Minnesota Plumbing Board

ORDER ADOPTING RULES

Adoption of Rules Governing the Minnesota Plumbing Code, Minnesota Rules, chapter 4714; Revisor's ID Number R-04633, OAH docket number 60-9045-36860

BACKGROUND INFORMATION

1. The Minnesota Plumbing Board has complied with all notice and procedural requirements in Minnesota Statutes, chapter 14, Minnesota Rules, chapter 1400, and other applicable law. The Board authorized proposing the rules at its meeting on October 15, 2019, a quorum was present and a two-thirds or more majority of all voting members voted in favor of the motion. A copy of the Board's October 15, 2019, meeting minutes is attached as Attachment A.

2. The agency received 4 written comments and submissions on the rules. No persons requested a public hearing. Therefore, there are not 25 or more requests for a public hearing. The agency received no requests for notice of submission to the Office of Administrative Hearings.

3. The 2018 Uniform Plumbing Code is referred to as "UPC."

4. The Board approved Revisor's rule draft dated 12/17/21, with changes, at the January 19, 2021, Board meeting by a two-thirds or more majority vote of all voting members. A 1/22/21 copy of the proposed rules includes all the approved amendments as indicated below and is attached and incorporated into this order as Exhibit B.

4. The Board is making the following corrective amendments to its proposed rules as published with the Notice on the Board's website. Relevant excerpts are provided below.

A. 4714.0313 HANGERS AND SUPPORTS.

Line 4.17: adds a reference to footnote 4. The proposed rules amend Table 313.3 by adding footnote number 6 and references to footnote number 6. Table 313.3 of the 2018 UPC at line "Cast-Iron Hubless," column "Horizontal" references footnotes 1, 2, 3 and 4. The Board did not intend to remove this reference to footnote 4. The reference to footnote 4 was inadvertently dropped in the drafting process. This amendment corrects the unintended removal of the reference to footnote 4.

B. 4714.1101 GENERAL

Subpart 5. ~~**Sections**~~ **Subsections** ~~**1101.12.2.1, 1101.12.2.2,**~~ **1101.12.2.2.1~~,~~ and 110112.2.2.2.** UPC subsections ~~1101.12.2.1, 1101.12.2.2,~~ 1101.12.2.2.1~~,~~ and 110112.2.2.2 are deleted in their entirety.

The proposed rule amended this subpart to reflect the renumbering that occurred between the 2012 UPC and the 2018 UPC. However, the proposed rules also amend subsections 1101.12.2.1 (Primary Roof Drainage) and 1101.12.2.2 (Secondary Drainage). As a result of renumbering and the proposed amendments, the reference to subsections 1101.12.2.1 and 1101.12.2.2 as deleted portions was not initially correct. This amendment corrects the unintended inclusion of these subsections that are newly amended in the proposed rule.

C. Repealer.

Line 55.4: adds rule part 4714.0421 to the list of repealed rule parts. The changes made to the UPC in part 4714.0421 are now in rule part 4714.0407, subp. 1, as a result of renumbering. It is included in the proposed rule at lines 8.6 through 8.11 of the 1/22/21 draft of the rule. See Attachment B. Section 421 of the 2018 UPC addresses floor sinks and does not need amendment for Minnesota.

5. The rules are needed and reasonable.

6. A copy of the board's authorization to adopt the rules is attached.

ORDER

The above-named rules, in the form published in the State Register on October 26, 2020, with the modifications as indicated in the Revisor's draft, file number AR4633, dated January 22, 2021, are adopted under my authority in Minnesota Statutes, sections 326B.43, subd. 1, and 326B.435, subd. 2.

03/02/2021
Date

Richard Jacobs, Chair
Minnesota Plumbing Board

Meeting Minutes: Plumbing Board

Date: October 15, 2019
Time: 9:30 a.m.
Minutes by: Lyndy Logan
Location: Minnesota Room, Department of Labor and Industry
443 Lafayette Road No., St. Paul, MN 55117-4344

Members
Michael Dryke – via teleconference
Kent Erickson
John Flagg (Vice Chair)
Mike Herman (Secretary) – via teleconference
Rick Jacobs (Chair)
Justin Parizek
Phillip Sterner
Cathy Tran (DLI Commissioner's Designee)
David Weum (DOH Commissioner's Designee)

Members Absent
Richard Becker
Jeff Brown
David Wagner

DLI Staff & Visitors
Suzanne Todnem (Gen. Counsel, DLI)
Lyndy Logan (DLI)
Jim Peterson (DLI)
Jim Lungstrom (DLI)
Brad Jensen (DLI)
John Roehl (DLI)
Matt Marciniak (IAPMO)
Adam Hanson (ABC)
Mike Johnson (J-Berd)
Gary Thaden (MMCA)
Scott Thompson (My Plumbing Training)
Jennifer Schaff (County Materials Corp)
Chris Soderholm (Water Control Corp)
John Parizek (ASSE International)
Nick Erickson (Housing First MN)
Tim Power (MNLA)
Jim Grothaus (Hancock Concrete)
Kirk Ellis (Speedway LLC)
Dan Olson (Speedway counsel)
Jeff Hill (MWQA)
Jason Kruger (MN Concrete Pipe Assoc.)

1. Call to Order

The meeting was called to order by Chair Jacobs at 9:44 a.m. Roll call was taken by John Flagg; a quorum was declared with 7 of 11 voting members, and one non-voting member, present in person or via teleconference. (Phil Sterner joined the meeting at 10:11 a.m. resulting in 8 of 11 members present in person or via teleconference).

2. Approval of meeting agenda

A motion was made by Herman, seconded by Erickson, to approve the agenda as presented. The roll call vote was unanimous with 7 votes in favor; the motion carried.

3. Approval of previous meeting minutes

A motion was made by Flagg, seconded by Erickson, to approve the August 29, 2019, special meeting minutes with a correction to Larry Justin to read (MN FASPE) and to add "Attachment A" to pages 3 to 22, as presented. The roll call vote was unanimous with 7 votes in favor; the motion carried.

4. Regular Business

Approval of expense reports – Jacobs approved the expenses as presented.

5. Committee Reports

A. Department Updates

None

B. Executive Committee

The Committee met this morning and advised the Chair on the Board's agenda.

C. Construction Codes Advisory Council

The CCAC's next meeting is October 21, 2019 @ 9:30 a.m.
Representative: Mike Herman
Alternate: John Flagg

6. Special Business

A. Request for Final Interpretation (RFI) – PB0141 – Daniel R. Olson – section 709.1 – See Attachment A

Phil Sterner joined the meeting at 10:11 a.m. during the following discussion, resulting in 8 of 11 members present in person or via teleconference.

Kirk Ellis, Sr. Project Manager, Speedway LLC and Dan Olson, Legal Counsel, Bassford Remele, P.A., introduced themselves and Mr. Olson addressed the Board.
Mr. Olson summarized Speedway's RFI and position to the Board including their interpretation of "where practicable" in section 709.1, which considers factors such as comparative cost of installing a gravity system versus installing a pump system and safety of the surrounding area during installation of a gravity system. Mr. Olson described their situation which involves single-cup brewing machines that have a cleaning function that would drain 4-5 gallons of waste a day and Speedway would like to use a pump system instead of adding a gravity system that involves cutting into the floor to trench the gravity drain. Speedway's position is that because a pump system is a safe and less expensive alternative to a gravity drain, gravity drainage is not "practicable." Mr. Olson offered to respond to any questions of Board members. Tran clarified that Speedway is proposing a standpipe receptor that would receive waste indirectly from the coffee machine; the issue is how the proposed standpipe is being connected to the building drainage system, a pump system rather than gravity flow. The Department advised Speedway that the code requires this standpipe to drain by gravity but Speedway disagrees and has submitted this RFI to the Board. Discussion followed regarding the intent of the code, what factors are appropriate to consider

when determining when gravity drainage is “practicable,” who makes that determination, and outcomes of the different interpretations offered by Speedway and the Department.

Concern was raised that if pumps were allowed for one fixture, it could lead to multiple fixtures using pumps for any remodel work, and therefore multiple pumps will be installed when gravity is available. Pumps are not the preferred drainage method; gravity is and the code reflects this. Pumps are mechanical equipment and can fail and result in much higher costs than installing gravity drainage. The Board was reminded by Todnem that they are not approving or disapproving any particular product, configuration, or construction plan, and the Board should focus on interpreting the selected code language. Whether Speedway’s specific circumstances renders gravity drainage practicable or not practicable is an enforcement determination and the Board does not have enforcement authority.

The Board discussed extensively what factors determine whether gravity drainage is “practicable” or not in the code. Such a determination must be made on a case-by-case basis by the Authority Having Jurisdiction. Acceptable factors to be considered in determining whether gravity drainage is “practicable” include geological conditions, structural integrity of the building, and compliance with other regulations. Safety of the construction site is the contractor’s responsibility and should not be used to determine if gravity drainage is “practicable.” Sometimes it will be necessary to move things to install gravity drainage, such as cabinets and other obstacles to get to the plumbing system; the AHJ determines at what point it is no longer “practicable” to move things and require gravity drainage. Section 710 of the Plumbing Code offers relevant context for section 709. Section 710 provides requirements for when pump systems are used and limits pump use to fixtures that are below the crown level of the main sewer. Where gravity drainage is available, gravity drainage should be used. Under section 709.1, a sump pump system would be allowed when gravity is available but on a limited basis.

Jacobs said he has never believed a pump to be a good idea unless there were no other options. “Where practicable” means if it can happen, then it should happen. Herman said it needs to be a gravity drain feature due to the way the code is written. The current code does not allow for pumps when gravity is available.

Tran asked if section 709.1 allows for sump pump systems when gravity flow is available, and Jacobs replied no – when gravity is available it flows by gravity. Weum replied “rarely.” Tran added that section 709.1 of the Plumbing Code should be interpreted on a case by case basis, as determined by the AHJ but the code requires gravity. Jacobs reiterated that if it can flow by gravity, it must flow by gravity, as it pertains to the plumbing system. Jacobs agreed with Tran – section 709 indicates a case by case basis as determined by the AHJ.

Parizek said only the plumbing system is in question to define practicable, not the plans. The code said if a fixture must be drained by gravity then it must be drained by gravity and any other approved fixture must be approved by the AHJ.

The primary factor in whether gravity drainage is “practicable” or “reasonably capable of being accomplished” is the plumbing system capabilities, while recognizing there are other factors to consider. The determination must be made by the AHJ with the assumption that gravity drainage should be used. The Board considered what was asked in the RFI. Because the Board does not have enforcement authority, the question in the RFI was modified to be limited to code interpretation and not take an enforcement position regarding Speedway’s circumstances.

