports in manhole covers shall be not less than 8 inches (203 mm) in diameter and shall be a minimum of 4 inches (102 mm) above the finished grade level. The service port be secured to prevent unauthorized access.

> **Exception:** *Storage tanks* under 800 gallons in volume installed below grade shall not be required to be equipped with a manhole, but shall have a service port not less than 8 inches (203 mm) in diameter.

1301.9.8 Venting. *Storage tanks* shall be provided with a vent sized in accordance with Chapter 9 and based on the aggregate diameter of all tank influent pipes. The reservoir vent shall not be connected to sanitary drainage system vents. Vents shall be protected from contamination by means of a U-bend installed with the opening directed downward or an *approved* cap. Vent outlets shall extend a minimum of 4" above grade, or as necessary to prevent surface water from entering the *storage tank*. Vent openings shall be protected against the entrance of vermin and insects in accordance with the requirements of Section 1307.1.

1301.9.9 Draining of tanks. Where tanks require draining for service or cleaning, tanks shall be drained by using a pump or by a drain located at the lowest point in the tank The tank drain pipe shall discharge as required for overflow pipes and shall not be smaller in size than specified in Table 606.5.7. A minimum of one cleanout shall be provided on each drain pipe in accordance with Section 708.

1301.9.10 Marking and signage. Each non-potable water *storage tank* shall be *labeled* with its rated capacity. The contents of *storage tanks* shall be identified with the words "CAUTION: NON-POTABLE WATER – DO NOT DRINK." Where an opening is provided that could allow the entry of personnel, the opening shall be marked with the words, "DANGER – CONFINED SPACE." Markings shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material mounted on the tank or shall be indelibly printed on the tank. The letters of the words shall be not less than 0.5 inches in height and shall be of a color in contrast with the background on which they are applied.

1301.9.11 Storage tank tests. *Storage tanks* shall be tested in accordance with the following:

Storage tanks shall be filled with water to the overflow line prior to and during inspection. All seams and joints shall be left exposed and the tank shall remain water tight without leakage for a period of 24 hours.

1. After 24 hours, supplemental water shall be introduced for a period of 15 minutes to verify proper drainage of the overflow system and verify that there are no leaks.

2. The tank drain shall be observed for proper operation.
3. The makeup water system shall be observed for proper operation and successful automatic shutoff of the system at the refill threshold shall be verified.

1301.10 System abandonment. If the owner of an onsite non-potable water reuse system or *rainwater collection and conveyance system* elects to cease use of, or fails to properly maintain such system, the system shall be abandoned and shall comply with the following:

1. All system piping connecting to a utility-provided water system shall be removed or disabled.
2. The *distribution piping* system shall be replaced with an *approved potable* water supply piping system. Where an existing *potable* pipe system is already in place, the fixtures shall be connected to the existing system.
3. The storage tank shall be secured from accidental access by sealing or locking tank inlets and access points, or filling with sand or equivalent.

1301.11 Trenching requirements for non-potable water piping. Non-potable water collection and distribution piping and reclaimed water piping shall be separated from the *building* sewer and *potable* water piping underground by 5 feet (1524 m) of undisturbed or compacted earth. Non-potable water collection and distribution piping shall not be located in, under or above cesspools, septic tanks, septic tank drainage fields or seepage pits. Buried non-potable water piping shall comply with the requirements of Section 306.

Exceptions:

1. The required separation distance shall not apply where the bottom of the non-potable water pipe within 5 feet (1524 mm) of the sewer is not less than 12 inches (305 mm) above the top of the highest point of the sewer and the pipe materials conforms to Table 702.3.
2. The required separation distance shall not apply where the bottom of the *potable* water service pipe within 5 feet (1524 mm) of the non-potable water pipe is a minimum of 12 inches (305 mm) above the top of the highest point of the non-potable water pipe and the pipe materials comply with the requirements of Table 605.4
3. Non-potable water pipe is permitted to be located in the same trench with a building sewer, provided that such sewer is constructed of materials that comply with the requirements of Table 702.2.
4. The required separation distance shall not apply where a non-potable water pipe crosses a sewer pipe provided that the pipe is sleeved to at least 5 feet (1524 mm) horizontally from the sewer pipe centerline on both sides of such crossing with pipe materials that comply with Table 702.2.
5. The required separation distance shall not apply where a *potable* water service pipe crosses a non-potable water pipe provided that the *potable* water service pipe is sleeved for a distance of at least 5 feet (1524 mm) horizontally from the centerline of the non-potable pipe on both sides of such crossing with pipe materials that comply with Table 702.2.
6. Irrigation piping located outside of a *building* and downstream of the backflow preventer is not required to meet the trenching requirements where non-potable water is used for outdoor applications.

1301.12 Outdoor outlet access. Sillcocks, hose bibs, wall hydrants, yard hydrants, and other outdoor outlets supplied by *non-potable* water shall be located in a locked vault or shall be operable only by means of a removable key.

SECTION 1302
ONSITE NON-POTABLE WATER REUSE SYSTEMS

1302.1 General. The provisions of Section 1302 shall govern the construction, installation, *alteration,* and *repair* of *onsite non-potable water reuse systems* for the collection, storage, treatment and distribution of on-site sources of non-potable water as permitted by the jurisdiction.

1302.2 Sources. Onsite non-potable water reuse systems shall collect waste discharge from only the following sources: bathtubs, showers, lavatories, clothes washers, and laundry trays. Water from other approved non-potable sources including swimming pool backwash operations, air conditioner condensate, rainwater, cooling tower blow-down water, foundation drain water, steam system condensate, fluid cooler discharge water, food steamer discharge water, combination oven discharge water, industrial process water, and fire pump test water shall also be permitted to be collected for reuse by onsite non-potable water reuse systems, as approved by the code official and as appropriate for the intended application.

1302.2.1 Prohibited sources. Wastewater containing urine or fecal matter shall not be diverted to onsite non-potable water reuse systems and shall discharge to the sanitary drainage system of the building or premises in accordance with Chapter 7. Water from reverse osmosis system reject water, water softener discharge water, kitchen sink wastewater, dishwasher wastewater, and wastewater discharged from wet-hood scrubbers shall not be collected for reuse within a to onsite non-potable water reuse systems.

1302.3 Traps. Traps serving fixtures and devices discharging wastewater to to onsite non-potable water reuse systems shall comply with the Section 1002.4.

1302.4 Collection pipe. Onsite non-potable water reuse systems shall utilize drainage piping *approved* for use within plumbing drainage systems to collect and convey untreated water for reuse. Vent piping *approved* for use within plumbing venting systems shall be utilized for vents within the graywater system. Collection and vent piping materials shall comply with Section 702.

1302.3.1 Installation. Collection piping conveying untreated water for reuse shall be installed in accordance with Section 704.

1302.3.2 Joints. Collection piping conveying untreated water for reuse shall utilize joints *approved* for use with the *distribution piping* and appropriate for the intended applications as specified in Section 705.

1302.3.3 Size. Collection piping conveying untreated water for reuse shall be sized in accordance with drainage sizing requirements specified in Section 710.

1302.3.4 Labeling and marking. Additional marking of collection piping conveying untreated water for reuse shall not be required beyond that required for sanitary drainage, waste, and vent piping by the Chapter 7.

1302.5 Filtration. Untreated water collected for reuse shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gage or other *approved* method to provide indication when a filter requires servicing or replacement. Filters shall be installed with shutoff valves installed immediately upstream and downstream to allow for isolation during maintenance.

1302.6 Disinfection. Where the intended application for non-potable water collected onsite for reuse requires disinfection or other treatment or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use. Non-potable water collected onsite containing untreated *graywater* shall be retained in collection reservoirs for a maximum of 24 hours.

1302.7 Storage tanks. *Storage tanks* utilized in onsite non-potable water reuse systems shall comply with Section 1301.9.

1302.7.1 Location. *Storage tanks* shall be located with a minimum horizontal distance between various elements as indicated in Table 1302.7.1.

TABLE 1302.7.1
LOCATION OF NON-POTABLE WATER REUSE STORAGE TANKS

ELEMENT	MINIMUM HORIZONTAL DISTANCE FROM STORAGE TANK (FEET)
Critical root zone (CRZ) of protected trees	2
Lot line adjoining private lots	5
Seepage pits	5
Septic tanks	5
Water wells	50
Streams and lakes	50
Water service	5
Public water main	10

1302.7.3 Outlets. Outlets shall be located at least 4 inches (102 mm) above the bottom of the *storage tank*, and shall not skim water from the surface.

1302.8 Valves. Valves shall be supplied on onsite non-potable water reuse systems in accordance with Sections 1302.8.1 and 1302.8.2.

1302.8.1 Bypass valve. One three-way diverter valve listed and labeled to NSF 50 or other *approved* device shall be installed on collection piping upstream of each *storage tank*, or drainfield, as applicable, to divert untreated onsite reuse sources to the sanitary sewer to allow servicing and inspection of the system. Bypass valves shall be installed downstream of fixture traps and vent connections Bypass valves shall be *marked* to indicate the direction of flow, connection and *storage tank* or drainfield connection. Bypass valves shall be installed in accessible locations. Two shutoff valves shall not be installed to serve as a bypass valve.

1302.8.2 Backwater valve. One or more *backwater valves* shall be installed on each overflow and tank drain pipe. *Backwater valves* shall be in accordance with Section 715.

1302.9 Pumping and control system. Mechanical equipment including pumps, valves and filters shall be easily accessible and removable in order to perform *repair*, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall appropriate for the application and in accordance with Section 604.

1302.10 Water-pressure reducing valve or regulator. Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the nonnpotable water distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section 604.8.

1302.11 Distribution pipe. *Distribution piping* utilized in onsite non-potable water reuse systems shall comply with Sections 1302.11.1 through 1302.11.4.

Exception: Irrigation piping located outside of the *building* and downstream of a backflow preventer.

1302.11.1 Materials, joints and connections. *Distribution piping* shall conform to the standards and requirements specified in Section 605.

1302.11.2 Design. Onsite non-potable water reuse distribution piping systems shall be designed and sized in accordance with Section 604 for the intended application.

1302.11.3 Marking. Onsite non-potable water distribution piping labeling and marking shall comply with Section 608.8.

1302.12 Tests and inspections. Tests and inspections shall be performed in accordance with Sections 1302.12.1 through 1302.12.6.

1302.12.1 Collection pipe and vent test. Drain, waste and vent piping used for onsite water reuse systems shall be tested in accordance with Section 312.

1302.12.2 Storage tank test. *Storage tanks* shall be tested in accordance with the Section 1301.9.11.

1302.12.3 Water supply system test. The testing of makeup water supply piping and *distribution piping* shall be conducted in accordance with Section 312.5.

1302.12.4 Inspection and testing of backflow prevention assemblies. The testing of backflow preventers and *backwater valves* shall be conducted in accordance with Section 312.10.

1302.12.5 Inspection vermin and insect protection. Inlets and vents to the system shall be inspected to verify that each is protected to prevent the entrance of insects and vermin into the *storage tank* and piping systems in accordance with Section 1301.7.

1302.12.6 Water quality test. The quality of the water for the intended application shall be verified at the point of use in accordance with the requirements of the *jurisdiction*.

1302.13 Operation and maintenance manuals. Operations and maintenance materials shall be supplied with non-potable onsite water reuse systems in accordance with Sections 1302.13.1 through 1302.13.4.

1302.13.1 Manual. A detailed operations and maintenance manual shall be supplied in hardcopy form with all systems.

1302.13.2 Schematics. The manual shall include a detailed system schematic, locations of all system components, and a list of all system components including manufacturer and model number.

1302.13.3 Maintenance procedures. The manual shall provide a maintenance schedule and procedures for all system components requiring periodic maintenance. Consumable parts including filters shall be noted along with part numbers.

1302.13.4 Operations procedures. The manual shall include system startup and shutdown procedures. The manual shall include detailed operating procedures for the system.

SECTION 1303
NON-POTABLE RAINWATER COLLECTION AND DISTRIBUTION SYSTEMS

1303.1 General. The provisions of Section 1303 shall govern the construction, installation, *alteration,* and *repair* of *rainwater collection and conveyance systems* for the collection, storage, treatment and distribution of rainwater for non-potable applications, as permitted by the jurisdiction.

1303.2 Collection surface. *Rainwater* shall be collected only from above-ground impervious roofing surfaces constructed from *approved* materials. Collection of water from vehicular parking or pedestrian surfaces shall be prohibited except where the water is used exclusively for landscape irrigation. Overflow and bleed-off pipes from roof-mounted appliances including but not limited to evaporative coolers, water heaters, and solar water heaters shall not discharge onto *rainwater* collection surfaces.

1303.3 Debris excluders. Downspouts and leaders shall be connected to a *roof washer* and shall be equipped with a debris excluder or equivalent device to prevent the contamination of collected *rainwater* with leaves, sticks, pine needles and similar material. Debris excluders and equivalent devices shall be self-cleaning.

1303.4 Roof washer. A sufficient amount of *rainwater* shall be diverted at the beginning of each rain event, and not allowed to enter the *storage tank*, to wash accumulated debris from the collection surface. The amount of rainfall to be diverted shall be field adjustable as necessary to minimize *storage tank* water contamination. The *roof washer* shall not rely on *manually* operated valves or devices, and shall operate automatically. Diverted *rainwater* shall not be drained to the roof surface, and shall be discharged in a manner consistent with the storm water runoff requirements of the *jurisdiction*. *Roof washers* shall be accessible for maintenance and service.

1303.5 Roof gutters and downspouts. Gutters and downspouts shall be constructed of materials that are compatible with the collection surface and the *rainwater* quality for the desired end use. Joints shall be made water-tight.

1303.5.1 Slope. Roof gutters, leaders, and *rainwater* collection piping shall slope continuously toward collection inlets. Gutters and downspouts shall have a slope of not less than 1/8 inch per foot along their entire length, and shall not permit the collection or pooling of water at any point.

> **Exception:** Siphonic drainage systems installed in accordance with the manufacturer's installation instructions shall not be required to have slope.

1303.5.2 Size. Gutters and downspouts shall be installed and sized in accordance with Section 1106.6 and local rainfall rates.

1303.5.3 Cleanouts. Cleanouts shall be provided in the water conveyance system so as to allow access to all filters, flushes, pipes and downspouts.

1303.6 Drainage. Water drained from the *roof washer* or debris excluder shall not be drained to the sanitary sewer. Such water shall be diverted from the *storage tank* and discharge in a location that will not cause erosion or damage to property in accordance with the *International Building Code*. *Roof washers* and debris excluders shall be provided with an automatic means of self draining between rain events, and shall not drain onto roof surfaces.

1303.7 Collection pipe. Rainwater collection and conveyance systems shall utilize drainage piping *approved* for use within plumbing drainage systems to collect and convey captured rainwater. Vent piping *approved* for use within plumbing venting systems shall be utilized for vents within the rainwater system. Collection and vent piping materials shall comply with Section 702.

1303.7.1 Installation. Collection piping conveying captured rainwater shall be installed in accordance with Section 704.

1303.7.2 Joints. Collection piping conveying captured rainwater shall utilize joints *approved* for use with the *distribution piping* and appropriate for the intended applications as specified in Section 705.

1303.7.3 Size. Collection piping conveying captured rainwater shall be sized in accordance with drainage sizing requirements specified in Section 710.

1303.7.4 Labeling and marking. Additional marking of collection piping conveying captured rainwater for reuse shall not be required beyond that required for sanitary drainage, waste, and vent piping by the Chapter 7.

1303.8 Filtration. Collected rainwater shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gage or other *approved* method to provide indication when a filter requires servicing or replacement. Filters shall be installed with shutoff valves installed immediately upstream and downstream to allow for isolation during maintenance.

1303.9 Disinfection. Where the intended application for rainwater requires disinfection or other treatment or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use. Where chlorine is used for disinfection or treatment, water shall be tested for residual chlorine in accordance with ASTM D1253. The levels of residual chlorine shall not exceed the levels allowed for the intended use in accordance with the requirements of the *jurisdiction*.

1303.10 Storage tanks. *Storage tanks* utilized in non-potable rainwater collection and conveyance systems shall comply with Section 1301.9 and 1303.10.1 through 1303.10.3.

1303.10.1 Location. *Storage tanks* shall be located with a minimum horizontal distance between various elements as indicated in Table 1303.10.1.

TABLE 1303.10.1
LOCATION OF RAINWATER STORAGE TANKS

ELEMENT	MINIMUM HORIZONTAL DISTANCE FROM STORAGE TANK (FEET)
Critical root zone (CRZ) of protected trees	2
Lot line adjoining private lots	5
Seepage pits	5
Septic tanks	5

1303.10.2 Inlets. *Storage tank* inlets shall be designed to introduce collected rainwater into the tank with minimum turbulence, and shall be located and designed to avoid agitating the contents of the *storage tank*.

1303.10.3 Outlets. Outlets shall be located at least 4 inches (102 mm) above the bottom of the *storage tank*, and shall not skim water from the surface.

1303.11 Valves. Valves shall be supplied on rainwater collection and conveyance systems in accordance with Sections 1303.11.1 and 1303.11.2.

1303.10.2 Backwater valve. *Backwater valves* shall be installed on each overflow and tank drain pipe. *Backwater valves* shall be in accordance with Section 715.

1303.12 Pumping and control system. Mechanical equipment including pumps, valves and filters shall be easily accessible and removable in order to perform *repair*, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall appropriate for the application and in accordance with Section 604.

1303.13 Water-pressure reducing valve or regulator. Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the rainwater distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section 604.8.

1303.14 Distribution pipe. *Distribution piping* utilized in rainwater collection and conveyance systems shall comply with Sections 1303.14.1 through 1303.14.3.

> **Exception:** Irrigation piping located outside of the *building* and downstream of a backflow preventer.

1303.14.1 Materials, joints and connections. *Distribution piping* shall conform to the standards and requirements specified in Section 605 for non-potable water.

1303.14.2 Design. Distribution piping systems shall be designed and sized in accordance with the Section 604 for the intended application.

1303.14.3 Marking. Non-potable rainwater distribution piping labeling and marking shall comply with Section 608.8.

1303.15 Tests and inspections. Tests and inspections shall be performed in accordance with Sections 1303.15.1 through 1303.15.8.

1303.15.1 Roof gutter inspection and test. Roof gutters shall be inspected to verify that the installation and slope is in accordance with Section 1303.5.1. Gutters shall be tested by pouring a minimum of one gallon of water into the end of the gutter opposite the collection point. The gutter being tested shall not leak and shall not retain standing water.

1303.15.2 Roofwasher test. Roofwashers shall be tested by introducing water into the gutters. Proper diversion of the first quantity of water in accordance with the requirements of Section 1303.4 shall be verified.

1303.15.3 Collection pipe and vent test. Drain, waste and vent piping used for rainwater collection and conveyance systems shall be tested in accordance with Section 312.

1303.15.4 Storage tank test. *Storage tanks* shall be tested in accordance with the Section 1301.9.11.

1303.15.5 Water supply system test. The testing of makeup water supply piping and *distribution piping* shall be conducted in accordance with Section 312.5.

1303.15.6 Inspection and testing of backflow prevention assemblies. The testing of backflow preventers and *backwater valves* shall be conducted in accordance with Section 312.10.

1303.15.7 Inspection vermin and insect protection. Inlets and vents to the system shall be inspected to verify that each is protected to prevent the entrance of insects and vermin into the *storage tank* and piping systems in accordance with Section 1301.7.

1303.15.8 Water quality test. The quality of the water for the intended application shall be verified at the point of use in accordance with the requirements of the *jurisdiction*. Except where site conditions as specified in ASTM E2727 affect the rainwater, collected rainwater shall be considered to have the parameters indicated in Table 1303.15.8.

TABLE 1303.15.8
RAINWATER QUALITY

PARAMETER	**VALUE**
pH	6.0-7.0
BOD	Not greater than 10 mg/L
NTU	Not greater than 2
Fecal Coliform	No detectable fecal coli in 100 mL
Sodium	No detectable sodium in 100 mL
Chlorine	No detectable chlorine in 100 mL
Enteroviruses	No detectable enteroviruses in 100 mL

1303.16 Operation and maintenance manuals. Operations and maintenance materials shall be supplied with rainwater collection and conveyance systems in accordance with Sections 1303.16.1 through 1303.16.4.

1303.16.1 Manual. A detailed operations and maintenance manual shall be supplied in hardcopy form with all systems.

1303.16.2 Schematics. The manual shall include a detailed system schematic, locations of all system components, and a list of all system components including manufacturer and model number.

1303.16.3 Maintenance procedures. The manual shall provide a maintenance schedule and procedures for all system components requiring periodic maintenance. Consumable parts including filters shall be noted along with part numbers.

1303.16.4 Operations procedures. The manual shall include system startup and shutdown procedures. The manual shall include detailed operating procedures for the system.

SECTION 1304
RECLAIMED WATER SYSTEMS

1304.1 General. The provisions of this section shall govern the construction, installation, *alteration*, and *repair* of systems supplying *non-potable reclaimed water*.

1304.2 Water-pressure reducing valve or regulator. Where the *reclaimed water* pressure supplied to the *building* exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the *reclaimed water* distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section 604.8 of the *International Plumbing Code*.

1304.3 Reclaimed water systems. The design of the *reclaimed water* systems shall conform to ASTM E 2635 and *accepted engineering practice.*

1304.3.1 Distribution pipe. *Distribution piping* shall comply with Sections 1304.3.1.1 through 1304.3.1.3.

> **Exception:** Irrigation piping located outside of the *building* and downstream of a backflow preventer.

1304.3.1.1 Materials, joints and connections. *Distribution piping* conveying reclaimed water shall conform to standards and requirements specified in Section 605 for non-potable water.

1304.3.1.2 Design. Distribution piping systems shall be designed and sized in accordance with the Section 604 for the intended application.

1304.3.1.3 Labeling and marking. Non-potable rainwater distribution piping labeling and marking shall comply with Section 608.8.

1304.4 Tests and inspections. Tests and inspections shall be performed in accordance with Sections 1304.4.1 and 1304.4.2.

1304.4.1 Water supply system test. The testing of makeup water supply piping and *reclaimed water distribution piping* shall be conducted in accordance with Section 312.5.

1304.4.2 Inspection and testing of backflow prevention assemblies. The testing of backflow preventers shall be conducted in accordance with Section 312.10.

Add new Chapter and next text as follows:

CHAPTER 14
SUBSURFACE LANDSCAPE IRRIGATION SYSTEMS

SECTION 1401
GENERAL

1401.1 Scope. The provisions of Chapter 14 shall govern the materials, design, construction and installation of subsurface landscape irrigation systems connected to non-potable water from onsite water reuse systems.

1401.2 Materials. Above-ground drain, waste and vent piping for subsurface landscape irrigation systems shall conform to one of the standards listed in Table 702.1. Subsurface landscape irrigation underground building drainage and vent pipe shall conform to one of the standards listed in Table 702.2.

1401.3 Tests. Drain, waste and vent piping for subsurface landscape irrigation systems shall be tested in accordance with Section 312.

1401.4 Inspections. Subsurface landscape irrigation systems shall be inspected in accordance with Section 107.

1401.5 Disinfection. Disinfection shall not be required for onsite non-potable reuse water used for subsurface landscape irrigation systems.

1401.6 Coloring. Onsite non-potable reuse water used for subsurface landscape irrigation systems shall not be required to be dyed.

SECTION 1402
SYSTEM DESIGN AND SIZING

1402.1 Sizing. The system shall be sized in accordance with the sum of the output of all water sources connected to the subsurface irrigation system. Where gray water collection piping is connected to subsurface landscape irrigation systems, gray water output shall be calculated according to the gallons-per-day-per-occupant number based on the type of fixtures connected. The gray water discharge shall be calculated by the following equation:

$C = A \times B$ **(Equation 14-1)**

where:

A = Number of occupants:

Residential–Number of occupants shall be determined by the actual number of occupants, but not less than two occupants for one bedroom and one occupant for each additional bedroom.
Commercial–Number of occupants shall be determined by the *International Building Code.*

B = Estimated flow demands for each occupant:

Residential–25 gallons per day (94.6 lpd) per occupant for showers, bathtubs and lavatories and 15 gallons per day (56.7 lpd) per occupant for clothes washers or laundry trays.

Commercial–Based on type of fixture or water use records minus the discharge of fixtures other than those discharging gray water.

C = Estimated gray water discharge based on the total number of occupants.

1402.2 Percolation tests. The permeability of the soil in the proposed absorption system shall be determined by percolation tests or permeability evaluation.

1402.2.1 Percolation tests and procedures. At least three percolation tests in each system area shall be conducted. The holes shall be spaced uniformly in relation to the bottom depth of the proposed absorption system. More percolation tests shall be made where necessary, depending on system design.

1402.2.1.1 Percolation test hole. The test hole shall be dug or bored. The test hole shall have vertical sides and a horizontal dimension of 4 inches to 8 inches (102 mm to 203 mm). The bottom and sides of the hole shall be scratched with a sharp-pointed instrument to expose the natural soil. All loose material shall be removed from the hole and the bottom shall be covered with 2 inches (51 mm) of gravel or coarse sand.

1402.2.1.2 Test procedure, sandy soils. The hole shall be filled with clear water to a minimum of 12 inches (305 mm) above the bottom of the hole for tests in sandy soils. The time for this amount of water to seep away shall be determined, and this procedure shall be repeated if the water from the second filling of the hole seeps away in 10 minutes or less. The test shall proceed as follows: Water shall be added to a point not more than 6 inches (152 mm) above the gravel or coarse sand. Thereupon, from a fixed reference point, water levels shall be measured at 10-minute intervals for a period of 1 hour. Where 6 inches (152 mm) of water seeps away in less than 10 minutes, a shorter interval between measurements shall be used, but in no case shall the water depth exceed 6 inches (152 mm). Where 6 inches (152 mm) of water seeps away in less than 2 minutes, the test shall be stopped and a rate of less than 3 minutes per inch (7.2 s/mm) shall be reported. The final water level drop shall be used to calculate the percolation rate. Soils not meeting the above requirements shall be tested in accordance with Section 1303.7.1.3.

1402.2.1.3 Test procedure, other soils. The hole shall be filled with clear water, and a minimum water depth of 12 inches (305 mm) shall be maintained above the bottom of the hole for a 4-hour period by refilling whenever necessary or by use of an automatic siphon. Water remaining in the hole after 4 hours shall not be removed. Thereafter, the soil shall be allowed to swell not less than 16 hours or more than 30 hours. Immediately after the soil swelling period, the measurements for determining the percolation rate shall be made as follows: any soil sloughed into the hole shall be removed and the water level shall be adjusted to 6 inches (152 mm) above the gravel or coarse sand. Thereupon, from a fixed reference point, the water level shall be measured at 30-minute intervals for a period of 4 hours, unless two successive water level drops do not vary by more than 1/16 inch (1.59 mm). At least three water level drops shall be observed and recorded. The hole shall be filled with clear water to a point not more than 6 inches (152 mm) above the gravel or coarse sand whenever it becomes nearly empty. Adjustments of the water level shall not be made during the three measurement periods except to the limits of the last measured water level drop. When the first 6 inches (152 mm) of water seeps away in less than 30 minutes, the time interval between measurements shall be 10 minutes and the test run for 1 hour. The water depth shall not exceed 5 inches (127 mm) at any time during the measurement period. The drop that occurs during the final measurement period shall be used in calculating the percolation rate.

1402.2.1.4 Mechanical test equipment. Mechanical percolation test equipment shall be of an approved type.

1402.2.2 Permeability evaluation. Soil shall be evaluated for estimated percolation based on structure and texture in accordance with accepted soil evaluation practices. Borings shall be made in accordance with Section 1402.2.1.1 for evaluating the soil.

1402.3 Subsurface landscape irrigation site location. The surface grade of all soil absorption systems shall be located at a point lower than the surface grade of any water well or reservoir on the same or adjoining lot. Where this is not possible, the site shall be located so surface water drainage from the site is not directed toward a well or reservoir. The soil absorption system shall be located with a minimum horizontal distance between various elements as indicated in Table 1402.3. Private sewage disposal systems in compacted areas, such as parking lots and driveways, are prohibited. Surface water shall be diverted away from any soil absorption site on the same or neighboring lots.

TABLE 1402.3
LOCATION OF SUBSURFACE IRRIGATION SYSTEM

ELEMENT	**MINIMUM HORIZONTAL DISTANCE**	
	STORAGE TANK (feet)	**IRRIGATION DISPOSAL FIELD (feet)**
Buildings	5	2
Lot line adjoining private property	5	5
Water wells	50	100
Streams and lakes	50	50
Seepage pits	5	5
Septic tanks	0	5
Water service	5	5
Public water main	10	10

For SI: 1 foot = 304.8 mm.

SECTION 1403
INSTALLATION

1403.1 Installation. Absorption systems shall be installed in accordance with Sections 1403.1.1 through 1403.2.1 to provide landscape irrigation without surfacing of water.

1403.1.1 Absorption area. The total absorption area required shall be computed from the estimated daily gray water discharge and the design-loading rate based on the percolation rate for the site. The required absorption area equals the estimated gray water discharge divided by the design-loading rate from Table 1403.1.1.

TABLE 1403.1.1
DESIGN LOADING RATE

PERCOLATION RATE (minutes per inch)	**DESIGN LOADING FACTOR (gallons per square foot per day)**
0 to less than 10	1.2
10 to less than 30	0.8
30 to less than 45	0.72
45 to 60	0.4

For SI: 1 minute per inch = min/25.4 mm,
1 gallon per square foot = 40.7 L/m2.

1403.1.2 Seepage trench excavations. Seepage trench excavations shall be not less than 1 foot (304 mm) in width and not greater than 5 feet (1524 mm) in width. Trench excavations shall be spaced not less than 2 feet (610 mm) apart. The soil absorption area of a seepage trench shall be computed by using the bottom of the trench area (width) multiplied by the length of pipe. Individual seepage trenches shall be not greater than100 feet (30 480 mm) in developed length.

1403.1.3 Seepage bed excavations. Seepage bed excavations shall be not less than 5 feet (1524 mm) in width and have more than one distribution pipe. The absorption area of a seepage bed shall be computed by using the bottom of the trench area. Distribution piping in a seepage bed shall be uniformly spaced not greater than 5 feet (1524 mm) and not less than 3 feet (914 mm) apart, and greater than 3 feet (914 mm) and not less than 1 foot (305 mm) from the sidewall or headwall.

1403.1.4 Excavation and construction. The bottom of a trench or bed excavation shall be level. Seepage trenches or beds shall not be excavated where the soil is so wet that such material rolled between the hands forms a soil wire. All smeared or compacted soil surfaces in the sidewalls or bottom of seepage trench or bed excavations shall be scarified to the depth of smearing or compaction and the loose material removed. Where rain falls on an open excavation, the soil shall be left until sufficiently dry so a soil wire will not form when soil from the excavation bottom is rolled between the hands. The bottom area shall then be scarified and loose material removed.

1403.1.5 Aggregate and backfill. Not less than 6 inches in depth of aggregate ranging in size from 1/2 to 21/2 inches (12.7 mm to 64 mm) shall be laid into the trench below the distribution piping elevation. The aggregate shall be evenly distributed not less than 2 inches (51 mm) in depth over the top of the distribution pipe. The aggregate shall be covered with approved synthetic materials or 9 inches (229 mm) of uncompacted marsh hay or straw. Building paper shall not be used to cover the aggregate. Not less than 9 inches (229 mm) of soil backfill shall be provided above the covering.

1403.2 Distribution piping. Distribution piping shall be not less than 3 inches (76 mm) in diameter. Materials shall comply with Table 1303.10. The top of the distribution pipe shall be not less than 8 inches (203 mm) below the original surface. The slope of the distribution pipes shall be not less than 2 inches (51 mm) and not greater than 4 inches (102 mm) per 100 feet (30 480 mm).

TABLE 1403.2
DISTRIBUTION PIPE

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F 405
Polyvinyl chloride (PVC) plastic pipe	ASTM D 2729
Polyvinyl chloride (PVC) plastic pipe with a 3.5 inch O.D. and solid cellular core or composite wall.	ASTM F 1488

1403.2.1 Joints. Joints in distribution pipe shall be made in accordance with Section 705 of this code.

Reason: The sections shown to be added to the code are from the IgCC. These sections really need to be in the IPC as these subjects are more applicable to the IPC scope. Currently, the IPC does not address different types of nonpotable water (other than gray water) and therefore provides no guidance as to how nonpotable waters are to be collected, stored and distributed. The current Chapter 13 only deals with the use/reuse of gray water for the flushing of water closets and urinals and subsurface irrigation. It is clarified that gray water and rain water recycling systems must be separate systems and may not be interconnected.

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.

Cost Impact: None

P11-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

301.3-P-STRAUSBAUGH.PMGCAC

P12 – 12
301.4

Proponent: Shawn Strausbaugh, Arlington County VA representing the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Revise as follows:

301.4 Connections to water supply. ~~Every~~ Plumbing fixture<u>s</u>, device<u>s</u> or appliance<u>s</u> requiring or using water ~~for its proper operation~~ shall be directly or indirectly connected to the water supply system in accordance with the provisions of this code. <u>Faucets provided with a connection for cold water shall be connected to the cold water distribution system.</u>

Reason: The current code does not require a fixture to be supplied with cold water even if the handles or trim plate indicate cold water will be supplied when it is turned to the "on" position.. If a faucet has the "indication" that cold water can be obtained (e.g. single handle cold water position or a two handle faucet), the code should require that cold water actually be connected and provided to the faucet.

Cost Impact: none

P12-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

301.4-P-STRAUSBAUGH

P13 – 12
303.1

Proponent: James Ranfone, American Gas Association (jranfon@aga.org)

Revise as follows:

303.1 Identification. Each length of pipe and each pipe fitting, trap, fixture, material and device utilized in a plumbing system shall bear the identification of the manufacturer and any markings required by the applicable referenced standards.

> **Exception:** The manufacturer identification for fittings and pipe nipples shall be on each piece or shall be printed on the packaging or provided documentation.

Reason: The exception would allow identification of fittings to be provided on or with the packaging. Some piping fittings, short couplings for example, do not have the physical room for a manufacturers mark.

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

P13-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

303.1-P-RANFONE

P14 – 12
303.3, 611.3

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

Delete without substitution:

~~**303.3 Plastic pipe, fittings and components.** All plastic pipe, fittings and components shall be third-party certified as conforming to NSF 14.~~

Revise as follows:

611.3 Connection tubing. The tubing to and from drinking water treatment units shall be of a size and material as recommended by the manufacturer. The tubing shall comply with ~~NSF 14,~~ NSF 42, NSF 44, NSF 53, NSF 58 or NSF 61.

Reason: With the addition of Section 303.4 to the 2012 edition, there is no need to have a separate reference to NSF 14. All plumbing material must be listed by a third party certifier.

NSF 14 was originally inserted into the code as a quality control standard. In the latest edition of NSF 14, material requirements were added. It is completely inappropriate for a quality control standard to have material requirements. The material requirements belong in the material standards that are listed in the code (and referenced in NSF 14), not a quality control standard. With the change to NSF 14, it is no longer a viable quality control standard. It has crossed over to being a quazi-material standard. All material standards should be complete material standards regulating the full requirements of the material. NSF 14 does not do this.

For these reasons, NSF 14 should no longer be referenced in the International Plumbing Code.

Cost Impact: This may reduce the cost of certain plumbing products.

P14-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

303.3-P-BALLANCO

P15 – 12
305.1

Proponent: Shawn Strausbaugh, Arlington County VA representing the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Delete and substitute as follows:

~~**305.1 Corrosion.** Pipes passing through concrete or cinder walls and floors 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 the 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 the material shall be not less than 0.025 inch (0.64 mm).~~

305.1 Corrosion. Metallic piping shall not be installed in direct contact with concrete, masonry or corrosive soil. Where plastic sheathing is used to prevent direct contact, the wall thickness of the sheathing shall be not less than 0.006 inches (6 mil) (0.152 mm) thick .

Reason: The intent of the code is to protect piping from direct contact with concrete, masonry and corrosive soils, this proposal is a cleanup action to clarify that intent. The commonly used plastic sheathing for pipe protection has a wall thickness of only 0.004 inches or 0.006 inches thick. The 0.025 inch thick material is really unnecessary and beyond the minimum standard practice used to protect the piping system. The thinner material has been used for years with satisfactory results.

Cost Impact: none

P_-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

305.1-P-STRAUSBAUGH

P16 – 12

305.6, 305.6.1 (New), 305.6.2 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

305.6 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<u>,</u> ~~and~~ below top plates <u>and to each side of a stud, joist, rafter or similar member.</u>

<u>**305.6.1 Formed steel framing members.** *Piping*, other than cast-iron or galvanized steel, shall not be installed within the channel of a formed steel framing member except where the piping is not less than 1-1/2 inches from the backside of any fastening face of the member.</u>

<u>**305.6.2 Piping installed parallel to framing members**. In concealed locations where *piping*, other than cast-iron or galvanized steel, is installed parallel to studs, joists, rafters or similar members less than 1-1/2 inches (38 mm) from the nearest edge of the member, such pipe shall be protected along its length by steel shield plates that comply with the requirements of Section 305.6.</u>

Reason: Like the IPC, Section 404.7 does not address pipe or tubing run down the side of a stud or inside of a "C" channel metal stud or rafter. Such installations are subject to penetrations but the code addresses only holes and notches for pipe and tubing that runs perpendicular to the framing member. The NEC treats wiring that runs parallel to framing members the same as wiring that runs perpendicular. The IMC, IFGC and IPC need to catch up. If the sheeting material fasteners miss a framing member, they can easily penetrate piping which is why the code requires the protection shield to extend 2 inches above and below wall plates. Placing piping parallel to a member, either on the side or within a channel, exposes the piping to penetration, yet current code addresses only perpendicular penetrations.Given the speed at which drywall installers put up and fasten drywall to studs and rafters, there is a great potential for drywall screws or nails to miss the intended stud and hit a pipe or tube. The code already requires that shield plates on sole plates and top plates extend 2 inches above and below the edges of those framing members. Why should not piping to the sides of framing members be protected to the same degree?

Section 305.6.1 is being added to prohibit piping from being installed within 1-1/2 inches of the backside of the fastening flange of a formed steel member. Piping located in this area is likely to be penetrated by drywall fasteners. An all too common practice is to install piping "inside" of formed steel members such that the piping is within 1-1/2" of the fastening face of the member. It is unrealistic to protect the piping with steel shield plates as installing the shield plates requires the installation fasteners. Piping just should not be placed in this location.

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.

Cost Impact: None

P_-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

305.6-P-STRAUSBAUGH.PMGCAC

P17 – 12
307.5

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Delete and substitute as follows:

~~**307.5 Protection of footings.** Trenching installed parallel to footings shall not extend below the 45-degree (0.79 rad) bearing plane of the footing or wall~~.

307.5 Protection of footings. Trenching installed parallel to footings and walls shall not extend into the bearing plane of a footing or wall. The upper boundary of the bearing plane is a line that extends downward, at an angle of 45 degrees from horizontal, from the outside bottom edge of the footing or wall.

Reason: The current language is not especially clear and is easily misunderstood. The proposed text is explicit and captures the intent of this provision.

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.

Cost Impact: None

P17-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

307.5-P-STRAUSBAUGH.PMGCAC

P18 – 12
308.5

Proponent: James Paschal, Paschal Engineering representing himself (Jim@PaschalEngineering.com)

Revise as follows:

308.5 Interval of support. Pipe shall be supported in accordance with Table 308.5.

> **Exception:** The interval of support for piping systems designed to provide for expansion/contraction shall conform to the engineered design in accordance with Section 316.1. <u>The interval of support for fiberglass or metal reinforced plastic piping shall be in accordance with the manufacturer's specifications and shall conform to the engineered design in accordance with Section 316.1.</u>

Reason: There are a variety of plastic piping systems available which utilize metal or fiberglass reinforcement to add rigidity and strength to the piping, and as a result, may require different support spacing than the traditional materials shown in Table 308.5. In addition to the existing requirement that the spacing be per the engineered design and approved by the code official, the proposed wording here also requires that the spacing be per the manufacturer's specifications. This will ensure that the spacing is consistent between the design professional, code official, and manufacturer.

Cost Impact: None

P18-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308.5-P-PASCHAL

P19 – 12
Table 308.5

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

TABLE 308.5
HANGER SPACING

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
ABS pipe	4	10[b]
Aluminum tubing	10	15
Brass pipe	10	10
Cast-iron pipe	5[a]	15
Copper or copper-alloy pipe	12	10
Copper or copper-alloy tubing, $1^1/_4$-inch diameter and smaller	6	10
Copper or copper-alloy tubing, $1^1/_2$-inch diameter and larger	10	10
Cross-linked polyethylene (PEX) pipe	2.67 (32 inches)	10[b]
Cross-linked polyethylene/ aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	2.67 (32 inches)	4
CPVC pipe or tubing, 1 inch and smaller	3	10[b]
CPVC pipe or tubing, $1^1/_4$ inches and larger	4	10[b]
Steel pipe	12	15
Lead pipe	Continuous	4
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	2.67 (32 inches)	4
Polyethylene of raised temperature (PE-RT) pipe	2.67 (32 inches)	10[b]
Polypropylene (PP) pipe or tubing 1 inch and smaller	2.67 (32 inches)	10[b]

Polypropylene (PP) pipe or tubing, $1^1/_4$ inches and larger	4	10^b
PVC pipe	4	10^b
Stainless steel drainage systems	10	10^b

a. The maximum horizontal spacing of cast iron pipe hangers shall be increased to 10 feet where 10 foot lengths of pipe are installed.

b. ~~Mid-story guide~~ For sizes 2 inches and smaller, a guide shall be installed midway between required vertical supports. Such guides shall prevent pipe movement in a direction perpendicular to the axis of the pipe.

Reason: What constitutes a "mid-story guide" and what is it supposed to do? The current footnote doesn't clearly state a requirement. What is the purpose of the guide and how limiting is the guide supposed to be? The term mid-story seems out of context considering that the intent of the footnote is to require a guide midway between vertical supports. The vertical supports don't necessarily correspond to a support at each story. Stories can be any height. The revised language provides the necessary information to make this footnote clearly state 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.

Cost Impact: None

P19-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T308.5-P-STRAUSBAUGH.PMGCAC

P20 – 12
309.2

THIS CODE CHANGE PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE HEARING ORDER FOR THE IBC STRUCTURAL DEVELOPMENT COMMITTEE.

Proponent: John Ingargiola and Gregory Wilson, representing Department of Homeland Security, Federal Emergency Management Agency (john.ingargiola@dhs.gov, gregory.p.wilson@dhs.gov) and Rebecca Quinn, RCQuinn Consulting, Inc., representing Federal Emergency Management Agency (rcquinn@earthlink.net).

Revise as follows:

[B] 309.2 Flood hazard. For structures located in flood hazard areas, the following systems and equipment shall be located and installed as required by Section 1612 of the *International Building Code*.

~~**Exception:** The following systems are permitted to be located below the elevation required by Section 1612 of the *International Building Code* for utilities and attendant equipment provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to up to such elevation.~~

1. ~~All~~ water service pipes.
2. Pump seals in individual water supply systems where the pump is located below the *design flood elevation*.
3. Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is elevated to not less than 1 foot (305 mm) above the *design flood elevation*.
4. ~~All~~ Sanitary drainage piping.
5. ~~All~~ Storm drainage piping.
6. Manhole covers shall be sealed, except where elevated to or above the *design flood elevation*.
7. ~~All~~ Other plumbing fixtures, faucets, fixture fittings, piping systems and equipment.
8. Water heaters.
9. Vents and vent systems.

<u>**Exception:** The systems listed in this section are permitted to be located below the elevation required by Section 1612 of the *International Building Code* for utilities and attendant equipment provided that the systems are designed and installed to prevent water from entering our accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding up to such elevation.</u>

Reason: This proposal simply moves the exception language below the list. It is awkward and certainly confusing to have the exception placed between the parent language "the following systems and equipment") and the list. This change is editorial. ICC staff recommended deletion of "all" in four locations.

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

P20-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

309.2-P-INGARAGIOLA-WILSON-QUINN.doc

P21 – 12
311.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to ANSI Z4.3. <u>Not less than one portable toilet facility for every 50 workers or fraction thereof shall be provided.</u>

Reason: The code currently provides no guidance as to how many portable toilet facilities are needed for construction sites. To save money, a contractor could provide just one toilet facility for hundreds of workers. The ratio of 1 per fifty workers is reasonable.

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.

Cost Impact: None

P21-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

311.1-P-STRAUSBAUGH.PMGCAC

P22 – 12
317 (New)

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

SECTION 317
ELECTRICAL

317.1 Grounding. Metallic underground water piping shall be permitted to be used as a grounding electrode in accordance with NFPA 70.

317.2 Connections. Electrical connections between appliances and the building wiring, including the grounding of the appliances, shall conform to NFPA 70.

Reason: Electrical safety issues with regard to plumbing, including plumbing appliances, should be covered in the IPC. Added text will address concerns associated with accidental contact between water and electricity.

Cost Impact: None

P22-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

317 (NEW)-P-EUGENE

P23 – 12
317 (New)

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

SECTION 317
ELECTRICAL BONDING

317.1 Grounding and bonding of metallic piping. Aboveground portions of a metallic piping system that are likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path in accordance with NFPA 70. Piping shall be considered to be bonded where it is connected to *plumbing appliances* that are connected to the equipment grounding conductor of the circuit supplying that *plumbing appliance.*

Reason: Electrical safety issues with regard to plumbing, including plumbing appliances, should be covered in the IPC. Added text will address concerns associated with accidental contact between water and electricity.

Cost Impact: None

P23-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

317 #2-P-EUGENE

P24 – 12
317 (New), 317.1 (New)

Proponent: Guy McMann, MCP representing the Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

Add new text as follows:

SECTION 317
INSULATION PROTECTION

317.1 Protection of piping Insulation. Pipe insulation exposed to weather shall be listed and labeled for exterior use or otherwise protected in accordance with the manufacturer's installation instructions. Insulation subject to physical damage shall be protected with shields or by approved methods.