The Board answered the following question stated in the Request for Interpretation:

Question: **Given that the definition of "practicable" is "reasonably capable of being accomplished," does the Plumbing Code require drainage by gravity system where such an installation is unreasonably expensive to the landowner and avoidably dangerous to patrons when a safe, sanitary, proven alternative exists?**

Answer: **Yes. Plumbing fixtures that can flow by gravity must flow by gravity. Section 709.1 offers an alternative on a case by case basis. Code conformance for existing buildings is described in Chapter 4714.0101, Subp. 3.**

A motion made by Flagg, seconded by Sterner, to authorize the Chair to prepare a Final Interpretation, as described above, and include a memorandum explaining the Board’s decision. The roll call vote was unanimous with 8 votes in favor; the motion carried.

B. Review Plumbing Board Bylaws and proposed amendments – See Attachment B
A motion was made by Sterner, seconded by Flagg, to accept proposed amendments. The roll call vote was unanimous with 8 votes in favor; the motion carried. **[Executive Committee was dissolved]**

C. Discuss 2018 Uniform Plumbing Code: Review “Ad Hoc Code Review and Rulemaking Committee 2018 UPC Recommendations to the Board” (Attachment C) and “Board Review of 2018 UPC RFAs” (Attachment D) documents and related RFAs; Board to consider granting rulemaking authorization to Chair

A motion was made by Flagg, seconded by Erickson, to authorize the Board Chair to open rulemaking of possible amendments to chapter 4714 to adopt the 2018 UPC with amendments accepted by the Board. The roll call vote was unanimous with 8 votes in favor; the motion carried.

D. **Training: Open Meeting Law, Data Practices, and Records Retention – This was tabled until Jan. 21, 2020.**

7. Complaints

Nothing to report.

8. Open Forum

9. Correspondence

10. Board Discussion

None

11. Announcements

Next regularly scheduled meeting in 2020 – all meetings will be held at 9:30 a.m. in the Minnesota Room. The Board accepted the amendment in the Bylaws to dissolve the Executive Committee.

A. January 21, 2020

12. Adjournment

A motion was made by Sterner, seconded by Flagg, to adjourn the meeting at 2:43 p.m. The roll call vote was unanimous with 8 votes in favor of the motion; the motion passed.

Respectfully submitted,

Mike Herman

Mike Herman, Board Secretary

Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344
www.dli.mn.gov

Plumbing Board
Request for Interpretation

PRINT IN INK or TYPE

NAME OF SUBMITTER	Rule(s) to be interpreted (e.g., 4714.0330)
Speedway LLC	709.1

The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at www.dli.mn.gov/CCLD/PlumbingCode.asp

Has a request for interpretation been submitted to Department of Labor and Industry (DLI) staff, either as a verbal request or a written request? ☒ Yes ☐ No

If "No," contact DLI staff at 651-284-5187. The DLI is responsible for administration and interpretation of the Minnesota Plumbing Code, and all requests must be processed and provided a DLI interpretation before being referred to the Plumbing Board. This form is intended to be used to request an interpretation from the Plumbing Board only as a resolution of dispute with DLI interpretation.

Code/Rule to be interpreted:	Name of DLI employee gave interpretation:	Date interpretation originally requested:
709.1	Cathy Tran	8/27/2019

Provide a copy of the DLI interpretation with this request (a copy must be provided as reference).

Is there a local dispute with an Inspector of other official?	If Yes, state the name or type of official
☐ Yes ☒ No	N/A

State the circumstances of the initial dispute:
Please see the attached letter from counsel.

Explain what you disagree with the interpretation given to you by DLI staff:
Please see the attached letter from counsel.

What is your interpretation of the language:
Please see the attached letter from counsel.

List any other information you would like the Board to consider:
Please see the attached letter from counsel.

Information regarding submitting this form:

- Submit any supporting documentation to be considered electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Interpretation form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.

Information for presentation to the Committee:

- You will be notified with the date of the Committee Meeting in which your Request For Interpretation will be heard.
- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the Code, the circumstances that led to the dispute and please bring copies of any documentation.

What you can do if you disagree with the Board's determination:

- You may appeal the Board's determination pursuant to Minn. Stat. Chapter 14.

Office Use Only			
RFI File No. PB0141	Date Received by DLI 9.13.2019	Dated Received by Board	Date of Board Meeting 10.15.2019
Title of RFI	By:		

This material can be made available in different forms, such as large print, Braille or on a tape. To request, call 1-800-342-5354 (DIAL-DLI).

Submitted by:

NAME		FIRM NAME		
Daniel R. Olson		Bassford Remele, P.A.		
ADDRESS		CITY	STATE	ZIP CODE
100 South Fifth Street, Suite 1500		Minneapolis	MN	55402
PHONE	SIGNATURE (original or electronic)	DATE		
612-746-1095	/s/ Daniel R. Olson	9/13/2019		

For assistance or questions on completing this form, please call 651-284-5898 or 651-284-5889.

Mailing address:

Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344

***** Please remember to attach all necessary explanations and supporting documentation*** Page 2 of 2**

BASSFORD REMELE

DANIEL R. OLSON
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September 13, 2019

VIA EMAIL AND U.S. MAIL

Minnesota Plumbing Board
c/o Minnesota Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344
dli.ccldboard@state.mn.us

Re: *Request for Interpretation by Speedway LLC*
Our File No.: 5945-1

Dear Minnesota Plumbing Board:

Our office represents Speedway, LLC. We respectfully submit the following issue for interpretation:

Question:

Section 709.1 of the Plumbing Code provides that "Where practicable, plumbing fixtures shall be drained to the public sewer or private sewage disposal system by gravity." Given that the definition of "practicable" is "reasonably capable of being accomplished," does the Plumbing Code require drainage by gravity system where such an installation is unreasonably expensive to the landowner and avoidably dangerous to patrons and where a safe, sanitary, proven alternative exists?

Background:

On August 13, 2019, Speedway was informed by a plumbing inspector, Scott Sawyer, that the Department would not approve Speedway's proposed plan to install Bean-to-Cup coffee machines in its convenience stores. Speedway's plan featured designed drainage pumps that would clear out no more than five gallons of water and cleaning fluid per day from the machines at each store. These drainage pumps are safe and sanitary and have been approved and installed all across the country.

The Department, however, rejected the proposed plan and has told Speedway that it will be required to dig trenches in all of its proposed Bean-to-Cup Stores to connect the machines to floor drains—all to flush out five gallons of water and cleaning fluid. Such an endeavor would significantly disrupt operations at Speedway's stores and would amount to a small remodel in certain locations. The process will take several months and require three different contractors, costing Speedway in upwards of $1 million in project costs and lost sales. Importantly, the project would also pose significant safety concerns to Speedway's customers and employees as the stores would need to remain open during the construction phase.

The Department further informed Speedway that it could seek deviations from the Plumbing Code based on undue hardship, but would need to submit a separate deviation request for each of the dozens of individual stores in which the Bean-to-Cup machines are scheduled for install. Because the Department is incorrectly interpreting the Plumbing Code, Speedway seeks an interpretation before undertaking dozens of individual deviation requests.

Analysis:

The crux of the analysis here is necessarily based on basic tenets of statutory construction and interpretation. When a legislature or governing body includes certain words or phrases in some parts of the Code but not others, those words or phrases must be given ample consideration.

The specific section of the Plumbing Code at issue is Section 709.1, which provides: "**Where practicable**, plumbing fixtures shall be drained to the public sewer or private sewage disposal system by gravity." (Emphasis added.) Significantly, the inclusion of the "where practicable" language differs from every other regulation and requirement set forth in Chapter 7, including commercial dishwashing machines and sinks (Section 704.3), cleanout locations (Section 707.4), sump construction (Section 710.8), and building sewer locations (Section 752.1). This is significant, as by including "[w]here practicable" in the original text of Section 709.1, the authors of the Code clearly intended to build in flexibility here without the requirement of a formal deviation process. Why else would it be included in this Section where it is conspicuously omitted in every other section? Enabling Speedway to install its Bean-to-Cup machines with a sanitary, safe, proven alternative would not be a deviation from this code provision, as it is not practicable to install the system any other way. The other Code sections do not have this built-in flexibility and require a deviation.

With regards to whether spending $1 million and digging trenches at the peril of its employees and customers (or in the alternative completely shutting down the Stores and putting its employees who need a paycheck out of work) where there is a proven alternative is practicable, one must look at the definition of "practicable." Notably, the Code does not define practicable." But the Minnesota Court of Appeals has repeatedly relied on *Black's Law Dictionary* in interpreting "practicable" as meaning "**reasonably** capable of being accomplished." *See In re Matter of Application of J.M.M. o/b/o Minors for a Change of Name*, No. A17-1730, 2018 WL 2470701, at

*6 (Minn. Ct. App. June 4, 2018) (emphasis added) (citing *Black's Law Dictionary* 1361 (10th ed. 2014)), *review granted* (Sept. 18, 2018); *State v. Morse*, No. A14-1202, 2015 WL 3822833, at *4 (Minn. Ct. App. June 22, 2015), *rev'd on other grounds*, 878 N.W.2d 499 (Minn. 2016); *Abel v. Abel*, No. A06-1733, 2007 WL 2703035, at *3 (Minn. Ct. App. Sept. 18, 2007).

Here, connecting the Bean-to-Cup machines to a gravity drain is not "reasonably capable of being accomplished." In fact, it is not reasonable by any definition of this word. Quite the opposite: Speedway will be forced to incur nearly $1 million in costs and lost sales to install coffee machines and make the choice to either (1) put its employees and customers in danger or (2) completely shut down its stores, increasing the cost associated with the project exponentially and putting its hard-working employees out of work—where there is a proven safe and sanitary alternative used by numerous companies all over the country. This is inherently *un*reasonable.

Accordingly, Speedway respectfully requests the following interpretation of Section 709.1: No, Section 709.1 does not require plumbing fixtures to drained by a gravity system where the installation of such a system would be unreasonably burdensome and a proven safe and sanitary alternative is adopted.

Very truly yours,

Daniel R. Olson

DRO:vlc

cc: Erin A. Moosbrugger, Esq.

Bylaws of the Plumbing Board

Article I. Name

A. The official name shall be “Plumbing Board.”

Article II. Purpose

A. The purpose of the Plumbing Board shall be as identified in Minnesota Statutes, section 326B.435, subdivision 2. At the request of the Commissioner of Labor and Industry, the Board shall also provide information and documentation concerning any complaint referred by the Board to the commissioner, as provided in Minnesota Statutes, section 326B.435, subdivision 8.

Article III. Membership

A. The membership of the Plumbing Board shall be as identified in Minnesota Statutes, section 326B.435, subdivision 1.

Article IV. Officers

A. The Plumbing Board shall elect a chair, vice-chair, and secretary. All voting members of the Board are eligible to serve as officers.

a. Chair: The chair shall:
   i. Preside at Board meetings;
   ii. Appoint committees;
   iii. Correspond on behalf of the Board;
   iv. Develop meeting agenda; and
   v. Act as the Board liaison with the Department of Labor and Industry regarding Board functions.

b. Vice-Chair: The vice-chair shall:
   i. Assume the duties of the chair in the chair’s absence; and
   ii. Assume the duties of the secretary in the secretary’s absence.

c. Secretary: The secretary shall:
   i. Ensure that accurate notes of all Board meetings are taken and minutes are created and presented for Board approval at the next following meeting;
   ii. Provide the presiding officer and membership with the exact wording of all motions;
   iii. Record the official vote on all motions; and
   iv. Maintain a record of all actions taken by the Board.

B. The election of officers shall take place at the first meeting of the Plumbing Board and at each annual meeting thereafter.
   a. The commissioner or the commissioner's designee shall preside over the election of all officers. The newly elected chair shall begin presiding over the meeting at the completion of elections.
   b. Nominations for and election of each officer shall be independent of other officers.
   c. Officers shall be elected in the following order: chair, vice-chair, secretary.
   d. Nominations may be made by any voting member of the Board.
   e. The number of nominees for each office is not limited.
   f. Election shall be determined by majority of members voting.
      i. Votes shall be cast by a raising of hands.
      ii. Members shall vote for only one candidate at each ballot.
      iii. Ballots shall be cast until one candidate receives a majority of votes cast.

C. Vacancy
   a. An election shall be held at the next regular meeting to fill a vacant office.
      i. When an election results in creating a vacancy, an election to fill the vacancy shall be held at the same meeting until all positions are filled.
      ii. The commissioner or the commissioner's designee shall preside over the election of vacant offices.

D. Term
   a. The term of all elected officers ends at the completion of election of officers at the annual meeting.

Article V. Meetings

A. All meetings shall be held pursuant to Minnesota Statutes Chapter 13D.
B. Location
   a. Board meetings shall be held at the Department of Labor and Industry offices located at 443 Lafayette Road North, Saint Paul, Minnesota.
   b. As provided in Minnesota Statutes, section 326B.435, subdivision 7, meetings employing telephone or other electronic means may be conducted.
C. Annual meeting
   a. The annual meeting of the Board shall be the first meeting each state fiscal year.
D. Regular meetings
   a. Regular Board meetings shall be held on a schedule determined by the Board.
      i. The regular Board meeting schedule shall be maintained at 443 Lafayette Road North, Saint Paul, and on the Department of Labor and Industry website.
E. Special meetings
   a. Special Board meetings are meetings that are not regularly scheduled.

i. Special Board meetings shall be called by the chair.
ii. Unless the meeting is an emergency meeting, at least three days before the date of the meeting, notice of the special Board meeting shall be posted at 443 Lafayette Road North, Saint Paul, and mailed, e-mailed, or delivered to each person who has requested a notice of special meetings.
iii. If the chair determines that circumstances require immediate consideration by the Board, the chair shall call an emergency meeting in accordance with Minnesota Statutes, section 13D.04, subdivision 3.

Article VI. Committees

A. The chair may appoint a Board committee to address specific issues.
   a. Committees shall report directly to the Board.
   b. Unless dismissed by the appointing chair, the term of committee members ends with the election of a new chair.
   c. Each Committee shall appoint a Secretary to record the meeting's Minutes.

B. Parliamentary Authority for Committees
   a. A quorum of the committee shall consist of the majority of members of the committee qualified to vote on the matter in question.
   b. A meeting must not be called to order unless a quorum is present.
   c. A meeting must be declared adjourned by the committee chair or other presiding committee member at any time it is apparent that a quorum is not present.
   d. A vote on any issue is valid even though fewer than the quorum vote.

Article VII. Parliamentary authority for the Board

A. Quorum
   a. A quorum of the Board shall consist of the majority of members of the Board qualified to vote on the matter in question.
   b. A meeting must not be called to order unless a quorum is present.
   c. A meeting must be declared adjourned by the Board chair or other presiding officer at any time it is apparent that a quorum is not present.
   d. A vote on any issue is valid even though fewer than the quorum vote.

B. Majority
   a. A majority of the membership is 7 voting members of the Board, except that if there is any vacancy in the voting members of the Board, a majority of the membership is more than half of the voting member positions on the Board that are filled. This number does not depend on the number of members present at a meeting or voting on a particular matter. An affirmative majority of the voting members is the same as a majority of the membership.
   b. A simple majority, or a voting majority, is more than half of the members voting on a particular matter.
   c. A two-thirds majority of the membership is 9 voting members of the Board, except that if there is any vacancy in the voting members of the Board, a two-thirds majority of the membership is two-thirds or more of

the voting member positions on the Board that are filled. This number does not depend on the number of members present at a meeting or voting on a particular matter. A two-thirds majority of the voting members is the same as a two-thirds majority of the membership.

d. A two-thirds voting majority is two-thirds or more of the members voting on a particular matter.

C. Regular meeting order of business

e. Call To Order
f. Approval of Meeting Agenda
g. Approval of Previous Meeting Minutes
h. Regular Business
    i. Minnesota Plumbing Code
    ii. Plumbing Licensure and Registration
i. Special Business
j. Committee Reports
k. Complaints
l. Open Forum
m. Board Discussion
n. Announcements
o. Adjournment

E. Process for consideration of business agenda items and motions

a. A business agenda item is presented by the chair or other Board member.
b. Any Board member, either a voting or nonvoting member, makes a motion to address the issue.
c. Another Board member, either a voting or nonvoting member, seconds the motion.
d. The issue and motion are discussed/debated.
e. After all members have had opportunity to speak on the issue the chair or presiding officer asks the secretary to read the motion and calls for a vote on the motion.
f. Other motions may be made and considered within this process as outlined in the following table.

F. RULES GOVERNING MOTIONS IN ORDER OF PRECEDENCE

Motion	**Interrupt (Note 1)**	**Second**	**Debatable (Note 2)**	**Amendable (Note 3)**	**Vote to Pass**
Adjourn	No	Yes	No	No	Voting Majority
Recess	No	Yes	Restricted	Restricted	Voting Majority
Postpone/Table (Note 4)	No	Yes	No	No	Voting Majority
Refer to Committee (Note 5)	No	Yes	Restricted	Yes	Voting Majority
Amend	No	Yes	Yes	Yes	Voting Majority
Main Motion	No	Yes	Yes	Yes	Voting Majority
Reconsider (Note 6)	Yes	Yes	Restricted	No	Voting Majority
Rescind (Note 7)	No	Yes	Yes	No	Membership Majority
Resume Consideration/ Remove from the Table	No	Yes	No	No	Voting Majority
Appeal (Note 8)	Yes	Yes	Yes	No	Voting Majority
Amend Bylaws	No	Yes	Yes	Yes	Membership Majority
Rules Amendment Except Plumbing Code Amendment	No	Yes	Yes	Yes	Membership Majority
End debate	Yes	Yes	No	No	Two-thirds Voting Majority
Plumbing Code Amendment	No	Yes	Yes	Yes	Two-Thirds Membership Majority

Notes to the table:

1. Interrupt – Can the maker of the motion interrupt another motion process?
2. Debatable – Can the motion be debated? Restricted – Debate is restricted to the motion being considered.
3. Amendable – Can the motion be amended? When restricted, an amendment must be germane to the motion to amend.
4. Postpone/Table – A motion postponed or tabled may be reconsidered within the same meeting as a result of motion to resume consideration. The motion postponed/tabled may be brought forward as a new motion at subsequent meetings without a motion to resume consideration. A motion to postpone/table ends debate of the motion to be postponed or tabled.
5. Refer to Committee – The debate on a motion to refer to a committee is restricted to the committee membership, assignment, meeting and reporting schedule.

6. Reconsider – A motion to reconsider can only be made during the same meeting the motion to be reconsidered was acted on. Debate is restricted to the motion to reconsider. Debate on the motion to be reconsidered can only occur after the motion to reconsider is passed. The use of the term “reconsider” in these bylaws is different from the use of the term “reconsider” in Minnesota Statutes, section 326B.435, subdivision 6, items (b), (d), (e) and (f). Nothing in these bylaws is intended to conflict with the statutory restrictions on the Board’s ability to “reconsider” plumbing code amendments and other proposed rules and rule amendments.
7. Rescind – A motion to rescind can only be made on motions that passed at previous meetings and then only if irreversible actions have not been carried forth. A motion to rescind must pass by a majority vote of the Board membership. A motion to rescind cannot be reconsidered or rescinded.
8. Appeal – Any member may make a motion to appeal a ruling or action of the chair or presiding officer.
9. End debate – Any member may make a motion to end discussion on the matter at hand.

Other actions or limits are at the discretion of the chair or other presiding officer, but are subject to appeal by another Board member.

Article VIII. Internal standards related to “day spent on Board business”

When authorized by the Board, members may be compensated at the rate of $55 per diem for each day spent on Board activities in addition to being reimbursed for expenses as authorized by the commissioner’s plan adopted under Minnesota Statutes section 43A.18, subdivision 2. The Board defines a day spent on Board activities as any day members attend a regular or special Board meeting, or when specifically authorized by the Board to attend committee meetings or other meetings or activities or perform other duties on any day other than the day of a regular or special Board meeting.

In addition to the day of the Board activity and when a Board member’s primary residence is more than 250 miles from the location of the Board activity, an additional day for travel is allowed when the member incurs overnight lodging expense.

Article IX. Board Minutes

The Minutes for each meeting shall include the following:

1. A list of attendees.
2. The start time of the meeting.
3. Each topic description.
4. All motions made and the recorded vote.
5. Upcoming meeting dates and times.
6. Time of adjournment.

Article X. Amendment to bylaws

A majority of the membership must vote in the affirmative to adopt an amendment to these bylaws.