Reason. Pipe insulation exposed to the elements needs to be protected from solar and UV effects and should be listed for such exposure when applied in this situation. Insulation must also be protected in locations where maintenance or other activity takes place that may damage the installation. This is information the plan reviewer, inspector or installer would need to be aware of at the planning stage of a project.

Cost Impact: None

P24-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

317 (NEW)-P-MCMANN

P25– 12

403.1 (IBC [P]2902.1), Table 403.1 (IBC Table[P]2902.1)

Proponent: Matt Archer, Douglas County, CO, representing the Colorado Chapter ICC (marcher@douglas.co.us)

Revise as follows:

403.1 (IBC [P]2902.1) Minimum number of fixtures. Plumbing fixtures shall be provided for the type of function ~~occupancy~~ and in the minimum number shown in Table 403.1. Types of functions ~~occupancies~~ not shown in Table 403.1 shall be considered individually by the code official. ~~The number of occupants shall be determined by the International Building Code. Occupancy classification shall be determined in accordance with the International Building Code.~~

~~TABLE 403.1 (IBC Table [P]2902.1)~~
~~MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURESa~~
~~(See Sections 403.2 and 403.3)~~

TABLE 403.1 (IBC Table [P]2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 403.2 and 403.3)

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[b, c]	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN[f,g] (SEE SECTION 410.1)	OTHER
		MALE	FEMALE	MALE	FEMALE			
Assembly Art gallery/ exhibition hall/ museum Court rooms (other than fixed seating) Gaming floors (keno, slots) Gymnasium/ locker room/ exercise area Library Reading rooms Stack areas Multiuse assembly area Religious services or place of worship Seating (fixed) Seating (not fixed) Skating rinks, swimming pools	30 gross 40 net 11 gross 50 gross - 50 net 100 gross 7 net - 1per seat[d] 7 net 50 gross	1per 150	1per 75	1 per 200		–	1 per 1000	1 service sink
Assembly with fixed seating (Bleachers, theaters, performing arts)	1 per seat[d]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	–	1 per 1000	1 service sink
Assembly without fixed seating (Bars, night clubs, performing arts)	5 net	1 per 40		1 per 75		–	1 per 500	1 service sink
Correctional Facility Employee (see	-	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR [b, c]	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN [f, g] (SEE SECTION 410.1)	OTHER
		MALE	FEMALE	MALE	FEMALE			
Office) Prison Visitor area (see Office)	- -							
Day care (Adult or child care)	35 net	1 per 15		1 per 15		1	1 per 100	1 service sink
Educational Auditoriums (fixed seating) Classroom areas Dance studio/ martial art space Gymnasium/ locker room/ exercise area Multiuse assembly areas	1per seat[d] 20 net 50 gross 50 gross 7 net	1 per 50		1 per 50		–	1 per 100	1 service sink
Factory and Storage Assembly or processing of materials Fabricating Freight depot Warehouse	500 gross	1 per 100		1 per 100		See Section 411	1 per 400 1 per 400 1 per 1000 1 per 1000	1 service sink
Food and beverage services Banquet hall Kitchen Seating (booths) Seating (tables and chairs) Takeout/ order area Waiting/ lobby area	15 net 200 gross 1 per seat[d] 15 net 15 net 15 net	1 per 75		1 per 200		–	1 per 500	1 service sink
Hospital, nursing home Employee (see Office) Patient room Visitor area (see Office)	- - -	1 per room[f]		1 per room[f]		1 per 15	1 per 100	1 service sink
Office Accessory areas Closets/ filing rooms Corridors/ lobby areas Conference/ meeting rooms Office/ work spaces Reception/ waiting areas Shipping and receiving areas Training/ classroom areas Warehouse areas	- - - 15 net 100 gross 15 net 300 gross 20 net 500 gross	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		–	1 per 100	1 service sink[h]
Passenger terminals Baggage claim Baggage handling Concourse Waiting areas	20 gross 300 gross 100 gross 15 net	1 per 500		1 per 750		–	1 per 1000	1 service sink
Residential Multi-family (apartments)	–	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	–	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR [b, c]	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN [f g] (SEE SECTION 410.1)	OTHER
		MALE	FEMALE	MALE	FEMALE			
One- and two-family dwelling	–						–	20 dwelling units ---------------- 1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
Residential, transient (Boarding house, hotel, motel)	-	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	–	1 service sink
Residential, non-transient (Congregate living, dormitories, fraternities, sororities, group home)	200 gross	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
Retail Mall common areas (covered and open) Sales area Shipping and receiving areas Warehouse/ Storage room	(.0007)(GLA)+25[e] 30 gross 300 gross 500 gross	1 per 500		1 per 750		-	1 per 1000	1 service sink[h]

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. Floor area in square foot per occupant.
b. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
c. Fixed seating without dividing arms shall be one person for each 18" of seating length. Booth seating shall be one person for each 24" of seating length, measured at the back rest.
d. GLA, the gross leasable area (square feet)
e. The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the International Building Code.
f. Drinking fountains are not required for an occupant load of 15 or fewer.
g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

Reason: This code change is intended to place the methodology for occupant load assessment for plumbing fixtures under the purview of the IPC Code Development Committee. Currently, occupant loads are derived from the IBC means of egress chapter. These egress-oriented occupant loads are intended to represent conservative loading at highest anticipated occupancy. This is essential to the IBC's primary life safety goal of ensuring adequate egress capacity.

During the past several years, members of our Chapter have encountered designs using less than adequate occupant loads for egress purposes. When asked, designers involved have indicated that they were trying to moderate plumbing fixture counts to a level more representative of "normal" levels of building occupant loads. In their effort to justify fewer plumbing fixtures, the design capacity of the egress system was affected. This could result in serious life safety detriment.

Assessment of plumbing fixture counts using an occupant load basis is appropriate for determining fixture counts. This change intends to provide for that assessment independently of the IBC means of egress chapter. This change will allow the IPC Code Development Committee to have complete ownership over the appropriate occupant load factor to be employed for each use group represented within the building.

The change from "occupancy" group to "function" is imperative for proper assessment of buildings with uses that may be denser than an occupancy classification may imply. For instance, a building made up of multiple conference spaces, each of which under the 50 occupant Group A assembly classification, may be classified as a Group B Occupancy. In reality, the assembly use of the conference spaces has a much higher density of 5-7 times that ascribed to a Group B. This change allows the IPC Committee to assign fixtures based on that actual use, not just the overall and frequently limiting occupancy classification.

This change does not intend to either increase or decrease the amount of plumbing fixtures currently required by the IPC. It is intended to provide an independent, function-based assessment method that is similar to that tried and proven in the IMC. Ultimately, better assessment will be assured and the primary life safety required of the means of egress system will be assured. If approved, the committee may adjust these values as they see fit, without unintended consequence to the building's means of egress system.

Cost Impact: None

P25-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.1-P-ARCHER

P26 – 12
403.1 (IBC [P] 2902.1)

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

Revise as follows:

403.1 (IBC [P] 2902.1) Minimum number of fixtures. Plumbing fixtures shall be provided ~~for the type of occupancy and~~ in the minimum number as shown in Table 403.1 based upon the actual use of the building or space. ~~Types of occupancies~~ Uses not shown in Table 403.1 shall be considered individually by the code official. The number of occupants shall be determined by the International Building Code. ~~Occupancy classification shall be determined in accordance with the International Building Code.~~

Reason: The purpose of the table is to provide fixtures based on the use of the building space, not based on the use group classification. By referencing the use group in accordance with the Building Code, an incorrect number of fixtures may be established for a building. A typical example is a mixed use building. Each use must be considered separately as to the fixture demands. Another example would be a high school that has a cafeteria, an auditorium for productions, and a stadium for sporting events. Each space would have different requirements. The listing of the use group in the table was done merely for convenience. The fixture demands have always been based on the use of the space.

Cost Impact: There is no impact to the cost of a building.

P26-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.1-P-BALLANCO

P27 – 12

202 (IBC 202), 403.1 (IBC [P]2902.2.1), Table 403.1 (IBC Table [P]2902.1), Table 403.1.2 (New) (IBC Table [P]2902.1.2 (New))

Proponent: Eirene Oliphant, MCP, BRR Architecture, representing self

Add new definitions as follows:
(Definitions to also be added to the IBC)

ATHLETIC FIELDS. Outdoor sporting venues that contain spectator seating in the form of *grandstands* or *bleachers*, excluding stadiums and coliseums.

BLEACHERS. Tiered seating that is supported on a dedicated structural system, that is two or more rows high and that is not a *building element*. See “Grandstand”.

BUILDING ELEMENT. A functional component of building construction that is listed in Table 601 of the *International Building Code*. Such components are constructed of materials consistent with the construction type of the building and can be fire-resistance-rated.

COMMUTER PARKING LOT. Parking designated specifically for the temporary storage of personal vehicles at or near the workplace or at a location from where an employee commutes to work by transit, vanpooling or carpools.

GRANDSTAND. Tiered seating that is supported on a dedicated structural system, that is two or more rows high and that is not a *building element*. See “Bleachers”.

DEVELOPED LINEAR PARK. A park that is longer than wide, often formed as a part of a system of trails that are made of materials that provide a stable and firm surface.

MARINAS. A facility for personally owned sailboats and yachts, typically offering docking, fuel, off-season out-of-water storage and other services; sometimes with a restaurant.

ORGANIZED CAMP. A site with program and facilities established for the primary purposes of providing an outdoor group living experience with social, spiritual, educational, or recreational objectives, for five days or more during one or more seasons of the year.

PICNIC AREA. A tract of land set aside within a park that contains tables and cooking equipment for the purposes of eating outdoors.

PUBLIC BEACH. A public beach is any beach, whether publicly or privately owned, extending inland from the line of mean low tide to the natural line of vegetation to which the public has acquired the right of use. This definition does not include a beach that is not accessible by means of public transportation such as roads and ferries.

PUBLIC SWIMMING POOL. A pool, other than a residential pool, that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee, or concessionaire, regardless of whether a fee is charged for use.

RIDING ARENAS. Buildings used for boarding, breeding and training of horses, riding instruction and competitions and that have an occupant load of less than 200.

Revise as follows:

403.1 (IBC [P]2902.1)Minimum number of fixtures. Plumbing fixtures shall be provided ~~for~~ in accordance with ~~the type of *occupancy* and in the minimum number shown in per~~ Table 403.1.1 or Table

403.1.2. ~~Types of occupancies not shown in Table 403.1 shall be considered individually by the code official.~~ The number of occupants and occupancy classification shall be determined by the International Building Code. ~~Occupancy classification shall be determined in accordance with the International Building Code.~~ Those groups which are accessory to the main use group shall be provided with fixtures in accordance with the main use group classification.

Types of ~~occupancies~~ uses not shown in Table 403.1.1 or Table 403.1.2 shall be considered individually by the code official.

TABLE 403.1.1 (IBC [P]2902.1.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES BASED ON USE GROUP CLASSIFICATION
(See Sections 403.2 and 403.3)

(Portions of table not shown remain unchanged)

TABLE 403.1.2 (IBC [P]2902.1.2)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

TYPE OF BUILDING OR USE	WATER CLOSETS		LAVATORIES	BATHTUB/ SHOWER	DRINKING FOUNTAIN
	MALE	FEMALE			
Picnic areas	1 per 50		1 for every 2 water closets		
Organized camps	1 per 15		1 per 15	1 per 150	1 per camping area
Public swimming pools[b]	1 per 125[a]	1 per 75	1 for every 2 water closets	1 per 200	1 per 1,000
Developed linear parks and trails[c](ARA)	1 per each 3.1 miles (5 km) interval		1 for every water closet	--	--
Athletic fields[e,f]	1 per 75	1 per 40	1 for every 2 water closets	--	1 per 1,000[g]
Marinas	1 per 100 slips		1 for every 2 water closets	--	--
Commuter parking lots[d]	1 per 100 parking stalls		1 for every 2 water closets	--	--
Public beaches	1 per 100		1 for every 2 water closets	--	--
Riding arenas	1 per 100		1 for every 2 water closets	--	--

a. Urinals shall be permitted to be substituted for not more than 67 percent of the required number of water closets.
b. Where the occupant load is less than 15, one family or assisted use toilet facility shall be permitted to be substituted for separate male/female toilet facilities. Where the occupant load is less than 50, two family or assisted use toilet facilities shall be permitted to be substituted for separate male/female toilet facilities..
c. Separate facilities shall not be required where one or more family or assisted use toilet facilities is provided.
d. Where the parking lot capacity is less than 10 vehicles, fixtures shall not be required.
e. Facilities shall be within 500 feet of field perimeter.
f. Where the total bleacher or grandstand seating capacity is less than 150 persons and permanent toilet facilities are not provided, portable toilets facilities that conform to ANSI 4.3 shall be provided.
g. Where the total bleacher or grandstand seating capacity is less than 150 persons, drinking fountains shall not be required.

Reason: While the language in 403.1 provides discretion to the code official to determine the “best fit” for occupancies not shown in Table 403.1, there are situations where it just does not “fit” into the Table. The proposed table is to provide additional direction to the code official for situations that are not defined in Table 403.1 yet should be provided with fixtures and at a lower rate than those defined in Table 403.1 due to their infrequent usage.

Many of the proposed required fixtures exist in other codes, some of which have modified the IPC at the state or local level to provide direction to their respective jurisdictions. Other uses have been added to reflect growing trends in parks and transportation (ride sharing areas).

The proposed fixtures are intended to be permanent in nature, not portable facilities. While there is a footnote providing an exception to allow for portable facilities in one use, the enforcement of providing and maintaining portable facilities is not feasible in many jurisdictions due to recent economic problems resulting in doing more with less.

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

P27-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.1-P-OLIPHANT

P28 – 12

Table 403.1 (IBC Table [P]2902.1)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN[e, f] (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses.[j]	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink[g]

j. Exam and procedure rooms in doctor, dentist and veterinarian offices shall be provided with a hand washing sink.

(Portions of table and footnotes not shown remain unchanged)

Reason: The code is silent about requiring hand washing sinks in doctor, dentist and veterinarian exam and procedures rooms. Sanitation is vitally important to prevent the spread of disease causing organisms. Hand washing is critical in preventing this spreading. The code needs to require hand washing sinks in these areas to allow for proper sanitation.

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.

Cost Impact: None

P28-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1-P-STRAUSBAUGH.PMGCAC

P29 – 12
202 (IBC 202), Table 403.1 (IBC Table [P]2902.1)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new definitions as follows:
(Definitions to also be added to the IBC)

GRANDSTAND. Tiered seating that is supported on a dedicated structural system, that is two or more rows high and that is not a *building element*. See "Bleachers".

BLEACHERS. Tiered seating that is supported on a dedicated structural system, that is two or more rows high and that is not a *building element*. See "Grandstand".

BUILDING ELEMENT. A functional component of building construction that is listed in Table 601 of the IBC. Such components are constructed of materials consistent with the construction type of the building and can be fire-resistance-rated.

Revise table as follows:

TABLE 403.1 (IBC Table [P]2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN[e, f] (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities[h]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000[i]	1 service sink[i]

(Portions of table and footnotes not shown are unchanged)

h. Where the total *bleacher* or *grandstand* seating capacity is less than 150 persons and permanent toilet facilities are not provided, portable toilets facilities that conform to ANSI 4.3 shall be provided.

i. Where the total *bleacher* or *grandstand* seating capacity is less than 150 persons, drinking fountains and service sinks shall not be required.

Reason: Consider a small city park with a ball field having a several bleacher units. The code currently requires that any venue with bleachers and grandstands have permanent toilet facilities and a drinking fountain and a service sink. This seems to be an unreasonable requirement where the ball field is used only seasonally, the anticipated attendance is very low and the provision of utilities (water, sewer) might be difficult. However, it is recognized that the presence of even a small number of people at an event does create the need for basic toilet facilities. Therefore, if permanent toilet facilities are not required, then portable toilet facilities need to be required.

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.

Cost Impact: None

P29-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1 #2-P-STRAUSBAUGH.PMGCAC

P30 – 12
Table 403.1 (IBC [P]2902.1), 410.2 (New) (IBC 2902.6 (New))

Proponent: Matt Archer - Douglas County, CO - representing the Colorado Chapter ICC (marcher@douglas.co.us)

Revise as follows:

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 403.2 and 403.3)

BATHTUBS/ SHOWERS	DRINKING FOUNTAIN~~[e, f]~~ (SEE SECTION 410~~.1~~)	OTHER

(Portions of table not shown remain unchanged.)

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the International Building Code.
b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units hall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
~~e. The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the International Building Code.~~
~~f. Drinking fountains are not required for an occupant load of 15 or fewer.~~
~~g~~e. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

410.2 (IBC 2902.6)Small occupancies. Drinking fountains shall not be required for an occupant load of 15 or fewer.

(Renumber subsequent section)

Reason: I believe footnotes serve as a guide for how to use the table. Footnotes are not meant to create new requirements or exceptions.
I deleted footnote e because the table will refer you to the main Section 410 where the (existing) section 410.2 stating that 2 drinking fountains are required for accessibility reasons can be found. Therefore, footnote e will be redundant and should be removed.
I deleted footnote f because this footnote applies to the entire table and not a specific function within the table. Therefore, this type of exception should be placed in the body of the code by moving the footnote to a new section under Section 410, drinking fountains.

Cost Impact: None

P30-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1-ARCHER

P31 – 12
Table 403.1 (IBC [P]2902.1)

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

Revise as follows:

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS		LAVATORIES		BATHTUBS / SHOWERS	DRINKING FOUNTAINS	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-2	Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		-	1 per 500	1 service sink, 1 food waste grinder

Reason: Food waste grinders are an important component of every commercial kitchen and food handling establishment. This change will merely emphasize that such an appliance is required for these establishments. Plumbing engineers already provide food waste grinders in the design of commercial kitchens. Hence, this is not a significant change since it is common practice to install a food waste grinder.

It is well known as to the purpose of a food waste grinder. By having a food waste grinder in a commercial kitchen, there will be a reduction in the number of stoppages, since food waste will be reduced in size to allow the water to transport the food waste to the public sewer.

Cost Impact: This change will increase the cost of construction.

P31-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1-P-BALLANCO

P32 – 12
Table 403.1 (IBC Table [P]2902.1)

Proponent: Robert G. Konyndyk, Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan representing The Bureau of Construction Codes. (konyndykr@michigan.gov)

Revise as follows:

TABLE 403.1 (IBC Table [P]2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 403.2 and 403.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN[e, f] (SEE SECTION 410.1)	OTHER
				MALE	FEMALE	MALE	FEMALE			

h. Structures not designed for occupants or as an employee's regular working area shall not be required to have toilet facilities.

(Portions of table and footnotes not shown remain unchanged.)

Reason: This code change revision will improve the code by providing greater clarity. This footnote clarification provides a restroom exception for structures like very small remote metering stations, unattended airplane hangers, etcetera. For example it is understood that Number 8, Classification Storage, Occupancy S-1 and S-2 in the table above address structures where individuals are present.

Cost Impact: Construction cost will be reduced by providing greater understanding of non occupied structures.

P32-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1-P-KONYNDYK

P33 – 12
Table 403.1 (IBC [P]Table 2902.1)

Proponent: Gary Kreutziger,M.C.P., City of San Antonio, representing himself (gkreutziger@sanantonio.gov)

Revise as follows:

TABLE 403.1 (IBC [P]Table 2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]

(See Sections 403.2 and 403.3)

				WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES			DRINKING FOUNTAIN[e, f] (SEE SECTION 410.1)	
NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	MALE	FEMALE	MALE	FEMALE	BATHTUBS/ SHOWERS		OTHER

f. Drinking fountains are not required for an occupant load of 15 or fewer <u>or in clinic, outpatient occupancies as defined in the *International Building Code*</u>.

(Portions of table and footnotes not shown remain unchanged.)

Reason: The installation of a drinking fountain in *clinic, outpatient* occupancies is an obstacle in a clinics ability to maintain sanitary conditions and infection control within the medical office. Per the Center for Disease Control, indirect transmisssion of infectious diseases can occur by contact of an infectious agent through a contaminated intermediate object and some viruses and bacteria can live two hours or longer on most surfaces. Also most clinical staff would prefer to control the distribution of drinking water due to patients not being allowed any food or drink prior to a procedure.

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

P33-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T403.1-P-KREUTZIGER

P34 – 12
403.2 (IBC [P] 2902.2)

Proponent: David Porter AIA, representing David Porter Associates and self.
(dporter@porterarchitects.com)

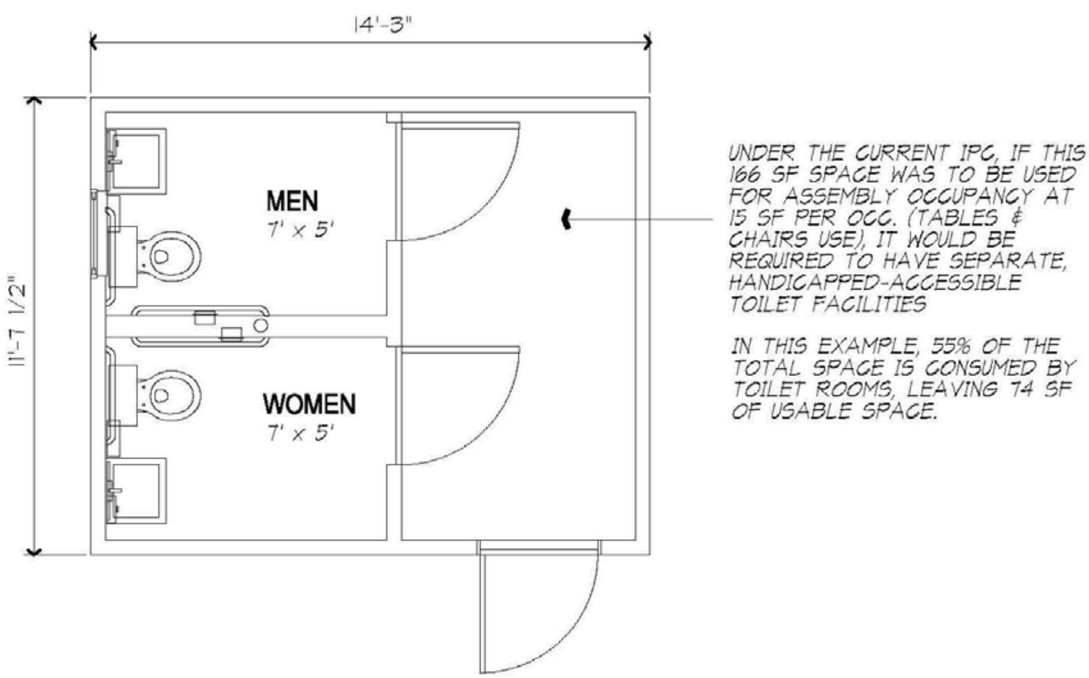
Revise as follows:

403.2 (IBC [P] 2902.2) Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for
each sex.

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. <u>Separate facilities shall not be required in assembly occupancies in which the maximum occupant load is 50 or fewer.</u>

Reason: There is no current exception for allowing a single toilet room in very small assembly occupancies. One could conceivably have a 100 SF, small community hall where the occupant load would be 7 persons (15 SF per occupant for table and chair seating) but where two, separate, handicapped-accessible toilet rooms are currently required. Those two toilet rooms would consume no less than 70 SF of the 100 SF space and that does not seem to be the intent of the Code (see attached illustrative example of the current code requirement).



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

P34-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.2-P-PORTER

P35 – 12
403.3 (IBC [P] 2902.3)

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

Revise as follows:

403.3 (IBC [P] 2902.3) Required public toilet facilities. Customers, patrons and visitors shall be provided with *public* toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 403 for all users. Employees shall be provided with toilet facilities in all *occupancies*. Employee toilet facilities shall be either separate or combined employee and *public* toilet facilities.

Exceptions: Public toilet facilities shall not be required in<u>:</u>

<u>1.</u> Open or enclosed parking garages~~. Toilet facilities shall not be required in parking garages~~ where there are no parking attendants.

<u>2.</u> <u>Structures and tenant spaces intended for quick transactions, including take out, pick up and drop off, having a public access area less than or equal to 300 square feet.</u>

Reason: Tenant spaces that are only intended for quick transactions do not need to provide public facilities for customers, patrons, and visitors. The public does not rely on such spaces to provide public toilet rooms. Patrons spend a short period of time completing a transaction, then they depart.

Examples of these types of spaces include: take out food locations, such as Chinese food take outs; pizza take outs; and carry out ribs. Similar quick transaction facilities include: dry cleaners, atm facilities, florists, shoe repair shops, and newspaper stands.

It is recognized that the text of the second exception could be shortened to read: <u>Structures and tenant spaces having a public access area less than or equal to 300 square feet.</u> The added text is provided for clarity.

The purpose of this section has always been to provide comfort facilities for anyone spending a period of time in the public space. Quick transaction spaces are unique, in that people are not in the space for any length of time. Furthermore, the space open to the public is limited to 300 square feet.

It would be a safety and/or health hazard to have the public travel to the working areas of the tenant space to use toilet facilities. Hence, if a public toilet room is added, the space for the toilet room would have to be located in the front space where the small public area is located. This creates a security concern where the public toilet room would block openings in the front tenant space.

The 300 square foot dimension is based on the standard large spaces used by these types of facilities. Most tenant spaces of this type have an area less than 300 square feet for the public.

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

P35-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.3-P-BALLANCO

P36 – 12
403.3.1 (IBC [P] 2902.3.1)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee, the Virginia Plumbing and Mechanical Inspectors Association (VPMIA), the Virginia Building Code Officials Association (VBCOA) and ICC Region 7.

Revise as follows:

403.3.1 (IBC [P] 2902.3.1) Location and access. The required public toilet facilities shall be located in the same building or in an adjacent building that is under the same tenant control. Access to the required facilities shall be from within the building or from the exterior of the building. ~~All~~ Access routes shall comply with the accessibility requirements of the *International Building Code*. The access route to ~~the~~ *public* toilet facilities ~~required by Section 403.3~~ shall not pass through kitchens, storage rooms or closets. The public shall have access to the required toilet facilities at all times that the building is occupied.

Reason: Access to toilet facilities can be from the exterior of a building and facilities for one building can be located in another building given that the required travel distance is met and it's an accessible route. This proposal ensures that the tenant that is required to provide facilities is actually authorized to use toilets in another area during all times that such tenant space is occupied. The current problem is that some creative designs have attempted to utilize facilities where the tenant has absolutely no control over the location of the non-local facilities. Concerning the second line: If access to toilet facilities can be from the exterior of a building, could toilet facilities for one building be located in another building given that the required travel distance is met?

Examples: Could amusement park buildings have central toilet facilities in one building to serve the requirements of those buildings? Could a business office building with an adjacent working warehouse building have the toilet facilities for the warehouse in the office building?

For example, a strip center type mall setting may have an adjacent retail building. The tenants in the mall might expect their customers to use the facilities in the adjacent building, so long as they are not more than 500 feet away and on an accessible route. This proposal prevents that from occurring if the adjacent retail building is not under the same "tenant control." This example creates two serious problems. The first is the retail building owner may not be aware that he is the facility provider for spaces in the strip mall. In addition there is no way to regulate or mandate the hours of operation for the adjacent building to coincide with those of the strip mall. The second is what if the adjacent building operation goes out of business? There are many examples of campus type properties and outlet mall complexes where the required toilet facilities are in another building and this should be allowed if access to such buildings is controlled such that the facilities will always be available when needed.

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Cost Impact: None

P36-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.3.1-P-STRAUSBAUGH.PMGCAC

P37–12
403.3.6 (IBC [P]2902.3.5)

Proponent: Randall R. Dahmen, P.E. Wisconsin licensed Commercial Building Inspector, representing himself (randy.dahmen@wi.gov)

Revise as follows:

403.3.6 (IBC [P]2902.3.5) Door locking. ~~Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.~~ Doors to toilet rooms shall not be lockable from either side of the door.

Exceptions:

1. Toilet room doors located on the exterior of a building that are associated with a motor fuel-dispensing facility shall be permitted to be lockable from the exterior provided that the key for access is available from a building attendant. When an attendant is not present, such toilet rooms can be locked from the exterior.
2. The doors to family-or-assisted-use toilet rooms and toilet rooms designed for a single occupant shall be permitted to have a lock on the inside of the door.

Reason: The proposed language addresses the limitations for access to toilet rooms not currently addressed in the code. Motor fuel-dispensing facilities many times will have toilet rooms that are accessible from the exterior of the building. These facilities many times require a key for access to be obtained from the building attendant. At present, there are many such facilities that remain limitedly open by allowing fuel dispensing to take place under an attached canopy by a customer, when there are no longer workers located in the main building. The proposed language is to clarify when toilet rooms for these type of buildings are expected to available for use. The 2nd exception is included so as to address previous code language.

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

P37-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.3.6 (NEW)-P-DAHMEN

P38 – 12
403.4 (IBC [P]2902.4)

Proponent: Larry Brown, National Association of Home Builders (NAHB)

Revise as follows:

403.4 (IBC [P]2902.4)Signage. Required public facilities shall be provided with ~~designated by a~~ ~~legible~~ signs that ~~for each~~ designate the sex as required by Section 403.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1110 of the *International Building Code*.

Reason: This modification is proposed as the IPC and IBC do not always require a separate toilet facility for each sex, as shown below in the Exceptions to Section 403.2. As Section 2902.4 (above) only addresses the signs themselves, is it more appropriate that sign itself have the correct designation for the sex, or for a facility that can be used by either sex. This modification achieves this intent.

403.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.

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

P38-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.4-P-BROWN

P39 – 12
403.4.1 (IBC [P] 2902.4.1)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

403.4.1 (IBC [P] 2902.4.1) Directional signage. Directional signage indicating the route to the required public toilet facilities shall be posted ~~in accordance with Section 3107 of the *International Building Code*. Such signage shall be located~~ in a lobby, corridor, ~~or~~ aisle or similar space, such that it can be readily seen from the main ~~at the~~ entrance to the building or tenant space. ~~facilities for customers, and visitors~~.

Reason: IBC Section 3107 is silent with respect to the posting of this directional signage, so the reference to this section is being removed. The current language indicates that that signage should be located at the entrance to the toilet facilities. The intent of this section is to require signage at the entrance of the building or tenant space so that persons entering such spaces are made aware that toilet facilities do exist and the general direction to those facilities. The overall reason why this section is in the code is to prevent the tenant from telling people that toilet facilities are not available. The requirement for a sign to be displayed at the entrance to the building or tenant space puts the tenant on notice that he cannot deny that public toilet facilities exist to those persons needing those facilities. How can the tenant or owner say that he/she has no public toilet facilities when there is a sign clearly indicating the location of those supposedly non-existing facilities?

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.

Cost Impact: None

P39-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.4.1-P-STRAUSBAUGH.PMGCAC

P40– 12

404.1, Chapter 14

Proponent: Sidney L. Cavanaugh, Cavanaugh Consulting representing Truebro (sidneycavanaugh@yahoo.com)

Revise as follows:

404.1 Where required. Accessible plumbing facilities and fixtures shall be provided in accordance with the International Building Code. Where accessible plumbing facilities or fixtures are required, such facilities and fixtures shall comply with ICC A117.1. Exposed waste and supplies on such fixtures shall be protected and insulated in accordance with ASME A112.18.9.

Add new standards to Chapter 14 as follows:

ASME

A112.18.9-2011 Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures.

ICC

A117.1-2009 Standard for Accessible and Usable Buildings and Facilities for Persons with Physical Disabilities

Reason: The completion of the national consensus standard for protectors/insulators for exposed waste and supplies which are required by ANSI/ICC A117.1 allows for compliance with that standard and consistent installation and protection in the field. In addition, plumbing fixtures and fittings and their inspection are under the jurisdiction of the plumbing inspector, including accessible ones. Accordingly the ANCI/ICC standard should be referenced in the plumbing code.

Cost Impact: No additional cost

P40-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.1-CAVANAUGH

P41 – 12
404.1.1 (New), Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Add new text as follows:

404.1.1 Exposed Pipes and Surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be insulated/protected by covers complying with ASME A112.18.9.

Add new standard to Chapter 14 as follows:

ASME

A112.18.9–2011	Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures

Reason: ASME A112.18.9 Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures is a National standard (ANSI). This Standard is intended to cover products that will satisfy the requirements of ICC/ANSI A117.1, Standard for Accessible and Usable Buildings and Facilities for Persons With Physical Disabilities, and contains acceptable performance requirements for protectors/insulators for exposed waste and supplies, so a physically challenged person will be protected when using a sink or lavatory in a public/commercial or private/residential facility.

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

P41-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.1.1 (NEW)-CONSTANTINO

P42 – 12

404.2 (New), 404.3 (New), Chapter 14

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

Add new text as follows:

<u>**404.2 Accessible fixture requirements.** Accessible plumbing fixtures shall be installed with the clearance, height, spacing, and arrangement in accordance with ICC A117.1.</u>

<u>**404.3 Exposed pipes and surfaces.** Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact . Pipe coverings shall comply with ASME A112.18.9.</u>

Add new standards to Chapter 14 as follows:

ASME

<u>A112.18.9-2011</u> <u>Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures</u>

ICC

<u>A117.1-2009</u> <u>Accessible and Usable Buildings and Facilities</u>

Reason: Reference should be made to ICC A117.1 in the plumbing code. While this standard is referenced in the Building Code, it should also be referenced in the Plumbing Code since the standard contains requirements for plumbing fixture installations.

One of the common concerns is who inspects accessible plumbing fixtures for compliance with ICC A117.1? Plumbing fixtures are inspected by the plumbing official. Therefore, appropriate reference to the spacing, sizing, and configuration requirements needs to be placed in the plumbing code.

ASME A112.18.9 Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures is the national consensus standard regulating protective covers for water and drain pipes. This Standard is intended to regulate products that must meet the requirements of ICC A117.1. The standard has performance requirements for protectors/insulators for exposed waste and supplies, so a physically challenged person will be protected when using a sink or lavatory in a public/commercial or private/residential facility.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.18.9-2011 and ICC A117.1-2009, 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 2, 2012.

P42-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.2-P-BALLANCO

P43 – 12
405.10 (New)

Proponent: Daniel D. Fish, Roda LLC,representing self (info@drainbrain.us)

Add new text as follows:

<u>**405.10 Wastewater leak containment, detection and notification.** Where a plumbing fixture such as a water closet, shower, or bathtub is installed in a location where wastewater leakage from the fixture will cause damage, an early-warning wastewater leak containment, detection, and notification device shall be required. This device shall be equipped with an auditory alarm, visual signal, and a means for notification to the affected building occupants, property owners or the property management staff. The auditory alarm shall have a sound pressure level rating of not less than 85 dB when measured at a distance of ten feet.</u>

Reason: Millions of wastewater leaks occur every year in multi-story buildings from leaking drains, waste lines, and toilets. Toilets are especially high risks for water leakage. Research has shown that 30 percent of all toilets in the United States leak. Toilets with unreliable wax gaskets and flanges – a common problem – cause the most damage to the unit below. Also, the float valve that controls water entering the toilet tank often malfunction, which allows water to run into toilet waste line continuously .

Wastewater leaks typically go undetected until considerable damage has been done. These leaks: (1) waste millions of gallons of water, (2) damage property/materials, generating millions of tons of debris that swells landfills, and (3) develop mold on building components, creating property damage and a health hazard. Property owners spend millions of dollars to repair the damage from wastewater leaks and cure mold-related problems.

An early-warning wastewater leak containment, detection, and notification device will give building occupants and owners the opportunity to avoid wastewater leak damage and its attendant costs. Taking action early will conserve millions of gallons of water and eliminate the environmental, economic, and health hazards from wastewater leaks. This solution for the age-old wastewater leak problem will meet the intent of this code by safeguarding the public health, safety, and welfare.

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

P43-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

405.10 (NEW)-P-FISH

P44– 12
405.3.1

Proponent: Bob Scott, Kye Lehr and Daryl Kuiper - Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

405.3.1 Water Closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches from its center to any side wall, partition, vanity, paper holder, accessory or other obstruction, or closer than 30 inches (762mm) center to center between adjacent fixtures. There shall be a 21 inch clearance in front of the water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762mm) in width and not less than 60 inches (1524 mm) in depth for floor mounted water closets and not less than 30 inches(762mm) in width and 56 inches (1422 m) in depth for wall-hung water closets.

Reason: Today's construction is typically limited to the minimums permitted in this section. Once tissue holders, napkin disposals and paper dispensers are installed this min area is reduced to a non- practical size when located adjacent to the fixture. Adding the language proposed would require installers to take into consideration these types of obstructions and locate them in front of the fixture where usage of the fixture is not compromised.

Cost Impact: none. The practice of locating accessories in front of the fixture instead of adjacent to it would cause no additional labor or costs.

P44-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

405.3.1-P-SCOTT

P45 – 12
405.3.2

Proponent: Shawn Strausbaugh, Arlington County VA Representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Revise as follows:

405.3.2 Public lavatories. In employee and *public* toilet rooms, the required lavatory shall be located in the same room as the water closet.

> **Exception:** In educational use occupancies, the required lavatory shall be permitted to be located adjacent to the room or space containing the water closet provided that not more than one operational door is between the water closet and the lavatory.

Reason: This has been a long standing practice in school construction. It is geared towards helping educate children on the importance of personal hygiene. This arrangement also allows for group wash fixtures to be located adjacent to core toilet rooms. This allows the instructors to wait outside and assure the children wash their hands upon exit of the toilet room. More commonly, it permits the installation of the lavatory to be located within the classroom when water closets are installed in the classroom itself. So when a child uses the facilities they walk through a single door (no different in concept to exiting a typical toilet stall) into the classroom where the instructor can assure hands are washed.

Cost Impact: None

P45-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

405.3.2-P-STRAUSBAUGH

P46 – 12
406.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

406.1 Water connection. The water supply to an automatic clothes washer shall be protected against backflow by an air gap that is integral with ~~installed~~ ~~integrally within~~ the machine or ~~with the installation of~~ a backflow preventer shall be installed in accordance with Section 608. Air gaps shall comply with ASME A112.1.3 or A112.1.2.

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 ACW's have integral backflow protection.

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.

Cost Impact: None

P46-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.1-P-STRAUSBAUGH.PMGCAC

P47 – 12
406.2

Proponent: Richard Allison, A.R.K. Plumbing, Inc, representing self

Revise as follows:

406.2 Waste connection. The waste from an automatic clothes washer shall discharge through an air break into a standpipe in accordance with Section 802.4 or into a laundry sink. The trap and fixture drain for an automatic clothes washer standpipe shall be not less than 2 inches (51 mm) in diameter. ~~The fixture drain for the standpipe serving an automatic clothes washer shall connect to a 3-inch (76 mm) or larger diameter fixture *branch* or *stack*.~~ Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an approved trench drain.

Reason: Certain jurisdictions are interpreting this as needing a 3 inch fixture branch solely for automatic clothes washer. Their interpretation of this is that we need to use a 3 x 1 ½ x 2 sanitary tee and cannot wet vent the automatic clothes washer with a laundry tub. All other jurisdictions only require us to tie into a 3 inch stack.

Cost Impact: Minimal- More importantly on the cost, is in many instances, the framing won't allow this.

P47-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.2-P-ALLISON

P48 – 12

406.3 (New), Chapter 14

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

<u>**406.3 Approval.** Commercial clothes washers shall be listed and labeled in accordance with UL1206 or UL 2157. Residential clothes washers shall be listed and labeled in accordance with UL 2157.</u>

Add new standards to Chapter 14 as follows:

UL

<u>1206-2003 (R2007)</u>	<u>Electric Commercial Clothes-Washing Equipment with revisions through June 16, 2010</u>
<u>2157-2004 (R2010)</u>	<u>Electric Clothes Washing Machines and Extractors</u>

Reason: Referenced UL standards contain important safety and plumbing requirements that should be covered in the International Plumbing Code. UL 1206 and UL 2157 are ANSI approved standards for commercial clothes washing equipment. UL 2157 is an ANSI approved standard for domestic clothes washers.

Cost Impact: None

Analysis: A review of the standards proposed for inclusion in the code, UL 1206-2003(R2007) and UL 2157-2004(R2010) 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 2, 2012.

P48-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.3-P-EUGENE

P49 – 12
409.1, Chapter 14

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

409.1 Approval. Commercial dishwashing machines shall conform to ASSE 1004 and NSF 3. Commercial dishwashing machines shall be listed and labeled in accordance with UL 921. Residential Dishwashing machines shall be listed and labeled in accordance with UL 749.

Add new standards to Chapter 14 as follows:

UL

749-2008	Household Dishwashers
921-2005 (R2010)	Commercial Dishwashers

Reason: Referenced UL standards contain important safety and plumbing requirements that should be covered in the International Plumbing Code. UL 749 is an ANSI approved standard for household dishwashers. UL 921 is an ANSI approved standard for commercial dishwashers.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 749-2008 and UL 921-2005 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 2, 2012.

P49-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

409.1-P-EUGENE

P50 – 12
409.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

409.2 Water connection. The water supply to a dishwashing machine shall be protected against backflow by an *air gap* that is integral with the machine or a backflow preventer shall be installed in accordance with Section 608. Air gaps shall comply with ASME A112.1.3 or A112.1.2.

Reason: The requirement for dishwashing machines to comply with ASSE 1006 (covering the requirement for an internal air gap on the water supply) was removed from the 2012 code because DW manufacturers are no longer certifying their machines to ASSE 1006. 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 DWM's have integral backflow protection.

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.

Cost Impact: None

P50-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

409.2-P-STRAUSBAUGH.PMGCAC

P51 – 12
410.1, Chapter 14

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1/CSA B45.2 or ASME A112.19.2/CSA B45.1 and water coolers shall conform to ARI 1010. Drinking fountains and water coolers shall conform to NSF 61, Section 9. <u>Electrically operated, refrigerated drinking water coolers shall be listed and labeled in accordance with UL 399.</u>

Add new standard to Chapter 14 as follows:

UL

<u>399-2008</u> <u>Drinking-Water Coolers, with revisions through January 14, 2011</u>

Reason: Referenced UL standards contain important safety and plumbing requirements that should be covered in the International Plumbing Code. UL 399 is an ANSI approved standard for drinking water coolers.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 399-2008 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 2, 2012.

P51-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.1-P-EUGENE

P52 – 12
410.1, 410.3, 410.4, Chapter 14

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

Revise as follows:

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1/CSA B45.2, ~~or~~ ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4. Drinking fountains with self-contained refrigeration units for chilling the drinking water ~~and water coolers~~ shall also conform to ~~ARI 1010~~ ASHRAE Standard 18. Drinking fountains ~~and water coolers~~ shall conform to NSF 61, Section 9.

410.3 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies, where drinking fountains are required, ~~water coolers~~ permanently-installed bottle filling stations ~~or bottled water dispensers~~ shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains. Bottle filling stations shall conform to NSF 61. Where bottle filling stations have self-contained refrigeration units for chilling the drinking water, they shall conform to ASHRAE Standard 18. Bottled water dispensers shall not be substituted for required drinking fountains.

410.4 Prohibited location. Drinking fountains and bottle filling stations~~,~~ ~~water coolers~~ ~~and bottle water dispensers~~ shall not be installed in public restrooms.

Add new standard to Chapter 14 as follows:

American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329

ASHRAE
Standard 18-2008 Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration

Reason: There is considerable confusion in the code enforcement and design communities about terminology for drinking fountains. Currently the Section 410.1 talks about drinking fountains and water coolers. Drinking fountain manufacturers use the term “water cooler” to indicate a drinking fountain that supplies chilled drinking water. However, for years, many people have thought of water coolers as the water dispensers that have a 5 gallon water bottle turned upside down on top of them. Because the code uses the term “water cooler” in Section 410.1, some misunderstand that the code allows for a complete substitution of drinking fountains with bottled water dispensers. This is not the intent of the code nor would we want these “temporary” water dispensers to be the only source of drinking water in a building. My proposed changes eliminate the term “water cooler” to prevent future misunderstanding of what is allowed and what is not.

The substitution of bottled water dispensers for a *required* number of drinking fountains is often used to “get around the code requirement” for providing the full number of required permanent fixtures for providing drinking water. It is not uncommon for bottled water dispensers to frequently run dry, for cups not to be available or for management to realize how much they end up paying for the bottled water service and discontinue the service. Ultimately, the intent of the code is not being realized in many buildings. Because of the temporary nature of bottled water dispensers, they should not be allowed to be a substitute for permanent fixtures.

There is no denying that the use of personal drinking water bottles has increased dramatically in recent years. Use of a personal water bottle eliminates having to obtain drinking water from a drinking fountain that might not have been cleaned for some time. Some people just don’t like the idea of putting their mouth so close to an area where others have done so previously. Getting water from a lavatory in order to fill a water bottle is no better. So why not realize the trend towards personal water bottle use and have the code allow a bottle filling station substitution for drinking fountains? It is a permanent fixture, it provides access to a clean supply of drinking water, it encourages reuse of bottles (a green practice), reduces the carbon footprint of bottled water delivery (a very green practice) and provides drinking water in a manner that the public is demanding more and more. It’s time for the code to come out of the dark ages and provide complete access to safe drinking water.

And finally, the ASHRAE 18 standard is being proposed to replace the AHRI 1010 standard that has not be used for many years for water cooling systems. AHRI no longer maintains the standard (the last revision was 10 years ago). The code needs to stay abreast of current standards.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASHRAE Standard 18-2008, 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 2, 2012.

P52-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.1-P-SWATKOWSKI

P53 – 12
202, 410.1, 410.3, 410.4, Chapter 14

Proponent: John Watson, Manager-Compliance and Sustainability, Elkay Manufacturing, representing Elkay Manufacturing (john.watson@elkay.com)

Add new definitions as follows:

BOTTLE FILLING STATION. A plumbing fixture that is connected to the potable water distribution and building drainage system and is designed and intended for filling personal use drinking water bottles not less than 10 inches (250 mm) in height. Such fixtures can be separate from or integral to a *drinking fountain*.