ADOPTED: November 16, 2007
AMENDED: February 19, 2008
PROPOSED AMENDMENT: April 21, 2009
PROPOSED AMENDMENT, ADOPTED: August 23, 2011
PROPOSED AMENDMENT: April 19, 2016
PROPOSED AMENDMENT, ADOPTED: July 19, 2016

Ad Hoc Code Review and Rulemaking Committee 2018 UPC Recommendations to the Board

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
1.	PB0097	RFA	Thomas Johnson	Chapter 1	Add chapter 1 of the UPC into the Plumbing Code	**Proposal**: add chapter 1 of the UPC to the Plumbing Code. **Recommendation**: do not add chapter 1 of the UPC because MN uses rule chapter 1300 for code administration.	8/29/19	The Board accepted the recommendation as presented.	Accept
2.	Letter	N/A	Jeff Quinn, Farr Plumbing and Heating		Letter to Board re: Dishwasher air gaps, venting floor drains, boiler water fill, for next rule cycle.	Addressed in RFAs below.	8/29/19	Items were addressed in RFA's submitted to the Ad Hoc Committee – no further discussion.	N/A
3.	PB0135	RFA (2018 UPC) Also see Final Interpretation at line #8	DLI	Chapter 2 definitions	Definition of "building supply" and registered design professional	**Proposal**: amend definitions of "building supply" and change term "Registered Professional Engineer" to "Registered Design Professional" **Recommendation**: amend the definitions of "building supply" and "Registered Professional Engineer" as proposed. See PB0135.	8/29/19	The Board accepted the recommendation as presented to amend term "Registered Professional Engineer" to Registered Design Professional. The Board accepted the recommendation to amend the definition of "building supply" with one modification: Remove "is" as follows: "Building Supply. The pipe ~~is~~ carrying potable water from municipal water supply…"	1. Accept Registered Design Professional as presented 2. Accept building supply with modification (remove "is")
4.	PB0128	RFA (2018 UPC)	Scott Thompson	Chapter 2	Definition of "floor drain" and "floor drain – emergency"	**Proposal:** amend definition of "floor drain" and "floor drain – emergency" as proposed. **Recommendation**: define "floor drain – emergency" as "Floor drains that DO NOT SERVE AS A RECEPTOR THAT are located in restrooms, under emergency eyewash/shower equipment and in laundry rooms." No definition for "floor drain."	8/29/19	1. **Floor drain:** The Board agreed to keep the definition of floor drain with a modification to add language shown in ALL CAPS: Floor drains that DO NOT SERVE AS A RECEPTOR THAT are located in restrooms, under emergency eyewash/shower equipment and in laundry rooms."	1. Accept with modifications noted in ALL CAPS 2. Amend to emergenc

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
								2. Floor drain – emergency: The Board agreed to amend to "emergency floor drain" in lieu of "floor drain – emergency." The Board discussed whether the language should read "floor drain, emergency" or "emergency floor drain." The language 'floor drain, emergency" is used in Table 702.1; however, "emergency floor drain" is defined in the definitions; therefore, the Board agreed to accept the recommendation but amend to "emergency floor drain" in lieu of "floor drain – emergency."	y floor drain
5.	PB0137	RFA (2018 UPC)	MDH	Chapter 2	Definition of "potable water"	**Proposal:** amend definition of "potable water" as proposed. **Recommendation**: leave definition of "potable water" as is in 2018 UPC.	8/29/19	The Board agreed with the recommendation as presented after discussion noted below. Weum read the definition of potable water. The Board discussed leaving "potable water" but defining "water for human consumption The definition of Human Consumption in Section 604.2 of the 2018 UPC would affect the manufacturer's lead content. Tran read Exception 2 of Section 604.2 of the 2018 UPC.	Accept
6.	PB0129	RFA (2018 UPC)	Scott Thompson	Chapter 2	Definition of "quick-acting valve"	**Proposal**: amend definition of "quick-acting valve" as proposed **Recommendation**: Full-board discussion	8/29/19	The Board rejected the proposal and accepted language to modify the 2018 UPC, Section 609.10 as follows: "Building water supply systems where water hammer occurs shall be provided with water hammer arrestors to absorb the resulting high pressures. Water hammer …"	Reject proposal. Amend 2018 UPC Section 609.10 as shown
7.	PB0083	Final Interpretation	Patrick Lorio, City of Minneapolis	2012 UPC, sections 414.3 & 807.4, MN	Air gap fittings and drainage from domestic dishwashers	**Question**: May a domestic dishwasher be drained to a lower floor, without the installation of an approved air gap fitting with an indirect drain?	N/A	The Board agreed that no further discussion was needed at the 8/29/2019 meeting. 5.11.2016: No, a domestic dishwasher cannot drain to a lower floor without the installation of	

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
				Rule 4714.0050		**Answer**: No. The Minnesota Plumbing Board interprets UPC Sections 414.3 and 807.4 as incorporated into the Minnesota Plumbing Code by Minnesota Rule 4714.0050, to require a domestic dishwasher to discharge through a listed air gap fitting. The air gap fitting must be referenced in chapter 14 of the 2012 UPC as amended by Minnesota Rules chapter 4714.		an approved air gap fitting with an indirect drain. The air gap fitting must be referenced in chap 14 of the 2012 UIPC as amended by MN Rules chapter 4714	
8.	Definition of "Building Supply" See also PB0135	Final Interpretation	Gordon Granse, Polyethylene Technology	2012 UPC section 204.0, MN Rule 4714.0050	Definition of Building Supply	**Question**: Is the pipe supplying water to a water meter or pressure tank inside the building considered part of the building supply? **Answer**: Yes.	N/A	Final Interpretation issued (in response to a letter) May 11, 2016. Yes, the pipe supplying water to a water meter or pressure tank inside the building is considered part of the building supply.	
9.	PB0085 See also PB0135	Final Interpretation	David Henrich, Bergerson Caswell, Inc./MN Water Well Assoc	2012 UPC section 204, Table 604.1, and IS 7 (2.6.1), MN Rule, part 4714.0050	Use of polyethylene piping for building supply piping	**Question**: Based on the Plumbing Board's May 11, 2016, Final Interpretation, can polyethylene piping, when used for building supply, be installed inside and under buildings? **Answer**: Yes.	N/A	Final Interpretation issued June 15, 2016. Yes, polyethylene piping, when used for building supply, can be installed inside and under buildings	
10.	PB0088	Final Interpretation	Sean Flaherty, President MN Chapter of the NFSA	Sec. 603.5.15, part 4714.0050	Double Check backflow prevention assemblies (DC) and double check detector fire protection backflow prevention assemblies that are an integral	**Question**: Is additional backflow protection required if all of the following conditions are met: (1) an individual licensed under Minnesota Statutes chapter 299M installs a fire protection system; (2) the fire protection system includes as an integral component a double check backflow prevention assembly (DC) that meets ASSE 1015 and meets the requirements of NFPA 13, Parts 8.16.1.1.3.1 and 8.16.1.1.3.2 or a double check detector fire protection backflow prevention assembly that meets ASSE 1048	8/29/19	The Board agreed that no modifications were necessary following discussion below: Final interpretation issued March 20, 2017. Todnem asked the Board if there needed to be any further discussion and Peterson said this should be addressed in the Licensing rules, not the Plumbing Code. Minnesota Plumbing Code 603.5.15.1 (renumbered to 603.5.14) would not be affected. Backflow protector is part of the fire system per Tran.	No modifications necessary

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
					part of a fire protection system.	and meets the requirements of NFPA 13, Parts 8.16.1.1.3.1 and 8.16.1.1.3.2; and (3) neither a reduced pressure principle backflow prevention assembly nor a reduced pressure detector fire protection backflow prevention assembly is required by section 603.5.15.1 of the Minnesota Plumbing Code? **Answer**: No. Uniform Plumbing Code section 603.5.23, as adopted in the Minnesota Plumbing Code, Minn. R. parts 4716.0096 and 4716.0097, and Minn. Stat. § 326B.437 still apply to the backflow assembly			
11.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0301	chapters 3-5, various	(1) **Proposal**: Delete Minn. rule part 4714.0301 (default to use 2018 UPC) **Recommendation**: Delete Minn. rule part 4714.0301	6/17/19	The Board agreed to accept recommendation as presented. The Board previously determined that 4714 is the controlling document and the 2018 UPC would be adopted as the reference.	Accept
12.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	301.2.5	chapters 3-5, various	(2) **Proposal**: Delete 2018 UPC sec. 301.2.5 (Existing Buildings) in its entirety. Already addressed in Minn. rule 4714.0101, subparts 3 and 6. **Recommendation**: Delete 2018 UPC sec. 301.2.5 in its entirety.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
13.	N/A	N/A	Committee	312 and 313	Pipe expansion	**Proposal**: Becker to make tables to address ΔT 50 (conditioned space) and ΔT 100 (unconditioned space). **Recommendation**: Use proposed Table 313.3.1 as modified	8/29/19, 6/17/19	8/29/2019: Becker submitted **Exhibit A** and Jim Peterson and Zach Barnaal submitted **Exhibits B and C** on behalf of DLI. • The Board agreed to accept Exhibit B with modifications. Modifications are shown on attached Exhibit B2. • Add a footnote #6 to Table 313.3, at line "Schedule 40 PVC and ABS DWV" under column "Horizontal": For expansion loops, see Table 313.3.1	8/29/19: Accept with modifications as noted on **Exhibit B.1.** Modifications accepted with addition of 10 and 20 feet – See **Exhibit B.2**

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
								• Table title change: Schedule 40 PVC and ABS DWV and Storm Pipe Expansion Table 6/17/19 Discussion: Installation shall compensate for thermal expansion and contraction. Expansion joints shall be utilized in vertical straight runs in excess of thirty (30) feet (9,144 mm) provided they are installed per manufacturer's installation instructions. Except piping buried below ground, horizontal and vertical piping must be installed with restraint fittings or a minimum twenty-four (24) inches (610 mm) 45 degree offset every thirty (30) feet (9144 mm) Becker said he would revise the tables to incorporate formulas for ABS and PVC and bring back to the Board at a later date.	6/17/19: Modify
14.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	Table 313.3	chapters 3-5, various	(4) **Proposal**: Add footnote 6 to Table 313.3. **Recommendation**: DLI will bring recommendation to Board for discussion. See also Item 13 above as part of discussion	6/17/19	6/17/2019: Table 313.3 is connected to the above tables; therefore, it will be discussed when tables above are revised and brought back to Board.	See above 6/17/19: Modify
15.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0314	chapters 3-5, various	(3) **Proposal**: Delete Minn. rule 4714.0314 (default to use 2018 UPC for tunneling/trenching) **Recommendation**: Delete Minn. rule 4714.0314	6/17/19	The Board agreed to accept recommendation as presented.	Accept
16.	N/A	N/A	Committee	407.4	Transient Public Lavatories	**Proposal**: delete section 407.4 Transient Public Lavatories	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: delete section 407.4 of 2018 UPC.			
17.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0409	chapters 3-5, various	(5) **Proposal**: Amend Minn. rule 4714.0409 **Recommendation**: Amend rule part 4714.0409 to reflect the additions of nationally recognized standards in the body of the code that are also referenced standards under Chapter 17 of the UPC 2018, strike IAPMO IGC 155 references (see PB0102)	6/17/19	The Board agreed to accept recommendation as presented.	Accept
18.	PB0090 PB0099 PB0101 PB0110	RFA	Multiple	4714.0414.3	Redundancy - Dishwasher listed air gap device	**Proposal**: Delete "through an air gap fitting in accordance with Section 807.4 in section 414.3 and delete section 807.4. **Recommendation**: add language to sections 414.3 and 807.3, "or run the discharge line as high as possible under the countertop, securely fastened." (Section 807.3 of 2018 UPC renumbered section 807.4) See 1/14/19 Ad Hoc meeting minutes.	6/17/19	The Board agreed to accept recommendation as presented. Note: Tran noted that the recommendation as presented is correct. Marciniak previously confirmed that IGC 155 (2018 version) was superseded by ASME A112.19.7 (2012 version).	Accept
19.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0418	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0418, regarding section 418.7, add a reference to other sections (1017, 1009.1, 1011.1, and 1017.1) **Recommendation**: Full Board review; committee recommends adding definitions for "open parking garage" and "enclosed parking garage."	6/17/19	The Board agreed to accept recommendation as presented. Currently neither are defined; therefore, DLI references the building code for "open parking garage" and "enclosed parking garage" definitions.	Accept
20.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0421	chapters 3-5, various	**Proposal**: Use 2018 UPC language, delete Minn. rule 4714.0421, result: change temperature from 110 degrees F to 120 degrees F (relocated to section 407.3 in 2018 UPC).	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: delete Minn. rule 4714.0421, result: change temperature from 110 degrees F to 120 degrees F.			
21.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0501	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0501 to exclude chimneys, vents and their connectors because not plumbing. **Recommendation**: Amend Minn. rule 4714.0501 to exclude chimneys, vents and their connectors because not plumbing.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
22.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0504	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0504, subp. 2, to add "Discharge piping shall be installed in accordance with Section 608.5." **Recommendation**: Amend Minn. rule 4714.0504, subp. 2, to add "Discharge piping shall be installed in accordance with Section 608.5." Delete "[NFPA 54: 10.25.5]" that is in the rule.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
23.	N/A	N/A	Committee	505.4.1	Single-wall heat exchanger	Discussion of the change for single-wall exchange in UPC 2018, Section 505.4.1, and current Minn. rule 603.5.4.1. Minn. Rule does not have a heat-transfer medium that is listed as a toxicity rating or Class of 1. No recommendation.	6/17/19	No recommendation	No Action
24.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0507	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0507, subp. 2 regarding Relief Valve Discharge, to replace the Minnesota amendment and use 2018 UPC language. **Recommendation**: Amend Minn rule 4714.507, subp. 2 regarding Relief Valve Discharge, to replace the Minnesota amendment and use 2018 UPC language.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
25.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0508	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0508 to effectively use 2018 UPC language for 508.4 Appliances in Attics and Under-Floor	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Spaces, and maintain deletion of sections 508.0 to 508.3.3. **Recommendation**: Amend Minn. rule 4714.0508 to effectively use 2018 UPC language for 508.4 Appliances in Attics and Under-Floor Spaces, and maintain deletion of sections 508.0 to 508.3.3.			
26.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0509	chapters 3-5, various	**Proposal**: Amend Minn. rule 4714.0509 to include deletion of UPC section 509.15, Venting of Appliances. **Recommendation**: delete section 509 in its entirety, including 509.15, of the 2018 UPC.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
27.	PB0104	RFA (2018 UPC)	Richard Becker	509-510.2.27	Delete those section in their entirety	**Proposal**: Delete UPC sections 509.0 through 510.2.27 in their entirety. **Recommendation**: Delete UPC sections 509.0 through 510.2.27; these deletions already covered in other recommendation or already in Minn. rule 4714.0510.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
28.	N/A			4714.0511	Delete 4714.0511	**Proposal**: Delete Minn. rule 4714.0511 because no section 511 in 2018 UPC. **Recommendation**: Delete 4714.0511.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
29.	PB0115	RFA (2018 UPC)	DLI	4714.0601	Various chapter 6 proposals (DLI)	**Proposal**: renumber section 601 (4714.0601) to 602, per 2018 UPC **Recommendation**: correct numbering	6/17/19	The Board agreed to accept recommendation as presented.	Accept
30.	PB0114	RFA (2018 UPC)	MDH	4714.0603	Various chapter 6 proposals (MDH)	**Proposal**: Keep the current Minnesota amendment in Minn. rule 4714.0603, subp. 1 as is. **Recommendation**: Keep the current Minnesota amendment in Minn. rule 4714.0603, subp. 1 as is. (No action necessary)	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
31.	PB0114	RFA (2018 UPC)	MDH	4714.0603	Various chapter 6 proposals (MDH)	**Proposal**: Keep the current Minnesota amendment in Minn. rule 4714.0603, subp. 5. **Recommendation**: Keep the current Minnesota amendment in Minn. rule 4714.0603, subp. 5. (No action necessary)	6/17/19	The Board agreed to accept recommendation as presented.	Accept
32.	PB0092	Final Interpretation	Douglas R. Morin	603.2	Double check assembly	**Question 1**: Can a backflow preventer approved to ASSE 1022 be installed on a domestic water line serving a combi-oven pursuant to Minnesota Plumbing Code section 603.2? **Answer**: No. Table 603.2 explicitly states that a backflow preventer approved to ASSE 1022 is appropriate for carbonated beverage machines or dispensers. A combi-oven is not a carbonated beverage machine or dispenser. UPC section 603.2, as adopted in chapter 4714, requires backflow prevention devices or assemblies to comply with Table 603.2. **Question 2**: Is a backflow preventer approved to ASSE 1012 a suitable device for the installation on a combi-oven under section 603.2 when approved by the Authority Having Jurisdiction? **Answer**: Yes. ASSE 1012 is not specifically listed in Table 603.2. Devices approved to ASSE 1012 are not explicitly addressed as approved devices in Table 603.2 so the Authority Having Jurisdiction must approve its use, including for use on a combi-oven.	6/17/19	No action necessary – clarification only	No action