DRINKING FOUNTAIN. A plumbing fixture connected to the potable water distribution system that provides drinking water in a flowing stream so that the user can consume water directly from the fixture without the use of any accessories. Drinking fountains can incorporate a *bottle filling station*. Wasted water from the flowing stream and from the *bottle filling station* is captured and directed into the building's drainage system. These fixtures have a permanent connection to a building's potable cold water supply and to the building's drainage system through a trap and can incorporate a water filter and a cooling system for chilling the drinking water.

Revise as follows:

410.1 Approval. Drinking fountains shall conform to ASME A112.19.1/CSA B45.2, ~~or~~ ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4. Drinking fountains and *bottle filling stations* with a self contained cooling system for chilling the drinking water ~~and water coolers~~ shall conform to ~~ARI 1010~~ ASHRAE Standard 18. Drinking fountains and ~~water coolers~~ bottle filling stations shall conform to NSF 61, Section 9.

410.3 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies, where drinking fountains are required, *bottle filling stations* ~~water coolers or bottled water dispensers~~ shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains. Bottled water dispensers shall not be substituted for required drinking fountains.

410.4 Prohibited location. Drinking fountains and *bottle filling stations*~~, water coolers and bottle water dispensers~~ shall not be installed in public ~~restrooms~~ toilet facilities.

Add new standard to Chapter 14 as follows:

American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329

ASHRAE

Standard 18-2008	Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration

Reason: Drinking fountain manufacturers use the term "water cooler" to indicate a drinking fountain that supplies chilled drinking water. However, some people think of water coolers as the bottled water dispensers. My proposal eliminates the term "water cooler" to prevent future misunderstanding of what is allowed and what is not.

Using bottled water dispensers to substitute for a *required* number of permanently installed drinking fountains is just a cheap way for the designer to get around the full intent of the code. Providing permanent fixtures for obtaining drinking water is the intent of the code. Bottled water dispensers frequently run dry, cups for their use are sometimes not to be available and it's too easy for a bottled water service to be discontinued. Bottled water dispensers are temporary and should not be allowed to be a substitute for permanent fixtures.

We need to recognize that the use of personal drinking water bottles or containers has increased dramatically in recent years. Use of such a personal device eliminates having to obtain drinking water from a drinking fountain that might not have been cleaned for some time. Some people just don't like the idea of putting their mouth so close to an area where others have previously done so; and getting water from a lavatory in order to fill a water bottle is no better. So why not realize the trend towards personal water bottle use and have the code allow a bottle filling station substitution for drinking fountains? It is a permanent fixture, it provides access to a clean supply of drinking water, it encourages reuse of bottles (a green practice), reduces the carbon footprint of bottled water delivery (a very green practice) and provides drinking water in a manner that the public is obviously demanding. It's time for the code to recognize this new product and take a stance to provide complete access to safe drinking water.

And finally, the ASHRAE 18 standard is being proposed to replace the ARI 1010 standard that has not be used for many years for water cooling systems. ARI no longer maintains the standard (the last revision was 10 years ago). The code needs to stay abreast of current standards.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASHRAE Standard 18-2008, 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 2, 2012.

P53-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.1-WATSON

P54 – 12
202, 410.3, 410.4

Proponent: Roger Harper, Jr, Louisa County VA, representing, the Virginia Plumbing and Mechanical Inspectors Association (sharper@louisa.org)

Add new definitions as follows:

DRINKING FOUNTAIN. A plumbing fixture that is connected to the potable water distribution system and the drainage system. The fixture allows the user to obtain a drink directly from a stream of flowing water without the use of any accessories.

WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. This definition also includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.

WATER COOLER. A drinking fountain that incorporates a means of reducing the temperature of the water supplied to it from the potable water distribution system.

Revise as follows:

410.3 Substitution. Where restaurants provide drinking water in a container free of charge, *drinking fountains* shall not be required in those restaurants. In other occupancies where *drinking fountains* are required, ~~water coolers or bottled~~ *water dispensers* shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.

410.4 Prohibited location. *Drinking fountains, water coolers* and ~~bottle~~ *water dispensers* shall not be installed in public restrooms.

Reason: There is often confusion regarding what is or is not a water cooler. Some people think that a water cooler is a drinking fountain since typically, they do also cool the water that is being dispensed. Others think that a water cooler is a bottled water dispenser that is capable of cooling the water dispensed. Currently the code does not define any of the terms. In reality, drinking fountains are drinking fountains and everything else is some form of a water dispenser. Whether or not the water is cooled is irrelevant. The code does not require cooled water. The code can be simplified in Section 410.3 by referring only to drinking fountains or their alternative, water dispensers. The new definitions establish that a drinking fountain and a water dispenser that is connected to the potable water supply system are both plumbing fixtures by definition and a bottled water dispenser is not a plumbing fixture by definition. It is necessary to be clear as to what the code requires to be provided and also what the code intends to allow as an alternative. This proposal also paves the way for new technology that is being marketed and installed today, namely water dispensers that are built into a wall, connected to the potable water supply system and dispense water into cups, glasses and bottles. These units typically treat the potable water with additional filtering and/or reverse osmosis treatment.

Cost Impact: none

P54-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.3-P-HARPER

P55 – 12
412.5 (New)

Proponent: Joseph Campanella, representing self

Add new text as follows:

412.5 Floor drains required. Not less than one floor drain shall be installed in every kitchen and bathroom of a multi-story building.

Reason: Water from fire sprinkler activations, dishwasher overflows, and toilet overflows typically causes catastrophic damage to a building because there is nowhere for the water drain to except into the lower floors of a building. For high rise structures, this means that the water damage can extend for many floors below the floor where the water event occurred. This collateral damage is very costly for building owners and residents and could be prevented by the installation of floor drains in rooms where water catastrophes are most likely to occur. There would be significant cost savings on insurance premiums.

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

P55-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

412.5 (NEW)-P-CAMPANELLA

P56 – 12

413, 413.1, 413.2, 413.3, 413.4, Table 709.1, 802.1.6, 915.1, 916.1, 1003.3.2

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

Revise as follows:

SECTION 413
FOOD WASTE DISPOSERS ~~GRINDER UNITS~~

413.1 Approval. Domestic food waste ~~grinders~~ disposers shall conform to ASSE 1008. Food waste ~~grinders~~ disposers shall not increase the drainage fixture unit load on the sanitary drainage system.

413.2 Domestic food waste ~~grinders~~ disposers waste outlets. Domestic food waste ~~grinders~~ disposers shall be connected to a drain of not less than 1 1/2 inches (38 mm) in diameter.

413.3 Commercial food waste ~~grinders~~ disposers waste outlets. Commercial food waste ~~grinders~~ disposers shall be connected to a drain not less than 1 1/2 inches (38 mm) in diameter. Commercial food waste ~~grinders~~ disposers shall be connected and trapped separately from any other fixtures or sink compartments.

413.4 Water supply required. All food waste ~~grinders~~ disposers shall be provided with a supply of cold water. The water supply shall be protected against backflow by an *air gap* or backflow preventer in accordance with Section 608.

Revise as follows:

TABLE 709.1
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS	MINIMUM SIZE OF TRAP (inches)
Kitchen sink, domestic with food waste ~~grinder~~ disposer and/or dishwasher	2	1 ½

(Portions of table not shown remain unchanged.)

Revise as follows:

802.1.6 Domestic dishwashing machines. Domestic dishwashing machines shall discharge indirectly through an *air gap* or *air break* into a standpipe or waste receptor in accordance with Section 802.2, or discharge into a wye branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste ~~grinder~~ disposer. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste ~~grinder~~ disposer shall connect to a deck-mounted *air gap* or the waste line shall rise and be securely fastened to the underside of the sink rim or counter.

Revise as follows:

915.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, lavatories and drinking fountains. Combination waste and vent systems shall not receive the discharge from a food waste ~~grinder~~ disposer or clinical sink.

916.1 Limitation. Island fixture venting shall not be permitted for fixtures other than sinks and lavatories. Residential kitchen sinks with a dishwasher waste connection, a food waste ~~grinder~~ disposer, or both, in combination with the kitchen sink waste, shall be permitted to be vented in accordance with this section.

Revise as follows:

1003.3.2 Food waste grinders. Where food waste ~~grinders~~ disposers connect to grease interceptors, a solids interceptor shall separate the discharge before connecting to the grease interceptor. Solids interceptors and grease interceptors shall be sized and rated for the discharge of the food waste ~~grinder~~ disposer. Emulsifiers, chemicals, enzymes and bacteria shall not discharge into the food waste ~~grinder~~ disposer.

Reason: The proper term used in the plumbing profession is food waste disposers, not food waste grinders. This will correct the language in the code to the proper terminology for this type of plumbing appliance.

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

P56-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

413-P-BALLANCO

P57 – 12

413.1, Chapter 14

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

413.1 Approval. Domestic food waste grinders shall conform to ASSE 1008 and shall be listed and labeled in accordance with UL 430. Food waste grinders shall not increase the drainage fixture unit load on the sanitary drainage system.

Add new standard to Chapter 14 as follows:

UL

430-2009 Waste Disposers, with revisions through March 23, 2011

Reason: Referenced UL standards contain important safety and plumbing requirements that should be covered in the International Plumbing Code. UL 430 is an ANSI approved standard for waste disposers.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 430-2009 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 2, 2012.

P57-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

413.1-P-EUGENE

P58 – 12
413.3

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

Revise as follows:

413.3 Commercial food waste grinder waste outlets. Commercial food waste grinders shall be connected to a drain not less than 11/2 inches (38 mm) in diameter. Commercial food waste grinders shall be connected and trapped separately from any other fixtures or sink compartments <u>and shall not discharge through a grease interceptor</u>.

Reason: This is a companion change to the change proposed to Section 1003. A food waste grinder should never discharge through a grease interceptor. The purpose of a food waste grinder is to pulverize food waste to small enough particles to discharge to the sewer. If a grinder connects to a grease interceptor, the food particles will separate out, defeating the purpose of a food waste grinder. Similarly, if a food waste grinder discharges to a solids interceptor, the food particles will be separated.

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

P58-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

413.3-P-BALLANCO

P59 – 12
417.4.1

Proponent: Roger Harper, Jr, Louisa County VA, representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (sharper@louisa.org)

Revise as follows:

417.4.1 Wall area. Bathtub floors, shower floors, ~~the~~ wall areas above built-in tubs ~~with~~ that have installed shower heads and walls in shower compartments shall be constructed of smooth, ~~noncorrosive~~ corrosion-resistant and nonabsorbent waterproof materials. Wall materials shall extend to a height of not less than 6 feet (1829 mm) above the room floor level~~,~~ and not less than 70 inches (1778 mm) above the drain of the tub or shower. ~~where measured from the compartment floor at the drain.~~ Such walls shall form a water-tight joint with each other and with either the tub~~, receptor~~ or shower floor.

Reason: This is consistent with the language currently in the IRC. This adds the missing requirement from the IPC that bath tubs and showers are required to have non-absorbent floors, the same as the IRC currently requires. This change also incorporates the term “corrosion resistant” in place of “non-corrosive”. The materials must be made of materials that resist corrosion. This is consistent industry terminology used throughout the I-codes.

Cost Impact: None

P59-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

417.4.1-P-HARPER

P60 – 12
417.5.2

Proponent: Tom Allen, City of Mount Dora, FL, representing self

Revise as follows:

417.5.2 Shower lining. Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made water tight utilizing material complying with Sections 417.5.2.1 through 417.5.2.6. Such liners shall turn up on all sides not less than 2 inches (51 mm) above the finished threshold level. Liners shall be recessed and fastened to an *approved* backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. The completed liner shall be tested in accordance with Section 312.9.

Exceptions:

1. Floor surfaces under shower heads provided for rinsing laid directly on the ground are not required to comply with this section.
2. Where a sheet-applied, load-bearing, bonded, waterproof membrane is installed as the shower lining, the membrane shall not be required to be recessed.
3. <u>Shower floors integrally cast into a concrete slab-on-grade floor and recessed such that the top of the shower drain is not less than 2 inches (51mm) below the room floor shall not be required to comply with this section.</u>

Reason: Recessing shower floors in concrete slab-on-grade floors has been common practice in many areas of the country. The advantage of this method for shower receptor construction is that the threshold doesn't require a curb. The shower floor is tiled so that the shower floor is even with the floor of the room. This makes it easy for elderly people to walk in and out of the shower. Because the recessed area for the shower receptor is cast integral to the rest of the slab and that any water seepage through the tile floor would just contact concrete, there is no need to install a liner in these situations. If the shower drain did become clogged to the point where water would fill the receptor, the water would run out the threshold at the same time the level would rise to a point to begin leaking through the tile and onto the top of the floor slab. The occupant would take action to shut off the water/unclog the drain long before any water would have the chance to seep through the tile and get into areas where wood construction (stud walls) would be damaged. Again, installing a liner in this recessed floor arrangement is simply a waste of time.

Cost Impact: There is no cost impact.

P60-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

417.5.2-P-ALLEN

P61 – 12
419.1.1 (New)

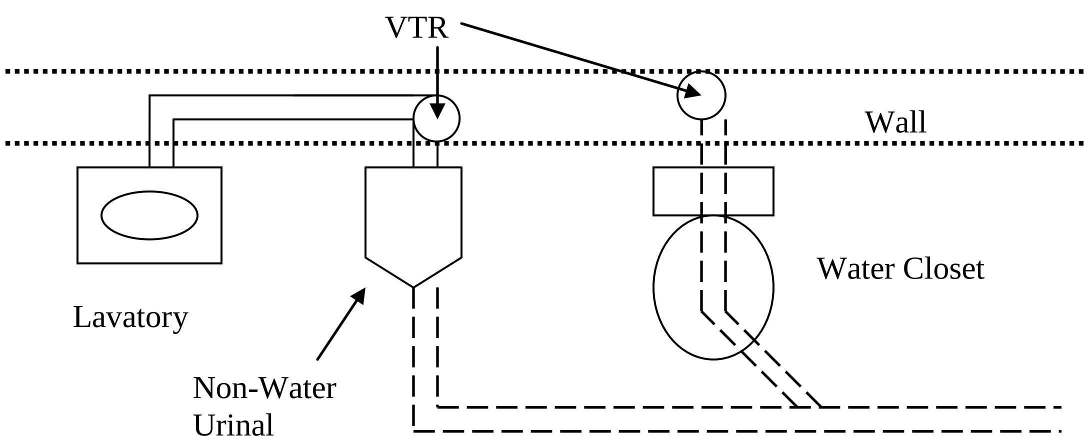
Proponent: Gary Kreutziger, M.C.P., City of San Antonio, representing self (gkreutziger@sanantonio.gov)

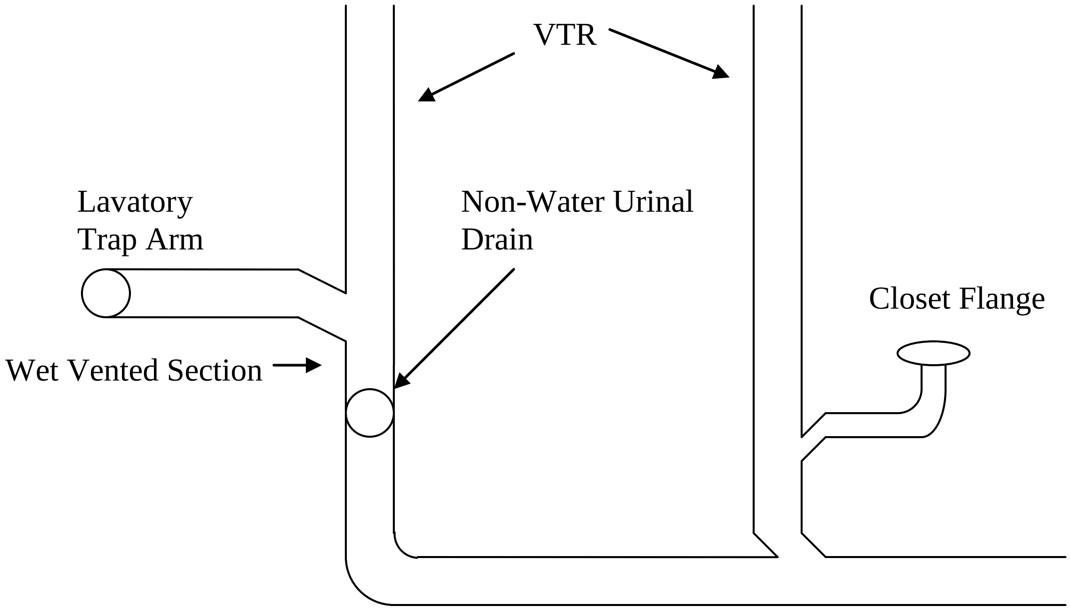
Add new text as follows:

419.1.1 Water-less urinal drain connection. The fixture drain from a water-less urinal shall be installed in accordance with one of the following:

1. The fixture drain shall connect to a horizontal drain that serves one or more water-supplied fixtures that connect to the horizontal drain upstream of the water-less urinal fixture drain connection . The vertical section of the water-less urinal fixture drain shall be provided with access and shall be installed with *mechanical joints* at each end of the vertical section of fixture drain.
2. The fixture drain shall be the lower fixture connection of a common vented drain arrangement where the upper fixture drain is a water-supplied fixture drain.

Reason: The drain lines of a water-less urinal are very prone to uric acid salt build up. Most manufacturers' maintenance protocols require flushing a urinal with water or "cleaning fluid" at every cartridge change. This flushing is too little, too late. By the time the urine has passed through the drain line and the uric acid salts are left behind to solidify the water or "cleaning fluid " have very little effect on the build up. Utilizing installation method #1 the horizontal drain line will receive frequent flushing from an upstream fixture, creating the same performance of the drain as is expected of a water-supplied urinal drain. The small vertical section of the urinal drain line that receives no flushing from an upstream fixture will remain accessible and easily replaceable with the mechanical joints when it does clog. Installation method #2 will utilize the gray water from another water-supplied fixture drain to frequently flush the entire urinal drain.





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

P61-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

419.1.1 (NEW)-P-KREUTZIGER

P62 – 12
419.4 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

419.4 Nonwater urinal connection. The fixture drain for a nonwater urinal shall independently connect to a branch drain that serves one or more lavatories, water closets or water-using urinals that discharge upstream of such nonwater urinals.

Reason: Nonwater urinals have such a concentrated discharge that fixture drains and branch drain lines carrying only urine have a tendency to accumulate urine salt deposits. Designing such systems with water using fixtures is a method that solves the potential clogging problem by keeping the drain lines washed out with the discharge of other types of fixtures.. The proposed language is adapted from what is currently in the IgCC.

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.

Cost Impact: None

P62-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

419.4 (NEW)-P-STRAUSBAUGH.PMGCAC

P63 – 12
420.1, Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Revise as follows:

420.1 Approval. Water closets shall conform to the water consumption requirements of Section 604.4 and shall conform to ANSI Z124.4, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5. Water closets shall conform to the hydraulic performance requirements of ASME A112.19.2/CSA B45.1. Water closet tanks shall conform to ANSI Z124.4, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5. Electro-hydraulic water closets shall comply with ASME A112.19.2/CSA B45.1. <u>Water closets equipped with a dual flushing device shall comply with ASME A112.19.14.</u>

Add new standard to Chapter 14 as follows:

ASME
<u>A112.19.14–2006(R2011)</u> <u>Six-Liter Water Closets Equipped with a Dual Flushing Device</u>

Reason: Dual flush water closets which consist of a full flush of 1.6 gpf and a reduce flush of less than 1.1 gpf do exist and should be required to comply with some performance requirements. This is a National standard (ANSI) which covers the performance requirements for these types of systems.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.19.14-2006(R2011) 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 2, 2012.

P63-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.1-P-CONSTANTINO

P64 – 12
420.1.1 (New), Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Add new text as follows:

420.1.1 Dual flush devices. Dual flush devices for water closets shall comply with ASME A112.19.10.

Add new standard to Chapter 14 as follows:

ASME
A112.19.10–2003(R2008) Dual Flush Devices for Water Closets

Reason: Dual flush devices for water closets is a device that consist of a full flush of 1.6 gpf and a reduce flush of less than 1.1 gpf and these products do exist and should be required to comply with some performance requirements. This is a National standard (ANSI) which covers the performance requirements for these types of systems.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.19.10, 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 2, 2012.

P64-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.1.1(NEW)-P-CONSTANTINO

P65 – 12
420.3

Proponent: Bob Scott and Kye Lehr - Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

420.3 Water Closet Seats. Water closets shall be equipped with seats of smooth, nonabsorbent material. All seats of water closets provided for public or employee toilet facilities shall be of the hinged open-front type. Integral water closet seats shall be of the same material as the fixture. Water closet seats shall be sized for the water closet bowl type.

> **Exception**: Water closet seats shall not be required in facilities such as mental health centers or correctional facilities.

Reason: Seats are commonly eliminated in these facilities to avoid suicide or injury to the occupants. Adding the exception will allow these installations without conflict to the code.

Cost Impact: None. The elimination of seats would reduce costs and labor to install them.

P65-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.3 #1-P-SCOTT-LEHR

P66 – 12
420.3

Proponent: Bob Scott and Kye Lehr - Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

420.3 Water closet seats. Water closets shall be equipped with seats of smooth, nonabsorbent material. All seats of water closets provided for public or employee toilet facilities shall be of the ~~hinged~~ open-front type. Integral water closet seats shall be of the same material as the fixture. Water closet seats shall be sized for the water closet bowl type.

Reason: Seats are commonly eliminated in public facilities such as mental health centers or correctional facilities. Removing the "hinged" verbiage allows integral water closet seats to be used.

Cost Impact: None. The elimination of this word would only clarify the code.

P66-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.3 #2-P-SCOTT-LEHR

P67 – 12
420.5 (New)

Proponent: Christopher Salazar / Penguin Toilets LLC./ Penguin Toilets LLC

Add new text as follows:

420.5 Overflow protection. Where an overflow from the bowl of a water closet will cause damage, one of the following shall be installed:

1. A water closet with overflow protection means.
2. A floor drain located within the same room as the water closet.

Reason: To be in compliance with IPC 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: The code change proposal will not increase the cost of construction. Cost impact is none to little depending on method of protection.

P67-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.5 (NEW)-P-SALAZAR

P68 – 12
421.1

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

421.1 Approval. Whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10 <u>and shall be listed and labeled in accordance with UL1795.</u>

Add new standard to Chapter 14 as follows:

UL
<u>1795-2009</u> <u>Hydromassage Bathtubs, including revisions through August 23, 2011</u>

Reason: Referenced UL standard contains important safety and plumbing requirements that should be covered in the International Plumbing Code.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 1795-2009 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 2, 2012.

P68-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

421.1-P-EUGENE

P69 – 12
422.11(New)

Proponent: Daniel D. Fish, Roda LLC, representing self (info@drainbrain.us)

Add new text as follows:

422.11 Wastewater leak containment, detection and notification. An early-warning wastewater leak containment, detection and notification device shall be required in hospitals and other healthcare occupancies. The device shall contain and detect wastewater leakage from water closets, showers and bathtubs. The device shall be equipped with an auditory alarm, visual signal, and a means for notification to the building occupants, property owners or the property management staff. The auditory alarm shall have a sound pressure level rating of not less than 85 dB when measured at a distance of ten feet.

Reason: Millions of wastewater leaks occur every year in multi-story buildings from leaking drains, waste lines, and toilets. Toilets are especially high risks for water leakage. Research has shown that 30 percent of all toilets in the United States leak. Toilets with unreliable wax gaskets and flanges – a common problem – cause the most damage to the unit below. Also, the float valve that controls water entering the toilet tank often malfunction, which allows water to run into toilet waste line continuously.

Wastewater leaks typically go undetected until considerable damage has been done. These leaks: (1) waste millions of gallons of water, (2) damage property/materials, generating millions of tons of debris that swells landfills, and (3) develop mold on building components, creating property damage and a health hazard. Property owners spend millions of dollars to repair the damage from wastewater leaks and cure mold-related problems

. An early-warning wastewater leak containment, detection, and notification device will give building occupants and facility managers/owners the opportunity to avoid wastewater leak damage and its attendant costs. Taking action early will conserve millions of gallons of water and eliminate the environmental, economic, and health hazards from wastewater leaks. This solution for the age-old wastewater leak problem will meet the intent of this code by safeguarding the public health, safety, and welfare.

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

P69-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

422.11 (NEW)-P-FISH

P70 – 12
423.3 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new text as follows:

423.3 Footbaths, pedicure baths and head shampoo sinks. The water supplied to specialty plumbing fixtures such as pedicure chairs having an integral foot bath tub, footbaths, and head shampoo sinks, shall be limited to a maximum temperature of 110 °F by a water temperature limiting device that conforms to ASSE 1070 or CSA B125.3.

Reason: The code does not address maximum water temperature for foot baths and head shampoo sinks. Feet and heads should be protected from potentially scalding water.

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.

Cost Impact: None

P70-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

423.3 (NEW)-P-STRAUSBAUGH.PMGCAC

P71 – 12
424.3

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self (eosann@nrdc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Revise as follows:

424.3 Individual shower valves. Individual shower and tub-shower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016 or ASME A112.18.1/CSA B125.1 <u>when tested at a flow rate of 1.5 gpm ± 0.1 gpm (5.75 L/m ± 0.35 L/m).</u> ~~and~~ <u>Such</u> valves shall be installed at the point of use. <u>Such valves shall be factory marked with the manufacturer's minimum rated flow and such marking shall be visible at final inspection.</u> Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions. In-line thermostatic valves shall not be utilized 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.

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.

P71-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

424.3-P-OSANN

P72 – 12
424.4

Proponent: Edward R. Osann, Natural Resources Defense Council, representing himself (eosann@nrdc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Revise as follows:

424.4 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an *approved* automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125.3 <u>when tested at a flow rate of 1.5 gpm ± 0.1 gpm (5.75 L/m ± 0.35 L/m)</u>, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that conforms to ASSE1016 or ASME A112.18.1/CSA B125.1 <u>when tested at a flow rate of 1.5 gpm ± 0.1 gpm (5.75 L/m ± 0.35 L/m)</u> and is installed at the point of use. <u>Such valves shall be factory marked with the manufacturer's minimum rated flow and such marking shall be visible at final inspection.</u> Such valves shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturers' instructions.

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.

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.

P72-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

424.4-P-OSANN

P73 – 12
424.8

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Revise as follows:

424.8 Transfer valves. Deck-mounted bath/shower transfer valves containing an integral atmospheric vacuum breaker shall conform to the requirements of ASME ~~A112.18.7~~ A112.18.1/CSA B125.1.

Reason: Update Section 424.8 by referencing ASME A112.18.1/CSA B125.1 since the requirements from A112.18.7 are now covered in A112.18.1/B125.1 and also deleting standards from Chapter 14. The A112.18.7 standard is longer published by ASME.

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

P73-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

424.8-P-CONSTANTINO

P74 – 12

428 (New), 428.1 (New), 428.2 (New), Chapter 14

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

Add new text as follows:

SECTION 428
NON-LIQUID SATURATED TREATMENT SYSTEMS

428.1 Approval. Materials, design, construction and performance of non-liquid saturated treatment systems shall comply with NSF 41.

428.2 Installation. Non-liquid saturated treatment systems shall be installed in accordance with the manufacturer's instructions.

Add new standard to Chapter 14 as follows:

NSF
41-2011 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 permitted in the IPSDC. A copy of this standard may be obtained from brown@nsf.org

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

Analysis: A review of the standard proposed for inclusion in the code, NSF 41-2011, 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 2, 2012.

P74-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

428-P-BROWN

P75 – 12
501.3

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

501.3 Drain valves. Drain valves for emptying shall be installed at the bottom of each tank-type water heater and hot water storage tank. ~~Drain valves shall conform to ASSE 1005.~~ The drain valve inlet shall be not less than ¾ inch nominal iron pipe size and the outlet shall be provided with male garden hose threads.

Reason: ASSE discontinued the 1005 standard. The new language proposed for this section provides for minimum requirements for water heater drain valves.

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.

Cost Impact: None

P75-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

501.3-P-STRAUSBAUGH.PMGCAC

P76 – 12
501.6

Proponent: Ron George, CPD, Plumb-Tech Design & Consulting Services LLC, representing self (Ron@Plumb-TechLLC.com)

Revise as follows:

501.6 Water temperature control ~~in piping from tankless~~ <u>for water</u> heaters. <u>The temperature of hot water supplied to a hot water distribution system that supplies hot water for domestic use shall not exceed</u> ~~from tankless water heaters shall be not greater than~~ 140°F (60°C) ~~where intended for domestic uses~~. <u>The thermostat on the water heater supplying such system shall not be used for meeting this provision.</u> This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

Reason: There is no reason to limit the maximum hot water temperature in just tankless water heaters. The thermostat dial on a water heater is not intended or designed to adequately control the outlet hot water temperature of a water heater. The water heater thermostat is located near the bottom of the water heater to sense incoming cold water and turn “on” and “off” the fuel source for a storage type water heater. Other code sections for combined systems, (IPC 501.2 and 501.6) already limit hot water intended for domestic used to 140 degrees Fahrenheit. This code change correlates with those code requirements and applies to all water heaters for all domestic hot water. Recent ill advised, attempts to minimize scalding have been to simply instruct people to turn the thermostat down on a water heater. When this is done hot water runs short and other problems occur in the system. Calls of “lack of hot water” usually result in the thermostat being readjusted upwards after users experience a hot water shortage. This increases the scalding potential significantly. The thermostat on the water heater does not accurately control the outlet temperature of hot water from a water heater. Turning down the thermostat can cause condensing and premature corrosion from the burner side of the heater, a shortage of hot water and lower temperatures increase the possibility of incubating or amplifying the bacteria like Legionella in the hot water system to levels that can trigger outbreaks in people with suppressed immune systems. A thermostatic mixing valve located as shown in figure 6 would allow the water heater to be turned up to a temperature that would minimize condensation, kill Legionella bacteria and deliver an ample supply of hot water and allow hot water to be delivered at a safe temperature.

Temperature/Time Burn Chart

Temp. in Deg. F	Time for 1st deg. Burn.	Time for 2nd -3rd Deg. Burn.
111 F =	270 min’s.	300 min’s.
113 F =	120 min’s.	180 min’s.
116 F =	20 min’s.	45 min’s.
118 F =	15 min’s.	20 min’s.
120 F =	8 min’s.	10 min’s.
124 F =	2 min’s.	4.2 min’s.
131 F =	17 seconds	30 seconds
140 F =	3 seconds	5 seconds
151 F =	Instant	2 Seconds

(Source: Report prepared by Dr. Moritz and Dr. Henriques at Harvard Medical School in the 1940s for adult males. Children and elderly can receive burns in less time because their skin is thinner.)

Figure 1 – Table showing the relationship of Time/Temperature and Degree of Burn

Figure – 2 Photos of scald burns.

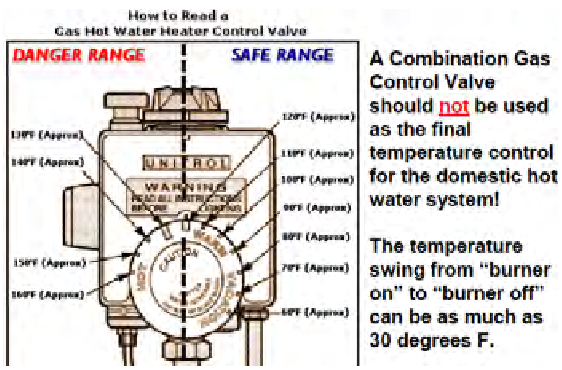


Figure 3 – T-Stat Setting – illustration from a manufacturers catalog.

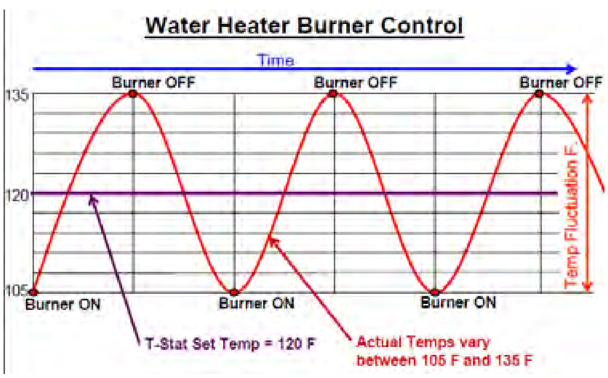


Figure 4 – Example of Water heater Thermostat setting verses HW outlet temperature at the top of the heater.

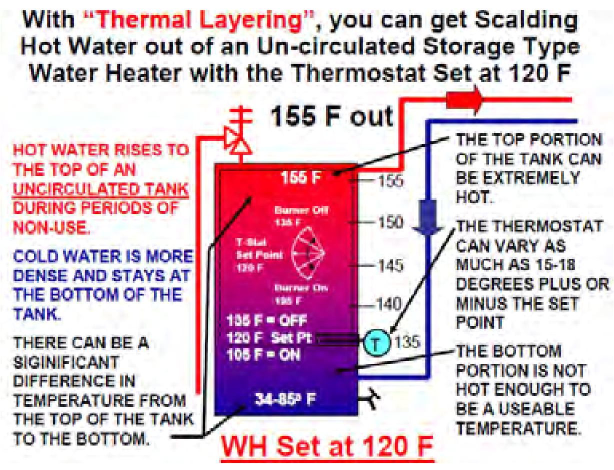


Figure 5 – Illustration showing how stacking or thermal layering
This figure shows how the hot water at the top outlet of a water heater can exceed the thermostat setting near the bottom of the water heater.

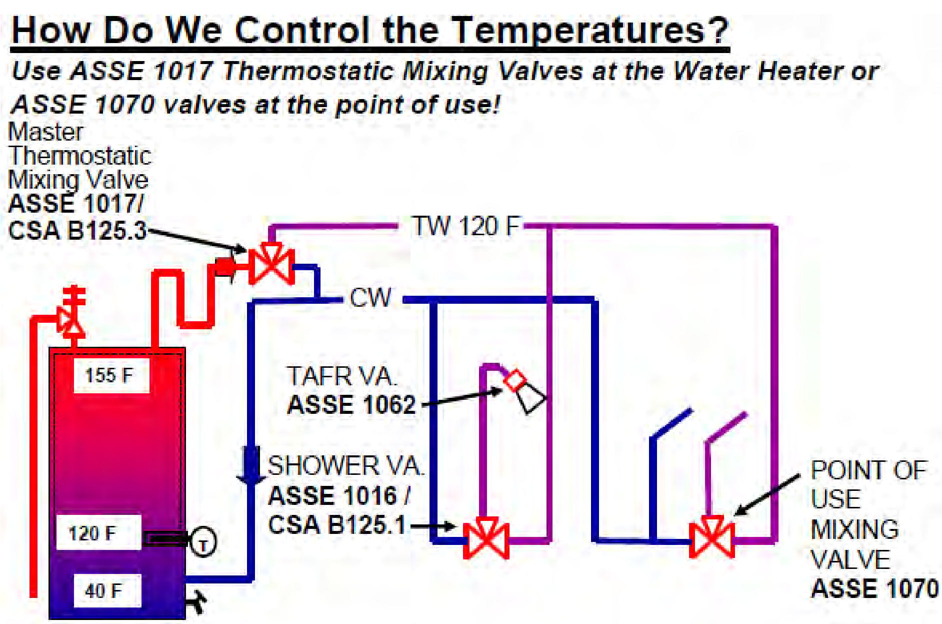


Figure 6 – Illustration of various temperature control methods available.

Cost Impact: This code change will slightly increase the cost of construction in some cases. Mixing valves are already required when temperatures exceed 140 F. A properly designed hot water system will already have a thermostatic mixing valve. There are several types of devices available to accomplish the tempering of the domestic hot water. ASSE 1070 thermostatic temperature limiting valves and ASSE 1017 Master thermostatic mixing valves can be utilized to provide safe hot water distribution temperatures.

P76-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

501.6-P-GEORGE

P77 – 12
501.8

Proponent: Ron George, CPD, Plumb-Tech Design & Consulting Services LLC representing himself (Ron@Plumb-TechLLC.com)

Revise as follows:

501.8 Temperature controls. ~~Hot water supply systems~~ Water heaters shall be equipped with an automatic temperature control thermostat capable of adjustments from the lowest to the highest ~~acceptable~~ temperature settings for the intended temperature operating range. Water heaters installed in dwelling units shall have a maximum thermostat temperature setting capability of 160°F (71.1°C). Water heaters installed in other than dwelling units shall have a maximum thermostat temperature setting capability of 180°F (82.2°C). Thermostats on water heaters shall not be used to limit the water temperature discharged from shower valves or bathtub valves as required by Sections 424.3 through 424.5.

Reason: All residential water heaters have a maximum thermostat setting of 160 F. All commercial water heaters have a maximum thermostat setting of 180F. Heating boiler thermostats can go up to 200 degrees Fahrenheit. This language will assure that the inspector can verify that the proper temperature range thermostat is installed in accordance with the available thermostat temperature ranges for a given installation. The water heaters are supplied with installation and operation manuals that indicate the temperature settings on the thermostat dial. Inspectors can verify the maximum water heater outlet temperature by looking at the literature if it is not printed on the thermostat dial. The thermostat temperature ranges are called out in the ANSI or UL standards for thermostats. The boiler thermostat would be covered in the mechanical code so it was not listed here.

The language also allows the inspector to verify that proper temperature controls are installed on the water heater for a given application. The language about the thermostat not being the final temperature control was added here for instances where a permit is pulled for inspection of a water heater replacement. The inspector can verify if an approved type of shower or water temperature control valve is installed downstream of the water heater to protect bathers in older installations so that they are not relying only on the water heater thermostat. This language helps the inspector to verify that the proper safety devices such as an ASSE 1017 master mixing valve, or an ASSE 1070 (point-of-use) local mixing valve or an ASSE 1016 shower or tub/shower valve or an ASSE 1069 gang shower valve is installed downstream of the water heater to protect the bather from scalding or thermal shock hazards.

Cost Impact: There is no additional cost to construction associated with this code change. This change is simply adding clarification and correlation between other sections of the code.

P77-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

501.8-P-GEORGE

P78 – 12
502.6 (New)

Proponent: Tom Allen, City of Mt. Dora, FL, representing self

Add new text as follows:

<u>**502.6 Water heater instructions.** Water heaters shall be installed in accordance with the manufacturer's instructions. Such instructions shall be available on the job site at the time of inspection.</u>

Reason: Allows for installation per the manufacturer's requirements and requires the instructions to be on site for inspection.

Cost Impact: There is no cost impact.

P78-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

502.6 (NEW)-P-ALLEN

P79 – 12
504.4

Proponent: Dana Bres, P.E./U.S. Department of Housing and Urban Development/U.S. Department of Housing and Urban Development (dana.b.bres@hud.gov)

Revise as follows:

504.4 Relief valve. Storage water heaters operating above atmospheric pressure shall be provided with an approved, self-closing (levered) pressure relief valve and temperature relief valve or combination thereof. The relief valve shall conform to ANSI Z21.22. The relief valve shall not be used as a means of controlling thermal expansion. <u>Tankless water heaters shall not be required to be provided with a pressure relief valve or a temperature relief valve except where such valves are required by the tankless water heater listing or the tankless water heater manufacturer's instructions.</u>

Reason: The discussion of temperature and pressure relief valves for tankless water heaters is vague. The current language in IPC 504.4 is silent on tankless water heaters, which can lead to confusion. For electric tankless water heaters, UL 499 (Sec 28.11) indicates a requirement when the vessel diameter is more than 3.0 inches. Tankless water heaters have little stored volume and the burner or heating element operates only when water is being consumed. The proposed change would clarify the code requirements for installation of tankless water heaters. Similar changes will be proposed to section P2803 of the IRC in the next cycle. This change would help harmonize the two codes and would clarify the current code language regarding installation of tankless water heaters. These changes would facilitate the acceptance of an appliance that provides energy and space savings in a home.

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

P79-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.4-P-BRES

P80 – 12
504.6

Proponent: Roger Harper, Jr, Louisa County VA Representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (sharper@louisa.org)

Revise as follows:

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

(Items 1-9 remain unchanged)

10. ~~Not~~ terminate not more than 6 inches (152 mm) above and not less than two times the discharge pipe diameter above the floor or waste receptor flood level rim.

Reason: A minimum distance is not stated. Typically, the minimum air gap would be two nominal pipe diameters as stated in Section 802.2.1 for indirect wastes pipe.

Cost Impact: None

P80-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.6-P-HARPER

P81 – 12
504.6

Proponent: Bob Scott, Kye Lehr and Dennis Gardner, Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, Temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4 Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor or to the outdoors.
6. Discharge to the floor, ~~to the pan serving the heater or storage tank,~~ to a waste receptor or to the outdoors.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate more than 6 inches (152 mm) above the floor or waste receptor.
11. Not have a threaded connection at the end of such piping.
12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.

Reason: We all know what the commentary states is true that the relief valve discharges are in small amounts or continuous trickles of water or all out blowouts and with the latter the pan will not handle it anyway. The pan drain will allow the pan to retain from ½"to ¾" of water leaving the water heater to set in a pool of water until the problem is found by the owner. Most owners are not mechanically inclined and will not look at the water heater until it fails leaving the legs or the bottom of an electric water heater to rust to an unsafe condition thus creating another problem either with the electric, gas or flue piping connection. All of which could produce disastrous consequences. Pans were brought in because of the concerns for structural damage which I feel is justified, we are trading one problem for others and we need to solve all. Our jobs are to protect the home owners not make the job easier for the installers.

Cost Impact: None-the pan must already go to an approved place of disposal that drain can serve both the pan and the P&T valve by many methods.

P81-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.6-P-SCOTT-LEHR-GARDNER

P82 – 12
504.6

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

(Items 1 through 13 remain unchanged)

14. <u>Be one nominal size larger than the size of the relief valve outlet, where the relief valve discharge piping is constructed of PEX or PE-RT tubing. The outlet end of such tubing shall be fastened in place.</u>

Reason: PEX and PE-RT tubing use insert fittings for connections. The bore size for a ¾ inch male adapter fitting is small such that there is concern that the discharge from a T & P valve could be restricted. The proposed language requires that PEX and PE-RT tubing used for relief valve discharge piping be one size larger so that the insert fitting has a larger bore which would not restrict flow.

PEX and PE-RT tubing is somewhat flexible and where supplied from a coil, the tubing has a memory to stay in a coil shape. This flexibility and memory to a coil shape can cause the discharge end of the tubing to be displaced from its required or intended position. To prevent displacement, new language is being added to require that the outlet end of the tubing be fastened in place.

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.

Cost Impact: None

P82-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.6-P-STRAUSBAUGH.PMGCAC

P83 – 12
504.7

Proponent: Ron George, CPD, Plumb-Tech Design & Consulting Services LLC, representing himself (Ron@Plumb-TechLLC.com)

Revise as follows:

504.7 Required pan. Where a ~~storage tank-type~~ water heater or a hot water storage tank is installed in a location where water leakage from the <u>water heater</u> <u>or</u> tank will cause damage, the <u>water heater or</u> tank shall be installed in a galvanized steel pan having a material thickness of not less than 0.0236 inch (0.6010mm) (No. 24 gage), or other pans approved for such use.