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
33.	PB0098	Final Interpretation	Thomas Johnson	4714.0603.2 and table	Whether an AVP can have a valve downstream.	Pending litigation.		Final Interpretation issued 10/8/2018;	
34.	PB0100	RFA	Joel Hipp	Table 603.2	Table 603.2, Atmospheric Vacuum Breaker Installation	**Proposal**: Amend Table 603.2 (and 1401) to replace "No valve downstream" with "have outlet open to atmospheric pressure" consistent with the 2017 edition of ASSE 1001. **Recommendation**: leave language as is in the code because proposed amendment would require updating reference to the 2017 edition of ASSE for consistency; concern that updating this referenced standard edition could lead to other referenced standard updates, which would defeat the purpose of adopting a model code.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
35.	PB0115	RFA (2018 UPC)	DLI	603.5.8	Various chapter 6 proposals (DLI)	**Proposal**: renumber *603.5.18 to 603.5.17* **Recommendation**: renumber	6/17/19	The Board agreed to accept recommendation as presented.	Accept
36.	PB0105 PB0116	RFA (2018 UPC)	Scott Eggen, Steve Tiedman	603.5.10	Exception to Steam or Hot Water Boilers	**Proposal**: Amend section 603.5.10 by adding an exception for 1- and 2-family dwellings. **Recommendation**: do not add an exception for 1- and 2-family homes; use 2018 UPC language as is.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
37.	PB0114	RFA (2018 UPC)	MDH	603.5.18	Various chapter 6 proposals (MDH)	**Proposal**: Renumber section 603.5.18 to 603.5.17 to reflect 2018 UPC numbering. **Recommendation**: Renumber section 603.5.18 to 603.5.17.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
38.	PB0114	RFA (2018 UPC)	MDH	603.5.21	Various chapter 6 proposals (MDH)	**Proposal**: Section 603.5.21 is new to the 2018 UPC, keep it incorporated as is.	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: Incorporate (new) 2018 UPC section 603.5.21 as is. (No action necessary)			
39.	PB0114 PB0115	RFA (2018 UPC)	DLI	4714.0604	Various chapter 6 proposals (DLI)	**Proposal**: repeal rule Minn. rule 4714.0604 in its entirety. **Recommendation**: repeal Minn. rule 4714.0604. Use 2018 UPC language re: lead content (604.2)	6/17/19	The Board agreed to accept recommendation as presented.	Accept
40.	PB0137	RFA (2018 UPC)	MDH	604.2 (formerly 604.11)	Amend 2018 UPC language re: potable water and lead content	**Proposal:** amend 2018 UPC language regarding definition of potable water and Section 604.2 on lead content by revising "water for human consumption" to "potable water" (Committee recommends deleting MN amendment) **Recommendation**: do not amend; use 2018 UPC language.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
41.	PB0114	RFA (2018 UPC)	MDH	604.11	Various chapter 6 proposals (MDH)	**Proposal**: Do not amend Minn. rule section 604.11, keep the 2018 UPC language. **Recommendation**: Do not amend section 604.11, keep the 2018 UPC language (604.2). (No action necessary)	6/17/19	The Board agreed to accept recommendation as presented.	Accept
42.	PB0118	RFA (2018 UPC)	Rich Olson	Table 604.1, chapter 14	Add NSF SE 17304 to the Referenced Standards Fittings column for CPVC fittings in Table 604.1	**Proposal**: Amend Table 604.1 and add NSF SE 17304 to the Referenced Standards chapter. **Recommendation**: do not amend Table 604.1 to add NSF SE 17304.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
43.	PB0114	RFA (2018 UPC)	MDH	604.10	Various chapter 6 proposals (MDH)	**Proposal**: Renumber Minn. rule 604.10 to 604.9 to reflect 2018 UPC numbering. **Recommendation**: Renumber 604.10 to 604.9	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
44.	PB0114	RFA (2018 UPC)	MDH	607.3	Drinking water protection	**Proposal**: Amend 2018 UPC section 607.3 for potable water tanks **Recommendation**: Amend 2018 UPC section 607.3 as written in the RFA.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
45.	PB0114	RFA (2018 UPC)	MDH	607.4	Tanks used in commercial settings	**Proposal**: Amend 2018 UPC section 607.4 **Recommendation**: Amend 2018 UPC section 607.4 as written in RFA except last sentence of RFA language should read: "Overflow pipe shall discharge through an air gap."	6/17/19	The Board agreed to accept recommendation as presented in chart – The word "No" is removed from the last sentence as shown in PB0114. "~~No o~~ Overflow may be connected directly to any drain, sanitary sewer, or storm sewer"	Accept
46.	PB0115	RFA (2018 UPC)	DLI	4714.0608	Various chapter 6 proposals (DLI)	**Proposal***:* repeal Minn. rule 4714.0608, use 2018 UPC language. **Recommendation:** repeal part 4714.0608	6/17/19	The Board modified the proposal and recommendation as shown below and accepted the modified recommendation. **MODIFIED Proposal***: Amend* Minn. rule 4714.0608, use 2018 UPC language. **MODIFIED Recommendation:** *Amend MN Rule* 4714.0608*, use the 2018 UPC but amend 608.5 and use the verbiage as presented in PB0115.*	Accept modified language
47.	PB0103	RFA (2018 UPC)	Brent Marsolek, Dave Wagner	UPC 609.1, 312.6	UPC sec. 609.1. Installation	**Proposal**: amend 2018 UPC sections 312.6 , 609.1 **Recommendation**: Amend water pipe bury depth requirements: "Building supply and yard piping shall be not less than 12 inches (305 mm) below the maximum local frost depth in accordance with Section 312.6, or an alternative approved by the Authority Having Jurisdiction." PB to define "maximum frost depth" or find a published source of maximum frost depth.	6/17/19	The recommendation matches NFPA 24 and the Board agreed to accept the recommendation with ***no need for the PB to define "maximum frost depth" or find a published source of maximum frost depth.*** Wagner and Tran no longer need to review and bring a revised recommendation back to the Board as discussed earlier.	Accept as modified
48.	PB0113	RFA	Brent Marsolek, Dave Wagner	4714. 609	Meter location, section 609.11	**Proposal**: amend Minn. rule 4714.0609.11 to require water meters be located as close as possible to the point of entrance of the potable water supply pipe.	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: amend Minn. rule 4714.0609.11 as drafted in RFA.			
49.	PB0114	RFA (2018 UPC)	MDH	609.6 and 611.0 through 611.3	Various chapter 6 proposals (MDH)	**Proposal**: Maintain Minnesota amendments in rule chapter 4714 to sections 609.6 and 611.0 through 611.3. **Recommendation**: Maintain Minnesota amendments to sections 609.6 and 6110 through 611.3.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
50.	PB0106 PB0129	RFA (2018 UPC)	Multiple	609.10	Quick acting valves, water hammer, section 609.10	**Proposal**: define "quick-acting valve" as used in section 609.10. **Recommendation**: Full-board discussion	6/17/19	The Board agreed that it would be too difficult to define "quick-acting valve" and after much discussion agreed to table this item.	Table
51.	PB0114	RFA (2018 UPC)	MDH	609.11 to 609.12	Various chapter 6 proposals (MDH)	**Proposal**: Renumber in Minn. rule, section 609.11 to 609.12, keep Minnesota amendment. **Recommendation**: Renumber in Minn. rule, section 609.11 to 609.12, keep Minnesota amendment.	6/17/19	The Board rejected the recommendation as presented because section 609.11 would be replaced. Pipe insulation removed.	Reject
52.	PB0115	RFA (2018 UPC)	DLI	611.3.1	Various chapter 6 proposals (DLI)	**Proposal**: add subsection 611.3.1 to Minn. rule 4714.0611 **Recommendation**: add subsection 611.3.1 as proposed. See RFA PB0115.	6/17/19	The Board agreed to accept modified proposal and recommendation as shown below. **MODIFIED Proposal**: add subsection 611.5 to Minn. rule 4714.0611 **MODIFIED Recommendation**: add subsection 611.5 as proposed. See RFA PB0115.	Accept as modified
53.	PB0119	RFA (2018 UPC)	Jason Kruger	Table 701.2	Amend Table 701.1 to allow the use of reinforced concrete pipe as described in ASTM C76	**Proposal**: Amend Table 701.2 of Chapter 7 to add ASTM C76 reinforced concrete pipes and ASTM C443 as proposed **Recommendation**: amend as proposed with addition of footnote stating, "**For storm sewer application only"	6/17/19	The Board agreed to accept recommendation as presented.	Accept
54.	PB0121	RFA (2018 UPC)	DLI	701.1	chapter 7, various	**Proposal**: minor corrections and renumbering to coordinate with numbering changes in the 2018 UPC	6/17/19	The Board agreed to accept recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: amend as proposed. See 3/11/19 meeting minutes.			
55.	PB0107	RFA (2018 UPC)	Aaron Ganson	Table(s) 701.1 (and 1701.1)	polypropylene pipe per ASTM F2764, Table 701.1 and Table 1701.1 (referenced standards)	**Proposal**: Add polypropylene pipe per ASTM F2736 and ASTM F2764 to Tables 701.1 and 1701.1 for sanitary building sewers. See 3/11/19 meeting minutes. **Recommendation**: add the ASTM standards, and joints and connections section as proposed (with updated numbering per the UPC 2018).	**10/15/19 (added language: add deflection test)** 6/17/19	**MODIFIED recommendation:** • Add footnote *** With no change in direction **and deflection test.** • Add the ASTM standards with updated numbering per the UPC 2018 under building sewer pipe and fittings. No directional changes. If good enough for sanitary sewer use then acceptable for storm use. Storm use would have cheaper pipe options available that could be used.	Accept as modified **(and deflection test was added at the 10.15.19 Board meeting.**
56.	PB0133	RFA (2018 UPC)	Robert G Moore	Table 701.1	Add ASTM F2562 to Table 701.1	**Proposal**: add ASTM F2562 standard to Table 701.1 (renumbered Table 701.2) **Recommendation**: do nothing, do not add ASTM F2562 to Table 701.1.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
57.	PB0121	RFA (2018 UPC)	DLI	705.10.2 Expansion Joints	chapter 7, various	**Proposal**: delete Minnesota rule amendment and use the 2018 UPC language **Recommendation**: amend as proposed (use the 2018 UPC language)	8/29/19, 7/16/19	8/29/2019: The Board agreed with their decision to Accept the recommendation on 7/16/2019. 7/16/2019: The Board agreed to accept the recommendation as presented.	Accept
58.	PB0121 PB0108 PB0109	RFA (2018 UPC)	DLI	707.4.1	chapter 7, various	**Proposal**: eliminate the cleanout requirement for back-to-back (or common) vertical fixture drains installed at same level by deleting Section 707.4.1 **Recommendation**: delete section 707.4.1	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
59.	PB0121	RFA (2018 UPC)	DLI	707.4	chapter 7, various	**Proposal**: delete exception #3 of Section 707.4 **Recommendation**: keep exception #3 (DLI can review the RFA and resubmit)	7/16/19	The Board agreed to accept the recommendation as re-submitted using the 2021 UPC preprint language as follows: Exceptions: (3) Excepting the building drain, its horizontal branches, kitchen sinks, and urinals, a cleanout	Accept as modified

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
								shall not be required on a pipe or piping that is above the floor level of the lowest floor of the building.	
60.	PB0121	RFA (2018 UPC)	DLI	710.10	chapter 7, various	**Proposal**: add an exception to Section 710.10 for vents serving elevator sumps and pool sumps to not terminate through the roof **Recommendation**: amend as proposed, add an exception.	7/16/19	The Board agreed to accept the recommendation as presented. **Exception:** Vents serving sumps connected to elevator pit drains or swimming pool deck drains need not extend through the roof and must not connect to any other vent pipe.	Accept
61.	PB0096	Final Interpretation	Peter Daniels, PE	710.10 and 906.4	Do Plumbing Code sections 710.10 and 906.4 apply to exterior sumps and receiving tanks?	**Final Interpretation**: Yes, if the sump and receiving tank are located within in the property lines and not covered by a utility easement. If the sump and receiving tank are covered by a utility easement, then the Plumbing Code does not apply.	7/16/19	Final Interpretation issued on 8/29/2018 The board agreed to take no action.	No Action
62.	PB0127	RFA (2018 UPC)	Scott Thompson	Sec. 712.1	Amend section 712.1 [and 4714.0712, subp. 1]	**Proposal**: repeal MN amendment to section 712.1 and use 2018 UPC 712.1 language. **Recommendation**: keep current MN amendment in Minn. rule part 4714.0712.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
63.	PB0121	RFA (2018 UPC)	DLI	715 - CIPP	chapter 7, various	**Proposal**: amend Minn. rule 4714.0715 regarding section 715.3 to reflect the language of UPC 2018 **Recommendation**: full board should have a full discussion and make a decision on this proposed change. See 3/11/19 ad hoc meeting minutes for discussion notes.	7/16/19	The Board agreed to reject the recommendation as presented.	Reject
64.	PB0121	RFA (2018 UPC)	DLI	717.1, Table 717.1	chapter 7, various	**Proposal**: add language to provide an option for the AHJ to accept fixture loading less than the minimum fixture loading required by this table for building sewers while maintaining the minimum scouring pipe velocity of two feet per second: "Loadings less than the listed minimums must be approved by the Authority Having Jurisdiction."	7/16/19	The Board agreed to accept the recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: add language as proposed. See RFA PB0121.			
65.	PB0121	RFA (2018 UPC)	DLI	719.6	chapter 7, various	**Proposal**: add an additional option to join pipe to manholes and similar structures to provide a water tight connection **Recommendation**: amend as proposed. See 3/11/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented but noted that the word "follow" should be "follows" as shown below. Connections to manhole and similar structures must be provided as **follows:** add "s" to follow	Accept w-amendment (adding "s" to follow)
66.	PB0136	RFA (2018 UPC)	DLI	4714.0724	Add a table to section 724, Recreational Vehicle, drainage pipe sizes	**Proposal**: amend section 724.1 as proposed **Recommendation**: Amend section 724.1 as proposed in PB0136.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
67.	PB0131	RFA (2018 UPC)	Cathy Tran, DLI	810.1	Chapter 8, various	**Proposal**: Amend 810.1 Steam and Hot Water Drainage Condensers and Sumps and delete sections 810.1 (remaining) to 814.1 (see RFA PB0131) **Recommendation**: amend as proposed. See 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
68.	PB0131	RFA (2018 UPC)	Cathy Tran, DLI	4714.0813	Chapter 8, various	**Proposal**: amend current Minn. rule 4714.0813 SWIMMING POOLS **Recommendation**: amend as proposed. See 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
69.	PB0130	RFA (2018 UPC)	Scott Thompson	905.3	Adopt 2018 UPC section 905.3 in its entirety	**Proposal**: adopt Section 905.3 of the 2018 UPC in its entirety, delete MN amendment to section 905.3 in Minn. rule 4714.0905 **Recommendation**: no recommendation, full board to consider the proposal. See 3/29/19 meeting minutes.	7/16/19	The proposal was rejected.	Rejected
70.	PB0117	RFA (2018 UPC)	Dennis Anderson	908.2	delete 908.2	**Proposal**: delete section 908.2 in its entirety (Horizontal Wet Venting for a Bathroom Group)	7/16/19	The Board agreed to accept the recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
						Recommendation: keep section 908.2 in its entirety.			
71.	PB0122	RFA (2018 UPC)	Richard Blaylock	911	add/keep section 911.0 through 911.5	**Proposal**: adopt circuit venting method under 2018 UPC **Recommendation**: adopt circuit venting method (no action necessary to include)	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
72.	PB0089	RFA	Cathy Tran, DLI	1002.2 Fixture traps	Chapter 10	**Proposal**: add an exception to 1002.2: "Exception: Emergency floor drains, tell tail floor drains, and floor drains not used as waste receptors installed within 25 feet of a vented branch or main." **Recommendation**: Amend as modified, see 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
73.	PB0089	RFA	Cathy Tran, DLI	1006.1	Chapter 10	**Proposal**: Add an exception to the end of 1006.1: "Exception: Floor drains or trench drains which connect to sand interceptors or oil and flammable liquid interceptors do not need to be trapped." **Recommendation**: Amend as modified, see 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
74.	PB0089	RFA	Cathy Tran, DLI	1016.4	Chapter 10	**Proposal**: Amend section 1016.4 **Recommendation**: Amend as modified, see 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
75.	PB0089	RFA	Cathy Tran, DLI	1017.1	Chapter 10	**Proposal**: Amend section 1017.1 **Recommendation**: Amend as modified, see 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
76.	PB0111	RFA (2018 UPC)	Ken Loucks	1014.2.2	Exception to section 1014.2.2 vents	**Proposal**: Add an exception to Section 1014.2.2 Vent **Recommendation**: do not add exception, leave 2018 UPC language as is.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
77.	PB0112	RFA (2018 UPC)	Mike Johnson	1017.2	Design of interceptors, section 1017.2	**Proposal**: Establish set sizing for garages used for storage with 10 or more vehicles **Recommendation**: amend section 1017.2 and add subsection 1017.2.1, to read as stated in 3/29/19 meeting minutes.	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
78.	PB0123	RFA (2018 UPC)	Aaron Ganson	Table 1101.4.5	Add materials and standards to Building Storm Sewers, create Table 1101.4.5	**Proposal**: create a table in chapter 11 and add referenced standards to the table, or add the referenced standards to Table 701.2. **10/15/2019:** **Recommendation**: Do not create table in Chapter 11. Include F2306 and F2881 standards for storm sewer use only, include F2648 and add footnote #1 for yard drainage only, to Table 701.2, add proposed joints language,to section 1101.4.5 and referenced standards 1701.1. Add joints and connections section as proposed (with updated numbering per the UPC 2018). Add Footnote #2 to require deflection testing for pipes 12" and larger. **Note: Reference PB0142 to renumber.** 7/16/19: **Recommendation**: Do not create table in Chapter 11. Include F2306 and F2881 standards for storm sewer use only, include F2648 for yard drainage only, to Table 701.2, add proposed joints language,to section 1101.4.5 and referenced standards 1701.1. Add joints and connections section as proposed (with updated numbering per the UPC 2018)	10/15/19 (modified) 7/16/19	**10/15/19 – The board made modifications as shown in recommendation.** 7/16/19: After the discussion below, the Board agreed to accept the recommendation with a modification to replace ASTM C1628 with ASTM C443 in Section 1101.2.1 Mechanical Joints. Riley Dvorak, Forterra Pipe and Precast, and Jennifer Schaff, County Materials Corp, addressed the Board after Jason Kruger's email regarding Line #78 of PB0123 was read aloud by the Chair (see Correspondence section of the 7.16.2019 minutes). Dvorak said there are two standards C443 and C1628 – both will have the same performance requirements, both are required to meet 13 PSI. There is one major difference in that C1628 requires additional tolerance requirements. Their standard product meets the performance criteria of C443, but the joint tolerances are slightly different. Schaff said that through this process she found that C1628 was created for a sanitary sewer mechanism for a joint. C443 is standard for storm sewer applications which is what is being discussed. The federal standard referenced in the submittal is C443 as well, therefore, Schaff said if the intention is for storm sewer use only, then refer just to C443. If using for sanitary	Accept as modified on **10/15/19** and 7/16/19

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
								sewer application, then that would be something different.	
79.	PB0125	RFA (2018 UPC)	Cathy Tran, DLI	1101.11.2.1 and 1101.11.2.2	Chapter 11, various	**Proposal**: add subsections 1101.11.2.1 Location and 1101.11.2.2 Engineered System. **Recommendation**: amend as submitted. See PB0125.	8/29/19	The Board reviewed the 4/22/2019 Ad Hoc Committee meeting minutes for modifications that the Committee made to PB0125, item 1, page 3, and the Board accepted the modifications. The Committee's recommendation includes clarity to adding secondary roof drains. The Board agreed to accept the recommendation as modified in the 4/22/2019 Committee minutes. (4/22/2019 minutes, page 3 of 5, PB0125, item 1 should read 1101.11.2.1 not 1101.2.1)	Accept as modified in 4/22 Ad Hoc minutes
80.	PB0125	RFA (2018 UPC)	Cathy Tran, DLI	Chapter 11	Chapter 11, various	**Proposal:** amend sections1103.1 and 1103.2 (renumbered from 1106). Add to both sections. **Recommendation**: amend as submitted. See PB0125.	8/29/19	The Board reviewed the 4/22/2019 Ad Hoc Committee meeting minutes for modifications that the Committee made to PB0125, item 2, page 3, and the Board accepted the modifications.	Accept as modified in 4/22 Ad Hoc minutes
81.	PB0132	RFA (2018 UPC)	Arthur Schwidder	1106	Add a new section 1106.5 Sump Manhole/Catch Basin with Vertical Baffle	**Proposal**: require a minimum of 18 inches between nearest inlet pipe and a vertical baffle **Recommendation**: take no action, do not require a minimum of 18 inches.	8/29/19	The Board this could restrict the use of products. The Board agreed to take no action as recommended by the Committee.	Accept
82.	PB0124	RFA (2018 UPC)	MDH	Chapter 15	Do not adopt chapter 15	**Proposal**: Do not adopt chapter 15 **Recommendation**: do not incorporate chapter 15.	8/29/19	The Board agreed to accept the recommendation as presented.	Accept
83.	PB0124	RFA (2018 UPC)	MDH	Table 1702.9.4	Update Table 1702.9.4	**Proposal**: Amend Table 1702.9.4 as proposed. **Recommendation**: amend Table 1702.9.4 as proposed in PB0124.	8/29/19	The Board reviewed the 5/31/2019 Ad Hoc Committee minutes for modifications made to PB0124 and accepted these modifications.	Accept as modified in 5/31 Ad Hoc minutes

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)ccept (R)eject (M)odify
84.	N/A	N/A	Committee	Chapts. 16, 17	Chpts. 16, 17	**Proposal:** Keep current chapter 17 regarding rainwater catchment systems (renumber as appropriate for consistency with 2018 UPC), with RFA proposals recommended	8/29/19	The Board agreed to accept the proposal as noted with the change to Table 1702.9.4 as amended above.	Accept proposal as presented
85.	N/A	N/A	Committee	App. E	App. E	**Proposal:** do not include Appendix E in the Minnesota Plumbing Code **Recommendation**: do not include Appendix E in the Minnesota Plumbing Code	8/29/19	The Board agreed to accept the recommendation as presented.	Accept

PB = Minnesota Plumbing Board

Accept, Reject, Deny column = in reference to the Board's determination in regard to the committee's recommendation

Some PB numbers are not included for a variety of reasons (e.g., RFA was withdrawn, RFA/RFI was incomplete, was for the plumber licensing chapter, etc.).

All UPC section and table numbers that have changed in the 2018 UPC will be adjusted as necessary, even if not indicated on this table. The substantive change is addressed here and renumbering corrections will be made as necessary for any proposed rules stemming from this document.

Board Review of 2018 UPC RFAs

Line #	PB #	Submitter	Rules affected	Brief Title	Proposal in RFA	Date reviewed by PB	PB Action	(A)ccept (R)eject (M)odify
1.	PB0140	Cathy Tran	408.7, 4xx.x, 1009.4	Lining for showers and receptors; trench drains; relief vent	**Proposal:** #1: Add language to 408.7 Lining for Showers and Receptors: Unless the shower receptor is poured on the ground as part of a slab, an approved shower liner must be provided in accordance with the requirements of this section. #2: Add language as follows: 4xx.x Trench Drains Trench Drains shall comply with ASME Al 12.6.3, ASME A1 l2.3.I. or be constructed of watertight material, watertight joint and be tested for watertightness by filling with water to the level of the flood rim of the trench drain. #3: Add language as follows: 1009.4 Relief Vent: Interceptor (clarifier) and neutralization tank vent ports must be located above the highest liquid flow level.	8/29/19	The Board agreed with proposed amendments as follows: 1. Section 408.7 – The Board agreed with proposed amendment 1 as presented. 2. Section 4XX.X (Trench Drains) – The Board agreed with proposed amendment 2 as presented. 3. Section 1009.4 (Relief Vent) – The Board agreed with proposed amendment 3 as presented.	Accept
2.	PB0142	Jason Kruger	1107.2	Thermoplastic piping materials requirements, add section 1107.2	**Proposal:** The proposed change would add deflection testing requirements to Chapter 11, Storm Drainage. Thermoplastic piping materials deflect in response to loading. Such deflection is by design and proper installation is necessary to ensure the pipe has not deflected more than 5%, typical, as compared to the actual inside diameter of the pipe. If deflection exceeds 5%, structural concerns can include shear cracking and buckling deflection, the point at which the pipe no longer sustains increasing or constant load without increasing deflection. The requirement needs to be explicitly defined apart from the thermoplastic pipe ASTM standard references.	10/15/19	The Board accepted the proposal with the following modification to D. Inspection Reporting, item #1: "Provide a copy of the documented inspection to the administrative authority ~~engineer and municipal official~~ upon …" Discussion: Tran said the RFA is specific to storm drainage. Jennifer Shaff addressed the Board. The market has changed and there are many more types of piping that are less stiff. If there is a stiff pipe there is good compaction around smaller pipes. Tran	Modify