> <u>**Exception:** A drain pan shall not be required for a tankless water heater installed in an exposed location under a wall hung fixture where the floor material under the water heater is waterproof, there is a floor drain nearby and the water heater is in a readily observable location under the fixture.</u>

Reason: During the last code cycle a code change was submitted to change the wording to this section to so that only require tank type water heaters would require drain pans. There was testimony from people wanting to eliminate drain pans under tankless water heaters with statements that tankless heaters don't have tanks and there is only a few ounces of water in the heat exchange therefore they do not need drain pans because not much water is stored in them so the potential for leaks was not there. This code change is to correct that loophole that will allow water damage from tankless heaters. Tankless water heaters work under significant thermal stresses and are subject to failures and leaks at a rate equivalent to or greater than tank type heaters. When tankless water heaters leak, they are connected to the entire municipal water system, so the volume of water in the heater is irrelevant. Small leaks can cause significant water damage. Tankless heaters can leak hundreds or thousands of gallons and cause significant structural damage to building materials that are subject to water damage. I realize some installations can be installed under a lavatory or wall hung sink in a restroom with tile or other water resistant flooring materials and a floor drain so the potential for damage is less as long as they are located in an areas where a leak would be readily observable, the flooring is water resistant and a drain is located in the same room. I proposed the above code change to address the need for a drain pan under all water heaters located in concealed locations where water leaks can cause structural damage. I have witnessed several plastic and fiberglass bodied electric tankless water heaters fail over the years. When many of them failed, they leaked and caused significant structural and property damage. A quick search of the internet yielded several examples of tankless water heater failures. I do not know the person in this video and I have no problems with the manufacturer in the video. This video simply demonstrates that tankless heaters can cause as much or more water damage than a tank type heater. Tankless heaters are often manufactured from plastic or other polymer materials that can fail catastrophically. The attached link shows a video of one of these tankless heater failures that leaked and caused significant structural damage to hardwood floors and other water damage on the floors below.
http://www.youtube.com/watch?v=BgU-rjh2LXE,

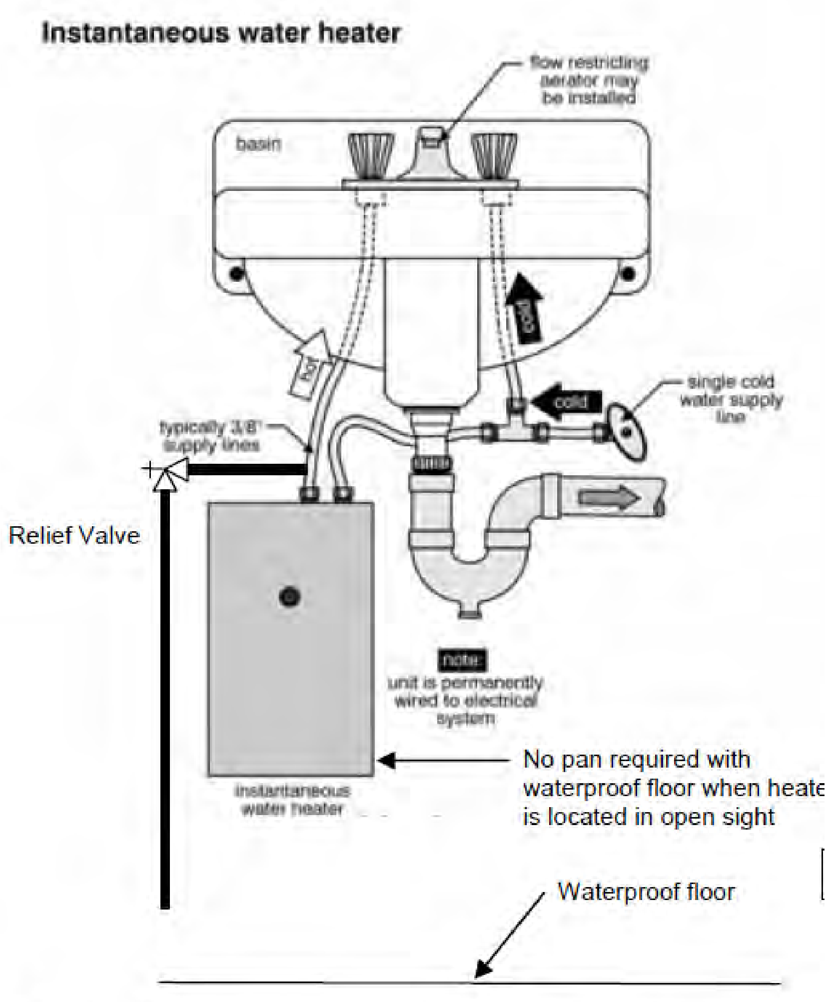


Fig. 1 – Heater in open sight location with water proof floor

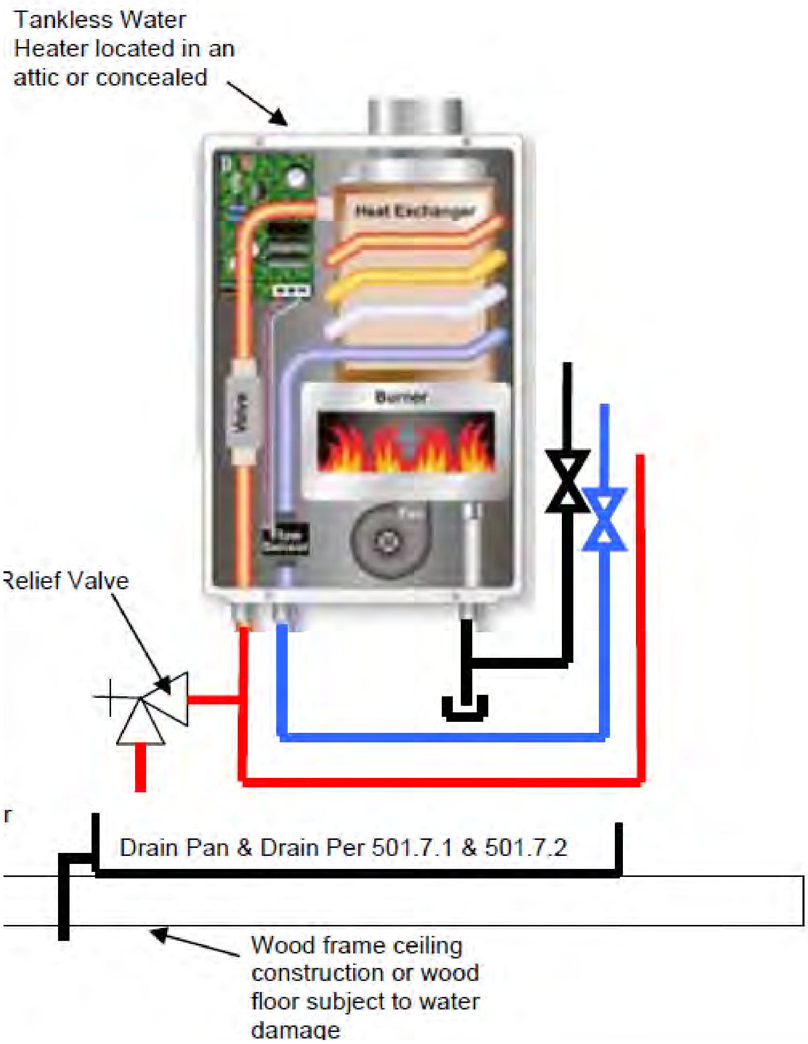


Fig. 2 – Heater located in concealed location with construction subject to water damage

Cost Impact: The code change proposal will not increase the cost of construction when there is a construction material or flooring that will not be damaged by water and exposed tankless heater are located under a lavatory. Pans were required for all water heaters prior to the previous code
cycle code change. The requirement to only require drain pans under tank type heaters appears to be an effort to make the more expensive tankless heaters more affordable and increasing the risk of damage to building materials and contents. Calculations show that when you factor in the purchase price and life expectancy, of tankless heaters versus newer high efficient storage type heaters and the increased in size of the energy service and installation costs tankless heaters do not save money over the life of the heater.

P83-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.7-P-GEORGE

P84 – 12
504.7

Proponent: Tom Allen, City of Mount Dora, FL, representing self

Revise as follows:

504.7 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed above the ground floor space, in attics, in areas above ceilings or within the habitable space ~~in a location where water leakage from the tank will cause damage,~~ the tank shall be installed in a galvanized steel pan or other metal pan of equal corrosion resistance having a material thickness of not less than 0.0236 inch (0.6010mm) (No. 24 gage), or other pans approved for such use. Electric water heaters shall be installed in a metal pan as herein required or in a pan of high-impact material having a thickness of not less than 0.0625 inch (1.59 mm).

Reason: Clarifies pan locations "in a location where water leakage form the tank will cause damage" is too subjective. Allows for other metal pans and for plastic pans for electric water heaters.

Cost Impact: There is no cost impact.

P84-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.7-P-ALLEN

P85 – 12
504.7, 504.7.1

Proponent: Jim Whitehead, IPS Corporation

Revise as follows:

504.7 Required pan. Where a storage tank-type water heater or a 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. Pans shall be constructed of galvanized steel ~~pan~~ having a material thickness of not less than 0.0236 inch (0.6010mm) (No. 24 gage), aluminum having a material thickness of not less than 0.030 inch (0.762 mm), plastic having a material thickness on the bottom of the pan of not less than 0.036 inch or other ~~pans~~ approved materials ~~for such use~~.

504.7.1 Pan size and drain. The pan shall be not less than 1½ inches (38 mm) in depth and shall be ~~of sufficient size and shape to receive all dripping or condensate from the tank or water heater.~~ not less than 2 inches (51 mm) larger in width or diameter than the diameter of the water heater or tank. The pan shall be drained by an indirect waste pipe having a diameter of not less than 3/4 inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4.

Reason: Inspectors call our company often to determine if a water heater pan made of anything other than galvanized steel (24 gage) is acceptable and how is it deemed acceptable. Clarifying the standard to include the common materials used will be helpful to inspectors in the field.

Cost Impact:

P85-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.7-P-WHITEHEAD

P86 – 12
504.7.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

504.7.2 Pan drain termination. The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface. <u>Where a pan drain was not previously installed, a pan drain shall not be required for a replacement water heater installation.</u>

Reason: Consider a water heater installation where the code did not require the original installation to have a drain for the T&P valve or a drain for a drip pan or such drain was required, but never installed. Upon replacement of the water heater, under the current code, a drain is required. Should a drain be installed regardless of the difficulty or cost?

The replacement of an existing water heater must be installed to the current code as if it was a new installation. If the original water heater installation did not require a pan, then in many cases, there is not a suitable disposal point for a pan drain. However, if the installation requires a pan, the current code requires that the pan have a pan drain. Many times, there is not a way to provide for a suitable disposal point for the pan drain. For example, consider a slab-on-grade building where the water heater is located in the center of the building where there is not a floor drain or waste receptor. When that water heater is replaced, the current code requires that the water heater have a pan and that the pan have a pan drain (that runs to a suitable disposal point). How is this to be accomplished in this existing building? There is not always a practical solution. Therefore, the proposed language provides an exception for replacement water heaters to not be required to have a pan drain, if the installation requires a pan. The code would still require the pan, but not the pan drain. A pan with no drain is better than no pan at all.

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.

Cost Impact: None

P86-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

504.7.2-P-STRAUSBAUGH.PMGCAC

P87 – 12
601.5 (New), Chapter 14

Proponent: Sidney L. Cavanaugh, Cavanaugh Consulting representing CuraFlo (sidneycavanaugh@yahoo.com)

Add new text as follows:

<u>**601.5 Rehabilitation of piping systems.** Where pressure piping systems are rehabilitated using an epoxy lining system, such lining system shall comply with ASTM F 2831.</u>

Add new standard to Chapter 14 as follows:

ASTM

<u>F 2831-11</u>	<u>Standard Practice for Internal Non Structural Epoxy Barrier Coating Material Used In Rehabilitation of Metallic Pressurized Piping Systems</u>

Reason: These systems are being used everyday across North America when systems need to be replaced or repaired when they do not meet minimum pressures and flow rates. It is important that they these epoxy lining systems meet a national consensus standard to assure proper installation and use.

Cost Impact: no additional cost when considering the replacement cost.

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 2831-11 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 2, 2012.

P87-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

601.5 (NEW)-P-CAVANAUGH

P88 – 12
603.2

Proponent: Shawn Strausbaugh, Arlington County VA Representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7

Delete and substitute as follows:

~~**603.2 Separation of water service and building sewer.** Water service pipe and the building sewer shall be separated by not less than 5 feet of undisturbed or compacted earth.~~

~~**Exceptions:**~~

1. ~~The required separation distance shall not apply where the bottom of the water service pipe within 5 feet of the sewer is not less than 12 inches above the top of the highest point of the sewer and the pipe materials conform to Table 702.3.~~
2. ~~Water service pipe is permitted to be located in the same trench with the building sewer, provided such sewer is constructed of materials listed in Table 702.2.~~
3. ~~The required separation distance shall not apply where a water service pipe crosses a sewer pipe, provided the water service is sleeved to a point not less than 5 feet horizontally from the sewer pipe centerline on both sides of such crossing with pipe materials listed in Table 605.3, 702.2 or 702.3.~~

603.2 Separation of water service and building sewer. Where water service piping is located in the same trench with the building sewer, such sewer shall be constructed of materials listed in Table 702.2. Where the building sewer piping is not constructed of materials listed in Table 702.2, the water service pipe and the building sewer shall be horizontally separated by not less than 5 feet (1524 mm) of undisturbed or compacted earth. The required separation distance shall not apply where a water service pipe crosses a sewer pipe, provided the water service is sleeved to a point not less than 5 feet (1524 mm) horizontally from the sewer pipe centerline on both sides of such crossing. The sleeve shall be of pipe materials listed in Table 605.3, 702.2 or 702.3. The required separation distance shall not apply where the bottom of the water service pipe located within 5 feet (1524 mm) of the sewer is not less than 12 inches (305 mm) above the highest point of the top of the building sewer.

Reason: This proposal is consistent with IRC Section 2905.4.2. Exception item number 2 of the existing text is the most common method utilized for sewer and water service installations across the country. Therefore it should not be the exception but rather the rule. The other provisions, items 1 and 2 in the proposal, have not been changed but simply reformatted into a more user friendly format.

Cost Impact: None

P88-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

603.2-P-STRAUSBAUGH8

P89 – 12
604.2

Proponent: Gary Klein, Affiliated International Management, LLC, representing self (gary@aim4sustainability.com)

Revise as follows:

604.2 System interconnection. At the points of interconnection between the hot and cold water supply piping systems and the individual fixtures, appliances or devices, provision shall be made to prevent flow between such piping systems.

> **Exception:** Hot or tempered water recirculation systems that pump water from a hot or tempered water pipe through a cold water pipe back to the hot water source shall be permitted provided that the system complies with all of the following:
>
> 1. The system is demand activated by a switch operated by the user of the fixture, a motion sensor triggered by the presence of the user of the fixture, a flow switch activated by the flow of hot water at a fixture or a door switch activated by the door to the room containing hot water-supplied fixtures. a fixture, a door switch activated by the door to the room containing hot water-supplied fixtures or a voice activated command.
> 2. After the pump starts, the controls shall allow the pump to operate until the water temperature in the return pipe rises not more than 10ºF (5.6 ºC) above the initial temperature of the water in the pipe. The controls shall not allow the pump to operate when the temperature in the pipe exceeds 102ºF (38.9 ºC). Controls shall limit pump operation to not more than 5 minutes for each activation in the event that both means of shutting off the pump have failed.
> 3. The manufacturer of the controls for the recirculation pump provides installation and operation instructions that provide details of the operation of the controls and such instructions are available at the jobsite for inspection by the code official.

Reason: As I understand it, the intent of IPC Section 604.2 is to prevent interconnections between the hot and cold piping systems so that hot water is not drawn unintentionally into the cold-water piping and vice-versa. The two most obvious issues with such unintentional interconnections is that 1) hot water could flow from a cold water faucet which might cause a potential for scalding and 2) hot water might be prevented from ever reaching certain fixtures.

The reason for the proposed exception is to resolve the question of whether or not a "no return pipe" hot water recirculation system violates the intent of this code section.

Typical "no return pipe" hot water recirculation systems utilize a pump in the hot water line to cause flow of water from the hot water piping through a special valve and into the cold water piping near a fixture that is most remote from the water heater. Some systems have the pump operating continuously or on timer to run continuously during certain time periods of the day. Even though the pump might be running continuously or semi-continuously, the special valve controls the flow of water in the hot water pipe to the cold water pipe. Other systems are demand controlled such that the user activates the pump operation only when hot water is intended to be used.

When the temperature sensing mechanism determines that the temperature of the water in the hot water piping is either rising quickly (demand controlled) or is approximately 105 degrees F (aquastat controlled), the valve automatically closes to stop flow so that the cold water line is not continuously being filled with hot water. The valve also prevents the flow of hot water to the cold supply pipe while cold water is flowing from the faucet.

Regardless of the shut-off mechanism, the overall operation of "no return pipe" hot water systems is the same - a valve controls when flow is allowed to pass from the hot water piping to the cold-water piping.

In my opinion, even without the proposed revisions, these "no return pipe" hot water recirculation systems do not violate the intent of the code. Because the valve prevents water of a temperature greater than approximately 105 degrees F from being introduced into the cold-water piping, the potential for scalding is not an issue. The valve also prevents cold water from entering into the hot water piping so the issue of cold water replacing hot water in a water distribution system doesn't exist.

However, “no return pipe” hot water recirculation systems that use timers, aquastats or a combination of timers and aquastats to control the flow of hot water into the “temporary” cold-water return line can operate up to 24 hours a day, either intentionally or unintentionally; intentionally if the timer is set to allow the pump to run continuously. Unintentionally if the aquastat has been disconnected; or the valve is jammed open; or if the temperature drop between the water heater and the shut-off valve with aquastat is large enough to prevent the shut-off temperature from ever being reached. An example: the water heater is set at 125F, the aquastat is set to close the valve at 105F and the temperature drop between the water heater and the aquastat is 25F. This large temperature drop is possible when the pipes are installed in a vented crawl space or under a slab. The reason the pump was installed was to overcome a hot water delivery problem, which these applications almost certainly had! The problem is that with a 25F temperature drop, the temperature at the aquastat will never reach 105F (125-25 = 100F) and the valve will never close, allowing water to continually, and in some sense, unintentionally, pass into the cold-water line.

In contrast, demand controlled priming pumps shut off based on a temperature rise, rather than an absolute temperature. As an example, when the pump is activated, the controls determine the temperature of the water in the pipe, which is likely to be close to ambient room temperature or about 65-70F. The controls allow the pump to run until the temperature rises about 5F, and then shut off typically when the water temperature is between 70 and 75F. There are other safety mechanisms built into the controls that restrict operation to no more than 5 minutes or when the temperature rises to 105F. Since these pumps only operate on demand, when intentionally activated shortly before hot water is desired, they restrict the time hot water is flowing in the cold water piping to typically less than 20 minutes a day in residential occupancies served by their own water heater or boiler, and similarly small durations in other occupancies. In contrast, timer, aquastat and combination timer and aquastat controlled pumps typically operate 4-8 hours per day and often much longer, up to 24/7.

In addition to coming closest to meeting the intent of this section, which is to prevent unintentional flow between hot and cold water supply piping, demand controlled hot water priming pumps are significantly more energy efficient that the other options. The energy costs of operation are a combination of the heat losses in the piping and the electricity requirement of the pump: the heat losses dominate the energy costs. The energy costs of demand-controlled hot water priming pumps are at least 75 percent and typically 90 percent less than the alternatives.

It is for these reasons that I have proposed only allowing the exception for pumps that prime the hot or tempered water supply piping on demand.

I urge your support for this proposal. Thank you.

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

No new requirements have been added, only a clarification of an existing section.

P89-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

604.2-P-KLEIN

P90 – 12
Table 604.3

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self (eosann@nrdc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Revise as follows:

TABLE 604.3
WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQUIRED CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

FIXTURE SUPPLY OUTLET SERVING	FLOW RATE[a] (gpm)	FLOW PRESSURE (psi)
Bathtub, balanced-pressure, thermostatic or combination balanced-pressure/ thermo-static mixing valve	4	20
Bidet, thermostatic mixing valve	2	20
Combination fixture	4	8
Dishwasher, residential	2.75	8
Drinking fountain	0.75	8
Laundry tray	4	8
Lavatory, private	~~2~~ 0.8	8
Lavatory, private, mixing valve	0.8	8
Lavatory, public	0.4	8
Shower	~~3~~ 2.5	8
Shower, balanced-pressure, thermostatic or combination balanced-pressure/ thermo-static mixing valve	~~3~~ 2.5[b]	20
Sillcock, hose bibb	5	8
Sink, residential	~~2.5~~ 1.75	8
Sink, service	3	8
Urinal, valve	12	25
Water closet, blow out, flushometer Valve	25	45
Water closet, flushometer tank	1.6	20
Water closet, siphonic, flushometer Valve	25	35
Water closet, tank, close coupled	3	20
Water closet, tank, one piece	6	20

For SI: 1 pound per square inch = 6.895 kPa,1 gallon per minute = 3.785 L/m.
a. For additional requirements for flow rates and quantities, see Section 604.4.
b. Where the shower mixing valve manufacturer indicates a lower flow rating for the mixing valve, the lower value shall be applied.

Reason: TABLE 604.3 WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQUIRED CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS requires plumbing distribution system design to achieve flow rates of *at least* 3 gpm for showers, 2.5 gpm for sink faucets, and 2 gpm for lavatory faucets, all of which are excessive as minimum requirements. The *minimum* flow rate for a shower in this table is above the allowable *maximum* flow rate for a showerhead as specified by Table 604.4 of this code and by the nationwide standard that has been in effect for nearly 20 years. Similarly, the minimum flow rate for lavatories does not distinguish between public and private fixtures, and thus sets a minimum flow for public lavatories that is in excess of the maximum flow allowable under Table 604.4 of this code. And for residential sinks other than service sinks, the *minimum* flow rate is again set higher than the allowable *maximum* flow rate for a sink faucet as specified by Table 604.4. For applications at the low end of the acceptable range of water pressure, these excessive minimum flow values tend to encourage the oversizing of pipes leading to fixture outlets, leaving a larger volume of cooled hot water to purge before use, and thus exacerbating the problem of the energy and water lost while waiting for actual hot water to arrive at the fixture. In some installations, these excessive minimum values may require water pressure booster systems that might otherwise be unnecessary.

Under this proposal, public lavatories would be distinguished from private lavatories, single-handle mixing valves for private lavatories would be recognized, and the minimum flow rates for lavatory, residential sink, and shower supply pipes would be adjusted downward. Minimum flow rates for showers would be set at 2.5 gpm, or such lower flow rate as would match the manufacturer's minimum rated flow for the mixing valve to provide the level of thermal protection prescribed by the industry standard. The minimum flow rate for a residential sink, other than a service sink, would be set at 1.75 gpm, which is 80 percent of the value of the maximum flow rate allowed by this code under Table 604.4. The minimum flow rate for a public lavatory would be set at 0.4 gpm, 80 percent of the value of the maximum flow rate allowed by this code under Table 604.4. The minimum flow rate for a private lavatory would be set at 0.8 gpm, which is the minimum flow rate prescribed for private lavatory faucets by the US EPA's WaterSense specification (version 1.0, October 2007).

Cost Impact: This proposal will have the effect of reducing the diameter of pipe that is allowed to serve lavatories, sinks, and showers in some installations, and may also eliminate the need for water pressure booster systems in some applications. This code change proposal will not increase the cost of construction.

P90-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T604.3-P-OSANN

P91 – 12
Table 604.4

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self (eosann@ndrc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Revise as follows:

TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY[b]
Lavatory, private	~~2.2~~ 1.5 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head[a]	~~2.5~~ 2.0 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	~~1.0~~ 0.5 gallon per flushing cycle
Water closet	~~1.6~~ 1.3 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 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 604.4 for water closets, urinals, 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 currently shown in Table 604.4 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; urinals (0.5 gpf) in 2009; 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 October 2011 indicate the widespread availability and commercial viability of plumbing products that are more efficient than the federal minimum standards shown in Table 604.4:

- Tank-type water closets 886 models from 60 brands
- Lavatory faucets and accessories 809 models from 86 brands
- Urinals
  - 47 models of fixtures from 9 brands
  - 41 models of valves from 4 brands
- Showerheads 402 models from 28 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, urinals, shower heads, and lavatory faucets in new construction will save 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 revised values in this proposal, effective 2016, can be expected to save:

- 243.1 million gallons of water per day by 2030;
- More than 2.8 billion kilowatt hours per year by 2030;
- More than 178 hundred million therms of natural gas per year by 2030; and
- Consumers will realize more than $2.18 billion dollars in reduced energy and water costs.

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.

P91-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T604.4-P-OSANN

P92 – 12
604.5

Proponent: Gary Klein, Affiliated International Management, LLC, representing self **(**gary@aim4sustainability.com)

Revise as follows:

604.5 Size of fixture supply. The minimum size of a fixture supply pipe shall be as shown in Table 604.5.The fixture supply pipe shall terminate not more than 30 inches (762 mm) from the point of connection to the fixture. A reduced size flexible water connector installed between the supply pipe and the fixture shall be of an *approved* type. The supply pipe shall extend to the floor or wall adjacent to the fixture. The minimum size of individual distribution lines utilized in gridded or parallel water distribution systems shall be as shown in Table 604.5.

Exceptions:

1. Where the developed length of a fixture supply pipe is 50 feet (15 240 mm) or less and the maximum fixture flow rate does not exceed 0.5 gpm (1.9 lpm), the minimum size of fixture supply pipe shall be 1/4 inch (6.4 mm).
2. Where the developed length of a fixture supply pipe is 50 feet (15 240 mm) or less and the maximum fixture flow rate does not exceed 1 gpm (3.8 lpm), the minimum size of fixture supply pipe shall be 5/16 inch (8 mm).
3. Where the developed length of a fixture supply pipe is 50 feet (15 240 mm) or less and the maximum fixture flow rate does not exceed 1.5 gpm (5.7 lpm), the minimum size of fixture supply pipe shall be 3/8 inch (9.5 mm).

Reason: The 2012 IGCC approved GEW 327 that contained a footnote to a table limiting the flow rate of hot or tempered water in small diameter piping (1/4, 5/16 and 3/8 inch) to 0.5, 1, and 1.5 gpm respectively. Putting a requirement in a footnote is not the best code language. The table also limited the length of these pipe diameters to 50 feet, or 50 feet of developed length, whichever is less (within the context of the 2012 IPC).

This proposal takes the requirement out of the footnote of a table and makes the flow rate and developed length requirements applicable to hot, tempered or cold-water distribution lines.

Why limit the maximum fixture flow rate when 1/4, 5/16 and 3/8 inch diameter piping is being used? The answer is that the flow rates were selected, using the Hazen-Williams formulas, to keep the velocity below 5 feet per second, which minimizes pressure drop, reduces noise and limits the rate of any internal corrosion. The same formulas were used to limit the pressure drop at these flow rates to not more than 5 psi in the 50 foot lengths of 1/4, 5/16 and 3/8 inch diameter piping.

Why limit the length of the small diameter tubing to 50 feet of developed length? The answer is that this restriction is necessary to correlate with the changes to Section 607.2 of the IPC that limited the distance between the source of hot or tempered water and the fixtures to no more than 50 feet of developed length. While this is particularly important in hot water supply piping, it is also a very reasonable restriction for cold water supply piping used for low flow rate fixtures. Pressure loss at lengths greater than 50 feet would be excessive and unacceptable, as would heat loss in the hot or tempered water supply piping. In addition, for the low flow rate fixtures used with the small diameter piping, limiting length to 50 feet reduces the time-to-tap and the amount of water wasted while waiting for hot or tempered water to arrive, thereby improving performance for the user as well as water and energy waste.

I urge your support for this proposal. Thank you.

Cost Impact: The code change proposal will not increase the cost of construction. In fact, if the smaller diameter piping becomes commonly used, it might decrease the costs of construction.

P92-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

604.5-P-KLEIN

P93 – 12
Table 604.5

Proponent: Gary Klein, Affiliated International Management, LLC, representing self (gary@aim4sustainability.com)

Revise as follows:

TABLE 604.5
MINIMUM SIZES OF FIXTURE WATER SUPPLY PIPES

FIXTURE SUPPLY OUTLET SERVING	FLOW RATE[a] (gpm)	FLOW PRESSURE (psi)

a. Where the developed length of the distribution line is ~~60~~ 50 feet or less, and the available pressure at the meter is 35 psi or greater, the minimum size of an individual distribution line supplied from a manifold and installed as part of a parallel water distribution system shall be one nominal tube size smaller than the sizes indicated.

(Portions of table not shown remain unchanged.)

Reason: Section 607.2 of the 2012 IPC limits the developed length of hot or tempered water supply piping to 50 feet.

The change recommended in this proposal correlates Table 604 with Section 607.2. It will apply to cold water as well as to hot or tempered water, which quite frankly is fine from the perspective of minimizing pressure drop and maintaining acceptable performance at the fixtures.

I urge your support for this proposal. Thank you.

Cost Impact: The code change proposal will not increase the cost of construction. In fact, if the smaller diameter piping becomes commonly used, it might decrease the costs of construction.

P93-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T604.5-P-KLEIN

P94 – 12
Table 605.3, Table 605.4, 605.17 (New)

Proponent: David W. Ash, Lubrizol Advanced Materials, Inc.

Revise as follows:

TABLE 605.3
WATER SERVICE PIPE

Chlorinated polyvinyl chloride/aluminum/ chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855

(Portions of table not shown remain unchanged)

TABLE 605.4
WATER DISTRIBUTION PIPE

Chlorinated polyvinyl chloride/aluminum/ chlorinated polyvinyl chloride (CPVC/AL/CPVC) pipe and tubing	ASTM F2855

(Portions of table not shown remain unchanged)

605.17 Chlorinated polyvinyl chloride/aluminum/ chlorinated polyvinyl chloride (CPVC/AL/CPVC) pipe and tubing. Joints between CPVC/AL/CPVC plastic pipe or CPVC fittings shall comply with Sections 605.17.1 and 605.17.2.

605.17.1 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.17.2 Solvent cementing. Joint surfaces shall be clean and free from moisture, and an *approved* primer shall be applied. Solvent cement, orange in color and conforming to ASTM F 493, shall be applied to joint surfaces. 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/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D 2846.

Add new standard to Chapter 14 as follows:

ASTM
F2855-11 Specification for Poly(Vinyl Chloride)/Aluminum/Poly(Vinyl Chloride) (CPVC/AL/CPVC) Composite Pressure Tubing

Reason: CPVC/AL/CPVC pipe has been developed that is suitable for use as potable water piping, both as water service pipe and water distribution pipe. This product has been successfully used successfully on a limited basis since 2007 based on NSF standard 61 and a special engineering standard (SE) from NSF International. Including this product in the IPC will recognize another plumbing pipe option for installers.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 2855-11 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 2, 2012.

P94-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.3-P-ASH

P95 – 12

Table 605.3, Table 702.2, Table 702.3, Table 702.4, 705.3, Table 1102.5

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

TABLE 605.3
WATER SERVICE PIPE

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C296~~

(Portions of table not shown remain unchanged)

~~**605.11 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.~~

(Renumber subsequent sections)

TABLE 702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C428~~

(Portions of table not shown remain unchanged)

TABLE 702.3
BUILDING SEWER PIPE

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C428~~

(Portions of table not shown remain unchanged)

TABLE 702.4
PIPE FITTINGS

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C428~~

(Portions of table not shown remain unchanged)

~~**705.3 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.~~

(Renumber subsequent sections)

TABLE 1102.4
BUILDING STORM SEWER PIPE

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C428~~

Portions of table not shown remain unchanged

TABLE 1102.5
SUBSOIL DRAIN PIPE

MATERIAL	STANDARD
~~Asbestos-cement pipe~~	~~ASTM C508~~

(Portions of table not shown remain 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.

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.

Cost Impact: None

P95-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.3-P-STRAUSBAUGH.PMGCAC

P96 – 12
Table 605.5

Proponent: Robert Hall, SE Technical Manager, representing Viega, LLC (robert.hall@viega.com)

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIALS	STANDARDS
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME 16.26; ASME B16.29; ICC-ES LC1002

(Portions of table not shown remain unchanged.)

Add standard to Chapter 14 as follows:

ICC-ES
5360 Workman Mill Road
Whittier, California 90601

ICC-ES

LC1002 Press-connection Fittings for Potable Water Tube and Radiant Heating Systems

Reason: ICC Evaluation Services Standard for press-connect copper fittings.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ICC-ES LC1002, 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 2, 2012.

P96-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5 #1-P-HALL

P97 – 12
Table 605.5, Chapter 14

Proponent: Robert Hall, SE Technical Manager, representing Viega, LLC (robert.hall@viega.com)

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIALS	STANDARDS
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME 16.26; ASME B16.29; <u>ASME B16.51</u>

Add new standard to Chapter 14 as follows:

ASME
<u>B16.51-2011</u> <u>Copper and Copper Alloy Press-Connect Pressure Fittings</u>

Reason: New, ASME Material Standard for Press-Connect fittings.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASME B16.51-2011, 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 2, 2012.

P97-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5 #2-P-HALL

P98 – 12
Table 605.5, Chapter 14

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

Revise as follows:

TABLE 605. 5
PIPE FITTINGS

MATERIAL	STANDARDS
Copper or copper alloy	ASSE 1061; ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29, <u>ASME B16.51</u>

(Portions of table not shown remain unchanged)

Add new standard to Chapter 14 as follows:

ASME
<u>B16.51-2011</u> <u>Copper and Copper Alloy Press-Connect Pressure Fittings</u>

Reason: This adds the new standard for copper press connect fittings. ASME B16.51 was published in December 2011. The standard regulates the size, design, and performance requirements for press connect fittings.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME B16.51-2011 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 2, 2012.

P98-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5-P-BALLANCO

P99 – 12
Table 605.5

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

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIAL	STANDARD
Copper or copper alloy	ASSE 1061; ASME B16.15; ASME B16.18; ASME B16.22; ~~ASME B16.23;~~ ASME B16.26; ~~ASME B16.29~~

Reason: The above proposal removes DWV fittings from Potable Water table to benefit the end user. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV and ASME B 16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV are designed with short cup depth and ¼ inch per foot slope. Both Standards are listed correctly under DWV fittings in Table 704.2 and Chapter 14 Reference Standards.

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

P99-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5-P-FEEHAN

P100 – 12
Table 605.5

Proponent: Larry Gill, P.Eng. IPEX USA LLC (larry.gill@ipexna.com)

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIAL	STANDARD
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F 1807; ASTM F 2098; ASTM F 2159; ASTM F 2735; <u>ASTM F2769</u>

Reason: I am adding standard ASTM F2769 (already in the code) to the pipe fittings table because the standard includes fittings for PE-RT tubing. This standard should have added to this table during the last cycle when the standard was first introduced into the code for Tables 605.3 and 605.4.

Cost Impact: The proposed change will not increase the cost of construction

P100-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5 #2-P-GILL

P101 – 12
Table 605.5, Chapter 14

Proponent: Kevin Simko, Victaulic representing Victaulic (ksimko@victaulic.com)

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIALS	STANDARDS
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME 16.26; ASME B16.29; ASTM B 75: ASTM B 152; ASTM B 584
Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53; ASTM A395; ASTM A 536; ASTM F 1476: ASTM F 1548
Stainless steel (Type 304/304L)	ASTM A 312; ASTM A 778; ASTM A 351; ASTM A403: ASTM A 743; ASTM A 744; ASTM A 890
Stainless steel (Type 316/316L)	ASTM A 312; ASTM A 778; ASTM A 351; ASTM A 403: ASTM A 743; ASTM A 744; ASTM A 890
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM A 53; ASTM A 106; ASTM A 234; ASTM A 395; ASTM A 536; ASTM F1476; ASTM F1548

(Portions of table not shown remain unchanged.)

Add new standards to Chapter 14 as follows:

ASTM

A106/A106M-11	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
A234/A234M-11a	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
A 351-10	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts
A 395/A395M-99(2009)	Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
A 403-11	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
A 536-84(2009)	Standard Specification for Ductile Iron Castings
A 743/A743M-06(2010)	Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
A 744/A744M-10e1	Standard Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service
A 890/A890M-10	Standard Specification for Castings, Iron-Chromium-Nickel-Molybdenum Corrosion-Resistant, Duplex (Austenitic/Ferritic) for General Application
B 584-11	Standard Specification for Copper Alloy Sand Castings for General Applications
F 1476-07	Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

F1548-01(2006) — Standard Specification for the Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications

Reason: The materials currently listed in Table 605.5 do not fully represent the materials being used for potable water systems in the industry. The code is overly-restrictive with regard to pipe materials and does not allow for the use of materials that offer improved mechanical and electrochemical properties compared with allowed materials. The additions of the standard materials will allows the use of high grade materials that provide improved performance. ,amy of these materials are also currently used in the International Mechanical Code and other piping codes.

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, ASTM A106/A106M-11, ASTM A234/A234M-11a, ASTM A 351-10, ASTM A 395/A 395M-99(2009), ASTM A 403-11, ASTM A536-84(2009), ASTM A536-84(2009), ASTM B584-11, ASTM A 743/A 743M-06(2010)m ASTM A 744/A 744M-10e1, ASTM A890/A890M-10, ASTM F 1476-07 and ASTM F 1548-01(2006), 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 2, 2012.

P101-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5-P-SIMKO

P102 – 12
Table 605.5

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee (Sstrausbaugh@arlingtonva.us)

Revise as follows:

TABLE 605.5
PIPE FITTINGS

MATERIAL	STANDARD
Cast-iron	ASME B16.4~~; ASME B16.12~~

(Portions of table not shown remain unchanged)

Reason: ASME B16.12 is for threaded *drainage* fittings and is inappropriate in a water distribution pipe fitting table.
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.

Cost Impact: None

P102-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T605.5-P-STRAUSBAUGH.PMGCAC

P103 – 12

605.14, 605.14.1, 605.14.2, 605.14.3, 605.14.4, 605.14.5, 605.14.6 (New), 605.14.7 (New), 605.14.8 (New), 605.15

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

Revise as follows:

605.14 Copper pipe and tubing. Joints between copper or copper-alloy pipe, tubing, and ~~or~~ fittings shall comply with Sections 605.14.1 through 605.14.~~5~~8.

605.14.1 Brazed joints. Brazed joints between copper pipe or tubing and fittings shall be made with a brazing alloy having a liquid temperature exceeding 1000˚F (538˚C). ~~All~~ Joint surfaces to be brazed shall be cleaned bright by manual or mechanical means. The ends of pipe or tubing shall be cut square and shall be reamed to the full inside diameter. Burrs on the outside end of the pipe or tubing shall be removed. Where required by the brazing alloy manufacturer's instructions, an approved brazing flux shall be applied to the joint surfaces. The joint shall be brazed with a brazing filler metal conforming to AWS A5.8. Brazing filler metal shall be applied at the point where the pipe or tubing enters the socket of the fitting.

605.14.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions. Mechanical joints shall include compression type, flanged type, grooved type and press type.

605.14.3 Soldered joints. Solder joints between copper pipe or tubing and fittings shall be made in accordance with the methods of ASTM B 828 with the following sequence of joint preparation and operation: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cooling and cleaning. ~~All cut~~ The ends of pipe or tub~~e~~ing shall be cut square and shall be reamed to the full inside diameter of the pipe or tub~~e~~ing. ~~end.~~ Burrs on the outside end of the pipe or tubing shall be removed. ~~All~~ Joint surfaces to be soldered shall be cleaned bright by manual or mechanical means. ~~A~~ Flux conforming to ASTM B 813 shall be applied to the pipe or tubing and fittings. Such flux shall be noncorrosive and nontoxic after soldering. ~~be applied.~~ Pipe or tubing shall be inserted to the base of the fitting. Excess flux shall be removed from the exterior of the joint. The assembled joint shall be supported to create a uniform capillary space around the joint. An LP gas or acetylene air /fuel torch shall be used to apply heat to the assembled joint. The heat shall be applied with the flame perpendicular to the pipe or tubing. The flame shall be moved alternately between the fitting cup and the pipe or tubing. Solder in compliance with ASTM B 32 shall be applied to the joint surfaces until capillary action draws the molten solder into the cup of the fitting. ~~The joint shall be soldered with a solder conforming to ASTM B 32.~~ The soldered joint shall not be disturbed until cool. Remaining flux residue shall be cleaned from the exterior of the joint.

605.14.4 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

605.14.5 Welded joints. ~~All~~ Welded joint surfaces shall be cleaned. The joint shall be welded with ~~an~~ *approved* filler metal.

605.14.6 Flared joints. Flared joints for water pipe shall be made by a tool designed for that operation.

605.14.7 Push-Connect joints. Removable and non-removable push fit fittings for copper tubing or pipe shall comply with ASSE 1061. Push fit fittings for copper pipe or tubing shall have an *approved* elastomeric O-ring that seals the joint. The end of pipe or tubing shall be cut square, chamfered and reamed to full inside diameter. The pipe or tubing shall be fully inserted into the fitting and the pipe or tubing shall be marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the pipe or tubing to verify that the pipe or tubing is fully inserted into the fitting and the gripping mechanism has engaged on the pipe or tube.

605.14.8 Pressed-Connect joints. Pressed fittings for copper pipe or tubing shall have an elastomeric O-ring that seals the joint. The pipe or tubing shall be fully inserted into the fitting, and the pipe or tubing shall be marked at the shoulder of the fitting. Pressed fittings for copper pipe or tubing shall have an *approved* elastomeric O-ring that forms the joint. The ends of pipe or tubing shall be cut square, chamfered and reamed to full inside diameter. The fitting alignment shall be checked against the mark on the pipe or tubing to verify that the pipe or tubing is fully inserted into the fitting. The joint shall be pressed using the tool recommended by the manufacturer of the press fitting.

~~**605.15 Copper tubing.** Joints between copper or copper alloy tubing or fittings shall comply with Sections 605.15.1 through 605.15.4.~~

~~**605.15.1 Brazed joints.** Joint surfaces shall be cleaned. An *approved* flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.~~

~~**605.15.2 Flared joints.** Flared joints for water pipe shall be made by a tool designed for that operation.~~

~~**605.15.3 Mechanical joints.** Mechanical joints shall be installed in accordance with the manufacturer's instructions.~~

~~**605.15.4 Soldered joints.** Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with lead-free solders and fluxes. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead.~~

(Renumber subsequent sections)

Reason: The above language combines pipe and tubing into one section and provides the joining methods of copper and copper alloys as referenced in Table 605.5. In addition, important language from the standards has been added to aid the end user.

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

P103-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.14-P-FEEHAN

P104 – 12

605.15, 605.15.4 (New)

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

Revise as follows:

605.15 Copper tubing. Joints between copper or copper alloy tubing or fittings shall comply with Sections 605.15.1 through ~~605.15.4~~ 605.15.5.

605.15.1 Brazed joints. Joint surfaces shall be cleaned. An *approved* flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.

605.15.2 Flared joints. Flared joints for water pipe shall be made by a tool designed for that operation.

605.15.3 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

605.15.4 Press connect. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. The tube shall be fully inserted into the press connect fitting. Press connect joints shall be pressed with a tool certified by the manufacturer.

~~605.15.4~~ 605.15.5 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with lead-free solders and fluxes. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead.

Reason: This change coordinates with the change to add the press connect fitting standard to Table 605.5. The proposed new text identifies the method of joining copper tube by press connect. The tube must be cut square and reamed. The tool must be certified by the manufacturer to assure that the proper press connection is made.

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

P104-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.15-P-BALLANCO

P105 – 12
605.15.3 (New), Chapter 14

Proponent: Kevin Simko, Victaulic, representing Victaulic (ksimko@victaulic.com)

Add new text as follows:

605.15.3 Grooved and shouldered mechanical joints. Grooved and shouldered mechanical joints shall comply with ASTM F1476, shall be made with an *approved* elastomeric seal and shall be installed in accordance with the manufacturer's instructions. Such joints shall be permitted to be concealed.

Add new standard to Chapter 14 as follows:

ASTM

ASTM F1476-07	Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

Reason: The code as written contains no provision specifically identifying grooved and shoulder mechanical joints. These types of joints are acceptable within the International Mechanical Code with the same verbiage. These type sof joints are commonly used in steel, stainless steel, copper and PVC potable water systems when incorporating a gasket that meets the requirements of the NSF 61. Without this provision, the current code is not representative of current materials and methods.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM F1476-07 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 2, 2012.

P105-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.15.3 (NEW)-P-SIMKO

P106 – 12
605.15.5 (New)

Proponent: Robert Hall, SE Technical Manager, Viega, LLC, representing Viega LLC (Robert.hall@viega.com)

Add new text as follows:

605.15.5 Press Connect Joints. Press connect joints shall be installed in accordance with the manufacturer's instructions. Press-connect joints shall conform to one of the standards listed in Table 605.5

Reason: Need press connect fittings reference in Section 605.15 Copper tube.

Cost Impact: None

P106-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.15.5 (NEW)-P-HALL

P107 – 12
605.16.2

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

Revise as follows:

605.16.2 Solvent cementing. Joint surfaces shall be clean and free from moisture~~,~~. Joints shall be made in accordance with the pipe manufacturer's installation instructions. Where such instructions require ~~and~~ that ~~an~~ ~~*approved*~~ primer be used, the primer shall be applied to the joint surfaces and a solvent cement, orange in color and conforming to ASTM F 493, shall be applied to the joint surfaces. Where such instructions allow for a one step solvent cement, yellow 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 cemented 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.

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

P107-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.16.2-P-BALLANCO

P108 – 12
605.16.2

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

Revise as follows:

605.16.2 Solvent cementing. Joint surfaces shall be clean and free from moisture, and an approved primer shall be applied. Solvent cement, orange in color and conforming to ASTM F 493, shall be applied to joint surfaces. 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 <u>or red</u> 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 <u>or ASTM F442</u>.

Reason: ASTM F442 CPVC is used in sprinkler systems, as well as, plumbing systems. With the use of multipurpose piping systems in one and two family dwellings and townhouses, it has become common to see both ASTM F442 and ASTM D2846 pipe being installed. UL has listed ASTM F442 pipe for joining with one step solvent cement. However, UL requires the solvent cement to be red in color. The yellow and red one step solvent cement are the same, other than the color. This will allow the use of a single color solvent cement when doing a multipurpose residential sprinkler installation.

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

P108-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.16.2-P-BALLANCO

P109 – 12

605.18.3 (New), Chapter 14

Proponent: Kevin Simko, Victaulic representing Victaulic (ksimko@victaulic.com)

Add new text as follows:

605.18.3 Grooved and shouldered mechanical joints. Grooved and shouldered mechanical joints shall comply with ASTM F1476, shall be made with an *approved* elastomeric seal and shall be installed in accordance with the manufacturer's instructions. Such joints shall be permitted to be concealed.

Add new standard to Chapter 14 as follows:

ASTM

ASTM F1476-07 Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

Reason: The code as written contains no provision specifically identifying grooved and shoulder mechanical joints. These types of joints are acceptable within the International Mechanical Code with the same verbiage. These type sof joints are commonly used in steel, stainless steel, copper and PVC potable water systems when incorporating a gasket that meets the requirements of the NSF 61. Without this provision, the current code is not representative of current materials and methods.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 1476-07 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 2, 2012.

P109-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.18.3 (NEW)-P-SIMKO

P110 – 12
202, 605.2

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

Revise as follows:

LEAD-FREE PIPE AND FITTINGS. ~~Containing not more than 8.0 percent lead~~ Pipe and fittings where the wetted surfaces of such pipe and fittings have a weighted average lead content of 0.25 percent or less.

605.2 Lead content of water supply pipe and fittings. Pipe and pipe fittings, including valves and faucets, utilized in the water supply system and providing water for human consumption shall ~~have a maximum of 8% lead content~~ be lead-free.

Reason: Section 1417 of the Safe Drinking Water Act (42 U.S.C. 300g–6) was amended by Senate Bill.3874 of 2010 http://www.gpo.gov/fdsys/pkg/BILLS-111s3874enr/pdf/BILLS-111s3874enr.pdf This changes the definition of lead free in the Safe Drinking Water Act from not more than 8 percent lead to not more than a weighted average of 0,25 percent. The effective date of the SDWA revision is January 4, 2014. This proposal makes the corresponding adjustment to the definitions and code section.

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

P110-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.2-P-BROWN

P111 – 12
202, 605.2, 605.2.1 (New), 605.14.3, 605.15.4

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Delete the following definitions without substitution:

~~**LEAD-FREE PIPE AND FITTINGS.** Containing not more than 8.0-percent lead.~~

~~**LEAD-FREE SOLDER AND FLUX.** Containing not more than 0.2-percent lead.~~

Revise as follows:

605.2 Lead content of water supply pipe and fittings. The wetted surfaces of pipe and pipe fittings, including valves and faucets, utilized in the water supply system shall have ~~a maximum of 8 -percent~~ not more than a weighted average of 0.25 percent lead.

605.2.1 Calculation. The weighted average lead content of pipe and pipe fitting, plumbing fittings, valves and faucets shall be calculated in accordance with this section: For the purposes of this section and Section 605.2, a wetted surface is defined as a surface that is in contact with the water that it contains. To determine the weighted percentage of lead of each wetted component, the percentage of lead in that component shall be multiplied by the ratio of the wetted surface area of that component to the total wetted surface area of the entire product. The weighted percentages of lead of each of the wetted components shall be added together and the sum of the weighted percentages shall constitute the weighted average lead content of the product. The lead content of the material used to produce wetted components shall be used to determine compliance with Section 605.2. For the lead content of materials that are provided as a range, the maximum content of the range shall be used.

605.14.3 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with ~~lead-free~~ solder and fluxes~~. "Lead free" shall mean a~~ having a chemical composition equal to or less than 0.2-percent lead.

605.15.4 Soldered joints. Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32. The joining of water supply piping shall be made with ~~lead-free~~ solders and fluxes~~. "Lead free" shall mean~~ having a chemical composition equal to or less than 0.2-percent lead.

Reason: The Safe Drinking Water Act (42 U.S.C. 300g–6) was amended by Senate Bill.3874 of 2010 http://www.gpo.gov/fdsys/pkg/BILLS-111s3874enr/pdf/BILLS-111s3874enr.pdf This amendment changes the definition of lead free in the Safe Drinking Water Act from not more than 8 percent lead to not more than a weighted average of 0.25 percent for wetted surfaces. The effective date of the SDWA revision is January 4, 2014. Accepting this change will align the IPC with Federal requirements.

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.

Cost Impact: None

P111-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.2-P-STRAUSBAUGH.PMGCAC

P112 – 12
605.2.1 (New), Chapter 14

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

Add new text as follows:

605.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent lead or less.

Add new standard to Chapter 14 as follows:

NSF
372-2010 Drinking Water System Components - Lead Content

Reason: This change will coordinate the IPC with Federal legislation limiting the amount of lead that can be used to supply drinking water. Section 605.2 is still necessary since remaining components in a potable water distribution system must still have a maximum of 8 percent lead. The Federal legislation only applies to drinking water components. There are other components that have a greater quantity of lead than 0.25 percent and are permitted to by Federal law.

NSF 372 is the new standard used to evaluate the weighted average of lead in drinking water components. This standard allows manufacturers to perform a mathematical analysis of their product to determine the weighted average of lead. NSF 372 is consistent with the Federal legislation.

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

Analysis: A review of the standard proposed for inclusion in the code, NSF 372-2010 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 2, 2012.

P112-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.2.1 (NEW)-P-BALLANCO

P113 – 12
605.5

Proponent: Kevin Simko, Victaulic representing Victaulic (ksimko@victaulic.com)

Revise as follows:

605.5 Fittings. Pipe fittings shall be *approved* for installation with the piping material installed and shall comply with the applicable standards listed in Table 605.5. Pipe fittings utilized in water supply systems shall also comply with NSF 61. Ductile and gray iron pipe <u>and pipe fittings utilized within water service piping systems</u> shall be cement mortar lined in accordance with AWWA C104.

Reason: The code as written requires that any fitting manufactured from ductile iron must be cement lined. This ambiguity results in overly-restrictive fitting requirements that do not represent current materials and methods. The requirement for cement lining needs to be specific for water service pipe and not distribution piping. Distribution piping typically incorporates galvanized steel of ductile iron components and not cement lining. Cement lining is used exclusively in ductile iron water main piping.

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

P113-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.5-P-SIMKO

P114 – 12
605.5.1.3 (New), 605.9

Proponent: Kevin Simko, Victaulic, representing Victaulic (ksimko@victaulic.com)

Revise as follows:

605.5.1.3 Mechanical joints for branch lines. Mechanical joints that are used to create branch lines of a pipe run shall incorporate a locating collar that is designed for alignment and prevention of the rotation of the mechanical joint after installation. The locating collar shall extend into a predrilled hole in the pipe. The mechanical joint shall be installed in accordance with the manufacturer's instructions. Sealing of the joint shall be made with an *approved* elastomeric seal.

605.9 Prohibited joints and connections. The following types of joints and connections shall be prohibited:

1. Cement or concrete joints.
2. Joints made with fittings not *approved* for the specific installation.
3. Solvent-cement joints between different types of plastic pipe.
4. Saddle-type fittings.

   Exception: Mechanical joints in accordance with Section 605.5.1.3 and used for branch line connections shall be permitted.

Reason: There is no provision in the IPC allowing or preventing the use of mechanical joints for branch lines. Mechanical joints for branch lines are used in HVAC and other applications not in the scope of the IPC. Mechanical joints for branch lines offer improved performance and safety compared with saddles, Materials are the same used in other acceptable products.

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

P114-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.5.1.3-P-SIMKO

P115 – 12
605.7

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

Revise as follows:

605.7 Valves. All valves shall be of an approved type and compatible with the type of piping material installed in the system. ~~Ball valves, gate valves, butterfly valves, globe valves and plug.~~ Valves intended to supply drinking water shall meet the requirements of NSF 61.

Reason: NSF/ANSI Standard 61 Drinking Water System Components-Health Effects addresses crucial aspects of drinking water system components: whether contaminants that leach or migrate from the product/material into the drinking water are above acceptable levels in finished waters. Requiring NSF 61 will help protect the drinking water supply from the leaching of contaminants. The IPC and IRC already requires conformance to NSF 61 for pipes, fittings, faucets and valves intended to supply drinking water. (Sections 424.1, 605.3, 605.4, 605.5, 605.7 of IPC).

The current list of valves in Section 605.7 which require NSF-61 was a concession during previous code change cycles to allow manufacturers time to bring product lines into compliance with this standard. The requirement should apply to all valves intended to supply drinking water. The Uniform Plumbing Code currently requires all valves to conform to NSF 61.

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

P115-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.7 # 1-P-BROWN

P116 – 12
605.7, Table 605.7 (New), Chapter 14

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

Revise as follows:

605.7 Valves. ~~All~~ Valves shall be ~~of an approved type and~~ compatible with the type of piping material installed in the system. Valves shall conform to one of the standards listed in Table 605.7 or shall be *approved.* Ball valves, gate valves, globe valves and plug valves intended to supply drinking water shall meet the requirements of NSF 61.

TABLE 605.7
VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASTM F 1970, CSA B125.3
Copper or copper alloy	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, MSS SP-67, MSS SP-80
Ductile Iron	ASTM A126, AWWA C500, AWWA C504, AWWA C507, MSS SP-67, MSS SP-70, MSS SP-71, MSS SP-72, MSS SP-78, MSS SP110,
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14, ASME A112.18.1, CSA B125.3, NSF 359
Polypropylene (PP) plastic	ASTM F 2389
Polyvinyl chloride (PVC) plastic	ASME A112.4.14, ASTM F 1970

Add new standards to Chapter 14 as follows:

ASME
A112.4.14 – 2004 Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems
B16.34 – 2009 Valves Flanged, Threaded and Welding End

ASTM
A126-04(2009) Gray Iron Castings for Valves, Flanges, and Pipe Fittings
F1970 - 05 Special Engineered Fittings, Appurtenances or Valves for use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems

AWWA
C500-09 AWWA Standard for Metal-Seated Gate Valves for Water Supply Service
C504-10 AWWA Standard for Rubber-Seated Butterfly Valves
C507-11 AWWA Standard for Ball Valves, 6 In. Through 60 In.

MSS
Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.
127 Park Street, N.E.
Vienna, VA 22180

SP-42-2009 Corrosion Resistant Gate, Globe, Angle and Check Valves with Flanged and Butt Weld Ends (Classes 150, 300 & 600)

SP-67-2011 Butterfly Valves
SP-70-2011 Gray Iron Gate Valves, Flanged and Threaded Ends
SP-71-2011 Grey Iron Swing Check Valves, Flanged and Threaded Ends
SP-72-2010 Ball Valves with Flanged or Butt-Welding Ends for General Service

SP-78-2011 Cast Iron Plug Valves, Flanged and Threaded Ends
SP-80-2008 Bronze Gate, Globe, Angle and Check Valves
SP-110-2010 Ball Valves, Threaded, Socket Welded, Solder Joint, Grooved and Flared Ends

NSF
359-2011 Valves for Crosslinked Polyethylene (PEX) Water Distribution Tubing Systems

Reason: Currently the code requires valves to be approved but does not contain requirements for which performance standards are acceptable for use. While a number of valve standards have been created over the years, they have not been included in the code. The intent of this code change is to create a table to identify appropriate standards for valves. This list is not all inclusive of all material types and in some cases there are not national standards for every type of valve and material used. For this reason, the language "shall be approved or conform to . . ."

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

Analysis: A review of the standards proposed for inclusion in the code, ASME A112.4.14–2004 , ASME B16.34–2009 , ASTM A126-04(2009), ASTM F1970-05, AWWA C500-09, AWWA C504-10, AWWA C507-11, MSS SP-42-2009, MSS SP-67-2011, MSS SP-70-2011, MSS SP-71-2011, MSS SP-72-2010, MSS SP-78-2011, MSS SP-80-2008, MSS SP-100-2010 and NSF 359-2011 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 2, 2012.

P116-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.7 #2-P-BROWN

P117 – 12
605.7.1 (New), Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Add new text as follows:

605.7.1 Quarter-turn shut-off valves. Manually operated, quarter-turn shut off valves, 2 inches (51mm) or less in size, shall conform to ASME A112.4.14.

Add new standard to Chapter 14 as follows:

ASME

A112.4.14–2004(R2010)	Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems

Reason: ASME A112.4.14 Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems is a National standard (ANSI). These valves are intended for indoor installation as potable water shutoff valves between the meter and the supply stop. Valves governed by this Standard are intended for service at temperatures between 34°F (1°C) and 180°F (82°C), with an allowable working pressure rating not less than 125 psi (862 kPa).

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.4.14-2004(R2010) 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 2, 2012.

P117-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.7.1 (NEW)-P-CONSTANTINO

P118 – 12

NUMBER NOT USED

P118-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

P119– 12
605.22.2 (New), Chapter 14

Proponent: Kevin Simko, Victaulic representing Victaulic (ksimko@victaulic.com)

Add new text as follows:

605.22.2 Grooved and shouldered mechanical joints. Grooved and shouldered mechanical joints shall comply with ASTM F1476, shall be made with an *approved* elastomeric seal and shall be installed in accordance with the manufacturer's instructions. Such joints shall be permitted to be concealed.

Add new standard to Chapter 14 as follows:

ASTM

ASTM F1476-07	Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

Reason: The code as written contains no provision specifically identifying grooved and shoulder mechanical joints. These types of joints are acceptable within the International Mechanical Code with the same verbiage. These type sof joints are commonly used in steel, stainless steel, copper and PVC potable water systems when incorporating a gasket that meets the requirements of the NSF 61. Without this provision, the current code is not representative of current materials and methods.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 1476-07 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 2, 2012.

P119-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.22.2 (NEW)-P-SIMKO

P120 – 12
605.23.3 (New), Chapter 14

Proponent: Kevin Simko, Victaulic representing Victaulic (ksimko@victaulic.com)

Add new text as follows:

605.23.3 Grooved and shouldered mechanical joints. Grooved and shouldered mechanical joints shall comply with ASTM F1476, shall be made with an *approved* elastomeric seal and shall be installed in accordance with the manufacturer's instructions. Such joints shall be permitted to be concealed.

Add new standard to Chapter 14 as follows:

ASTM

ASTM F1476-07	Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

Reason: The code as written contains no provision specifically identifying grooved and shoulder mechanical joints. These types of joints are acceptable within the International Mechanical Code with the same verbiage. These type sof joints are commonly used in steel, stainless steel, copper and PVC potable water systems when incorporating a gasket that meets the requirements of the NSF 61. Without this provision, the current code is not representative of current materials and methods.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 1476-07 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 2, 2012.

P120-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.23.3 (NEW)-P-SIMKO

P121– 12
605.24.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

605.24.2 Plastic pipe or tubing to other piping material. Joints between different ~~grades~~ types of plastic pipe or between plastic pipe and other piping material shall be made with ~~an~~ *approved* adapters or transition fittings.

Reason: There is a number of different grades of plastic within a type of plastic pipe. For example, PVC can be made from various grades of PVC. All grades of PVC are solvent welded in the same manner with the same cement. This section is concerned with joints between different types of plastic pipe such as between PVC and ABS. These two different types of pipe cannot be directly joined together because the solvent cement approved for one type is not suitable for the other type. This corresponding section in the IRC was corrected many cycles ago and for uniformity, the IPC needs the same correction.

The term "transition" was added because some manufacturers provide special fittings for the purpose of joining two different types of plastic pipe.

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.

Cost Impact: None

P121-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.24.2-P-STRAUSBAUGH.PMGCAC

P122 – 12
605.25.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

~~**605.25.1 Flared joints.** Flared pipe ends shall be made by a tool designed for that operation.~~

(Renumber subsequent sections)

Reason: Manufacturers of PE-RT tubing indicate that the tubing cannot be flared and that a tool for flaring this type of tubing does not exist.

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.

Cost Impact: None

P122-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.25.1-P-STRAUSBAUGH.PMGCAC

P123 – 12

605.26 (New), Chapter 14

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new text as follows:

605.26 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 piping components has become a real problem. There are 32,000 houses in Las Vegas that are being re-piped at a cost in excess of over $300 million due to dezincification of brass fittings in PEX domestic water systems. It is also occurring in other parts of the country (southern California and Hawaii to name just two). This also occurs in brass valves. 20 years ago Nibco had this problem when they started making brass valves in Taiwan. They figured out what they were doing wrong and it stopped. Now we have all these products being made abroad and the problem has come back times 10 or even 100.

The ASTM standards for these products allow several different alloys and since the codes are not specific as to which alloy to use for what, some manufacturers choose the least expensive one. Some of these alloys require more copper and allow less zinc (red brasses having the least amount of zinc) and other alloys require less copper and allow more zinc (yellow brasses). A poorly made yellow brass valve may be ok on a domestic water line in Chicago, or a drain line or air line or even a condenser water line in Las Vegas or San Diego. However, it will certainly fail in short order in a domestic water line in Las Vegas or San Diego or Honolulu. It is all about the local water and quality of the brass valve or PEX fitting. The brass valves and fittings that are failing meet the current codes. You can't treat the water because people drink it. The only solution is to regulate better through the codes and local enforcement.

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.

Cost Impact: None

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.

P123-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

605.26-P-STRAUSBAUGH.PMGCAC

P124–12
606.1 (New), Chapter 14

Proponent: Rand H Ackroyd, Rand Technical Consulting LLC, representing self (rackroyd@comcast.net)

Add new text as follows:

606.1 Quarter-turn full-open valves. Full open valves that are 2 inches and smaller shall be quarter-turn valves. Such valves shall comply with ASME A112.4.14.

(Renumber subsequent sections)

Add new standard to Chapter 14 as follows:

ASME
A112.4.14-2004 Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems.

Reason: ASME A112.4.14 Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems is a National standard(ANSI) These valves are intended for indoor installation as potable water shutoff valves between the meter and the supply stop. Valves governed by this Standard are intended for service at temperatures between 34°F (1°C) and 180°F (82°C), with an allowable working pressure rating not less than 125 psi (862 kPa).

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.4.14-2004 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 2, 2012.

P124-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

606.1 (NEW)-P-ACKROYD

P125 – 12
606.1.1 (New)

Proponent: Andrew Scott Jones, President, A Better Deal Heating and Air Conditioning, Inc., a Texas Corporation, representing self (tfkolter@gmail.com)

Add new text as follows:

<u>**606.1.1 Leak monitor**. Where new piping is installed or piping is replaced, a device or system to monitor for water leaks shall be provided. Such device ot systems shall automatically shut off the water upon detection of a leak.</u>

Reason: Flood damage in buildings resulting from undetected and uncontrolled water leaks is substantial and can be largely eliminated with an automatic supply shut-off valve and leak detection system. Likewise, an uncontrolled gas leaks present a danger to life, and can be largely eliminated if residential properties were protected with an automatic shut off valve and leak detection system.

Many such systems are available on the market at varying costs with a variety of leak detection and shut-off designs. This proposal is limited to new construction and to total refit of plumbing and gas systems, not repairs.

Cost Impact: The code change will increase the cost of construction, totaling an estimated $300.00 to $500.00 per unit, cost to the contractor.

P125-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

606.1.1 (NEW)-P-JONES

P126 – 12
202, 606.8 (New), 606.8.1 (New), 606.8.2 (New)

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self (eosann@nrdc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Add new definitions as follows:

WATER METER. A device that measures the volume of water supplied from a public water main to a building or to an irrigated landscape and that is used by a public water supplier to bill for water.

WATER SUB-METER. A device, other than a *water meter*, installed on a water distribution pipe or makeup water pipe that measures the volume of water supplied to a specified space or specified equipment within a building or at the building site.

Add new text as follows:

606.8 Water measurement required for multi-family residential occupancies. The volume of water supplied to buildings of R-2 residential occupancy or a mixed-use occupancy that includes an R-2 residential occupancy shall be measured as required by Sections 606.8.1 and 606.8.2.

606.8.1 Sub-meters for individual multi-family dwelling units. *Water sub-meters* shall be installed to measure the volume of water supplied to each dwelling unit. *Water sub-meters* shall be installed in accordance with the manufacturer's instructions. Where point of use *water sub-meters* capable of communicating water consumption data remotely are installed at every fixture within the dwelling unit, a dwelling unit *water sub-meter* shall not be required.

> **Exception**: *Water sub-meters* shall not be required for dormitories, fraternities, sororities, and boarding houses (non-transient).

606.8.2 Sub-meters for water features and landscaped areas. A *water sub-meter* shall be installed to measure the volume of water supplied to an outdoor water feature or to an automatically controlled irrigation system serving irrigated landscapes having a combined area exceeding 2,500 ft^2 (232 m^2). Such *water sub-meter* shall be installed in accordance with the manufacturer's instructions.

> **Exception:** A *water sub-meter* shall not be required for an irrigated landscape that is supplied through a *water meter* dedicated to the landscape irrigation system.

Reason: This proposal requires the installation of water sub-meters for individual units in newly constructed apartment buildings. Public water suppliers typically do not install meters of their own on water supply piping to individual units, and occupants typically pay for water and sewer service as part of their rent or condominium fee.

Sub-metering in new multi-family buildings, when used for allocating the cost of water and wastewater service to individual dwelling units, ensures that water users receive an appropriate signal regarding the volume and cost of their water use, and thus incentivizes residents to undertake responsible water use and prompt reporting of fixtures in need of repair. Sub-metering is also useful in identifying leakage or unintended use in unoccupied dwelling units within multifamily buildings.

The National Multiple Family Sub-metering and Allocation Study (2004), sponsored by the US EPA and thirteen public water suppliers in different parts of the country, demonstrated that sub-metering reduces indoor water consumption substantially, by about 16% or 7,960 gallons per household unit per year, as a mid-range estimate. Nationwide, an estimated 5.9 million additional households will be living in multifamily housing by 2030 compared with 2015 (US Energy Information Agency, *Annual Energy Outlook 2011*, Residential Sector Key Indicators and Consumption, Reference Case). If beginning in 2016 all new multifamily housing is equipped with sub-meters used for billing allocation, even a conservative savings estimate of 3,110 gallons per unit per year (the value at the lower bound of the confidence band of the 2004 National Study estimate) yields water savings of 388 million gallons per day by 2030. Additionally, the measurement of water used for landscape purposes and for outdoor water features, such as swimming pools, ornamental ponds, and fountains, is essential to the effective management and avoidance of waste in large landscape maintenance.

Cost Impact: The estimated cost to install a sub-meter in new construction is $175. The National Multiple Family Sub-metering and Allocation Study cites $150 per meter. Additionally, according to Northland Investment Corp, water sub-meters can be installed for $125 to $175 per meter (see http://www.allbusiness.com/real-estate-rental-leasing/real-activities-related-to-real/680669-1.html) and as per the City of San Diego, it costs $150 - $300 per unit to install sub-meters in new construction (See http://www.sdnn.com/sandiego/2010-04-02/politics-city-county-government/city-council-to-consider-new-water-meter-rules#ixzz0jyvjUjrD). However, installation of sub-meters to allocate the cost of the building's water and wastewater service to individual occupants removes these utility costs from the owner's income statement and effectively increases the net cash flow and capitalized value of each rental unit.

P126-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

606.8-P-OSANN

P127 – 12
607.1.2 (New), 607.1.3 (New)

Proponent: Ron George, CPD, Plumb-Tech Design & Consulting Services LLC, representing self (Ron@Plumb-TechLLC.com)

Add new text as follows:

607.1.2 Master water temperature-actuated mixing valves. Where a master water temperature-actuated mixing valve is installed to control the hot water temperature to specified limits, it shall be located at the water heater. The piping from the hot water outlet of the water heater to the mixing valve shall have a mechanical heat trap installed or the piping shall be configured in a heat trap piping arrangement that drops not less than 24 inches (610mm) before rising to connect to the mixing valve. A shut off valve shall be installed in the piping before each inlet and after the outlet of the mixing valve. A water temperature indicating device shall be installed in the outlet of the valve or in the outlet piping and shall be located within six feet (1829 mm) of the outlet of the mixing valve. The mixing valve shall be sized for the maximum and minimum anticipated flows in accordance with the manufacturer's sizing instructions or generally accepted engineering practices. Master water temperature-actuated mixing valves shall comply with ASSE 1017 or CSA B125.3 and shall be installed in accordance with the manufacturer's instructions.

607.1.3 Point-of-use water temperature mixing valves. Point-of-use water temperature-actuated mixing valves installed for the purpose of limiting the water temperature at a sink, lavatory or group of lavatories shall comply with ASSE 1070. A shutoff valve shall be installed in the piping to each inlet of the mixing valve. The mixing valve shall be sized in accordance with the manufacturer's sizing instructions for the maximum and minimum anticipated flows. Point-of use water temperature mixing valves shall be installed in accordance with the manufacturer's installation instructions.

(Renumber subsequent section)

Reason: Language was needed addressing the installation of thermostatic mixing valves in domestic hot water systems. For master mixing valves a temperature gauge is needed to see what the valve is mixing to. For local mixing valves no temperature gauge is needed because water temperatures can be tested at a nearby fixture.

Cost Impact: The code change proposal will not increase the cost of construction. These mixing valve devices are not mandatory so there is no increase in cost. This code language gives guidance by listing the appropriate industry standards, shut-off valves and installation instructions to comply with only when these devices are installed.

P127-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

607.1.2-P-GEORGE

P128 – 12

607.2, 607.2.1 (New), Table 605.2.1 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

607.2 Hot or tempered water supply to fixtures. The piping ~~developed length of hot or tempered water piping~~, from the source of hot water to the fixture ~~that require hot or tempered water,~~ shall ~~not exceed~~ contain not more than 75 fluid ounces of water and shall be not more than 50 feet (15 240 mm) in length. Recirculating system piping and heat-traced piping shall be considered to be sources of hot or tempered water.

607.2.1 **Pipe volumes.** Table 605.2.1 shall be used to determine the water volume in piping.

TABLE 605.2.1
PIPING VOLUME

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

Reason: 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.

The 2012 IPC limits the run of hot water lines in Section 607.2 to 50 feet. The IgCC, however, limits hot Reason: The 2012 IPC limits the run of hot water lines in Section 607.2 to 50’. The IgCC, however, limits hot water line length based on the volume in the pipe, therefore the maximum length is different for different sizes of pipe. The IPC should be revised to better correspond with the IgCC and provisions for recirculation systems should be updated to include demand-based recirculation. This method of reducing water waste is much more accurate than simply stated a “catch-all” maximum length.

Cost Impact: None

P128-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

607.2-P-STRAUSBAUGH.PMGCAC

P129 – 12
607.2.2 (New), 607.2.2.1(New), 607.2.2.2 (New)

Proponent: Gary Klein, Affiliated International Management, LLC, representing self

Add new text as follows:

607.2.2 Hot or tempered water recirculation systems. Hot or tempered water recirculation systems shall be provided with a recirculation pump. Gravity and thermo-syphon circulation systems shall be prohibited. Recirculation system pump controls shall comply with Sections 607.2.2.1 and 607.2.2.

607.2.2.1 Recirculating pump controls. Recirculating pump controls that allow timer-activated, water temperature-activated or continuous operation of the pump shall be prohibited. Recirculating pumps shall be demand activated by one of the following means:

1. A switch operated by the user of the fixture.
2. A motion sensor triggered by the presence of the user of the fixture.
3. A flow switch activated by the flow of hot water at a fixture.
4. A door switch activated by the door to the room containing hot water-supplied fixtures.
5. A voice activated command.

After the pump starts, the controls shall allow the pump to operate until the water temperature in the return pipe rises not more than 10ºF (5.6 ºC) above the initial temperature of the water in the pipe. The controls shall not allow the pump to operate when the temperature in the pipe exceeds 102ºF (38.9 ºC). Controls shall limit pump operation to not more than 5 minutes for each activation in the event that both means of shutting off the pump have failed.

607.2.2.2 Control manufacturer instructions . The manufacturer of the controls for the recirculation pump shall provide installation and operation instructions that provide details of the operation of the controls. Such instructions shall be available at the jobsite for inspection by the code official.

(Renumber subsequent section)

Reason:
1. This proposal was approved on consent at the 2012 IgCC Final Action Hearing in Phoenix. The wording in this proposal has the same content and has been modified for better correlation with the IPC. The description of the allowable pump control – on demand – has been drawn from the definition of Demand Recirculation Water System in the 2012 IECC.
2. Circulation systems with demand controlled pumps are significantly more energy efficient than any other type of hot water circulation system. The table below shows the relative energy consumption for all types of circulating systems covered in this section. The annual energy needed to keep the loop hot with water heated electrically or with natural gas are shown separately from the energy needed for the pump. The majority of the energy is lost in keeping the water in the loop at the desired temperature (all of it if there is a gravity loop). Two lengths of circulation loop are analyzed: 100 feet and 200 feet. The costs and savings remain proportional as the length of the circulation loop and the flow rate of the pump increase. Savings from demand controlled pumping systems have been documented by the Southern California Gas Company, which is now running an energy efficiency program that supports their installation.
3. The IPC requires that the hot water piping in automatic temperature maintenance systems be insulated with at least 1 inch of pipe insulation. The water in the circulation loop will stay hot for a very long time – 45 minutes for ¾ inch nominal pipe up to 2 hours for 2-inch nominal pipe – if the circulating pump is shut off.
4. If this is the case, why run the pump? Why run the pump when no one is in the building or when no one is demanding hot water? The only time it makes sense to run the pump is shortly before hot water is needed: hence the requirement that the pump be controlled on-demand by one of the mechanisms in the section.

Annual Energy Required for Operating Circulation Systems

		Recirculation: Daily Hours of Operation 24	12	8	6	4	2	Demand Controlled Priming	
1	**Small Hot Water System: Trunk, Branch, and Twig**								
	Loop Heat Losses							**Loop Heat Losses**	
	Natural Gas (therms)	292	146	97	73	49	24	Natural Gas (therms)	3
	Electric (kWh)	6,388	3,194	2,129	1,597	1,065	532	Electric (kWh)	67
	Pump Energy(kWh)	438	219	146	110	73	37	**Pump Energy(kWh)**	8
2	**Medium Hot Water System: Trunk, Branch, and Twig**								
	Loop Heat Losses							**Loop Heat Losses**	
	Natural Gas (therms)	584	292	195	146	97	49	Natural Gas (therms)	6
	Electric (kWh)	12,775	6,388	4,258	3,194	2,129	1,065	Electric (kWh)	133
	Pump Energy(kWh)	438	219	146	110	73	37	**Pump Energy(kWh)**	16

Thank you for considering this proposal.

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

P_-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

P129-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

607.2.2 (NEW)-P-KLEIN

P130 – 12

607.2.3 (New), 607.2.3.1 (New), 607.2.3.2 (New), 607.2.3.2.1 (New), 607.2..3.2.2 (New), Table 607.2.3.1 (New)

Proponent: Gary Klein, Affiliated International Management, LLC, representing self (gary@aim4sustainability.com); Janine Snyder, Colorado Code Consulting, LLC representing self (janinesnyder@yahoo.com)

Add new text as follows:

607.2.3 Efficient hot and tempered water supply piping. Hot and tempered water supply piping shall comply with either the maximum allowable pipe length or maximum allowable pipe volume methods in this section.

607.2.3.1 Maximum allowable pipe length method. The maximum allowable pipe length from the source of hot or tempered water to the termination of the fixture supply pipe shall be in accordance with the maximum pipe length columns in Table 607.2.3.1. Where the length contains more than one size of pipe, the largest size pipe shall be used for determining the maximum allowable length of the pipe in Table 607.2.3.1.

607.2.3.2 Maximum allowable pipe volume method. The water volume in the piping shall be calculated in accordance with Section 607.2.3.3. The maximum volume of hot or tempered water in the piping to public lavatory faucets, metering or non-metering, shall be 2 ounces (0.06 L). For other fixtures the maximum volume shall be 64 ounces (1.89 L) for hot or tempered water from a water heater or boiler; and 24 ounces (0.7 L) for hot or tempered water from recirculating system or heat-traced piping.

607.2.3.2.1 Water volume determination. The volume shall be the sum of the internal volumes of pipe, fittings, valves, meters and manifolds between the source of hot water and the termination of the fixture supply pipe. The volume shall be determined from the liquid ounces per foot column of Table 607.2.3.1. The volume contained within fixture shut off valves, flexible water supply connectors to a fixture fitting or within a fixture fitting shall not be included in the water volume determination. Where hot or tempered water is supplied by recirculating system or heat-traced piping, the volume shall include the portion of the fitting on the source pipe that supplies water to the fixture.

607.2.3.3 Maximum flow rate. The flow rate of fixtures shall be limited to 0.5 gpm where connected to 1/4 inch piping; to 1 gpm where connected to 5/16 inch piping; and to 1.5 gpm where connected to 3/8 inch piping.

TABLE 607.2.3.1
MAXIMUM LENGTH OF PIPE

NOMINAL PIPE SIZE (INCH)	LIQUID OUNCES PER FOOT OF LENGTH	MAXIMUM PIPE LENGTH		
		SYSTEM WITHOUT A CIRCULATION LOOP OR HEAT TRACED LINE (FEET)	SYSTEM WITH A CIRCULATION LOOP OR HEAT TRACED LINE (FEET)	LAVATORY FAUCETS—PUBLIC (METERING AND NON-METERING) (FEET)
1/4	0.33	50	16	6
5/16	0.5	50	16	4
3/8	0.75	50	16	3
1/2	1.5	43	16	2
5/8	2	32	12	1
3/4	3	21	8	0.5

NOMINAL PIPE SIZE (INCH)	LIQUID OUNCES PER FOOT OF LENGTH	MAXIMUM PIPE LENGTH		
		SYSTEM WITHOUT A CIRCULATION LOOP OR HEAT TRACED LINE (FEET)	SYSTEM WITH A CIRCULATION LOOP OR HEAT TRACED LINE (FEET)	LAVATORY FAUCETS—PUBLIC (METERING AND NON-METERING) (FEET)
7/8	4	16	6	0.5
1	5	13	5	0.5
1 ¼	8	8	3	0.5
1 ½	11	6	2	0.5
2 or larger	18	4	1	0.5

Reason:

1. The 2012 IPC reduced the allowable distance from the source of hot or tempered water to the fixtures from100 to 50 feet. This was an excellent change. However, limiting the length did not get at the real issue, which is the volume from the source to the use, Limiting volume has the effect of limiting pressure losses due to length, reducing the time it takes for hot water to arrive (time-to-tap) and reducing the amount of water wasted while waiting for the hot water (volume-to-hot). Limiting the volume in the hot water supply system piping also has the effect of reducing the energy losses during use and when the water in the pipes eventually cools down.
2. This proposal builds on the 2012 IPC by limiting the volume, while staying within the 50 foot developed length restriction, which is the intent of the proponents.
   a. It is possible for a single pipe to be installed 50 feet long with no fittings in between the source and the fixture; in that case the developed length is the same as the actual length.
   b. When fittings and valves are needed, which is likely, the actual length may need to be reduced to accommodate the extra pressure drop. This is most likely to be necessary for nominal ¼, 5/16 and 3/8 inch pipe in hot water supplies without recirculation system or heat-traced piping, however, it may also be necessary for other diameters too if the fittings and valves create significant restrictions to flow.
3. The core of this proposal was approved at the 2012 IGCC Final Action Hearing in Phoenix. The wording has been revised so that it fits within context of Section 607.2 of the IPC. The footnote has been removed so that the language could be more appropriately worded as a requirement.
   a. The proposal that was approved at the IGCC FAH was revised from the original wording in IGCC Public Version 2. Improvements include clarifying the distinctions between two types of hot water supply systems; those with a recirculation system or heat traced trunk line and those without and providing for a means of compliance without it being necessary to calculate the volume for most applications. This makes it easier for everyone involved.
   b. The table in PV 2 contained ounces per foot of different types of hot or tempered water piping. Based on recommendations from several code officials around the country, the table was revised to
      I Simplify the calculations, when necessary, by averaging the volumes for the different types of piping for each nominal pipe diameter and then rounding off to a simple to use and easy to remember number. The volumes that were averaged were taken from the table in PV 2 and are also contained in Table E 202.1 of the IPC. The revised table is now applicable to all piping materials approved now or in the future for use with hot or tempered water.
      II Include 1/4, 5/16, 5/8 and 7/8 inch nominal diameters. Piping materials are available in these diameters, although they are not widely used. Including them in this table provides values that will enable their use.
      III Limit the maximum fixture flow rate when 1/4, 5/16 and 3/8 inch diameter piping is being used (Section 607.2.3.3). The flow rates in the footnote were selected, using the Hazen-Williams formulas, to keep the velocity below 5 feet per second, which minimizes pressure drop, reduces noise and limits the rate of any internal corrosion. The same formulas were used to limit the pressure drop at these flow rates to no more than 5 psi in the 50 foot lengths of 1/4, 5/16 and 3/8 inch diameter piping; the pressure drop will be much less in the shorter lengths in the other columns.
      IV Limit the length of the small diameter tubing (1/4 – 1/2 inch inclusive) at 50 feet in hot water supply piping without recirculation systems or heat-traced lines. This correlates with the changes adopted in the 2012 IPC. Another reason for not using the 64-ounce volume allowance in small tubing is that otherwise the maximum length of 5/16 inch tubing could be 128 feet and 1/4 inch tubing could be 192 feet! Pressure loss at these lengths would be excessive and unacceptable, as would heat loss. In addition, limiting length to 50 feet reduces the time-to-tap and the amount of water wasted while waiting for hot water to arrive, thereby improving performance for the user as well as water and energy waste.
      V Limit the length of the small diameter tubing (1/4 – 1/2 inch inclusive) at 16 feet in hot water supply piping with recirculation systems or heat-traced lines. The purpose of the circulation loop or heat-traced line is to bring the source of hot water close (in volume) to the fixtures, thereby reducing the time-to-tap and the waste of water and energy. Given typical floor-to-ceiling heights in the occupancies covered by this code, it is possible to reach the angle stop of a lavatory or a tub-shower valve with 16 feet of pipe coming down the wall from a recirculation system in the ceiling. Additionally, limiting the length of the smaller diameter tubing will improve the time-to-tap for the lower flow rate fixtures the tubing is intended to serve.
      VI Limit the length serving lavatory faucets – public (metering and non-metering) in all hot water supply systems. These are the faucets where we wait a very long time for hot water to arrive – or we give up! Lavatory faucets are generally used for very short periods of time and hot water needs to arrive very quickly for it to be useful. Since the flow rates

are so low, it is critical that there be very little volume between the source of hot water and these faucets. I know that 2 ounces, and the corresponding feet are very small, but if we do this, hot water will arrive in less than 5 seconds after we turn on the faucet. And, there are several cost effective, energy efficient ways to meet this requirement.

VII It is the intent of the proponents that either the maximum allowable volume or maximum allowable length method be allowed in any occupancy.

VII It is also the intent of the proponents that the contents of this section apply to all occupancies.

4. Adopting this proposal will improve the performance of hot water distribution systems by:
   a. Helping to ensure that the pressure drop from the source of hot water to the fixtures is not excessive.
   b. Reducing the time it takes to get hot water after opening a tap. This is particularly important for lavatory faucets-public, which, in accordance with Federal law that has been in effect since the mid-1990s, are required to have flow rates no larger than 0.5 gallons per minute (non-metering) or 0.25 gallons per cycle (metering).
   c. Reducing the waste of water while waiting for hot water to arrive.
   d. Reducing the energy losses during delivery, use and cool down phases of all hot water events.
5. We urge your support for this proposal. Thank you.

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

The 2012 IPC limits the distance from the source of hot water to the use to no more than 50 feet of developed length. There is no limit on the volume in this length of pipe. (By way of reference, the 2009 IPC had a limit of 100 feet and no limit on the volume, so the 2012 IPC is an improvement over 2009.)

This code change minimizes the volume in the piping between the source of hot water and the uses. It has the effect of eliminating long, large volume pipe runs resulting in sizable material and labor savings.

In most cases, reducing the volume between the sources of hot water and the fixtures will reduce costs. There are generally many more branches, and particularly fixture branches, than there are trunk lines, recirculation system or heat-traced piping in a building. Getting the source closer to the use reduces the number of feet in each of these branches and it will also reduce the diameter: both of these reduce costs of the hot water supply piping as well as any insulation that is required. In some cases it will be necessary to increase the length of the trunk or recirculation system piping to get closer to the fixtures. In others the architect and engineers will decide to locate the hot water uses more centrally: this will reduce the costs of the hot water, the cold water, the drain lines and any required insulation too!

There are two primary cases to be considered: (1) when the source of hot water is a water heater or boiler and (2) when the source of hot water is recirculation system or heat-traced piping.

Assuming that there is a bathroom group at the end of the 50 feet of length, it would be very common to see a 1-inch pipe, either from a water heater or from a circulation loop in any occupancy. This pipe contains approximately 2 gallons. In order for hot water to get to the bathroom group a minimum of 2 gallons will run down the drain before the hot water arrives. In practice, we observe 3-4 gallons will run down the drain. (If the pipe were 3/4-inch nominal, the volume would be closer to 1.25 gallons and the typical waste would range from 1.25 to 2.5 gallons. However, if someone decided to use a 1.5-inch branch line to the bathroom group, the volume in the pipe would be more than 4.25 gallons and the waste would range from 4.25 to more than 8 gallons.)

Based on the above example, it is reasonable to assume that the amount of water currently wasted while waiting for hot water to arrive ranges from 1 gallon (128 ounces) to more than 4 gallons (512 ounces), the savings from a water heater will range from 50% ((128-64)/128) for a branch from a water heater to the use to 95% ((512-24)/512) for a branch from recirculation system or heat-traced piping to the use.

In addition to lower first costs, there are significant savings in water, energy and time. All of this water came through the water heater, so there is energy attached to it. There is also energy lost as the hot water moves from the source to the use, even if it is insulated. If the hot water is on an upper story, there is energy expended in lifting it to that floor. In addition, there is energy embedded in the cold water that came to the building and to the water that is taken away for wastewater treatment.

P130-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

607.2.3 (NEW)-P-KLEIN-SNYDER

P131 – 12
607.3, 607.3.1, 607.3.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

607.3 Thermal expansion control. ~~A means of controlling increased pressure caused by thermal expansion shall be provided where required in accordance with Sections 607.3.1 and 607.3.2.~~ 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 604.8.

~~**607.3.1 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.~~

~~**607.3.2 Backflow prevention device or check valve.** Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.~~

Reason: Any time 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 604.8, which is unacceptable.

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.

Cost Impact: None

P131-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

607.3-P-STRAUSBAUGH.PMGCAC

P132 – 12
Table 608.1, 608.13.6, Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Revise as follows:

TABLE 608.1
APPLICATION OF BACKFLOW PREVENTERS

Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes $^{1}/_{2}$″–1″	<u>ASME A112.21.3,</u> ASSE 1052, CSA B64.2.1.1
Hose connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2″,3/4″, 1″	<u>ASME A112.21.3,</u> ASSE 1011, CSA B64.2, CSA B64.2.1
Vacuum breaker wall hydrants, frost-resistant, automatic draining type	High or low hazard	Low head backpressure or backsiphonage Sizes 3/4″, 1″	<u>ASME A112.21.3,</u> ASSE 1019, CSA B64.2.2

(Portions of table not shown remain unchanged)

608.13.6 Atmospheric-type vacuum breakers. Pipe-applied atmospheric-type vacuum breakers shall conform to ASSE 1001 or CSA B64.1.1. Hose-connection vacuum breakers shall conform to <u>ASME A112.21.3</u>, ASSE 1011, ASSE 1019, ASSE 1035, ASSE 1052, CSA B64.2, CSA B64.2.1, CSA B64.2.1.1, CSA B64.2.2 or CSA B64.7. These devices shall operate under normal atmospheric pressure when the critical level is installed at the required height.

Add new standard to Chapter 14 as follows:

ASME
<u>A112.21.3–1985(R2007)</u> <u>Hydrants for Utility and Maintenance Use</u>

Reason: There also other hydrants and hose connections with the proper backflow preventer or vacuum breaker that exist other than those complying with the ASSE and CSA standards. These hydrants are for utility and maintenance use. This is a National standard (ANSI) which covers the performance requirements for these types of devices.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.21.3-1985(R2007) 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 2, 2012.

P132-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T608.1-P-CONSTANTINO

P133 – 12
Table 608.1

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

Revise as follows:

TABLE 608.1
APPLICATION OF BACKFLOW PREVENTERS

DEVICE	DEGREE OF HAZARD[a]	APPLICATION[b]	APPLICABLE STANDARDS
BACKFLOW PREVENTION ASSEMBLIES:			
Double check backflow prevention assembly and double check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1048
Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" - 2"	ASSE 1020, CSA B64.1.2
Reduced pressure principle backflow prevention assembly and reduced pressure principle fire protection backflow assembly	High or low hazard	Backpressure or backsiphonage Sizes 3/8 " – 16 "	ASSE 1013, AWWA C511, CSA B64.4, CSA B64.4.1
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backpressure or backsiphonage (Fire Sprinkler Systems)	ASSE 1047
Spill-resistant vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" - 2"	ASSE 1056
BACKFLOW PREVENTER PLUMBING DEVICES:			
Antisiphon-type fill valves for gravity water closet flush tanks	High hazard	Backsiphonage only	ASSE 1002, CSA B125.3
Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes 1/4" – 3/8"	ASSE 1022
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4" – 3/8"	ASSE 1012, CSA B64.3
Dual check valve type backflow preventers	Low hazard	Backpressure or backsiphonage Sizes 1/4"-1"	ASSE 1024, CSA B64.6
Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes1/2"- 1"	ASSE 1052, CSA B64.2, B64.2.1
Hose connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage only	ASSE 1011, CAN/CSA B64.1.1

		Sizes 1/2", 3/4 ", 1"	
Laboratory Faucet Backflow Preventer	High or low hazard	Low head backpressure and backsiphonage	ASSE 1035, CSA B64.7
Atmospheric type vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/2" - 4"	ASSE 1001, CSA B64.1.1
Vacuum breaker wall hydrants, frost resistant, automatic draining type	High or low hazard	Low head backpressure and backsiphonage Sizes 3/4 ", 1"	ASSE 1019, CSA B64.2.2
OTHER MEANS or METHODS:			
Air gap	High or low hazard	Backsiphonage only	ASME A112.1.2
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backpressure or backsiphonage	ASME A112.1.3
Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.13.4)

For SI: 1 inch = 25.4 mm

a. Low Hazard - See Pollution (Section 202), High Hazard - See Contamination (Section 202)

b. See Backpressure (Section 202), See Backpressure, low head (Section 202), See Backsiphonage (Section 202)

Reason: There is much confusion concerning protection provided by any 'backflow preventer'. Reorganizing this table would better identify proper and correct applications for code users by identifying the different protection methods: assemblies, backflow prevention devices and other means or methods. The existing table gives the mistaken understanding that "any of the above provides adequate protection for any job". This is not true. Adequate protection is based on hazard classification, application and proper installation. Backflow prevention assemblies are specifically recognized and accepted as separate and distinct units based on Section 312.10.2 because of their requirement for periodic testing to ensure proper and reliable operation in order to protect public health.

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

P133-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T608.1-P-MOSS

P134 – 12
608.6

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

Revise as follows:

608.6 Cross-connection control. Cross-connections shall be prohibited, except where approved backflow prevention assemblies, backflow prevention devices or other means or methods are installed to protect the potable water supply.

Reason: “Methods” are not defined in the definitions. The term from Chapter 2 is **“**Backflow Preventer**.** The definition of methods would be complete and precise with a change to: “BACKFLOW PREVENTER**.** A backflow prevention assembly, a backflow prevention device or other means or method to prevent backflow into the potable water supply.”

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

P134-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.6-P-MOSS

P135 – 12
608.8, 608.8.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

608.8 Identification of nonpotable water systems. Where *nonpotable* water systems are installed, the piping conveying the nonpotable water shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.~~3~~2.

608.8.1 Signage Required. All nonpotable water outlets such as hose connections, open ended pipes, and faucets shall be identified ~~at the point of use for each outlet with the words, "Nonpotable-not safe for drinking~~ ." 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 608.8.1 shall appear on the signage required by this section.

608.8.~~1~~2 ~~Information~~. 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.

608.8.2.1 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.

608.8.2.2 Lettering Size. The size of the background color field and lettering shall comply with Table 608.8.2.2.

608.8.2.3 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.

Table 608.8.2.2

SIZE OF PIPE IDENTIFICATION

PIPE DIAMETER (inches)	LENGTH BACKGROUND COLOR FIELD (inches)	SIZE OF LETTERS (inches)
$^3/_4$ to $1^1/_4$	8	0.5
$1^1/_2$ to 2	8	0.75
$2^1/_2$ to 6	12	1.25
8 to 10	24	2.5
over 10	32	3.5

For SI 1 inch = 25.4 mm.

Figure 706.2 Pictograph – DO NOT DRINK

Figure 608.1.1 Pictograph – DO NOT DRINK

Reason: 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.

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.

Cost Impact: None

P135-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.8-P-STRAUSBAUGH.PMGCAC

P136 – 12
202, 608.8.2

Proponent: Alan Rimer, Black and Veatch, representing the American Water Works Association's Water Reuse Committee

Add new definition as follows:

<u>**RECLAIMED WATER DISTRIBUTION SYSTEM.** Piping and appurtenances that are of the color purple and that are intended to convey only reclaimed water.</u>

Revise as follows:

608.8.2 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*. <u>The color gray with purple striping shall be used to identify rain and gray water distribution systems.</u>

Reason: Current municipal utilities throughout the world have adopted purple as the color used for any pipe conveying reclaimed water. It is an ASTM approved standard and does not permit the conveyance of other waters (such as rainwater or grey water) in purple pipe.

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

P136-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.8.2-P-RIMER

AS SUBMITTED:

P_________ – 12

202, 608.8.2

Proponent: Alan Rimer, Black and Veatch, representing the American Water Works Association's Water Reuse Committee

Add new definition as follows:

RECLAIMED WATER DISTRIBUTION SYSTEM. A reclaimed water distribution system shall consist of piping and appurtenances that are of the color purple and are intended to convey only reclaimed water.

Revise as follows:

608.8.2 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*. The color gray with purple striping shall be used to identify rain and gray water distribution systems.

Reason: Current municipal utilities throughout the world have adopted purple as the color used for any pipe conveying reclaimed water. It is an ASTM approved standard and does not permit the ????

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

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.8.2-RIMER

P137 – 12
608.11

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

Revise as follows:

608.11 ~~Painting of~~ Potable water tanks. Potable water tanks, interior coatings for potable water tanks and liners for potable water tanks shall conform to NSF 61. The interior surface of a potable water tank shall not be lined, painted or repaired with any material that changes the taste, odor, color or potability of the water supply when the tank is placed in, or returned to service.

Reason: NSF/ANSI Standard 61 Drinking Water System Components-Health Effects addresses crucial aspects of drinking water system components: whether contaminants that leach or migrate from the product/material into the drinking water are above acceptable levels in finished waters. Requiring NSF 61 will help protect the drinking water supply from the leaching of contaminants. The IPC and IRC already requires conformance to NSF 61 for pipes, fittings, faucets and valves intended to supply drinking water. (Sections 424.1, 605.3, 605.4, 605.5, 605.7 of IPC). It is logical that tanks should have to meet this same requirement to protect the drinking water. This requirement is also referenced in the Uniform Plumbing Code, and the water works regulations of 46 states.

There are adequate products on the market to fulfill this requirement as there are hundreds of products listed by NSF and other third party certifiers.

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

P137-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.11-P-BROWN

P138 – 12
608.13.3

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

Revise as follows:

608.13.3 Backflow preventer with an intermediate atmospheric vent. Backflow preventers with an intermediate atmospheric vent~~s~~ shall conform to ASSE 1012 or CSA B64.3. These backflow prevention devices shall be permitted to be installed where subject to continuous pressure conditions downstream of the device. Such devices shall only be installed in systems serving a single dwelling unit. The installation of these devices shall be prohibited where chemicals are introduced into the system downstream of the device. The relief opening shall discharge by air gap and shall be prevented from being submerged.

Reason: These backflow preventers are designed and sold for non-health hazard installations according to manufacturer specification sheets. They are inadequate for chemical additions or injections. Their use should be limited to potable water systems within a residential system only. Reference in Section 608.15.3 and Section 608.16.2.

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

P138-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.13.3-P-MOSS

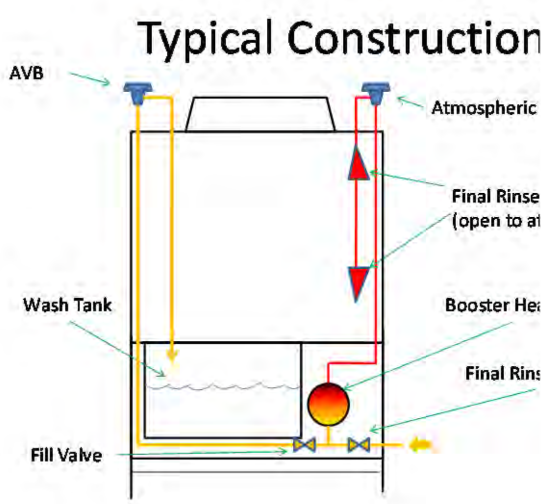
P139 – 12
608.13.6

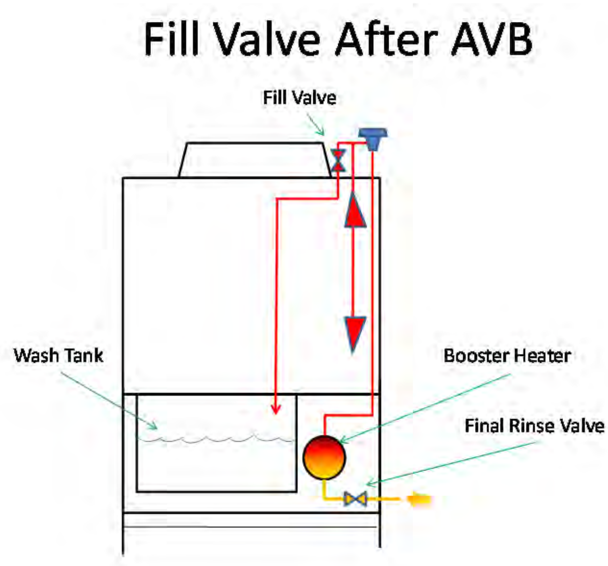
Proponent: Joel F. Hipp, Hobart Corporation representing Hobart Corporation (joel.hipp@hobartcorp.com)

Revise as follows:

608.13.6 Atmospheric-type vacuum breakers. Pipe applied atmospheric-type vacuum breakers shall conform to ASSE 1001 or CSA B64.1.1. Hose-connection vacuum breakers shall conform to ASSE 1011, ASSE 1019, ASSE 1035, ASSE 1052, CSA B64.2, CSA B64.2.1, CSA B64.2.1.1, CSA B64.2.2 or CSA B64.7. These devices shall operate under normal atmospheric pressure when the critical level is installed at the required height. <u>The outlet of a pipe applied atmospheric vacuum breaker shall not have a valve downstream except where there are multiple outlets where not less than one outlet is continuously open to atmosphere.</u>

Reason: Commentary for paragraph 608.13.6 of the 2006 IPC states, “The outlet of atmospheric vacuum breakers must remain open to the atmosphere by terminating with a pipe, spout or similar unobstructed opening. Valves must not be installed downstream of this device because this would subject the device to supply pressure, thereby rendering it inoperative.” However, when designed properly, a valve can be located downstream from the AVB. The following figures illustrate this on a commercial dishwasher application.





Even though the fill valve is downstream from the atmospheric vacuum breaker, the “TEE” between the two allows pressure to remain atmospheric at all times. Although the commentary is not a substitute for the code, it is often interpreted and enforced as code language. For this reason we urge the committee to add the wording as proposed.

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

P139-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.13.6-P-HIPP

P140 – 12
608.13.6

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

Revise as follows:

608.13.6 Atmospheric-type vacuum breakers. ~~Pipe applied~~ Atmospheric-type vacuum breakers shall conform to ASSE 1001 or CSA B64.1.1. Hose-connection vacuum breakers shall conform to ASSE 1011, ASSE 1019, ASSE 1035, ASSE 1052, CSA B64.2, CSA B64.2.1, CSA B64.2.1.1, CSA B64.2.2 or CSA B64.7. The outlet of a ~~These devices~~ vacuum breaker shall be open to the atmosphere.~~operate under normal atmospheric pressure when the critical level is installed at the required height.~~ The atmospheric vacuum breaker shall be installed with it's critical level marking not less than 6 inches (152 mm) above the highest elevation of the downstream piping or the flood level rim of the fixture or device.

Reason: Installation of vacuum breakers needs to be compliant with published manufacturer installation instructions. The information is the minimum standard for industry. This installation criteria provides adequate protection of the water supply and ensures protection of public health.

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

P140-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.13.6-P-MOSS

P141 – 12
608.13.7

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

Revise as follows:

608.13.7 Double check~~-valve~~ <u>backflow prevention</u> assemblies. Double check~~-valve~~ <u>backflow prevention</u> assemblies shall conform to ASSE 1015, CSA B64.5, CSA B64.5.1 or AWWA C510. Double-~~detector~~ check~~-valve~~ <u>detector fire protection backflow prevention</u> assemblies shall conform to ASSE 1048. These ~~devices~~ <u>assemblies</u> shall be capable of operating under continuous pressure conditions.

Reason: To provide consistent terminology throughout the code for reference and comparison.

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

P141-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.13.7-P-MOSS

P142 – 12
608.13.10 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new text as follows:

608.13.10 Dual check valve backflow preventer. Dual check valve backflow preventers shall conform to ASSE 1024 or CSA B64.6.

Reason: Table 608.1 lists ASSE 1024, CSA B64.6 (dual check valves) but currently there is no code text associated with these devices. This new section is added to correct this 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.

Cost Impact: None

P142-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.13.10 (NEW)-P-STRAUSBAUGH.PMGCAC

P143 – 12
608.15.4

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

Revise as follows:

608.15.4 Protection by a vacuum breaker. Openings and outlets shall be protected by atmospheric-type or pressure~~-type~~ vacuum breaker~~s~~ assemblies. ~~The critical level of the vacuum breaker shall be set a minimum of 6 inches (152 mm) above the flood level rim of the fixture or device.~~ Vacuum breakers shall not be installed under exhaust hoods or similar locations that will contain toxic fumes or vapors. Atmospheric type ~~Pipe-applied~~ vacuum breakers shall be installed with their critical level at a point not less than 6 inches (152 mm) above the highest elevation of downstream piping and the flood level rim of ~~the~~ any fixture, receptor or device served. Fill valves shall be ~~set~~ installed in accordance with Section 425.3.1. Pressure vacuum breaker and spill resistant vacuum breaker assemblies shall be installed with their critical level at a point not less than 12 inches (304 mm) above the highest elevation of downstream piping and the flood level rim of any fixture, receptor or device served.

Reason: Installation of different types of vacuum breakers within this section conflicts with published manufacturer installation instructions. Manufacturer literature recommends 12 inch installation above downstream piping and outlets for PVB's and SVB's for most conditions. This provides adequate protection of the water supply and ensures protection of public health.

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

P143-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.15.4-P-MOSS

P144 – 12
608.15.4.2

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

Revise as follows:

608.15.4.2 Hose connections. Sillcocks, hose bibbs, wall hydrants and other openings with a hose connection shall be protected by an atmospheric-type vacuum breaker or a pressure-type vacuum breaker assembly or a permanently attached hose connection vacuum breaker.

Exceptions:

1. This section shall not apply to water heater and boiler drain valves that are provided with hose connection threads and that are intended only for tank or vessel draining.
2. This section shall not apply to water supply valves intended for connection of clothes washing machines where backflow prevention is otherwise provided or is integral with the machine.

Reason: To provide consistent terminology throughout the code for reference and comparison.

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

P144-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.15.4.2-P-MOSS

P145 – 12
608.15.4.3 (New)

Proponent: Bob Scott, Kye Lehr and Robert Gallegos, Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Add new text as follows:

608.15.4.3 Urinal Flushometers. Integral vacuum breakers for urinal flushometers shall be located with the critical level located not less than 6 inches (152 mm) above the highest portion of the fixture.

Reason: This added verbiage will remove confusion on installation of flushometers on urinals where the critical level must be a located at least 6 inches above the top of the fixture.

Cost Impact: None.

P145-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.15.4.3 (NEW)-P-SCOTT-LEHR-GALLEGOS

P146 – 12
608.16.2

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

Revise as follows:

608.16.2 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 <u>to a boiler</u> shall be protected by an *air gap* or a reduced pressure principle backflow preventer 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. Reference in Section 608.15.3 and Section 608.16.2.

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

P146-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

608.16.2-P-MOSS

P147 – 12
610.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

610.1 General. New ~~or repaired~~ potable water systems shall be purged of deleterious matter and disinfected prior to utilization. The method to be followed shall be that prescribed by the health authority or water purveyor having jurisdiction or, in the absence of a prescribed method, the procedure described in either AWWA C651 or AWWA C652, or as described in this section. This requirement shall apply to "on-site" or "in-plant" fabrication of a system or to a modular portion of a system.

1. The pipe system shall be flushed with clean, potable water until dirty water does not appear at the points of outlet.
2. The system or part thereof shall be filled with a water/chlorine solution containing not less than 50 parts per million (50 mg/L) of chlorine, and the system or part thereof shall be valved off and allowed to stand for 24 hours; or the system or part thereof shall be filled with a water/chlorine solution containing not less than 200 parts per million (200 mg/L) of chlorine and allowed to stand for 3 hours.
3. Following the required standing time, the system shall be flushed with clean potable water until the chlorine is purged from the system.
4. The procedure shall be repeated where shown by a bacteriological examination that contamination remains present in the system.

Reason: The current language seems to suggest that anytime a general repair is made to a potable water system that the entire system must then be disinfected. For example, one riser valve in a 35 story high rise is repaired or replaced. Is it the intent of the code to then require the entire potable water system to be disinfected? Repairs should not trigger the need for disinfection of an entire water system.

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.

Cost Impact: None

P147-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

610.1-P-STRAUSBAUGH.PMGCAC

P148– 12
613.1, 613.2 (New), 613.3 (New)

Proponent: Ron George, CPD, Plumb-Tech Design & Consulting Services LLC, representing himself (Ron@Plumb-TechLLC.com)

Revise as follows:

613.1 Master water temperature-actuated mixing valves. ~~Temperature actuated mixing valves, which are installed to reduce water temperatures to defined limits, shall comply with ASSE1017.~~ Where a master water temperature-actuated mixing valve is installed to control the hot water temperature to specified limits, it shall be located at the water heater. The piping from the hot water outlet of the water heater to the mixing valve shall be have a mechanical heat trap installed or the piping shall be configured in a heat trap piping arrangement that drops not less than 24 inches (610mm) before rising to connect to the mixing valve. A shut off valve shall be installed in the piping before each inlet and after the outlet of the mixing valve. A water temperature indicating device shall be installed in the outlet piping and shall be located within six feet (1829 mm) of the outlet of the mixing valve. The mixing valve shall be sized for the maximum and minimum anticipated flows in accordance with the manufacturer's sizing instructions or generally accepted engineering guidelines. Master water temperature-actuated mixing valves shall comply with ASSE 1017 and shall be installed in accordance with the manufacturer's instructions.

613.2 Point-of-use water temperature-actuated mixing valves. Point-of-use water temperature-actuated mixing valves installed for the purpose of limiting the water temperature at a sink, lavatory or group of lavatories shall comply with ASSE 1070 or CSA B125.3. A shutoff valve shall be installed in the piping to each inlet of the mixing valve. The mixing valve shall be sized in accordance with the manufacturer's sizing instructions for the maximum and minimum anticipated flows. Point-of use water temperature mixing valves shall be installed in accordance with the manufacturer's instructions.

613.3 Temperature-actuated mixing valves for gang showers. Temperature-actuated mixing valves installed for the purpose of limiting the water temperature to gang showers shall comply with Section 424.4. A shut off valve shall be installed in the piping before each inlet and after the outlet of the mixing valve. A water temperature measuring device shall be installed in the piping at the shower valve that is nearest to the mixing valve. The temperature indicator for the water temperature measuring device shall shall be located within six feet (1829 mm) of the mixing valve. The mixing valve shall be sized and installed in accordance with the manufacturer's sizing and installation instructions for the maximum and minimum anticipated flows or generally accepted engineering practices.

Reason: Language was needed addressing the installation of thermostatic mixing valves in domestic hot water systems. For master mixing valves a temperature gauge is needed to see what the valve is mixing to. For local mixing valves no temperature gauge is needed because water temperatures can be tested at a nearby fixture. Gang showers need a temperature gauge at the valve, because it is often remote from the showers in school, prison or jail applications.

Cost Impact: The code change proposal will not increase the cost of construction. These mixing valve devices are not mandatory so there is no increase in cost. This code language gives guidance by listing the appropriate industry standards to comply with only when these devices are installed.

P148-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

613.1-P-GEORGE

P149 – 12
614 (New)

Proponent: Tom Allen, City of Mt. Dora, FL representing self

Add text as follows:

SECTION 614
WELL PUMPS AND TANKS USED FOR PRIVATE POTABLE WATER SYSTEMS

614.1 Pumps. Well pumps used for potable water shall comply with Sections 614.1.1 and 614.1.2

614.1.1 Pump installation. Pumps shall be installed for operation without repriming or breaking suction. Pumps shall be connected to the well head by means of a union, companion flange or compression coupling in such a manner that it is accessible for maintenance, repair and removal.

614.1.2 Pump sizing. The minimum pump well pump size shall be determined in accordance with Table 614.1.2

TABLE 614.1.2
MINIMUM PRIVATE POTABLE WATER SYSTEM PUMP SIZE

	NUMBER OF BATHROOMS IN BUILDING[b]				
	1	1 to 1 ½	2 to 2 ½	3 to 4	5 to 6
MINIMUM PUMP SIZE[a]	7 gpm	10 gpm	14 gpm	17 gpm	21 gpm

a. Values shown are average and do not include high or low extremes.
b. Installations over 6 bathrooms shall be approved by the code official.

614.2 Pressure tanks. Pressure tanks relying on expansion of a flexible membrane within a restricting container or tanks with direct water-to-air interface to provide pressure in the water system shall be used. Pressure tanks for storing potable water under pressure, including those having an air-space for pressure for expansion, shall be identified by a seal, label or plate indicating the manufacturer's name and model number. Tanks shall comply with all of the following:

1. Pressure tank drawdown shall be not less than of 1 gallon (3.8 L) for every gallon per minute produced by the pump.

   Exception: Pump start applications, constant pressure devices and variable speed pumps.

2. Pressure tanks shall be constructed of steel, fiberglass or comparable materials. Tanks to be buried shall be designed by the manufacturer for underground use. Fiberglass or other nonmetallic tanks to be buried shall have the structural strength to prevent collapse.

614.3 Piping. Piping associated with pumps and tanks shall comply with Sections 614.3.1 through 614.3.3.

614.3.1 Drop pipe. The drop pipe from the submersible pump to the first fitting past the well seal shall be either galvanized steel, stainless steel or PVC Schedule 80 threaded/coupled or lock joint pipe. The drop pipe for a single pipe, deep well jet pump shall be either galvanized steel or stainless steel. The drop pipe for a double pipe, deep well jet pump shall be either galvanized steel on the suction side and or minimum PVC schedule 40 on the pressure side.

614.3.2 Pump discharge pipe sizing. For submersible pumps, pipe size shall be equal to the pump discharge. Piping for all other types of pumps shall be sized in accordance with the pump manufacturer's specifications.

612.3.3 Pressure tank pipe sizing. Piping size for the offset of the pressure tank shall use the piping friction loss charts for the piping material used.

614.4 Electrical wiring. Wiring shall be installed in accordance with Chapter 27 of the *International Building Code.*

614.5 Disinfection. The pump installer shall disinfect the potable well and water system in accordance with Section 610.

614.6 Valves. A pressure relief valve shall be installed on pumping systems that can produce pressures of 75 psi (517 kPa) or greater. A check valve shall be installed at the well head of submersible pumps.

Reason: Provides prescriptive requirements for wells for private potable water systems

Cost Impact: There is a cost impact.

P149-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

614-P-ALLEN

P150 – 12
202, 614 (New)

Proponent: Edward R. Osann, Natural Resources Defense Council, representing self (eosann@nrdc.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Add new definitions as follows:

WATER METER. A device that measures the volume of water supplied from a public water main to a building or to an irrigated landscape and that is used by a public water supplier to bill for water.

WATER SUB-METER. A device, other than a *water meter*, installed on a water distribution pipe or makeup water pipe that measures the volume of water supplied to a specified space or specified equipment within a building or at the building site.

Add new text as follows:

SECTION 614
WATER SUB-METERS

614.1 General. *Water sub-meters* shall be installed on sources of water and applications of water in accordance with this section. Such *water sub-meters* shall be installed in accordance with the manufacturer's installation instructions.

614.2 Sources requiring the installation of a water sub-meter. Each source of water at the building or building site intended for beneficial use shall be separately measured with a *water sub-meter*.

> **Exception:** A *water sub-meter* shall not be required for a source of water supplied to a building or building site through a *water meter*.

614.2.1 Sump pump discharge. A *water sub-meter* shall be installed on the discharge pipe serving a *sump pump*.

614.3 Applications requiring the installation of a water sub-meter. A *water sub-meter* shall be installed on a water distribution pipe that is connect to any of the following applications:

1. Automatically controlled irrigation systems serving irrigated landscapes having a combined area exceeding 2,500 ft^2 (232 m^2).
2. Cooling tower makeup water supply and blow-down water supply.
3. Evaporative coolers designed to operate with an average flow rate of more than 0.6 gpm (2.3 Lpm).
4. Fluid coolers and chillers that do not utilize closed-loop recirculation.
5. Industrial processes with a design requirement for more than 1,000 gallons (3785 L) of water per day.
6. Makeup water supplied to closed-loop cooling systems that have a rated cooling capacity of 50 tons or more.
7. Makeup water supplied to closed-loop heating systems that have a rated heating capacity of 500,000 BTU/h (146.5 kW/hr) or more.
8. Makeup water supplied to onsite water collection systems.
9. Outdoor ornamental water features with a permanently installed water supply.
10. Pools and in-ground spas, whether indoor or outdoor.
11. Roof spray systems for the irrigation of vegetated roofs or for thermal conditioning of roofs.
12. Steam boilers that have a rating of 500,000 BTU/h (146.5 kW/hr) or more.

13. Tenant spaces with a design requirement for more than 1,000 gallons (3785 L) of water per day.

614.3.1 Point of Measurement. *Water sub-meters* shall be installed at a point in the water supply system that is downstream of any connection to any other application.

614.3.2 Multiple appliances and equipment. Multiple appliances and equipment performing a single application shall be permitted to be grouped and supplied from piping connected to a single *water sub-meter*.

614.4 Requirements for water sub-meters. The *water sub-meters* required by this section shall be capable of communicating water consumption data remotely, be capable of providing daily data with electronic data storage, and have reporting capability that can produce reports that show daily, monthly, and annual water consumption.

Reason:

1. The main reasons to measure sources and applications of water include: quantify the production of on-site sources of water; identify major sub-metered uses; quantify use to determine efficiency; and identify leaks and equipment problems. Daily reporting capability will allow for prompt remediation of equipment problems and reduced duration of water loss and property damage due to leaks and equipment failure.
2. Water utilities estimate unmetered water consumption is reduced 15 to 30 percent when metering is implemented.
3. According to USEPA's WaterSense, as much as 50 percent of commercial and residential irrigation water use goes to waste due to evaporation, wind, improper system design, or overwatering. Without metering outdoor uses, that use and potential waste cannot be identified.
4. This will also bring this part of the plumbing code into alignment with ASHRAE 189.1, reducing confusion.
5. This proposal is substantially similar to language approved for the IGCC in November, 2011 (submitted by Bill Hoffman); additional language is provided here for additional clarity and to further align with the IPC.

Cost Impact: The cost impact would be minor and would depend on the type of meters for each use. Meters that meet American Water Works Association (AWWA) standards and state regulatory requirements cost between $40 (residential size) to $2,000+ (industrial size). The estimated cost to install a sub-meter in new construction is $175. The National Multiple Family Sub-metering and Allocation Study cites $150 per meter. Additionally, according to Northland Investment Corp, water sub-meters can be installed for $125 to $175 per meter (see http://www.allbusiness.com/real-estate-rental-leasing/real-activities-related-to-real/680669-1.html) and as per the City of San Diego, it costs $150 - $300 per unit to install sub-meters in new construction (See http://www.sdnn.com/sandiego/2010-04-02/politics-city-county-government/city-council-to-consider-new-water-meter-rules#ixzz0jyvjUjrD).

P150-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

614 (NEW)-P-OSANN

P151 – 12

NUMBER NOT USED

P151-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

P152 – 12
701.7

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

Delete without substitution:

~~**701.7 Connections.** Direct connection of a steam exhaust, blowoff or drip pipe shall not be made with the building drainage system. Waste water where discharged into the building drainage system shall be at a temperature not greater than 140°F (60°C). Where higher temperatures exist, *approved* cooling methods shall be provided.~~

Reason: This section was added to be consistent with Section 803.1. Section 803.1 dates back to the A40.8-1955 National Plumbing Code. The requirement for limiting the temperature of the hot water was based on concerns that temperatures above 140 degrees will remove the galvanizing from galvanized steel pipe. Today, there are numerous other piping materials used for sanitary drainage systems. Most piping materials can handle waste temperatures in excess of 140 degrees.

The last sentence has no meaning since there are no approved cooling methods identified. The common method is adding cold water to the waste stream. However, this is an unnecessary waste of water.

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

P152-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

701.7-P-BALLANCO

P153 – 12
Table 702.1, Table 702.2, Table 702.4, Chapter 14

Proponent: Brian Conner, Charlotte Pipe and Foundry Company (bconner@charlottepipe.com)

Revise as follows:

TABLE 702.1
ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM F 2618

(Portions of table not shown remain unchanged)

TABLE 702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM F 2618

(Portions of table not shown remain unchanged)

TABLE 702.4
PIPE FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASTM F 2618

(Portions of table not shown remain unchanged)

Add new standard to Chapter 14 as follows:

ASTM
F 2618-09 Standard for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical waste Drainage Systems

Reason: CPVC Chemical waste pipe has been used in hundreds of installations throughout the country without the presence of standard or inclusion in the code. Adding this consensus standard to the code to the tables indicated takes the guesswork out of the hands of the code officials as to whether they should allow it as an alternative material.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 2618-09 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 2, 2012.

P153-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T702.1-P-CONNER

P154 – 12
701.10 (New)

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute representing self

Add new text as follows:

701.10 Inspections. Where sanitary drainage piping penetrates a fire resistance rated wall, a fire resistance rated floor or a fire resistance rated ceiling, the piping shall be inspected before and after the installation of fire stopping material to verify that the piping system has not been modified.

Reason: This change is proposed to assure that the installation of the piping is not altered during the installation of fire stopping materials.

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

P154-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

701.10 (NEW)-P-LEVAN

P155 – 12/13

702.5 (New), 803.1

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., representing self

Revise as follows:

<u>**702.5 Temperature rating.** Where the wastewater temperature will be greater than 140°F (60°C), the sanitary drainage piping material shall be rated for the highest temperature of the wastewater.</u>

~~**803.1 Waste water temperature.** Steam pipes shall not connect to any part of a drainage or plumbing system and water above 140°F (60°C) shall not be discharged into any part of a drainage system. Such pipes shall discharge into an indirect waste receptor connected to the drainage system.~~

Reason: Section 803.1 dates back to the A40.8-1955 National Plumbing Code. The requirement for limiting the temperature of the hot water was based on concerns that temperatures above 140 degrees will remove the galvanizing from galvanized steel pipe. Today, there are numerous other piping materials used for sanitary drainage systems. Most piping materials can handle waste temperatures in excess of 140 degrees.

In the 1950's, the means of cooling waste water was the addition of cold water. This is a waste of water that the code no longer permits.

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

P155-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

702.5 (NEW)-BALLANCO

P156 – 12
702.7

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute, representing self

Add new text as follows:

702.7 Cast iron soil pipe, fittings and mechanical joint hubless couplings. Upon request by the code official, certificates of conformance shall be provided by the manufacturer to the code official indicating that cast iron pipe, cast iron fittings and mechanical joint hubless couplings are in compliance with Sections 705 and 702.

Reason: This will ensure the purchaser and/or owner meet or exceed the requirements of the code and manufacturer requirements.

P156-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

702.7 (NEW)-P-LEVAN

P157 – 12
703.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee, the Virginia Plumbing and Mechanical Inspectors Association (VPMIA), the Virginia Building Code Officials Association (VBCOA) and ICC Region 7.

Revise as follows:

703.1 Building sewer pipe near the water service. ~~Where the building sewer is installed within 5 feet (1524 mm) of the water service, the installation shall comply with the provisions of Section 603.2.~~ The proximity of a sewer to a water service shall comply with Section 603.2.

Reason: This section only triggers Section 603.2 if the sewer is 5 feet or less from the water service. If the building sewer and water service are more than 5 foot apart, the reader is not referred back to Section 603.2 which requires that the separation be of undisturbed or compacted earth. In other words, Section 703.1 would allow for a building sewer and water service to be in a wide trench without undisturbed/compacted earth between. This would violate the requirements of Section 603.2. The solution to this problem is simply to refer the reader back to the section that requires the separation so that there is no question that the five foot of separation is of compacted or undisturbed earth.

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.

Cost Impact: None

P157-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

703.1-P-STRAUSBAUGH.PMGCAC

P158 – 12
703.6 (New), 1109, 1109.1

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

Add new text as follows:

703.6 Combined sanitary and storm public sewer. Where the public sewer is a combined system for both sanitary and storm water, the sanitary sewer shall be connected independently to the public sewer.

Revise as follows:

SECTION 1109
COMBINED SANITARY AND STORM ~~SYSTEM~~ PUBLIC SEWER

1109.1 ~~**Size of combined drains and sewers.** The size of a combination sanitary and *storm drain* or se*wer s*hall be computed in accordance with the method in Section 1106.3. The fixture units shall be converted into an equivalent projected roof or paved area. Where the total fixture load on the combined drain is less than or equal to 256 fixture units, the equivalent drainage area in horizontal projection shall be taken as 4,000 square feet (372 m2). Where the total fixture load exceeds 256 fixture units, each additional fixture unit shall be considered the equivalent of 15.6 square feet (1.5 m2) of drainage area. These values are based on a rainfall rate of 1 inch (25 mm) per hour.~~ **General.** Where the public sewer is a combined system for both sanitary and storm water, the storm sewer shall be connect independently to the public sewer.

Reason: The section on combined sanitary and storm systems implies that the two systems are combined inside the building. Hence, the need for some language to reflect how the combined piping is sized. However, when a combined sewer is only available, the connections are made separately to the public sewer. The combined system is in the street. Only older cities have combined sewers. Even these cities strive to separate the sewers. As such, the building connection must be separate to allow for the easy change over to a two sewer system.

The proposed change adds a requirement to Chapter 7 since there is no text regarding combined system. The text in Chapter 11 is modified to be consistent with the proposed new text in Chapter 7.

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

P158-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

703.6 (NEW)-P-BALLANCO

P159 – 12

705 (New)

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new text as follows:

SECTION 705
REPLACEMENT OF UNDERGROUND SEWERS
BY PIPE BURSTING METHODS

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

705.2 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.

705.3 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.

705.4 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.

705.5 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.

705.6 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.

705.7 Installation procedure. The installation procedure shall be in accordance with the following steps:

1. The existing pipe section to be replaced shall be cleaned of debris.
2. The beginning and end of the piping section to be replaced shall be exposed as necessary to enable pulling equipment to be properly installed and the replacement piping to be inserted without bending of the pipe at less than the minimum allowable bending radius as recommended by the pipe manufacturer.
3. A pulling cable shall be retrieved from the pulling end of the piping to be replaced and pulled to the insertion end of the piping to be replaced.
4. A pipe bursting and pulling head shall be connected to one end of the replacement piping. The bursting/pulling head shall be connected to the pulling cable.
5. In accordance with the pulling equipment and pipe bursting head manufacturer's operating instructions, the pipe bursting/pulling head shall be simultaneously operated and pulled through the existing piping until the end of the new piping exits at the pulling end of the operation.
6. The pipe bursting/pulling head shall be disconnected from the new piping and the pulling equipment removed from the area. The replacement piping ends shall be cut to length as required and shall be connected to the existing piping beyond the pipe section that was replaced. Connections to the ends of the replacement piping shall be in accordance with Section 705.
7. Where a connection to the replacement piping at a point between the pulling end and the insertion end of the pipe section that was replaced is required, the replacement piping shall be exposed at that location. A section of replacement piping shall be removed and a fitting of the appropriate configuration in accordance with Table 706.3 shall be installed. The connections between the fitting and the pipe shall be made in accordance with Section 705.16.

705.8 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.

705.9 Pressure testing. The replacement piping system as well as the connections to the replacement piping shall be tested in accordance with Section 312.

(Renumber subsequent sections)

Add new standards to Chapter 14 as follows:

ASTM

D2683-04	Standard Specification for Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing.
F 714-06a	Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) based on Outside Diameter.

Reason: The IPC 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.

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Cost Impact: None

Analysis: A review of the standards proposed for inclusion in the code, ASTM F 714-06a and ASTM D2683-04 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 2, 2012.

P159-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705 (NEW)-P-STRAUSBAUGH.PMGCAC

P160 – 12
705.5.2

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute , representing self (blevan@mindspring.com)

Revise as follows:

705.5.2 Compression gasket joints. Compression gasket joints for hub and spigot pipe and fittings shall conform to ASTM 564 and shall be tested to ASTM 1563. <u>Prior to installation, g</u>askets shall be <u>lubricated with lubricant recommended by the pipe and fitting manufacturer. Gaskets shall be</u> compressed when the pipe is fully inserted.

Reason: To allow easier and better insertion of the gasket into the pipe or fitting

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

P160-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.5.2-P-LEVAN

P161 – 12
705.5.3

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute representing self (blevan@mindspring.com)

Revise as follows:

705.5.3 Mechanical joint coupling. Mechanical joint couplings for hubless pipe and fittings shall <u>consist of an elastomeric sealing sleeve and a metallic shield that</u> comply with CISPI 310, ASTM C1277 or ASTM C1540. The elastomeric sealing sleeve shall conform to ASTM C564 or CSA B602 and shall be provided with a center stop. Mechanical joint couplings shall be installed in accordance with the manufacturer's installation instructions.

Reason: The metallic shield coupling provides protection for the elastomeric sealing sleeve and provides shear strength for the system.

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

P161-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.5.3-P-LEVAN

P162 – 12
705.7, 705.7.1, 705.7.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Delete without substitution:

~~**705.7 Coextruded composite ABS pipe, joints.** Joints between coextruded composite pipe with an ABS outer layer or ABS fittings shall comply with Sections 705.7.1 and 705.7.2.~~

~~**705.7.1 Mechanical joints.** Mechanical joints on drainage pipe shall be made with an elastomeric seal conforming to ASTM C1173, ASTM D 3212 or CSA B602. Mechanical joints shall not be installed in above-ground systems, unless otherwise approved. Joints shall be installed in accordance with the manufacturer's instructions.~~

~~**705.7.2 Solvent cementing.** Joint surfaces shall be clean and free from moisture. Solvent cement that conforms to ASTM D 2235 or CSA B181.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet. Joints shall be made in accordance with ASTM D 2235, ASTM D 2661, ASTM F 628 or CSA B181.1. Solvent cement joints shall be permitted above or below ground.~~

Reason: ABS pipe can be made by several different methods. The manufacturing method of an ABS pipe has nothing to do with how the pipe is joined. All forms of ABS pipe are joined by the joining method for ABS pipe, Section 705.2. These sections are redundant and should be deleted.

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Cost Impact: None

P162-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.7-P-STRAUSBAUGH.PMGCAC

P163 – 12
705.8, 705.8.1, 705.8.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Delete without substitution:

~~**705.8 Coextruded composite PVC pipe.** Joints between coextruded composite pipe with a PVC outer layer or PVC fittings shall comply with Sections 705.8.1 and 705.8.2.~~

~~**705.8.1 Mechanical joints**. Mechanical joints on drainage pipe shall be made with an elastomeric seal conforming to ASTM D 3212. Mechanical joints shall not be installed in above-ground systems, unless otherwise approved. Joints shall be installed in accordance with the manufacturer's instructions.~~

~~**705.8.2 Solvent cementing**. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent cement joints shall be permitted above or below ground.~~

Reason: PVC pipe can be made by several different methods. The manufacturing method of a PVC pipe has nothing to do with how the pipe is joined. All forms of PVC pipe are joined by the joining method for PVC pipe, Section 705.14. These sections are redundant and should be 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.

Cost Impact: None

P163-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.8-P-STRAUSBAUGH.PMGCAC

P164 – 12
705.8.2, 705.14.2

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

Revise as follows:

705.8.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent-cement joints shall be permitted above or below ground.

<u>**Exception:** A primer is not required where both of the following conditions apply:</u>

1. <u>The solvent cement used is third-party certified as conforming to ASTM D 2564.</u>
2. <u>The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in non-pressure applications in sizes up to and including 4 inch (102 mm) in diameter.</u>

705.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTMD2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent-cement joints shall be permitted above or below ground.

<u>**Exception:** A primer is not required where both of the following conditions apply:</u>

1. <u>The solvent cement used is third-party certified as conforming to ASTM D 2564.</u>
2. <u>The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in non-pressure applications in sizes up to and including 4 inch (102 mm) in diameter</u>

Reason: To introduce an exception in chapter 7, Sanitary Drainage, allowing for the practice of one-step solvent cementing of non-pressure DWV systems 4” and under.

This exception allows for an optional one-step procedure for joining non-pressure DWV PVC piping systems 4” in diameter and below with solvent cement conforming to ASTM D 2564. This method is practiced, and the code should include specific language to indicate when it is acceptable.

Pressure testing completed by NSF International has shown that solvent cement conforming to ASTM D 2564, when used without primer on PVC DWV pipe and fittings, both solid wall and cell core, generates bonding forces well in excess of what is required for these systems. The strength of the joint often exceeds the pipe and fitting pressure capacity.

Bibliography: NSF International report J-00036842.can be found on the PPFA website, www.ppfahome.org//ICC09/PPFA_NSF_J-00036842.pdf

Cost Impact: None

P164-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.8.2-P-CUDAHY

P165 – 12

705.9, 705.9.1, 705.9.2, 705.9.3, 705.9.4, 705.9.5, 705.10, 705.10.1, 705.10.2, 705.10.3

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

Revise as follows:

705.9 Copper pipe and tubing. Joints between copper or copper-alloy pipe, tubing, and ~~or~~ fittings shall comply with one of the methods indicated in Sections 705.9.1 through 705.9.5.

705.9.1 Brazed joints. Brazed joints between copper pipe or tubing and fittings shall be made with a brazing alloy having a liquid temperature exceeding 1000˚F (538˚C). ~~All~~ Joint surfaces to be brazed shall be cleaned bright by manual or mechanical means. The ends of pipe or tubing shall be cut square and shall be reamed to the full inside diameter. Burrs on the outside end of the pipe or tubing shall be removed. Where required by the brazing alloy manufacturer's instructions, an approved brazing flux shall be applied to the joint surfaces. The joint shall be brazed with a brazing filler metal conforming to AWS A5.8. Brazing filler metal shall be applied at the point where the pipe or tubing enters the socket of the fitting.

705.9.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions. Mechanical joints shall include compression type, flanged type, grooved type and press type.

705.9.3 Soldered joints. Solder joints between copper pipe or tubing and fittings shall be made in accordance with the methods of ASTM B 828 with the following sequence of joint preparation and operation: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cooling and cleaning. ~~All cut~~ The ends of pipe or tub~~e~~ing shall be cut square and shall be reamed to the full inside diameter of the pipe or tub~~e~~ing. ~~end.~~ Burrs on the outside end of the pipe or tubing shall be removed. ~~All~~ Joint surfaces to be soldered shall be cleaned bright by manual or mechanical means. ~~A~~ Flux conforming to ASTM B 813 shall be applied to the pipe or tubing and fittings. Such flux shall be noncorrosive and nontoxic after soldering. ~~be applied.~~ Pipe or tubing shall be inserted to the base of the fitting. Excess flux shall be removed from the exterior of the joint. The assembled joint shall be supported to create a uniform capillary space around the joint. An LP gas or acetylene air /fuel torch shall be used to apply heat to the assembled joint. The heat shall be applied with the flame perpendicular to the pipe or tubing. The flame shall be moved alternately between the fitting cup and the pipe or tubing. Solder in compliance with ASTM B 32 shall be applied to the joint surfaces until capillary action draws the molten solder into the cup of the fitting. ~~The joint shall be soldered with a solder conforming to ASTM B 32.~~ The soldered joint shall not be disturbed until cool. Remaining flux residue shall be cleaned from the exterior of the joint.

705.9.4 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

705.9.5 Welded joints. ~~All~~ Welded joint surfaces shall be cleaned. The joint shall be welded with ~~an~~ *approved* filler metal.

~~**705.10 Copper tubing.** Joints between copper or copper alloy tubing or fittings shall comply with Sections 705.10.1 through 705.10.3.~~

~~**705.10.1 Brazed joints.** All joint surfaces shall be cleaned. An *approved* flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.~~

~~**705.10.2 Mechanical joints.** Mechanical joints shall be installed in accordance with the manufacturer's instructions.~~

~~**705.10.3 Soldered joints.** Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32.~~

(Renumber subsequent sections)

Reason: The above language combines pipe and tubing into one section and provides the joining methods of copper and copper alloys as referenced in Table 702.4. In addition, important language from the standards has been added to aid the end user.

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

P165-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.9-P-FEEHAN

AS SUBMITTED:

P________ – 12

705.9, 705.9.1, 705.9.2, 705.9.3, 705.9.4, 705.9.5, 705.10, 705,10.1, 705.10.2, 705.10.3

Proponent: Pennie L. Feehan, Pennie L. Feehan Consulting representing The Copper Development Association

Revise as follows:

705.9 Copper pipe and tubing. Joints between copper or copper-alloy pipe, tubing, and ~~or~~ fittings shall comply with Sections 705.9.1 through 705.9.5

705.9.1 Brazed joints. Brazed joints between copper pipe or tubing and fittings shall be made with brazing alloys having a liquid temperature above 1000˚F (538˚C). All joint surfaces to be brazed shall be cleaned bright by either manual or mechanical means. Tubing shall be cut square and reamed to full inside diameter. An approved brazing flux shall be applied to the joint surfaces where required by manufacturer's recommendation. The joint shall be brazed with a brazing filler metal conforming to AWS A5.8. Brazing filler metal and shall be applied at the point where the pipe or tubing enters the socket of the fitting.

705.9.2 Mechanical joints. Mechanical joints shall be installed in accordance with the manufacturer's instructions. Joints shall include compression, flanged, grooved, press, and threaded.

705.9.3 Soldered joints. Solder joints between copper pipe or tubing and fittings shall be made in accordance with the methods of ASTM B 828 with the following sequence of joint preparation and operation as follows: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cooling and cleaning. ~~All cut~~ Pipe or tub~~e~~ing ~~ends~~ shall be cut square and reamed to the full inside diameter including the removal of burrs on the outside of the pipe and tub~~e~~ing. ~~end.~~ ~~All~~ Joint surfaces to be joined shall be cleaned bright by manual or mechanical means. ~~A~~ ~~f~~Flux shall be applied to pipe or tubing and fittings and shall be in accordance with ~~conforming to~~ ASTM B 813 and shall become noncorrosive and nontoxic after soldering ~~be applied~~. Insert pipe or tubing into the base of the fitting and remove excess flux. Pipe or tubing and fitting shall be supported to ensure a uniform capillary space around the joint. Heat shall be applied using an air or fuel torch with the flame perpendicular to the pipe or tubing using acetylene or an LP gas. Preheating shall depend on the size of the joint. The flame shall be moved to the fitting cup and alternate between the pipe or tubing and fitting. The joint shall be soldered with a solder in accordance with ~~conforming to~~ ASTM B 32 and shall be applied to the joint surfaces until capillary action draws the molten solder into the cup. Joint surfaces shall not be disturbed until cool and any remaining flux residue shall be cleaned.

705.9.4 Threaded joints. Threads shall conform to ASME B1.20.1. Pipe-joint compound or tape shall be applied on the male threads only.

705.9.5 Welded joints. ~~All~~ Welded joint surfaces shall be cleaned. The joint shall be welded with ~~an~~ approved filler metal.

~~**705.10 Copper tubing.** Joints between copper or copper alloy tubing or fittings shall comply with Sections 705.10.1 through 705.10.3.~~

~~**705.10.1 Brazed joints.** All joint surfaces shall be cleaned. An *approved* flux shall be applied where required. The joint shall be brazed with a filler metal conforming to AWS A5.8.~~

~~**705.10.2 Mechanical joints.** Mechanical joints shall be installed in accordance with the manufacturer's instructions.~~

~~**705.10.3 Soldered joints.** Solder joints shall be made in accordance with the methods of ASTM B 828. All cut tube ends shall be reamed to the full inside diameter of the tube end. All joint surfaces shall be cleaned. A flux conforming to ASTM B 813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B 32.~~

Renumber subsequent sections

Reason: The above language combines pipe and tubing into one section and provides the joining methods of copper and copper alloys as referenced in Table 702.4. In addition, important language from the standards has been added to aid the end user.

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

P_-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

705.9-FEEHAN

P166 – 12
706.3, Table 706.3

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee (Sstrausbaugh@arlingtonva.us)

Delete and substitute as follows:

~~**706.3 Installation of fittings.** Fittings shall be installed to guide sewage and waste in the direction of flow. Change in direction shall be made by fittings installed in accordance with Table 706.3. Change in direction by combination fittings, side inlets or increasers shall be installed in accordance with Table 706.3 based on the pattern of flow created by the fitting. Double sanitary tee patterns shall not receive the discharge of back-to-back water closets and fixtures or appliances with pumping action discharge.~~

> ~~**Exception:** Back-to-back water closet connections to double sanitary tees shall be permitted where the horizontal developed length between the outlet of the water closet and the connection to the double sanitary tee pattern is 18 inches (457 mm) or greater.~~

706.3 Installation of fittings. Changes in the direction of flow in drainage piping shall be made by fittings installed in an orientation that directs the drainage in the direction of flow. The following are prohibited applications of fittings:

1. A cast iron quarter bend or short sweep elbow smaller than 3 inches shall not be used for a vertical-to-horizontal or horizontal-to-horizontal change in direction of flow except where conveying flow from a single fixture drain.
2. A cast iron quarter bend or short sweep elbow that is 3 inches and larger shall not be used for a horizontal-to-horizontal change in direction of flow.
3. A plastic quarter bend elbow smaller than 3 inches, other than a long sweep quarter bend elbow, shall not be used for a vertical-to-horizontal or horizontal-to-horizontal change in direction of flow except where conveying flow from a single fixture drain.
4. A plastic quarter bend elbow that is 3 inches and larger, other than a long sweep quarter bend elbow, shall not be used for a horizontal-to-horizontal change in direction of flow.
5. A heel inlet of a quarter bend elbow shall not receive the discharge from any fixture where the elbow receives the discharge of a water closet and changes the flow direction from vertical-to-horizontal .
6. A low-heel inlet of a quarter bend elbow shall not be used as a connection for a wet vent or wet vented fixture where the elbow changes the flow direction from vertical-to-horizontal.
7. The side inlet of a quarter bend elbow shall not be used as a drainage connection where the elbow changes the flow direction from horizontal to horizontal.
8. A sanitary tee shall not be used in an orientation where the run of the tee is in the horizontal plane, or an angle less than 45 degrees thereto, except where the branch of the tee serves as a dry vent.
9. A double sanitary tee shall not receive the discharge of water closets through both branches nor shall it receive pumped waste flow in either branch.

   Exception: Water closets shall be permitted to connect to both branches of a double sanitary tee where the horizontal developed length between the outlet of each water closet and the connection to the double sanitary tee is 18 inches (457 mm) or greater.

Reason: The existing section and accompanying table are unclear as to how the table is to be used and exactly what the prohibitions of fitting uses are. The problem is that the table is too limiting and does not address the materials of the fittings relative to the pattern (i.e. short sweep versus quarter bend). Also, the table doesn't address the use of a drainage fitting where a branch is used as vent connection (e.g. sanitary tee). The text proposed clearly indicates the specific prohibitions and uses in mandatory language.

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Cost Impact: None

P166-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

706.3-P-STRAUSBAUGH.PMGCAC

P167 – 12
707.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

707.1 Prohibited joints. The following types of joints and connections shall be prohibited:

1. Cement or concrete joints.
2. Mastic or hot-pour bituminous joints.
3. Joints made with fittings not *approved* for the specific installation.
4. Joints between different diameter pipes made with elastomeric rolling O-rings.
5. Solvent-cement joints between different types of plastic pipe.
6. Saddle-type fittings.
7. <u>Where a pipe or fitting is inserted inside of another pipe.</u>

Reason: This proposed new item intends to prevent the misapplication of fittings and pipe of all materials. The IRC already prohibits the installation of a 4 x 3 plastic closet flange into the inside of a 4 inch plastic pipe. (Section P3003.19) . The reason for this is that the internal diameter of DWV plastic pipe is not controlled during manufacturing which results in a non-uniform and sometimes wavy surface inside of the pipe. Such surface was never intended to be part of solvent welded joint. The inside surface of fitting sockets are precisely controlled during manufacturing because they are designed to be part of a solvent welded joint, but this is not for the ID of pipe. If pipe or fittings are misapplied by attempting solvent weld joints in the inside of pipe, poorly made joints will result which are mechanically weak and prone to failure or leakage in service. Leakage may not be detected during DWV testing because closet flanges are commonly installed *after* testing and also because a poorly made weak joint could survive the test and fail at a later time as the piping system expands and contracts, ages and moves from building settlement. This problem is not limited to closet flanges as installers have attempted to install other fittings such as wyes inside of pipe.

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.

Cost Impact: None

P167-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

707.1-P-STRAUSBAUGH.PMGCAC

P168 – 12
708

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Delete and substitute as follows:

~~**SECTION 708**~~
~~**CLEANOUTS**~~

SECTION 708
CLEANOUTS

708.1 Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections 708.1.1 through 708.1.11.

708.1.1 Horizontal drains and building drains. Horizontal drainage pipes in buildings shall have cleanouts located at intervals of not more than 100 feet (30 480 mm). Building drains shall have cleanouts located at intervals of not more than100 feet (30 480 mm) except where manholes are used instead of cleanouts, the manholes shall be located at intervals of not more than 400 feet (122 m). The interval length shall be measured from the cleanout or manhole opening, along the developed length of the piping to the next drainage fitting providing access for cleaning, the end of the horizontal drain or the end of the building drain.

> **Exception:** Horizontal fixture drain piping serving a nonremovable trap shall not be required to have a cleanout for the section of piping between the trap and the vent connection for such trap.

708.1.2 Building sewers. Building sewers smaller than 8 inches (203 mm) shall have cleanouts located at intervals of not more than 100 feet (30 480 mm). Building sewers 8 inches (203 mm) and larger shall have a manhole located not more than 200 feet (60 960 mm) from the junction of the building drain and building sewer and at intervals of not more than 400 feet (122 m). The interval length shall be measured from the cleanout or manhole opening, along the developed length of the piping to the next drainage fitting providing access for cleaning, a manhole or the end of the building sewer.

708.1.3 Building drain and building sewer junction. The junction of the building drain and the building sewer shall be served by a cleanout that is located at the junction or within 10 feet (3048 mm) developed length of piping upstream of the junction. For the requirements of this section, the removal of water closet shall not be required to provide cleanout access.

708.1.4 Changes of direction. Where a horizontal drainage pipe, a building drain or a building sewer has a change of horizontal direction greater than 45 degrees (0.79 rad), a cleanout shall be installed at the change of direction. Where more than one change of horizontal direction greater than 45 degrees (0.79 rad) occurs within 40 feet (12 192 mm) of developed length of piping, the cleanout installed at the first change of direction shall serve as the cleanout for all changes in direction within that 40 feet (12 192 mm) of developed length of piping.

708.1.5 Cleanout size. Cleanouts shall be the same size as the piping served by the cleanout except cleanouts for piping larger than 4 inches (102 mm) need not be larger than 4 inches (102 mm).

Exceptions:

1. A removable P- trap with slip or ground joint connections can serve as a cleanout for drain piping that is one size larger than the P-trap size.
2. Cleanouts located on stacks can be one size smaller than the stack size.

3. The size of cleanouts for cast-iron piping can be in accordance with the referenced standards for cast iron fittings as indicated in Table 702.4.

708.1.6 Cleanout plugs. Cleanout plugs shall be brass, plastic or other approved materials. Cleanout plugs for borosilicate glass piping systems shall be of borosilicate glass. Brass cleanout plugs shall conform to ASTM A74 and shall be limited for use only on metallic piping systems. Plastic cleanout plugs shall conform to the referenced standards for plastic pipe fittings as indicated in Table 702.4. Cleanout plugs shall have a raised square head, a countersunk square head or a countersunk slot head. Where a cleanout plug will have a trim cover screw installed into the plug, the plug shall be manufactured with a blind end threaded hole for such purpose.

708.1.7 Manholes. Manholes and manhole covers shall be of an approved type. Manholes located inside of a building shall have gas-tight covers that require tools for removal.

708.1.8 Installation arrangement. The installation arrangement of a cleanout shall enable cleaning of drainage piping only in the direction of drainage flow.

Exceptions:

1. Test tees serving as cleanouts.
2. A two-way cleanout installation that is approved for meeting the requirements of Section 708.1.3.

708.1.9 Required clearance. Cleanouts for 6-inch (153 mm) and smaller piping shall be provided with a clearance of not less than 18 inches (457 mm) from, and perpendicular to, the face of the opening to any obstruction. Cleanouts for 8-inch (203 mm) and larger piping shall be provided with a clearance of not less than 36 inches (914 mm) from, and perpendicular to, the face of the opening to any obstruction.

708.1.10 Cleanout access. Required cleanouts shall not be installed in concealed locations. For the purposes of this section, concealed locations include, but are not limited to, the inside of plenums, within walls, within floor/ceiling assemblies, below grade and in crawl spaces where the height from the crawl space floor to the nearest obstruction along the path from the crawl space opening to the cleanout location is less than 24 inches (610 mm). Cleanouts with openings at a finished wall shall have the face of the opening located within 1-1/2 inches (38 mm) of the finished wall surface. Cleanouts located below grade shall be extended to grade level so that the top of the cleanout plug is at or above grade. A cleanout installed in a floor or walkway that will not have a trim cover installed shall have a countersunk plug installed so the top surface of the plug is flush with the finished surface of the floor or walkway.

708.1.10.1 Cleanout plug trim covers. Trim covers and access doors for cleanout plugs shall be designed for such purposes and shall be approved. Trim cover fasteners that thread into cleanout plugs shall be corrosion resistant. Cleanout plugs shall not be covered with mortar, plaster or any other permanent material.

708.1.10.2 Floor cleanout assemblies. Where it is necessary to protect a cleanout plug from the loads of vehicular traffic, cleanout assemblies in accordance with ASME A112.36.2M shall be installed.

708.1.11 Prohibited use. The use of a threaded cleanout opening to add a fixture or extend piping shall be prohibited except where another cleanout of equal size is installed with the required access and clearance.

Reason: Section 708 is disorganized. For example, the second Section 708.2 discusses requirements for cleanout plugs. The more significant sections of the section are scattered throughout the remainder of the section in a disorganized fashion. This proposal reorganizes this section in a more logical format for ease of understanding.

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Cost Impact: None

P168-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

708-P-STRAUSBAUGH.PMGCAC

P169 – 12
708.4, 708.8

Proponent: Dennis Gardner, State of Colorado plumbing inspector representing self.

Revise as follows:

708.4 Concealed piping. Cleanouts on concealed piping or piping under a floor slab or in a crawl space of less than ~~24 inches (610 mm)~~ 36 inches (914 mm) in height or a plenum shall be extended through and terminate flush with the finished wall, floor or ground surface or shall be extended to the outside of the building. Cleanout plugs shall not be covered with cement, plaster or any other permanent finish material. Where it isnecessary to conceal a cleanout or to terminate a cleanout in an area subject to vehicular traffic, the covering plate, *access* door or cleanout shall be of an *approved* type designed and installed for this purpose.

708.8 Clearances. Cleanouts on ~~6-inch (153 mm)~~ 3 inches (76 mm) and smaller pipes shall be provided with a clearance of not less than 18 inches (457 mm) for rodding. ~~Cleanouts on 8-inch (203 mm) and larger pipes shall be provided with a clearance of not less than 36 inches (914 mm) for rodding.~~ *C*leanouts for piping 4 inches (102mm) and larger shall be provided with a working space in front of the cleanout and such waorkign space shall be not less than 36 inches (914 mm) wide by 36 inches (914 mm) high by 36 inches (914 mm) deep. Fixtures shall not encroach upon such working space.

Reason: The definition of *access* in regards to the location of a cleanout is inappropriate language for clearances for operating a cleaning machine without the risk of harm to the operator of the equipment or the property. I recently had a 4 inch cleanout between a wall and the water closet set 18 inches from the wall. It gives the 18 inches mandatory clearance in front as required by code but does not give adequate *access* to be used. You would think common sense would prevail but without the proper guidelines winning a battle with contractors, architects or engineers who have never worked in the field or won't admit they are wrong, makes the call impossible to enforce and the cleanout impossible to use. To just use the term (*Access* shall be provided to all cleanouts*) is grossly inadequate.*

None: The cleanouts are already required by code it is just making the code clearer insuring cleanouts are accessible for use as the code has intended.

P169-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

708.4-P-GARDNER

P170 – 12
712.3.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

712.3.2 Sump pit. The sump pit shall be not less than 18 inches (457 mm) in diameter and not less than 24 inches (610 mm) in depth, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, concrete, steel, plastic or other approved materials. The pit bottom shall be solid and provide permanent support for the pump. The sump pit shall be fitted with a gas-tight removable cover that is <u>installed flush with grade or above grade. The cover shall be </u>adequate to support anticipated loads in the area of use. The sump pit shall be vented in accordance with Chapter 9.

Reason: The cover for sump pits needs to be located at grade or above grade. Otherwise, there is nothing to prevent an installation where the cover is located below grade in a well such that in order to service the pump, someone has to stand on his head in order to just remove the sump pit cover. Requiring the cover to be at or above grade eliminates this problem.

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Cost Impact: None

P170-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

712.3.2-P-STRAUSBAUGH.PMGCAC

P171 – 12
713.12 (New)

Proponent: Daniel D. Fish, Roda LLC, representing self (info@drainbrain.us)

Add new text as follows:

<u>**713.12 Wastewater leak containment, detection and notification.** An early-warning wastewater leak containment, detection and notification device shall be required in hospitals and other healthcare occupancies stated in section 713.1. This device shall contain and detect a wastewater leak in the building's water closets, showers and bathtubs. This device shall be equipped with an auditory alarm, visual signal, and a means for notification to the affected building occupants, property owners or the property management staff. The auditory alarm shall have a sound pressure level rating of not less than 85 dB when measured at a distance of ten feet.</u>

Reason: Millions of wastewater leaks occur every year in multi-story buildings from leaking drains, waste lines, and toilets. Toilets are especially high risks for water leakage. Research has shown that 30 percent of all toilets in the United States leak. Toilets with unreliable wax gaskets and flanges – a common problem – cause the most damage to the unit below. Also, the float valve that controls water entering the toilet tank often malfunction, which allows water to run into toilet waste line continuously.

Wastewater leaks typically go undetected until considerable damage has been done. These leaks: (1) waste millions of gallons of water, (2) damage property/materials, generating millions of tons of debris that swells landfills, and (3) develop mold on building components, creating property damage and a health hazard. Property owners spend millions of dollars to repair the damage from wastewater leaks and cure mold-related problems.

An early-warning wastewater leak containment, detection, and notification device will give building occupants and facility managers/owners the opportunity to avoid wastewater leak damage and its attendant costs. Taking action early will conserve millions of gallons of water and eliminate the environmental, economic, and health hazards from wastewater leaks. This solution for the age-old wastewater leak problem will meet the intent of this code by safeguarding the public health, safety, and welfare.

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

P171-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

713.12 (NEW)-P-FISH

P172 – 12
715.1

Proponent: Thomas C. Pitcherello, N.J. Department of Community Affairs, representing self (tpitcherello@dca.state.nj.us)

Revise as follows:

715.1 Sewage backflow. Where plumbing fixtures are installed on a floor with a finished floor elevation below the elevation of the manhole cover of the next upstream manhole in the *public sewer,* such fixtures shall be protected by a backwater valve installed in the *building drain,* or horizontal *branch* serving such fixtures. Plumbing fixtures installed on a floor with a finished floor elevation above the elevation of the manhole cover of the next upstream manhole in the *public sewer* shall not discharge through a backwater valve.

> **Exception:** In existing buildings, fixtures above the elevation of the manhole cover of the next upstream manhole in the *public sewer* shall not be prohibited from discharging through a backwater valve.

Reason: Building owners who have experienced a sewage backup in a building that was caused by problems in an existing public sewer main should be allowed to install a backwater valve in the building drain or sewer to protect their property. Having a basement full of raw sewage is an experience that no one wants to repeat. The requirement that only those fixtures that are on a floor elevation below the top of the next upstream manhole in the public sewer are allowed to discharge through the BWV, places a significant impediment for the building owner to protect his property against an event over which currently he has no control. For example, consider an existing two story hotel with multiple stacks connecting to a building drain. The fixtures on the lower floor are connected to the same building drain. The existing code language would require that all of the stacks be rerouted to connect downstream of a backwater valve installed to serve only the fixtures on the lower floor level. This would be cost prohibitive to do. The simpler solution would be to just install the BWV in the building drain or sewer. However, as the code is currently written, this is prohibited. The main reason why the code prohibits this is so that the discharge from upper floors does not flood the lower floor when the building sewer is backed up. If the BWV serves only the lower elevation fixtures, it would be closed when the sewer backed up and any discharge from higher elevation fixtures could not flow out of the lower elevation fixtures. BWV's are not known to create problems in a building sewer; rather, they provide protection from sewage backups and provide peace of mind for the building owners and occupants. Although the current code requirement can be easily accomplished in new construction, it is a hardship for those building owners who need protection for existing buildings. Imagine the work that would be necessary to separate the building drain into different sub building drains in an existing building with piping under slab floors.

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

P172-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

715.1-P-PITCHERELLO

P173 – 12
716 (New), Chapter 14

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

Add new text as follows:

SECTION 716
CURED-IN-PLACE PIPE LINERS

716.1 Approval. Cured-in-place pipe liner materials shall conform to NSF-14.

716.2 Installation. Installation of cured-in-place pipe liners shall be in accordance with the manufacturer's instructions and ASTM F1216, ASTM F1783 or ASTM F 2019.

Add new standards to Chapter 14 as follows:

ASTM

F1216-09	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin Impregnated Tube
F1743-08	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-In-Place Thermosetting Resin Pipe (CIPP)
F2019-11	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP).

Reason: Trenchless technology is commonly used to rehabilitate existing drain and sewer lines. This proposal establishes requirements by referring to appropriate standards for the materials and installation.

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

Analysis: A review of the standards proposed for inclusion in the code, ASTM F1216-09, ASTM F1743-08 and ASTM F2019-11 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 2, 2012.

P173-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

716 (NEW)-P-BROWN

P174– 12
716 (New), Appendix C

Proponent: David R. Scott, AIA, representing Target Corporation.

Delete without substitution:

~~**APPENDIX C**~~
~~**VACUUM DRAINAGE SYSTEM**~~

(Renumber subsequent Appendices)

Add new text as follows:

SECTION 716
VACUUM DRAINAGE SYSTEMS

716.1 Scope. Vacuum drainage systems shall be in accordance with Sections 716.2 through 716.4.

716.2 System design. Vacuum drainage systems shall be designed in accordance with the vacuum drainage system manufacturer's instructions. The system layout, including piping layout, tank assemblies, vacuum pump assembly and other components necessary for proper function of the system shall be in accordance with the manufacturer's instructions. Plans, specifications and other data for such systems shall be submitted to the code official for review and approval prior to installation.

716.2.1 Fixtures. Gravity-type fixtures installed in vacuum drainage systems shall comply with Chapter 4.

716.2.2 Drainage fixture units. Fixture units for gravity drainage systems which discharge into or receive discharge from vacuum drainage systems shall be based on the values in Chapter 7.

716.2.3 Water supply fixture units. Water supply fixture units shall be based on values in Chapter 6 of this code except that the water supply fixture unit for a vacuum-type water closet shall be 1.

716.2.4 Traps and cleanouts. Gravity drainage fixtures shall be provided with traps and cleanouts in accordance with Chapters 7 and 10.

716.2.5 Materials. Vacuum drainage pipe, fitting and valve materials shall be in accordance with the vacuum drainage system manufacturer's instructions and the requirements of Chapter 7.

716.3 Testing and demonstrations. After completion of the entire system installation, the system shall be subjected to a vacuum test of 19 inches (483 mm) of mercury and shall be operated to function as required by the code official and the manufacturer of the vacuum drainage system. Recorded proof of all tests shall be submitted to the code official.

716.4 Written instructions. Written instructions for the operation, maintenance, safety and emergency procedures shall be provided to the building owner. The code official shall verify that the building owner is in receipt of such instructions.

Reason: Vacuum drainage system is a proven technology and should be allowed for situations where draining by gravity is prohibitive or not possible. Moving this information into Chapter 7 will allow for acceptance of vacuum drainage systems in jurisdictions that have not adopted the appendices.

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

P174-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

716-P-SCOTT

P175 – 12
802.1, 802.1.8

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

802.1 Where required. Food-handling equipment <u>in other than dwelling units</u>, and clearwater waste shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.8. Health-care related fixtures, devices and equipment shall discharge to the drainage system through an indirect waste pipe by means of an air gap in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.

802.1.8 Food utensils, dishes, pots and pans sinks. Sinks, <u>in other than dwelling units</u>, used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food shall discharge indirectly through an air gap or an air break to the drainage system.

Reason: The current language requires that the waste discharge from food handling equipment as specified in Sections 802.1.1 through 802.1.8 in commercial and residential occupancies be indirectly connected. This should not be applicable for dwelling units but nonetheless, Section 802.1.1 requires fixtures (i.e. a kitchen sink in dwelling unit) to be indirectly connected. The IPC applies to multi-family dwelling buildings and is inappropriately requiring an indirect waste connection for a dwelling kitchen sink because such sink is used for food handling and ware washing (i.e. 802.1.1and 802.1.8).

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.

Cost Impact: None

P175-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.1 #1-P-STRAUSBAUGH.PMGCAC

P176 – 12
802.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

802.1 Where required. Food-handling equipment, ~~and~~ clear-water waste, dishwashing machines and utensil, pots, pans and dish washing sinks shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.8. Health-care related fixtures, devices and equipment shall discharge to the drainage system through an indirect waste pipe by means of an air gap in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.

Reason: The subject of the first sentence of current Section 802.1 is food handling and clear water waste. This sentence introduces Subsections 802.1.6, 802.1.7 and 802.1.8, however, these sections are not food handling or clear-water related. Revising the first sentence of Section 802.1 corrects this inaccuracy.

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.

Cost Impact: None

P176-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.1 #2-P-STRAUSBAUGH.PMGCAC

P177 – 12
802.1.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

802.1.1 Food handling. Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap. <u>Each well of a multi-compartment sink shall discharge independently to a waste receptor.</u>

Reason: An all too common practice for drain connections to a multi-compartment sink is to manifold the drain piping together and run a single indirect waste pipe to the waste receptor. If one compartment is draining and another compartment is empty or less full , the waste flow can back up into the empty or less full compartment and contaminate that compartment. Requiring each well to discharge independently to the waste receptor prevents this potential for contamination.

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.

Cost Impact: None

P177-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.1.1-P-STRAUSBAUGH.PMGCAC

P178 – 12
802.1.6

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

Revise as follows:

802.1.6 Domestic dishwashing machines. Domestic dishwashing machines shall discharge indirectly through an ~~*air gap* or~~ *air break* into a standpipe or waste receptor in accordance with Section 802.2, or discharge into a wye branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste grinder. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste grinder ~~shall connect to a deck-mounted *air gap* or the waste line~~ shall rise ~~and be securely fastened~~ to the underside of the sink rim or counter.

Reason: The connection as an air gap qualifies as an air break, therefore, there is no need to mention air gap. A deck mounted air gap fitting is never necessary for the connection of a dishwasher. The code should not mention a connection that is not required. If someone wants to add an air gap fitting they are free to do so. The drain still rises to the underside of the sink. A requirement for securely fastened is inappropriate since there is no definition of securely fastened.

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

P178-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.1.6-P-BALLANCO

P179 – 12
802.1.6, 802.1.7, 802.2, 802.2.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

802.1.6 Domestic dishwashing machines. Domestic dishwashing machines shall discharge indirectly through an *air gap* or *air break* into a ~~standpipe or~~ waste receptor in accordance with Section 802.2, or discharge into a wye branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste grinder. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste grinder shall connect to a deck-mounted *air gap* or the waste line shall rise and be securely fastened to the underside of the sink rim or counter.

802.1.7 Commercial dishwashing machines. The discharge from a commercial dishwashing machine shall be through an *air gap* or *air break* into a ~~standpipe or~~ waste receptor in accordance with Section 802.2.

802.2 Installation. Indirect waste piping shall discharge through an *air gap* or *air break* into a waste receptor. Waste receptors ~~and standpipes~~ shall be trapped and vented and shall connect to the building drainage system. All indirect waste piping that exceeds 30 inches (762 mm) in developed length measured horizontally, or 54 inches (1372 mm) in total developed length, shall be trapped.

802.2.2 Air break. An *air break* shall be provided between the indirect waste pipe and the trap seal of the waste receptor ~~or standpipe~~.

Reason: Because a standpipe is a waste receptor, it is redundant to state “standpipe and waste receptor” in these sections. Therefore, the word standpipe is removed as waste receptors include standpipes. A companion code change proposal relocates Section 802.4 to be a subsection of 802.3, because standpipes are a type of waste receptor and belong with the other waste receptors.

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Cost Impact: None

P179-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.1.6-P-STRAUSBAUGH.PMGCAC

P180 – 12
802.3

Proponent: Dennis Gardner, State of Colorado Plumbing and Gas Inspector

Revise as follows:

802.3 Waste receptors. Waste receptors shall be of an *approved* type. A removable strainer or basket shall cover the outlet of the waste receptors. Waste receptors shall be installed in ~~ventilated~~ spaces <u>normally occupied by the occupants of the building.</u> Waste receptors shall not be installed in bathrooms, toilet rooms, plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors or in an inaccessible space or unventilated space such as a closet or storeroom. Ready *access* shall be provided to the waste receptors.

Reason: There has always been a question about what constitutes a ventilated space. I believe that the real intent of the code is to make sure that waste receptors will be located in areas that are frequented by the occupants of the building so that if there is a problem such as a backup, the occupants will notice the problem.

Cost impact: None

P180-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.3-P-GARDNER

P181 – 12
802.3

Proponent: Shawn Strausbaugh, Arlington County VA, representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Revise as follows:

802.3 Waste receptors. ~~Waste receptors shall be of an approved type.~~ For other than standpipes and hub drains, a removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall not be installed in ~~ventilated~~ concealed spaces. Waste receptors shall not be installed in ~~bathrooms, toilet rooms~~, plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors ~~or in any inaccessible or unventilated space such as a closet or storeroom~~. Ready access shall be provided to waste receptors.

Reason: This is a companion proposal with a newly added definition of waste receptor. We have attempted to identify exactly what constitutes an 'approved type" of waste receptor. The code fails to provide guidance as to what is a ventilated space, so we suggest removing the terms. This proposal takes the provisions in the direction of clear mandatory language that provides the user with terminology that clearly explains where a waste receptor is not permitted to be located. Further, there is no real problem associated with having a hub drain in a closet or storeroom where items such as water heaters and condensate producing appliances are located so that text has been removed.

Cost Impact: None

P181-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.3-P-STRAUSBAUGH

P182 – 12
202, 802.3, 802.3.2, 802.4

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new definition as follows:

WASTE RECEPTOR. A floor sink, standpipe, hub drain or a floor drain that receives the discharge of one or more indirect waste pipes.

Revise as follows:

802.3 Waste receptors. ~~Waste receptors shall be of an approved type.~~ For other than hub drains that receive only clear-water waste and standpipes, a removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall not be installed in ~~ventilated~~ concealed spaces. Waste receptors shall not be installed in ~~bathrooms, toilet rooms~~, plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors. ~~or in any inaccessible or unventilated space such as a closet or storeroom~~. Ready access shall be provided to waste receptors.

802.3.2 ~~Open~~ Hub drains ~~waste receptors~~. A hub drain~~Waste receptors~~ shall be ~~permitted~~ in the form of a hub or a pipe extending not less than 1 inch (25.4 mm) above a water-impervious floor. ~~and are not required to have a strainer.~~

~~802.4~~ 802.3.3 Standpipes. Standpipes shall be individually trapped. Standpipes shall extend not less than 18 inches (457 mm) but not greater than 42 inches (1066 mm) above the trap weir. *Access* shall be provided to all standpipes and drains for rodding.

Reason: A definition for "waste receptor" is needed. The term is found in the code 24 times with no exact description. The proposed definition identifies exactly what constitutes an 'approved type" of waste receptor. The code fails to provide guidance as to what is a ventilated space so the language was changed to prevent waste receptors from being installed in a concealed space. There is no logical reason to prohibit waste receptors from being installed in a bathroom or toilet room. It is not unusual for a clothes washing machine (requiring a standpipe) to be placed in a bathroom or a toilet room in a multifamily residential occupancy. Waste receptors (typically a hub drain) are frequently needed in closets or storerooms where appliances discharge condensate or where relief valve discharge pipes are located.. The term "open hub waste receptor" is redundant and unclear and was eliminated in favor of the more common term "hub drain". As a hub drain is a waste receptor, a strainer is required except where the hub drain receives only clear water wastes. Standpipes are just another breed of waste receptors and should be included as a subsection under the waste receptor section.

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.

Cost Impact: None

P182-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

802.3-P-STRAUSBAUGH.PMGCAC

P183 – 12
803.1

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

803.1 Waste water temperature. Steam pipes shall not directly connect ~~to any part of~~ to a drainage ~~or plumbing~~ system. Such pipes shall discharge into a waste receptor that is connected to the drainage system. ~~and~~ Water ~~above~~ having a temperature of 140°F (60°C) or greater shall not be discharged into ~~any part of~~ a drainage system. except where it is cooled to a temperature of less than 140°F (60°C) . ~~Such pipes shall discharge into an indirect waste receptor connected to the drainage system.~~

Reason: The existing language appears to be contradicting. The current text states that water greater than 140F must not discharge to a drainage system but the next line seems to say that it's OK if you dump it in a waste receptor first. This section was reworded to indicate that water temperatures of a 140°F or greater must be cooled to less than 140°F before being discharged to the drainage system

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.

Cost Impact: None

P183-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

803.1-P-STRAUSBAUGH.PMGCAC

P184 – 12
901.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

901.2 Trap seal protection. The plumbing system shall be provided with a system of vent piping that will permit the admission or emission of air so that the seal of any fixture trap shall not be subjected to a ~~pneumatic~~ pressure differential of more than 1 inch of water column (249 Pa).

Reason: The word "pneumatic" is unnecessary. Pressure is pressure whether its water or air pressure.

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Cost Impact: None

P184-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

901.2-P-STRAUSBAUGH.PMGCAC

P185 – 12
903.1

Proponent: Shawn Strausbaugh, representing the ICC PMG Code Action Committee

Revise as follows:

903.1 Roof extension. Open vent pipes that extend through a roof shall be terminated not less than [NUMBER] inches (mm) above the roof~~, except that~~. Where a roof is to be used for assembly or as a promenade, observation deck, sunbathing deck or similar purposes ~~for any purpose other than weather protection~~, ~~the~~ open vent pipes ~~extensions~~ shall terminate not less than 7 feet (2134 mm) above the roof.

Reason: The current language literally states that if a roof is to be used for anything other than weather protection, then vent pipes must be extended 7 feet above the roof. If there is equipment on the roof (HVAC units, grease duct fans, etc.), the roof is being used for another purpose, but, that is not the intent of the section. The intent of the section is that when the roof can be "normally occupied" such as where the roof is being used as an assembly area, a promenade, observation deck or sunbathing deck, that is when the vent pipes must be extended. The revised language makes the intent of the section more 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.

Cost Impact: None

P185-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

903.1-P-STRAUSBAUGH.PMGCAC

P186 – 12
903.2

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

903.2 Frost closure. Where the 97.5-percent value for outside design temperature is 0°F (-18°C) or less, ~~every~~ vent extension<u>s</u> through a roof or wall shall be not less than 3 inches (76 mm) in diameter. Any increase in the size of the vent shall be made <u>not less than 1 foot</u> inside the ~~structure at a point not less than 1 foot (305 mm) below the roof or inside the wall~~ <u>building's thermal envelope</u>.

Reason: Requiring that the size transition occur at least 1 foot below the roof accomplishes nothing if it is just as cold below the roof as it is outdoors. The intent is to prevent frost blockage in the vent by making the part that is exposed to freezing temperatures at least 3 inches in diameter. The part of the vent that is less than 3 inches in size must be located in an area that stays above freezing. In most attics, the attic temperatures are very near the outdoor temperature , therefore, putting the size transition in the cold attic will subject the smaller pipe to freezing temperatures which is exactly what this section intended to avoid. The transition from a smaller size vent pipe to the 3 inch (or larger size) needs to occur at least one foot inside of the building's thermal envelope in order to avoid frost blockage.

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.

Cost Impact: None

P186-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

903.2-P-STRAUSBAUGH.PMGCAC

P187 – 12
904.1

Proponent: Tom Allen, City of Mt. Dora, representing self

Revise as follows:

904.1 Roof extension. ~~All open~~ Vent pipes that extend through a roof to terminate to the outdoors shall be terminated ~~at least~~ not less than ~~[NUMBER]~~ 6 inches (152 mm) above the roof. Where the roof is subject to ponding of storm water, vent pipes shall terminate not less than 2 inches (51 mm) above the highest elevation of ponded stormwater. ~~except that~~ Where a roof is to be used for any purpose other than weather protection, ~~the~~ vent pipes ~~extensions~~ shall ~~be run at least~~ extend not less than 7 feet (2134 mm) above the roof.

Reason: The code should state minimum height of the vent pipe above the roof as there are many jurisdictions that simply fail to fill in the [NUMBER] blank upon adoption. Where roofs are designed to pond storm water in case the primary roof drainage system is blocked, the vent pipe opening need to be above highest level of ponded water so that the storm water doesn't enter the plumbing vent systems and cause flooding in the building. The last sentence is changed to remove poor code language.

Cost Impact: There is not a cost impact.

P187-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

904.1-P-ALLEN

P188 – 12
904.3.1 (New)

Proponent: Bob Scott, Kye Lehr and Dennis Gardner - Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Add new text as follows:

904.3.1 Vent through metal roofs. In climates where snow occurs, vent pipes passing through metal roofs shall be protected from loading caused by ice and snow sliding down the metal roof or the vent shall penetrate the roof within 4 feet of the roof peak. Protection methods and devices shall be approved by the code official.

Reason: Protection of piping is presently limited to piping through walls, footers, and foundation. No mention of piping through the roof. Pipes that have been broken in the walls leak sewer gas or closed off. These vent pipes are difficult to repair once damaged in the wall or below the roof depending on location. We tried Steel and cast Iron pipe through the roof anchored them to framing members only to have the Ice and snow break the piping over inside the home causing structural damage by breaking through walls and knocking kitchen cabinets off the walls. Damaged vent pictures are available.

Cost Impact: Cost of approved material as required by local jurisdiction.

P188-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

904.3.1 (NEW)-P-SCOTT-LEHR-GARDNER

P189 – 12
915.1

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

Revise as follows:

915.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, lavatories and drinking fountains. Combination waste and vent systems shall not receive the discharge from a ~~food waste grinder or~~ clinical sink.

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.

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

P189-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

915.1-P-BALLANCO

P190 – 12
915.2.2

Proponent: Bob Scott and Daryl Kuiper, Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

915.2.2 Connection. The combination waste and vent system shall be provided with a dry vent connected at any point within the system or the system shall connect to a horizontal drain that serves vented fixtures located on the same floor. ~~is vented in accordance with one of the venting methods specified in this chapter.~~ Combination waste and vent systems connecting to building drains receiving only the discharge from a one or more ~~stack or~~ stacks shall be provided with a dry vent. The vent connection to the combination waste and vent pipe shall extend vertically to a point not less than 6 inches (152 mm) above the flood level rim of the highest fixture being vented before offsetting horizontally. The horizontal length of a combination waste and vent system shall be unlimited.

Reason: The struck out phrase: "is vented in accordance with one of the venting methods specified in this chapter." is vague about how the horizontal drain needs to be vented. Does this mean that the horizontal drain serving a CWV system can be vented through a connection from a waste or soil stack that might extend many floors before exiting the roof? We believe that the intent of the code is for the horizontal drain to be vented by serving vented fixtures on the same floor as the CWV system is located. Depending upon venting air through waste flow in stacks might not provide consistent pressure conditions to keep from causing trap seal problems in the traps on a CWV system.

Cost Impact: None

P190-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

915.2.2-P-SCOTT-LEHR

P191 – 12
915.2.2

Proponent: Bob Scott, Kye Lehr and Dennis Gardner, Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

915.2.2 Connection. The combination drain and vent system shall be provided with a dry vent connected at any point within the system ~~or be connected to a horizontal drain that is vented in accordance with one of the venting methods specified in the chapter.~~ Combination drain and vent systems connecting to building drains receiving only discharge from a *stack* or stacks shall be provided with a dry vent. The vent connection to the combination drain and vent pipe shall extend vertically a minimum of 6 inches (152mm) above the *flood level rim* of the highest fixture being vented before offsetting horizontally.

Reason: We have seen piping arrangements where the nearest vent connection on a horizontal drain line is over 100 feet away from the CWV system connection to the horizontal drain. If the horizontal drain is flowing at capacity (i.e. ½ full), is the air space above the flow line consistently adequate to provide sufficient venting air for the CWV system? This code section says it is but given the long horizontal drain lengths in large commercial buildings, we seriously doubt that there will be adequate venting for a CWV system. Our experience says that a dry vent for the CWV system should always be required. Depending on a vented horizontal drain in a one- or two-family dwelling where the drain lines are relatively short, should not be a problem. But in a large commercial building, the horizontal drain lines can be so lengthy that it is not wise to depend on such a line to provide venting air for a CWV system.

Cost Impact: Minimal cost impact.

P191-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

915.2.2-P-SCOTT-LEHR-GARDNER

P192– 12
918.5

Proponent: Shawn Strausbaugh, representing the ICC PMG Code Action Committee

Revise as follows:

918.5 Access and ventilation. Access shall be provided to all air admittance valves. ~~The~~ Such valves shall be installed in a loca~~ted~~tion ~~within a ventilated space~~ that allows air to enter the valve.

Reason: The question is frequently raised: "What constitutes a ventilated space?" The proposed language simply requires the AAVs to be located where air can enter the valve. For example, an AAV installed in wall cavity would require some means to allow air to enter the cavity.

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.

Cost Impact: None

P192-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

918.5-P-STRAUSBAUGH.PMGCAC

P193 – 12
1002.1

Proponent: Robert G. Konyndyk, Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan representing The Bureau of Construction Codes.

Revise as follows:

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. 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 (610 mm) measured from the centerline 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 802.4. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.
2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.
3. A grease interceptor intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the *developed length* of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).
4. <u>Floor drains in multilevel parking structures that discharge to a building storm sewer shall not be required to be individually trapped.</u> Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connect to a main trap in accordance with Section 1103.1.

Reason: This code change revision will improve the code by providing greater clarity. Sections 1002.1 and 1103.1 of the code currently address floor drains, leaders, and storm drains connected to combined building sewers. Storm water shall not discharge to sanitary sewers as stated in Section 1101.3. The absence of trap requirement instruction for floor drains connected to building storm sewer systems has been understood to not required traps for floor drains connected to storm sewers. The exceptions revision to the subject of floor drains in parking structures will provide a logical understanding of the subject.

Cost Impact: Construction cost will be reduced by providing greater understanding of proper floor drain application in building storm sewer use.

P193-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1002.1-P-KONYNDYK

P194 – 12
1002.3, Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Revise as follows:

1002.3 Prohibited traps. The following types of traps are prohibited:

1. Traps that depend on moving parts to maintain the seal.

   <u>**Exception:** In-line sanitary waste valves complying with ASME A112.18.8.</u>

2. Bell traps.
3. Crown-vented traps.
4. Traps not integral with a fixture and that depend on interior partitions for the seal, except those traps constructed of an *approved* material that is resistant to corrosion and degradation.
5. "S" traps.
6. Drum traps.

   Exception: Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.

Add new standard to Chapter 14 as follows:

ASME
<u>A112.18.8–2009</u> <u>In-Line Sanitary Waste Valves for Plumbing Drainage</u>

Reason: In-Line sanitary waste valves are mechanical traps which have been tested and proven to maintain a gas tight seal when used in lieu of a normal p-trap. These valves are mainly used in manufactured homes in areas of small and limited confined spaces. The performance requirements for these valves are mentioned within the ASME A112.18.8 ANSI approved standard with a gas tight seal test.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.18.8–2009,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 2, 2012.

P194-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1002.3-P-CONSTANTINO

P195 – 12
1002.4. 1002.4.1 (New), 1002.4.1.1 (New), 1002.4.1.2 (New), 1002.4.1.3 (New), 1002. 4.1.4 (New), Chapter 14

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

Revise as follows:

1002.4 Trap seals. Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. ~~Where a trap seal is subject to loss by evaporation, a trap seal primer valve shall be installed. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.~~

<u>**1002.4.1 Trap seal protection.** Traps seals of emergency floor drain traps and traps subject to evaporation shall be protected by one of the methods in Sections 1002.4.1.1 through 1002.4.1.4.</u>

<u>**1002.4.1.1 Potable water supplied trap seal primer valve.** A potable water supplied trap seal primer valve shall supply water to the trap. Water supplied trap seal primer valves shall conform to ASSE 1018. The discharge pipe from the trap seal primer valve shall connect to the trap above the trap seal on the inlet side of the trap. Water supplied trap seal primer valves shall discharge not more than 8 gallons of water per year.</u>

<u>**1002.4.1.2 Reclaimed or gray water supplied trap seal primer valve.** A reclaimed or gray water supplied trap seal primer valve shall supply water to the trap. Water supplied trap seal primer valves shall conform to ASSE 1018. The discharge pipe from the trap seal primer valve shall connect to the trap above the trap seal on the inlet side of the trap. The yearly discharge volume from reclaimed or gray water supplied trap seal primer valves shall not be limited.</u>

<u>**1002.4.1.3 Waste water supplied trap primer device.** A waste water supplied trap primer device shall supply water to the trap. Waste water supplied trap primer devices shall conform to ASSE 1044. The discharge pipe from the trap seal primer device shall connect to the trap above the trap seal on the inlet side of the trap.</u>

<u>**1002.4.1.4 Barrier type trap seal protection device.** A barrier-type trap seal protection device shall protect the floor drain trap seal from evaporation. Barrier type floor drain trap seal protection devices shall conform to ASSE 1072 and shall have an ASSE 1072 rating of AF-GW. The devices shall be installed in accordance with the manufacturer's instructions.</u>

Add new standard to Chapter 14 as follows:

ASSE
<u>1072-07</u> <u>Performance Requirements for Barrier Type Floor Drain Tap Seal Protection Devices</u>

Reason: This modification adds language to identify all of the methods available for protecting the trap seal of emergency floor drain traps or traps subject to evaporation. The four methods available are: water supplied trap seal primers, waste supplied trap primer devices, trap seal protection devices, and reclaimed water. A water supplied trap seal primer that is unrestricted can discharge 300 to 500 gallons a year to a trap. A 2" trap requires less than ½ gallon a year to maintain the trap seal. There are now devices available that limit the amount of water discharging to 8 gallons per year. The IPC currently has many water conservation measures. This is another water conservation measure.

Waste supplied trap primer devices divert water from a sink or lavatory to the trap. There is no need to limit the flow on these devices since they use waste water.

Trap seal protection devices do not require any water. They are tested for providing protection of the trap seal. By requiring a rating of AF-GW, all of the tests in ASSE 1072 become required. There were previous objections to not requiring all of the tests in the standard.

Reclaimed water can also be used to maintain the trap seal. Since the water is reclaimed, there is no need to limit the annual discharge.

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

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1072-07 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 2, 2012.

P_-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1002.4-P-BALLANCO

P196– 12
1002.4, Chapter 14

Proponent: David R. Scott, AIA, representing Target Corporation.

Revise as follows:

1002.4 Trap seals. Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. Where a trap seal is subject to loss by evaporation, ~~a trap seal primer valve~~ one of the following shall be installed~~.~~: ~~Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.~~

1. A trap seal primer valve conforming to ASSE 1018 or ASSE 1044. The discharge pipe from a trap seal primer valve shall terminate at a point that is above the level of the trap seal.
2. Barrier type floor drain trap seal protection device complying with ASSE 1072.

Add new standard to Chapter 14 as follows:

ASSE
1072-2007 Performance requirements for Barrier Type Floor Drain Trap Seal Protection Devices

Reason: Some locations of floor drains and water source do not allow for proper trap seal primer valve installation. There is no easy way to verify if the trap seal primer valve has failed. A barrier-type device is much more accessible to verify proper operation and is easy to replace if needed. Water conservation measures make the barrier-type device more appealing as well.

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

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1072-2007 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 2, 2012.

P196-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1002.4-P-SCOTT

P197 – 12
1002.6

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

Revise as follows:

1002.6 Building traps. Building (house) traps shall be prohibited~~, except where local conditions necessitate such traps. Building traps shall be provided with a cleanout and a relief vent or fresh air intake on the inlet side of the trap. The size of the relief vent or fresh air intake shall not be less than onehalf the diameter of the drain to which the relief vent or air intake connects. Such relief vent or fresh air intake shall be carried above grade and shall be terminated in a screened outlet located outside the building~~.

Reason: The only remaining purpose identified for the installation of a building trap is to keep rats out of the building. However, super rats can swim through the building trap. Hence, the building trap serves no useful purpose. The problem with building traps is that they create a major obstruction to the flow of sewage. As a result, they often cause stoppages. Since the 1960's, it has been recognized that building traps should be eliminated. The code needs to recognize this by deleting the wording requested by certain major cities. These cities should eliminate their requirements for building traps since they are an obstruction to the flow.

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

P197-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1002.6-P-BALLANCO

P198 – 12/13
1003.3 (New), 1003.3.2

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

Revise as follows:

1003.3 Grease interceptors required. A grease interceptor shall be required to receive the drainage from fixtures and equipment with grease-laden waste from food service establishments, such as restaurants, hotel kitchens, bars, factory cafeterias or restaurants, school cafeterias, and clubs. The discharge from a food waste grinder shall not be classified as grease-laden waste and shall not discharge through a grease interceptor.

~~**1003.3.2 Food waste grinders.** Where food waste grinders connect to grease interceptors, a solids interceptor shall separate the discharge before connecting to the grease interceptor. Solids interceptors and grease interceptors shall be sized and rated for the discharge of the food waste grinder. Emulsifiers, chemicals, enzymes and bacteria shall not discharge into the food waste grinder.~~

(Renumber subsequent sections)

Reason: The legacy codes were much clearer in establishing when a grease interceptor is requirement. This text was extracted from the BOCA National Plumbing Code/1993. There are a few changes including the addition of "school cafeterias" to the list and the revision of the facilities to "food service establishments". The other change was the modification of the last sentence to state that the discharge from food waste grinders is not classified as grease laden waste, which was the intent of the legacy codes. The SBCCI Standard Plumbing Code had similar text. The current section 1003.1 and 1003.2 are very unclear as to when grease interceptors are necessary. This will assist the inspector with necessary language for mandating grease interceptors.

The deletion of Section 1003.3.2 will also clarify that food waste grinders are not permitted to discharge through a grease interceptor. This, again, was the intent of the legacy codes. A food waste grinder should never discharge through a grease interceptor. The purpose of a food waste grinder is to pulverize food waste to small enough particles to discharge to the sewer. If a grinder connects to a grease interceptor, the food particles will separate out, defeating the purpose of a food waste grinder. Similarly, if a food waste grinder discharges to a solids interceptor, the food particles will be separated.

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

P198-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3 (NEW)-BALLANCO

P199 – 12
202, 1003.3.4, Chapter 14

Proponent: Rand H Ackroyd, Rand Technical Consulting LLC, representing Rand Technical consulting LLC (rackroyd@comcast.net)

Add new definition as follows:

GREASE INTERCEPTOR.

Fats, Oils, and Greases (FOG) disposal system. A plumbing appurtenance that reduces nonpetroleum fats, oils, and greases in effluent by separation or mass and volume reduction.

Revise as follows:

1003.3.4 Hydromechanical grease interceptors, fats, oils and greases disposal systems and automatic grease removal devices. *Hydromechanical grease interceptors; fats, oils, and greases disposal systems* and *automatic grease removal devices* shall be sized in accordance with ASME A112.14.3 ~~Appendix A~~, ASME 112.14.4, ASME A112.14.6, CSA B481.3 or PDI G101. *Hydromechanical grease interceptors; fats, oils, and greases disposal systems* and *automatic grease removal devices* shall be designed and tested in accordance with ASME A112.14.3 ~~Appendix A~~, ASME 112.14.4, CSA B481.1, PDI G101 or PDI G102. Hydromechanical grease interceptors*; fats, oils, and greases disposal systems* and *automatic grease removal devices* shall be installed in accordance with the manufacturer's instructions. Where manufacturer's instructions are not provided, *hydromechanical grease interceptors; fats, oils, and greases disposal systems* and *automatic grease removal devices* shall be installed in compliance with ASME A112.14.3, ASME 112.14.4, ASME A112.14.6, CSA B481.3 or PDI G101. ~~This section shall not apply to gravity grease interceptors.~~

Add new standard to Chapter 14 as follows:

ASME
A112.14.6-2010 FOG (Fats, Oils, and Greases) Disposal Systems

Reason: ASME A112.14.6 2010 FOG (Fats, Oils, and Greases) Disposal Systems is a National standard(ANSI) It covers performance requirements for both Hydro-mechanical Grease Interceptors and Gravity Grease interceptors. Appendix A is correct reference. New section proposed for Gravity Grease interceptors.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.14.6-2010 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 2, 2012.

P199-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3.4 – P-ACKROYD

P200– 12

202, 1003.3.6 (New), Chapter 14

Proponent: Rand H Ackroyd, Rand Technical Consulting LLC, representing Rand Technical Consulting LLC (rackroyd@comcast.net)

Add new definition to Chapter 2 as follows:

GREASE INTERCEPTORS.

Fats, Oils, and Greases (FOG) disposal systems. Plumbing appurtenances that reduce nonpetroleum fats, oils, and grease (FOG) in effluent by separation, mass and volume reduction.

Add new text as follows:

1003.3.6 Gravity grease interceptors and gravity grease interceptors with fats, oils, and greases disposal systems. The required capacity of *gravity grease interceptors* and *gravity grease interceptors* with *fats, oils, and greases disposal systems* shall be determined by multiplying the peak drain flow into the interceptor in gallons per minute by a retention time of 30 minutes. *Gravity grease interceptors* shall be designed and tested in accordance with IAPMO/ANSI Z100. *Gravity grease interceptors* with *fats, oils, and greases disposal systems* shall be designed and tested in accordance with ASME 112.14.6 and IAPMO/ANSI Z1001. *Gravity grease interceptors* and *gravity grease interceptors* with *fats, oils, and greases disposal systems* shall be installed in accordance with manufacturer's instructions. Where manufacturer's instructions are not provided, *gravity grease interceptors* and *gravity grease interceptors* with *fats, oils, and greases disposal systems* shall be installed in compliance with ASME A112.14.6 and IAPMO/ANSI Z1001.

Add new standards to Chapter 14 as follows:

ASME
A112.14.6-2010 FOG (Fats, Oils, and Greases) Disposal Systems

IAPMO
5001 East Philadelphia Street
Ontario, CA 91761

IAPMO
Z1001 -2007 Prefabricated Gravity Grease Interceptors

Reason: Gravity Grease Interceptors are defined in Chapter 2 and there is a National consensus standard IAPMO/ANSI Z1001-2007. ASME A112.14.6 2010 FOG (Fats, Oils, and Greases) Disposal Systems is a National standard(ANSI) It covers performance requirements for FOG Systems for both Hydro-mechanical Grease Interceptors and Gravity Grease interceptors

Cost Impact: None

Analysis: A review of the standards proposed for inclusion in the code, ASME A112.14.6-2010 and IAPMO Z1001-2007, 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 2, 2012.

P200-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3.6 (NEW)-P-ACKROYD

P201 – 12

1003.3.6 (New), Chapter 14

Proponent: Fred Constantino, American Society of Mechanical Engineers (ASME), representing the ASME A112 Plumbing Materials and Equipment Standards Committee.

Add new text as follows:

1003.3.6 Fats, oils, and greases disposal systems. Fats, oils, greases disposal systems shall be designed and tested in accordance with ASME 112.14.6. Such systems shall be installed in accordance with manufacturer's instructions. Where manufacturer's instructions are not provided, such systems shall be installed in compliance with ASME A112.14.6.

Add new standard to Chapter 14 as follows:

ASME
A112.14.6–2010 FOG (Fats, Oils, and Greases) Disposal Systems

Reason: A FOG (Fats, Oils, and Greases) Disposal System is another type of grease removal device that needs to be included under Section 1003.3. The standard covers the performance requirements for these types of systems and requires that the effluent from such systems be not greater than 100 mg/L FOG as measured by USEPA Method 1664. ASME A112.14.16 is a National standard (ANSI).

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.14.6-2010 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 2, 2012.

P201-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3.6 (NEW)-P-CONSTANTINO

P202 – 12
1003.3.6 (New)

Proponent: Shawn Strausbaugh, Arlington County VA representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (Sstrausbaugh@arlingtonva.us)

Add new text as follows:

1003.3.6 Direct connection. The discharge piping from a grease interceptor shall be directly connected to the sanitary drainage system.

Reason: The contents found within a correctly functioning grease interceptor produce some of the foulest odors in the plumbing system. Many interceptors are typically located directly in the kitchen they serve where the food is being prepared for human consumption. It is not reasonable to have the outlet side of the grease interceptor open to atmosphere in any situation, yet some manufacturers do not prohibit such an arrangement in their installation instructions. Many designers want to extend indirect waste piping to a waste receptacle several feet away in lieu of providing a direct connect for shear convenience. In this situation they have added even more pungent surface area exposed to the interior environment in the food handling operation that serves the public. The code is a minimum standard and it should be minimally expected that grease storage odors should not be present in a restaurant setting.

Cost Impact: None

P202-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3.6 (NEW)-P-STRAUSBAUGH

P203 – 12

1003.3.6 (New), 1003.3.6.1 (New), 1003.3.6.2 (New), 1003.3.6.3 (New), Chapter 14

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Add new text as follows:

1003.3.6 Gravity grease interceptors. Gravity grease interceptors shall be water and gas tight. Interceptors shall be engineered to withstand the load to be placed on the interceptor such as from vehicular traffic. Interceptor capacity shall be not less than 750 gallons (2839 l). Gravity grease interceptors shall comply with IAPMO/ANSI Z1001.

1003.3.6.1 Grease capacity. The grease retention capacity of interceptors in pounds shall be not less than two times the flow-through rate. Grease interceptors for restaurants shall be sized in accordance with Equation 10-1. Grease interceptors for other establishments with commercial kitchens shall be sized in accordance with Equation 10-2. Where a grease interceptor discharges to a private sewage disposal system, the required capacity obtained by Equations 10-1 and 10-2 shall be increased 25 percent.

C = S ● GS ● (HR/12) ● LF ● 0.75 **(Equation 10-1)**

where:

C = Required capacity of grease interceptor in gallons

S = Number of seats in dining area

GS = Gallons of waste water per seat

where:

GS = 25 for restaurants with china dishes or automatic dishwasher
GS = 10 for restaurants with paper plates or baskets and without dishwasher

HR = Number of hours that restaurant is open

LF = Loading factor

where:

LF = 2.00 for interstate highway location
LF = 1.50 for other freeway location
LF = 1.25 recreational areas location
LF = 1.00 for main highway location
LF = 0.75 other highway location

For SI: 1 gallon = 3.8 liters

C = M ● GM ● LF x 0.75 **(Equation 10-2)**

where:

C = Required capacity of grease interceptor in gallons

M = Meals prepared per day

GM = Gallons of wastewater per meal

where:

GM = 5 for all applications

LF = Loading factor

where:

LF = 1.0 for presence of dishwashing machine
LF = 0.75 for without a dishwashing machine

For SI: 1 gallon = 3.8 liters

1003.3.6.2 Interceptor construction. Interceptors shall be prefabricated or field fabricated and shall have not less than one baffle that extends from the bottom of the interceptor to within 6 inches (152 mm)of the top of the interceptor. The baffles shall have an inverted long radius elbow fitting or other approved means equivalent in size to the inlet piping but in no case less than 4 inches (102 mm) in size installed in the inlet compartment side of the baffle with the fitting placed 12 inches (305 mm) above the bottom of the interceptor. The depth of the liquid shall be not less than 42 inches (1067 mm). Compartments shall be provided with access through an opening that is not less than 18 inches (457 mm) square or in diameter.

1003.3.6.3 Inlet and outlet piping. The inlet and outlet piping shall have a two way cleanout tee installed. Inlet piping shall enter at 2 ½ inches (64 mm) above the elevation of the invert of the outlet piping. Inlet piping shall extend to 24 inches (610 mm) below the water level. The outlet pipe shall start at 8 inches (203 mm) above the bottom of the interceptor and extend vertically to a tee. The tee and pipe shall be not less than 4 inches (102 mm) in diameter. The tee shall be installed with the run in the vertical orientation.

Add new standard to Chapter 14 as follows:

IAPMO
5001 East Philadelphia Street
Ontario, CA 91761

IAPMO
Z1001-2007 Prefabricated Gravity Grease Interceptors

Reason: To update the correct standard reference and to provide enforceable uniform criteria for sizing grease interceptors. The current code requires interceptors (for flows exceeding 100 gpm) but lacks enforceable code criteria for sizing interceptors. Similar language has been adopted within statewide codes for Florida and Massachusetts.
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.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, IAPMO Z1001-2007, 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 2, 2012.

P203-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.3.6 (NEW)-P-STRAUSBAUGH.PMGCAC

P204 – 12
1003.4

Proponent: Robert G. Konyndyk, Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan representing The Bureau of Construction Codes. (konyndykr@michigan.gov)

Revise as follows:

1003.4 Oil separators required. At repair garages, car washing facilities, at factories where oily and flammable liquid wastes are produced and in hydraulic elevator pits, separators shall be installed into which all oil-bearing, grease bearing or flammable wastes shall be discharged before emptying into building drainage system or other point of disposal.

> **Exception:** An oil separator is not required in hydraulic elevator pits where an *approved* alarm system is installed<u>. Such alarm systems shall not terminate the operation of pumps utilized to maintain emergency operation of the elevator by firefighters.</u>

Reason: This code change revision will improve the code by addressing life safety issues. Adoption of the American Society of Mechanical Engineers (ASME) A17.1 Edition 2007, Safety Code for Elevators and Escalators, 2.2.2.5, requires elevators for Firefighters Emergency Operation to have a drain or pump capacity to remove 50 gallons per minute. The removal capacity provides consideration for fire suppression discharges. The consideration is to assure elevator operations for life safety matters by having identified discharge capacities and operations. The IPC Commentary discussion mistakenly only considers the subsoil water presence for drainage. This proposed revision assures that approved alarm systems shall not stop the pump operation. The approval should be centered upon an alarm visual and audio notification to the building operator of oil or water presence.

Cost Impact: Construction cost will not be affected by this life safety matter.

P204-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.4-P-KONYNDYK

P205 – 12
1003.4

Proponent: Andy Neuman, Assistant Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan representing The Bureau of Construction Codes.(konyndykr@michigan.gov)

Revise as follows:

1003.4 Oil separators required. At repair garages, car washing facilities, and at factories where oily and flammable liquid wastes are produced ~~and in hydraulic elevator pits,~~ separators shall be installed into which all oil-bearing, grease bearing or flammable wastes shall be discharged before emptying into building drainage system or other point of disposal.

> ~~**Exception:** An oil separator is not required in hydraulic elevator pits where an approved alarm system is installed~~.

Reason: This code change revision will improve the code by correcting overly restrictive text which is addressed by practical elevator preventive maintenance. Adoption of the American Society of Mechanical Engineers (ASME) A17.1 Edition 2007, Safety Code for Elevators and Escalators, 2.2.2.5, requires elevators for Firefighters Emergency Operation to have a drain or pump capacity to remove 50 gallons per minute. The removal capacity provides consideration for fire suppression discharges. The consideration assures elevator operations for life safety matters by having identified discharge capacities and operations.

The IPC Commentary discussion mistakenly only considers the subsoil water presence for drainage. Elevator pits are designed to allow a very minimal amount of subsoil water if any. Additionally elevator pits are generally required to be inspected which would identify the presence of hydraulic fluid. Requiring oil separators for an emergency fire sprinkler discharge is impractical. Further the sizing of an oil separator in this case is not clarified by code. Is it sized by potential amounts? Who can predict the number of head discharges? Is it sized by the floor area per Section 1003.4.2.2? That floor area could be the pit area only or the entire floor area divided by the number of serving elevators.

This proposed revision mirrors concerns expressed by the design community and welcomes any sizing clarification from hearing attendees.

Cost Impact: Construction cost will be reduced by the proposed revision.

P205-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.4-P-NEUMAN

P206 – 12
1003.4

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

1003.4 Oil separators required. At repair garages where floor or trench drains are provided, carwashing facilities, ~~at~~ factories where oily and flammable liquid wastes are produced and ~~in~~ hydraulic elevator pits, oil separators shall be installed into which ~~all~~ oil-bearing, greasebearing or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal.

> **Exception:** An oil separator is not required in a hydraulic elevator pit where an approved alarm system is installed.

Reason: The current text appears to assume that repair garages have floor drains, trench drains or some drains into which oily wastes are being discharged. If a repair garage has no such drains, what is the purpose of an oil separator? The requirement for a separator should be triggered by the presence of fixtures that are a source of oily waste. A repair garage with only a toilet facility has no need for a separator.

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.

Cost Impact: None

P206-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.4-P-STRAUSBAUGH.PMGCAC

P207 – 12
1003.6

Proponent: Jim Kendzel, MPH, CAE, Executive Director/CEO American Society of Plumbing Engineers (ASPE) representing himself (jkendzel@aspe.org)

Revise as follows:

1003.6 ~~Laundries~~ Clothes washer discharge interceptor. ~~Laundry facilities not installed within an individual dwelling unit or intended for individual family use~~ Clothes washers shall discharge through an interceptor that is provided with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids ½ inch (12.7 mm) or larger in size, string, rags, buttons or other materials detrimental to the public sewage system.

Exceptions:

1. Clothes washers in individual dwelling units shall not be required to discharge through an interceptor.
2. A single clothes washer designed for use in individual dwelling units and installed in a location other than an individual dwelling unit shall not be required to discharge through an interceptor.

Reason: The phrase "intended for individual family use" is vague and seems to indicate that a roomful of residential type clothes washing machines in an apartment complex would not require an interceptor. This application is no different from a standalone laundry facility that has multiple residential type clothes washers that would, logically, need an interceptor. The first exception already exists in current code text. The second exception is for the small business establishments such as hair salons, small restaurants, and small apartment buildings where only one dwelling unit-type machine is installed as such use is typically no worse than a family use of the single machine.

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

P207-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.6-P-KENDZEL

P208 – 12
1003.9

Proponent: Shawn Strausbaugh, Arlington County VA, representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region (Sstrausbaugh@arlingtonva.us)

Revise as follows:

1003.9 Venting of interceptors and separators. Interceptors and separators shall be designed so as not to become air bound. ~~where tight covers are utilized. Each~~ Interceptor~~s~~ ~~or~~ and separators shall be vented in accordance with one of the methods of Chapter 9. ~~where subject to a loss of trap seal.~~

Reason: Where subject to a "loss of trap seal." is inaccurate terminology for this application. In many instances we are referring to a tank or large sump that contains a body of water which is not actually a "trap seal" but rather a storage area for some type of contained debris. Venting methods located in Chapter 9 are provided to prevent the occurrence of siphonage and eliminate the potential for a piping system to be subject to a pressure differential of more than 1 inch of water column.

Cost Impact: None

P208-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1003.9-P-STRAUSBAUGH

P209 – 12
202, 1101.2

Proponent: Karen Hobbs, Natural Resources Defense Council, representing herself (khobbs@nrdc.org); Eddie Van Giesen, BRAE Rainwater Technologies, representing himself (vangig@watts.com); Harry Misuriello, American Council for an Energy-Efficient Economy, representing himself (misuriello@verizon.net)

Add new definitions as follows:

RAINWATER: Precipitation on any public or private parcel that has not entered an offsite storm drain system or channel, a flood control channel, or any other stream channel, and has not previously been put to beneficial use.

RAINWATER CAPTURE SYSTEM: A system designed to capture and store rainwater flowing off of a building, parking lot, or any other manmade, impervious surface for the purposes of using the rainwater for beneficial onsite use.

STORMWATER. Precipitation that has contacted a surface at grade or below grade and has not been put to beneficial use.

Revise as follows:

1101.2 Where required. *Rainwater* from ~~all~~ roofs, paved areas, yards, courts and courtyards shall drain onto open, unpaved areas for infiltration or evapotranspiration where such drainage will not cause or contribute to health, geotechnical or other hazards; or rainwater shall drain to a *rainwater capture system*. Where drainage onto open unpaved areas is not possible and a *rainwater capture system* would not provide beneficial use for the building, *rainwater* from ~~all~~ roofs, paved areas, yards, courts and courtyards shall drain into a separate storm *sewer* system, a combined *sewer* system or to an *approved* place of discharge. ~~For one- and two-family dwellings, and where approved,~~ *Storm water* is permitted to discharge onto flat areas, such as streets or lawns, provided that the storm water flows away from the building.

Reason:

1. The costs to repair and replace our nation's aging water infrastructure are enormous, with investment needs of $298 billion or more over the next 20 years, according to the U.S. Environmental Protection Agency (USEPA, 2008; http://water.epa.gov/scitech/datait/databases/cwns/upload/cwns2008rtc.pdf). In 2009, the American Society of Civil Engineers gave the nation's wastewater facilities a grade of D-minus due to their condition (American Society of Civil Engineers, 2009; http://www.infrastructurereportcard.org/sites/default/files/RC2009_full_report.pdf).
2. As NRDC recently documented in its "Rooftops to Rivers II" report (available at http://www.nrdc.org/water/pollution/rooftopsii/files/rooftopstoriversII.pdf), many cities recognize the unnecessary stress to their wastewater systems caused by having roofs and other paved areas draining directly into the sewer system, when other options exist, such as having those same surfaces drain to open, unpaved areas or captured for reuse through a rainwater harvesting system. Cities often require that roofs and paved areas drain into open, unpaved areas where the rainwater can either be infiltrated into the ground, evapotranspirated, or captured for later reuse. Many cities also have mandatory downspout disconnection programs for existing construction and many are considering mandatory downspout disconnections for new construction.
3. There are also a range of benefits that communities accrue when rainwater is either captured or reused. In a study conducted by NRDC and the University of California, Santa Barbara, *A Clear Blue Future* (http://www.nrdc.org/water/lid) found that implementing practices that emphasize on-site infiltration or capture and reuse had the potential to increase local water supplies by up to 405,000 acre-feet per year by 2030 at new and redeveloped residential and commercial properties in Southern California and the San Francisco Bay area. This represents roughly two-thirds of the volume of water used by the entire city of Los Angeles each year. These water savings translate into electricity savings of up to 1,225,500 megawatt-hours—which would decrease the release of carbon dioxide (CO_2) into the atmosphere by as much as 535,500 metric tons per year—because more plentiful local water reduces the need for energy-intensive imported water. And, perhaps most importantly, these benefits would increase every year.

Cost Impact: There is no cost impact to this proposal.

P209-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.2-P-HOBBS

P210 – 12
1101.3

Proponent: Bob Scott and Kye Lehr-Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Revise as follows:

1101.3 Prohibited Drainage. Storm water shall not be drained into sewers only intended for sewage. <u>Storm water shall not discharge onto public walkways.</u>

Reason: Storm water can cause a slip hazard when pooled on walkways. This is especially true in climates where freezing is possible.

Cost Impact: None. The practice of locating storm terminations at approved locations in decided at the design phase.

P210-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.3-P-SCOTT-LEHR

P211 – 12
1101.7

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

Revise as follows:

1101.7 Roof design. Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked. <u>The maximum possible depth of water on the roof shall include the height of the water required above the inlet of the secondary roof drainage means to achieve the required flow rate of the secondary drainage means to accommodate the design rainfall rate as required by Section 1106.</u>

Reason: Quite often, structural engineers are using the lower edge of a secondary roof drain to be the determining factor for establishing the maximum depth of water that can pond on the roof. However, the drain requires a certain head height to achieve a particular flow rate. That additional head height of water adds to the structural load. This change merely clarifies the intent of the current requirement. This change is consistent with the load requirements in the Building Code.

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

P211-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.7-P-BALLANCO

P212 – 12
1101.8 (New)

Proponent: Bob Scott, Kye Lehr and Dennis Gardner, Colorado Department of Regulatory Agencies, Division of Registrations Electrical and Plumbing Boards

Add new text as follows:

1101.8 Heated roof drain discharge termination required. Where the 97.5-percent value for the outdoor design temperature is 0°F (-18°C) or less and the primary roof drain system discharges to a location exposed to such temperature, the piping at the discharge location shall be heated to prevent water freezing and blocking the outlet.

(Renumber subsequent sections)

Reason: In cold climate areas the roof drains will freeze shut at the outlet causing a backup of Ice in the roof drain causing the Ice and water to build up on the roof and in the drain. The problem then is the roof drain freezes solid breaking the pipe causing damage not only to the pipe but to the inside of the building as it thaws and causes an unnecessary buildup of ice and water on the roof causing even more damage when it thaws.

Cost Impact: Low compared to the cost of repair for not making the change to the code.

P212-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.8-P-SCOTT-LEHR-GARDNER

P213 – 12
1101.10 (New)

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute representing self (blevan@mindspring.com)

Add new text as follows:

<u>**1101.10 Inspections.** Where storm drainage piping penetrates a fire resistance rated wall, a fire resistant rated floor or a fire resistant rated ceiling, the piping shall be inspected before and after the installation of fire stopping material to verify that the piping system has not been modified.</u>

Reason: This change is proposed to assure that the installation of the piping is not altered during the installation of fire stopping materials.

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

P213-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.10 (NEW)-P-LEVAN

P214 – 12
Table 1102.5

Proponent: Shawn Strausbaugh representing the ICC PMG Code Action Committee

Revise as follows:

TABLE 1102.5
SUBSOIL DRAIN PIPE

MATERIAL	STANDARD
Polyvinyl chloride (PVC) Plastic pipe (type sewer pipe, <u>SDR 35</u> PS25, PS50 or PS100)	ASTM D 2729; <u>ASTM D 3034</u>; ASTM F 891; CSA B182.2; CSA B182.4

(Portions of table not shown remain unchanged)

Reason: This type of pipe material is readily available in perforated form and should be allowed to be used in the application.

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.

Cost Impact: None

P214-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T1102.5-P-STRAUSBAUGH.PMGCAC

P215 – 12

1102.8 (New)

Proponent: William (Bill) LeVan, Cast Iron Soil Pipe Institute representing self (blevan@mindspring.com)

Add new text as follows:

1102.8 Cast iron soil pipe, fittings and mechanical joint hubless couplings. Upon request by the code official, certificates of conformance shall be provided by the manufacturer to the code official indicating that cast iron pipe, cast iron fittings and mechanical joint hubless couplings are in compliance with Sections 705 and 1102.

Reason: This will ensure the purchaser and/or owner meet or exceed the requirements of the code and manufacturer requirements.

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

P215-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1102.8 (NEW)-P-LEVAN

P216 – 12
1103.1

Proponent: Robert G. Konyndyk, Chief, Plumbing Division, Bureau of Construction Codes, Department of Licensing and Regulatory Affairs, State of Michigan representing The Bureau of Construction Codes (konyndykr@michigan.gov)

Revise as follows:

1103.1 Main trap. Leaders and storm drains connected to a combined sewer shall be trapped. Individual storm water traps shall be installed on the storm water drain *branch* serving each conductor, or a single trap shall be installed in the main *storm drain* just before its connection with the combined *building sewer* or the *public sewer*. <u>Leaders and storm drains connected to a building storm sewer shall not be required to be trapped.</u>

Reason: This code change revision will improve the code by providing greater clarity. Sections 1002.1 and 1103.1 of the code currently address floor drains, leaders, and storm drains connected to combined building sewers. Storm water shall not discharge to sanitary sewers as stated in Section 1101.3. The absence of trap requirement instruction for leader/conductors and storm drains connections to building storm sewer systems has been understood to not require traps to storm sewers. The IPC Commentary for Section 1103.1 states: “Unlike a sanitary system, a storm drainage system is not designed for any precautions against sewer gas.”

This last sentence clarification will provide a logical understanding of the subject. Further it is my understanding that text addressing the overall subject matter is preferred to be within the section body rather than using an exception.

Cost Impact: Construction cost will be reduced by providing greater understanding of proper trap requirements when building storm sewers are utilized.

P216-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1103.1-P-KONYNDYK

P217– 12
1104.2

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

Delete without substitution:

~~**1104.2 Combining storm with sanitary drainage.** The sanitary and storm drainage systems of a structure shall be entirely separate except where combined *sewer* systems are utilized. Where a combined *sewer* is utilized, the building *storm drain* shall be connected in the same horizontal plane through a single-wye fitting to the combined *sewer* not less than 10 feet (3048 mm) downstream from any soil *stack*.~~

Reason: The section on combined sanitary and storm systems implies that the two systems are combined inside the building. A companion code change will require the connection to be independent to the public sewer. This allows the separation of systems when separate sewer systems are added in the future to the public system.

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

P217-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1104.2-P-BALLANCO

P218 – 12
1105.2 (New)

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

Add new text as follows:

1105.2 Roof drain flow rate. The published roof drain flow rate based upon the head of water above the roof drain shall be used to size the storm drainage system in accordance with Section 1106. The flow rate used for sizing the storm drainage piping shall be based on the maximum anticipated ponding at the roof drain.

(Renumber subsequent sections)

Reason: The code currently requires the storm drainage system to be sized based on the roof area. The sizing never considered the flow rate through a roof drain, nor the ponding around the roof drain required to achieve that flow rate. A study by the ASPE Research Foundation discovered that the flow rates through roof drain vary based on the design of the roof drain. The study also found that for certain roof drains, there were different flow rates depending on which strainer was installed. As a result, some smaller drains are allowing more water through the drain than the pipe is designed to handle under open channel flow.

The only proper way to size a storm drainage system is to apply the known flow rates through the roof drain such that the piping is properly sized. Without knowledge of the flow rate through a roof drain, a storm drainage system can be either undersized or oversized.

Cost Impact: This change will increase the cost of construction.

P218-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1105.2 (NEW)-P-BALLANCO

P219 – 12

1106.2, Table 1106.2 (New), Table 1106.2(1), Table 1106.2(2), 1106.3, Table 1106.3 (New), 1106.6, Table 1106.6

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

Revise as follows:

~~**1106.2 Vertical conductors and leaders.** Vertical conductors and leaders shall be sized for the maximum projected roof area, in accordance with Table 1106.2(1) and Table 1106.2(2).~~

~~**TABLE 1106.2(1)**~~
~~**SIZE OF CIRCULAR VERTICAL CONDUCTORS AND LEADERS**~~

~~**TABLE 1106.2(2)**~~
~~**SIZE OF RECTANGULAR VERTICAL CONDUCTORS AND LEADERS**~~

~~**1106.3 Building storm drains and sewers.** The size of the building *storm drain*, building storm *sewer* and their horizontal branches having a slope of one-half unit or less vertical in 12 units horizontal (4-percent slope) shall be based on the maximum projected roof area in accordance with Table 1106.3. The slope of horizontal branches shall be not less than one-eighth unit vertical in 12 units horizontal (1-percent slope) unless otherwise *approved*.~~

~~**TABLE 1106.3**~~
~~**SIZE OF HORIZONTAL STORM DRAINGE PIPING**~~

1106.2 Size of storm drain piping. Vertical and horizontal storm drain piping shall be sized based on the flow rate through the roof drain. The flow rate in storm drain piping shall not exceed that specified in Table 1106.2.

TABLE 1106.2
STORM DRAIN PIPE SIZING

PIPE SIZE (inches)	CAPACITY (gpm)				
	VERTICAL DRAIN	SLOPE OF HORIZONTAL DRAIN			
		1/16 inch per ft	1/8 inch per ft	¼ inch per ft	½ inch per ft
2	34	15	22	31	44
3	87	39	55	79	111
4	180	81	115	163	231
5	311	117	165	234	331
6	538	243	344	487	689
8	1,117	505	714	1,010	1,429
10	2,050	927	1,311	1,855	2,623
12	3,272	1,480	2,093	2,960	4,187
15	5,543	2,508	3,546	5,016	7,093

1106.3 Vertical leader sizing. Vertical leaders shall be sized based on the flow rate from horizontal gutters or the maximum flow rate through roof drains. The flow rate through vertical leaders shall not exceed that specified in Table 1106.3.

TABLE 1106.3
VERTICAL LEADER SIZING

SIZE OF LEADER (inches)	CAPACITY (gpm)
2	30
2 × 2	30
1½ × 2½	30
2½	54
2½ × 2½	54
3	92
2 × 4	92
2½×3	92
4	192
3 × 4¼	192
3½×4	192
5	360
4 × 5	360
4½ × 4½	360
6	563
5 × 6	563
5½ × 5½	563
8	1208
6 × 8	1208

1106.6 Size of roof gutters. ~~The size of semicircular gutters shall be based on the maximum projected roof area in accordance with Table 1106.6.~~ Horizontal gutters shall be sized based on the flow rate from the roof surface. The flow rate in horizontal gutters shall not exceed that specified in Table 1106.6.

~~**TABLE 1106.6**~~
~~**SIZE OF SEMICIRCULAR ROOF GUTTERS**~~

TABLE 1106.6
HORIZONTAL GUTTER SIZING

GUTTER DIMENSIONS[a] (inches)	SLOPE (inch/foot)	CAPACITY (gpm)
1½ × 2½	1/4	26
1½ × 2½	1/2	40
4	1/8	39
2¼ × 3	1/4	55
2¼ × 3	1/2	87
5	1/8	74

4 × 2½	1/4	106
3 × 3½	1/2	156
6	1/8	110
3 × 5	1/4	157
3 × 5	1/2	225
8	1/16	172
8	1/8	247
4½ × 6	1/4	348
4½ × 6	1/2	494
10	1/16	331
10	1/8	472
5 × 8	1/4	651
4 × 10	1/2	1055

a. Dimensions are width by depth for rectangular shapes.
Single dimensions are diameters of a semicircle.

Reason: The ASPE Research Foundation completed a research project on the flow rates through roof drains. What was uncovered was the fact that storm drainage systems have been improperly designed since the code requirements inception. The code requirements date back to the original National Plumbing Code recommendations from the National Bureau of Standards published in 1940. The current code assumes that the water will gradually flow to a roof drain and flow into the piping, never to exceed the amount of flow permitted in the drain.

What is occurring is the rain water flows at different rates depending on the pitch of the roof. The more ponding of water at the roof drain, the greater the quantity of flow through the roof drain. The research discovered that for smaller roof drains, the roof drain often allowed a much greater quantity of water to flow in the drain than is permitted by pipe sizing. The end result is the storm drain becomes a pressurized piping system. There are many occurrences of pipe failures resulting from storm drainage piping blowing apart inside the building. This can be attributed to improper sizing of the storm drainage system. Either a smaller roof drain was required, or a larger storm drain pipe.

By changing the method of sizing, the flow through the roof drain is finally considered when sizing the piping system. This is no different than sizing a sanitary drainage system whereby the system is sized based on the flow rate from a given fixture drain.

There is no need to indicate roof areas since the slope and shape of the roof will impact the sizing of the storm drainage system. An engineer will have to evaluate the amount of ponding around the roof drain during a 100 year storm of one hour duration. Once the ponding is known, the drain can be selected based on the flow rate of that particular drain. The piping is then sized based on the flow through the roof drain.

The sizing for all of the tables was taken from the ASPE Sizing Tables Application. Schedule 40 PVC was used for the pipe sizes, with the exception of 5 inch. Cast iron was used to develop the 5 inch numbers. The flow rates are maximum flows using one third full for the stacks and full flow for the horizontal drains. One third full stacks was identified by the National Bureau of Standards as a flow amount that will assure open channel flow in the piping system.

Gutter sizing was also taken from the ASPE Sizing Table Application.

The ASPE Research Foundation report has not been published as of the date of code change submittal deadline. However, the testing has been completed. The flow rate through roof drains varies with manufacturer, type of strainer, and head height. There is no one size fits all result from the testing. An engineer must know the flow through the roof drain they select in order to properly size the system.

Cost Impact: This change will increase the cost of construction.

P219-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1106.2-P-BALLANCO

P220 – 12
1108.1

Proponent: Bob Adkins, Prince William County VA Representing, the Virginia Plumbing and Mechanical Inspectors Association and The Virginia Building Code Officials Association and ICC Region 7 (radkins@pwcgov.org)

Revise as follows:

1108.1 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. <u>Where primary and secondary roof drains are manufactured as a single assembly, the inlet and outlet for each drain shall be independent.</u>

Reason: Fittings are available today to accomplish a single roof penetration and provide both a primary drain and a secondary roof drain. This added text will assure compliance is met with Section 1108.2 to maintain separate primary and secondary systems.

Cost Impact: None

P220-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1108.1-P-ADKINS

P221 – 12
1108.3

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

Revise as follows:

1108.3 Sizing of secondary drains. Secondary (emergency) roof drain systems shall be sized in accordance with Section 1106 based on the rainfall rate for which the primary system is sized ~~in Tables 1106.2(1), 1106.2(2), 1106.3 and 1106.6~~. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall have an opening dimension of not less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

Reason: This is a companion change to the change to Section 1106. There is no need to reference the tables in Section 1106. By merely referencing the section, the code adequately identifies the requirements for sizing the secondary drainage system.

P221-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1108.3-P-BALLANCO

P222 – 12
1110, 1110.1

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

Delete without substitution:

~~SECTION 1110~~
~~VALUES FOR CONTINUOUS FLOW~~

~~**1110.1 Equivalent roof area.** Where there is a continuous or semicontinuous discharge into the building *storm rain* or building storm *sewer*, such as from a pump, ejector, air conditioning plant or similar device, each gallon per minute (L/m) of such discharge shall be computed as being equivalent to 96 square feet (9 m2) of roof area, based on a rainfall rate of 1 inch (25.4 mm) per hour.~~

Reason: This is a companion change to the change in sizing in Section 1106. Since the new sizing method uses gpm for sizing, there is no need to convert numbers for adding values for continuous flow. The gpm is simply added to the rainfall gpm.

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

P222-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1110-P-BALLANCO

P223– 12
1302.2, Chapter 14

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

Revise as follows:

1302.2 Disinfection and treatment. ~~Gray water shall be disinfected by an approved method that employs one or more disinfectants such as chlorine, iodine or ozone that are recommended for use with the pipes, fittings and equipment by the manufacturer of the pipes, fittings and equipment.~~ Gray water shall be disinfected and treated by an on-site water reuse treatment system complying with NSF 350.

Add new standard to Chapter 14 as follows:

NSF
350-2011 Onsite Residential and Commercial Water Reuse Treatment Systems

Reason: In addition to microbiological contaminants that need disinfection, gray water contains organic compounds, suspended solids, turbidity, surfactants, and other contaminants that have the potential to accumulate and negatively impact the functioning of water closets and urinals if not treated properly. NSF/ANSI-350 *Onsite Residential and Commercial Water Reuse Treatment Systems* establishes the minimum materials, design and construction, and performance requirements for systems that disinfect and treat gray water for non-potable reuse applications, including flushing water for closets and urinals. Rigorous testing with gray water as defined by the standard ensures the treatment systems meet strict effluent quality requirements suitable for reuse applications, along with providing protection of public health and the environment. NSF 350 is currently referenced in the IGCC and IAPMO Green Supplement. Copies of this document may be obtained from the proponent.

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

Analysis: A review of the standard proposed for inclusion in the code, NSF 350-2011, 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 2, 2012.

P223-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1302.2-P-BROWN

P224 – 12
1302.4

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

Revise as follows:

~~**1302.4 Coloring.** The gray water shall be dyed blue or green with a food grade vegetable dye before such water is supplied to the fixtures.~~

Reason: This is an archaic requirement that dates back to when gray water was first considered for flushing water closets and urinals. The reason for abandoning the practice was because the dye stained building components when there was splashing of the dyed gray water. The means of identifying gray water is the purple coloring of the piping system.

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

P224-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1302.4-P-BALLANCO

P225_ – 12
1308.1.1 (New), Chapter 14

Proponent: Lorri Grainawi, STI/SPFA Representing the Steel Tank Institute / Steel Plate Fabricators Association (lgrainawi@steeltank.com)

Add new text as follows:

1308.1.1 Design and construction. Reservoirs shall be designed and constructed in accordance with Chapters 16 through 22 of the International Building Code and in accordance with the following standards as appropriate for the material of the reservoir: AWWA D100, AWWA D115, AWWA D120, UL 58, UL 1746, UL 1316, UL 142, API 12F or API 12D.

Add new standards to Chapter 14 as follows:

American Petroleum Institute
1220 L Street, NW
Washington, DC 20005

API

API 12F-2008	Specification for Shop Welded Tanks for Storage of Production Liquids, effective April 1, 2009
API 12D-2008	Specification for Field Welded Tanks for Storage of Production Liquids, effective April 1, 2009

AWWA

D100-05	AWWA Standard for Welded Carbon Steel Tanks for Water Storage
D115-06	AWWA Standard for Tendon Prestressed-Concrete Water Tanks
D120-09	AWWA Standard for Thermosetting Fiberglass-Reinforced Plastic Tanks

UL

UL 58-1996	Steel Underground Tanks for Flammable and Combustible Liquids with revisions through July 27, 1998
UL 1746-2007	External Corrosion Protection Systems for Steel Underground Storage Tanks
UL 1316-1994	Glass-Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol Gasoline Mixtures with revisions through May 12, 2006
UL 142-2006	Steel Aboveground Tanks for Flammable and Combustible Liquids with revisions through February 12, 2010

Reason: The Steel Tank Institute is proposing the above language in response to the fact that there are no specific references to allow the designer the ability to directly reference the appropriate provisions for the design and construction of reservoirs.

In addition, we would note that the graywater and rainwater reservoir market today is unregulated. We have experienced this through the number of communications to the Institute, were it has been found that the inquiries were citing an inconsistent application for the design and construction of reservoirs.

Our position is that some form of structural provisions needs to be incorporated in order to ensure that this subject is, at the very least, addressed. These provisions are not intended, nor do they, favor one or more materials or types of constructions of reservoirs. We simply feel that basic structural and foundation provisions of the International Building Code should be used to provide for the safe storage and installation of reservoirs holding gray water and rainwater.

With respect to the listing of standards, STI has simply employed those standards used in other applications, such as automatic fire suppression reservoirs and fuel tank reservoirs. Unfortunately, until either these standards are enhanced, or new standards are created, to handle gray water and rain water applications we felt these the most appropriate since they do cover the structural design of a reservoir.

Cost Impact: We do not anticipate significant additional costs.

Analysis: A review of the standards proposed for inclusion in the code, API 12F-2008, API 12D-2008, AWWA D100-05, AWWA D115-06, AWWA D120-09, UL 58-1996, UL 1746-2007, UL 1316-1994 and UL 142-2006, 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 2, 2012.

P225-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1308.1.1-P-GRAINAWI

P226 – 12
Table E202.1

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

Revise as follows:

TABLE E202.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION TUBING

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

For SI: 1 ounces = 0.030 liter

Reason: This proposal simply adds two more commonly used water distribution piping and tubing materials to this table in order to make the table more useful to designers.

Cost Impact: None

P226-11

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

TE202.1-P-CUDAHY

P227 – 12
Table E202.1

Proponent: Larry Gill, P.Eng. IPEX USA LLC (larry.gill@ipexna.com)

Revise as follows:

TABLE E202.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION PIPING

OUNCES OF WATER PER FOOT OF TUBE							
Size Nominal Inch	Copper Type M	Copper Type L	Copper Type K	CPVC CTS SDR 11	CPVC SCH 40	Composite ASTM F 1281	PEX CTS SDR 9, <u>PE-RT SDR 9</u>

(Portions of table not shown remain unchanged.)

Reason: Revise the table to include polyethylene of raised temperature (PE-RT) (same dimensions as PEX). All dimensions in the table remain unchanged.

Cost Impact: The proposed change will not increase the cost of construction

P227-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

TE202.1-P-GILL

P228 – 12
202

THIS CODE CHANGE PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE HEARING ORDER FOR THE IBC STRUCTURAL DEVELOPMENT COMMITTEE.

Proponent: John Ingargiola and Gregory Wilson, representing Department of Homeland Security, Federal Emergency Management Agency (john.ingargiola@dhs.gov, gregory.p.wilson@dhs.gov) and Rebecca Quinn, RCQuinn Consulting, Inc., representing Federal Emergency Management Agency (rcquinn@earthlink.net).

Revise as follows:

[B] DESIGN FLOOD ELEVATION. The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard map. <u>In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building's* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).</u>

Reason: This definition is controlled by the IBC; this proposal brings the IPC, IMC, IFGC, and IPSDC definitions in line with the term as defined by the IBC.

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

P228-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-PSD-DESIGN FLOOD ELEVATION-INGARGIOLA-WILSON-QUINN.doc

P229 – 12
505.8.2

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

Revise as follows:

505.8.2 Soldered joints. Solder joints between copper pipe or tubing and fittings shall be made in accordance with the methods of ASTM B 828 with the following sequence of joint preparation and operation: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cooling and cleaning. ~~All cut~~ The ends of pipe or tub~~e~~ing shall be cut square and shall be reamed to the full inside diameter of the pipe or tub~~e~~ing. ~~end.~~ Burrs on the outside end of the pipe or tubing shall be removed. ~~All~~ Joint surfaces to be soldered shall be cleaned bright by manual or mechanical means. ~~A~~ Flux conforming to ASTM B 813 shall be applied to the pipe or tubing and fittings. Such flux shall be noncorrosive and nontoxic after soldering. ~~be applied.~~ Pipe or tubing shall be inserted to the base of the fitting. Excess flux shall be removed from the exterior of the joint. The assembled joint shall be supported to create a uniform capillary space around the joint. An LP gas or acetylene air /fuel torch shall be used to apply heat to the assembled joint. The heat shall be applied with the flame perpendicular to the pipe or tubing. The flame shall be moved alternately between the fitting cup and the pipe or tubing. Solder in compliance with ASTM B 32 shall be applied to the joint surfaces until capillary action draws the molten solder into the cup of the fitting. ~~The joint shall be soldered with a solder conforming to ASTM B 32.~~ The soldered joint shall not be disturbed until cool. Remaining flux residue shall be cleaned from the exterior of the joint.

Reason: The above proposal provides important language from the standards to aid the end user.

Cost Impact: None

P229-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

505.8.2-P-FEEHAN

P230 – 12
1101.3 (New), Chapter 14

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

Add new text as follows:

1101.3 Residential water reuse treatment systems. Where gray water or wastewater is treated to produce water for non-potable reuse applications, such treatment systems shall comply with NSF 350.

Add new standard to Chapter 14 as follows:

NSF
350-11 Onsite Residential and Commercial Water Reuse Treatment Systems

Reason: NSF 350 *Onsite Residential and Commercial Water Reuse Treatment Systems* was newly adopted in 2011 as an American National Standard, establishing the minimum materials, design and construction, and performance requirements for systems that treat residential gray water or combined wastewater for non-potable reuse applications, including flushing water for closets and urinals, irrigation and other. Rigorous testing as defined by the standard ensures the treatment systems meet strict effluent quality requirements suitable for reuse applications, along with providing protection of public health and the environment. NSF 350 is currently referenced in the IGCC and IAPMO Green Supplement.

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

Analysis: A review of the standard proposed for inclusion in the code, NSF 35-11 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 2, 2012.

P230-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1101.3-PSD-BROWN