Line #	PB #	Submitter	Rules affected	Brief Title	Proposal in RFA	Date reviewed by PB	PB Action	(A)ccept (R)eject (M)odify
							added that this adds to the integrity of the pipe. Jacobs clarified that this would apply to outside of the building. Erickson said that this falls under the jurisdiction of the Plumbing Code to the property line. Weum said that MnDOT's language says "C. Retest 7 days …" The Board decided to leave at 30 days as presented.	
3.	PB0143	Jason Shank	417.6, 214.0	hot and cold water dispensers	**Proposal:** 1. 417.6: Add language 2. 214.0 -L: Add language 3. Table 1401.1: (Move from 1st table to 2nd table) Standard Number: ASSE 1023-2019 ~~1979~~ Standard Title: Electrically Heated or Cooled Water Dispensers ~~Hot Water Dispensers Household Storage Type Electrical~~ Referenced Section: ~~301.1.2. 301.2~~ 417.6	10/15/19	Discussion: John Parizek addressed the Board (president of ASSE International). IAPMO will be publishing the 2020 at the beginning of 2020. The reason the RFAs were presented is because product standards and references will be in the new UPC but the Plumbing Board may not look at amending these sections until 2024. The products would be left by the wayside. He has concerns. The standards have been vetted through the ASSE process, will be in the national UPC, and he would like to see them included in MN amendments. There isn't a proper definition for low pressure water dispensers. It isn't referenced in the code. 417.6 would reference the standard. Todnem said the Board could accept the proposal now but remove from rulemaking if IAPMO does not approve. The Board accepted the proposal as presented.	Accept
4.	PB0144	Jason Shank	421.2, Table 1401.1	Temperature limiting devices for public lavatories	**Proposal:** Devices that conform to ASSE 1070/ASME A 112.1070/CSA B125. 70 or water heaters that conform to ASSE 1084 are appropriate for lavatory	10/15/19	Parizek addressed the Board. This could be an alternate for a 1070 or 1084 water heater. This language will be in the 2021 UPC. The language presented directly	Accept

Line #	PB #	Submitter	Rules affected	Brief Title	Proposal in RFA	Date reviewed by PB	PB Action	(A)ccept (R)eject (M)odify
					applications. ASSE 1084 requires water heaters to have appropriate Class B or Class C electric control protective measures per UL 607301 to control the output temperature for point of use applications. This limits the water temperature when set to 110°F (43 °C) from the default of 120°F (49 °C), just as one would set an ASSE 1070 mixing valve. Also, CSA 8125.3 was harmonized into ASSE 1070 for temperature limiting devices. The text now shows the appropriate reference.		reflects language that will be in the 2021 UPC. The Board accepted the proposal as presented.	
5.	PB0145	Jason Shank	611.1.2, chpt. 2, Table 1401.1	Add ASSE 1087 - 2018, update various water conditioning NSF standards	**Proposal:** 1. 611.1.2 Manufacture and Assembly 2. Table 611.1.2 3. 203.0 -C- 4. 218.0 -P- 5. Table 1401.1	10/15/19	John Parizek retracted the RFA and said he would re-submit with modifications.	Retracted
6.	PB0146	Jason Shank	611.1.1, chpt. 2	Move and modify section 611.1.1 to chapter 2	**Proposal:** The language is correct but is located in the wrong section. Proposed change moves it into Chapter 2 with the rest of the definitions.	10/15/19	John Parizek addressed the Board and the proposal was accepted as presented.	Accept
7.	PB0147	Jason Shank	Table 1401.1	Add ASSE 1082 - 2018, water heater standard	**Proposal:** The 2018 UPC separated standards that are referenced in the body of the code from those that are accepted but not referenced. In anticipation of that adoption, this proposed change follows suit. ASSE 1082 is a new standard for water heaters that have safe and sufficient controls that control the output water temperature. The standard was developed with the output temperature and flow tolerances found in ASSE 1017 for distribution mixing valves. It is not appropriate to use a water heater that conforms with ASSE 1082 for point-of-use applications, but it is appropriate to use it for an entire premises or	10/15/19	John Parizek addressed the Board. Not acceptable for plumbing use but for water temperature in the building. Developed a standard that will allow water heaters to control temperature. He wants to include the standard. It is not point of use. Include in the second table. The Board accepted the proposal as presented.	Accept

Line #	PB #	Submitter	Rules affected	Brief Title	Proposal in RFA	Date reviewed by PB	PB Action	(A)ccept (R)eject (M)odify
					when distributing to multiple fixtures and appurtenances. The purpose of this standard is to eliminate the need for competing control devices in a plumbing system when the temperature output can be appropriately controlled by these types of water heaters.			
8.	PB0148	Jason Shank	408.3, Table 1401.1	Tub and shower combination temperature control valve	**Proposal:** The temperature limiting function does not necessarily need to be performed by the same device that controls the water temperature from a showerhead. Rather than having to adjust each control valve, this gives installers and designers the option of using other devices for that function. Devices that conform to ASSE 1070/ASME A 112.1070/CSA B125. 70 or water heaters that conform to ASSE 1084 are appropriate for bidet applications. ASSE 1084 requires water heaters to have appropriate Class B or Class C electric control protective measures per UL 607301 to control the output temperature for point of use applications. This limits the water temperature when set to 110°F (43 °C) from the default of 120°F (49 °C), just as one would set an ASSE 1070 mixing valve.	10/15/19	John Parizek said proposal reflects language that will be present in the UPC 2021. The Board accepted the proposal as presented.	Accept
9.	PB0149	Jason Shank	409.4, Table 1401.1	Water temperature control to bathtubs	**Proposal:** Devices that conform to ASSE 1070/ASME A112.1070/CSA 8125.70 or CSA B125.3, or water heaters that conform to ASSE 1084 are appropriate for point of use bathtub or whirlpool bathtub applications. ASSE 1084 requires water heaters to have appropriate Class B or Class C electric control protective measures per UL 607301 to control the output temperature for point of use applications. This limits the water temperature to 120°F (49 °C), or the setpoint whichever is lower.	10/15/19	John Parizek said proposal reflects language that will be present in the UPC 2021. The Board accepted the proposal as presented.	Accept

Line #	PB #	Submitter	Rules affected	Brief Title	Proposal in RFA	Date reviewed by PB	PB Action	(A)ccept (R)eject (M)odify
10.	PB0150	Jason Shank	410.3, Table 1401.1	Water temperature control to bidets	**Proposal:** Devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 or water heaters that conform to ASSE 1084 are appropriate for bidet applications. ASSE 1084 requires water heaters to have appropriate Class B or Class C electric control protective measures per UL 607301 to control the output temperature for point of use applications. This limits the water temperature when set to 110°F (43 °C) from the default of 120°F (49 °C), just as one would set an ASSE 1070 mixing valve. Also, CSA B125.3 was harmonized into ASSE 1070 for temperature limiting devices. The text now shows the appropriate reference.	10/15/19	John Parizek said proposal reflects language that will be present in the UPC 2021. The Board accepted the proposal as presented.	Accept
11.	PB0151	Jason Shank	416.2, Table 1401.1	Emergency eyewash and shower equipment water temperature control	**Proposal:** There is a new ASSE standard for water heater serving emergency fixtures, ASSE 1085. This standard requires the water heater to control the temperature to a tepid range as required for emergency fixtures. ASSE 1085 water heater provide the equivalent level of protection as an ASSE 1071 thermostatic mixing valve. ASSE 1071 valves are commonly used to prevent scalding and provide comfort to users of emergency fixtures. The valves and water heaters provide a fail-safe mechanism to still provide cold water if either the hot water flow fails or if the heating element fails. ASSE 1071 devices are required to be installed by the model codes. This updates the MN Code to the current safe plumbing practices.	10/15/19	John Parizek addressed the Board and the proposal was accepted as presented.	Accept

Minnesota Plumbing Board

Adopted Permanent Rules Adopting the 2018 Uniform Plumbing Code with Amendments

4714.0050 TITLE; INCORPORATION BY REFERENCE.

Chapters 2 to 11, 16, and 17 of the 2018 edition of the Uniform Plumbing Code (UPC) as promulgated by the International Association of Plumbing and Mechanical Officials (IAPMO), Ontario, California, and UPC appendices A, B, and I, are incorporated by reference and made part of the Minnesota Plumbing Code except as qualified by the applicable provisions in chapter 1300, and as amended in this chapter. The UPC is not subject to frequent change and a copy of the UPC, with amendments for use in Minnesota, is available in the office of the commissioner of labor and industry. Portions of this chapter reproduce text and tables from the UPC, reproduced with permission.

4714.0204 TERMS DEFINED BEGINNING WITH B.

Subpart 1. **Added definition.** UPC section 204.0 is modified by adding the following definition:

Barometric Loop - Means a section of pipe in the shape of an inverted "u" located upstream and rising a minimum of 35 feet above the highest fixture it supplies.

Subp. 2. **Amended definition.** UPC section 204.0 is modified by amending the following definition:

Building Supply - Means the pipe carrying potable water from the municipal water supply or source of water supply to a building water meter, pressure tank, or other point of use or distribution on the lot.

4714.0207 TERMS DEFINED BEGINNING WITH E.

UPC section 207.0 is modified by adding the following definition:

Emergency Floor Drain - Means floor drains that: do not serve as a receptor, are located in restrooms, are under emergency eyewash/shower equipment, or are in laundry rooms.

4714.0214 TERMS DEFINED BEGINNING WITH L.

UPC section 214.0 is modified by adding the following definition:

Low Pressure Water Dispenser - Means a terminal fitting located downstream of a pressure-reducing valve that dispenses hot drinking water above 160 degrees Fahrenheit (71 degrees Celsius) or cold water or both at a pressure of 15 psi (105 kPa) or less.

4714.0220 TERMS DEFINED BEGINNING WITH R.

UPC section 220.0 is modified by amending the following definition:

Registered Design Professional - For purposes of this code, "registered design professional," "engineer," or "registered professional engineer" means a person practicing professional engineering as described in Minnesota Statutes, section 326.02, subdivision 3, and who is licensed in the state of Minnesota as a professional engineer by the Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience, and Interior Design under Minnesota Statutes, section 326.10.

4714.0225 TERMS DEFINED BEGINNING WITH W.

UPC section 225.0 is modified by adding the following definition:

Water Conditioning Equipment or Water Treating Equipment - Means any appliance, appurtenance, or fixture, or any combination thereof, designed to treat potable water, so as to alter, modify, add, or remove any minerals, chemicals, or bacteria contained in the water. Water conditioning equipment and water treating equipment includes but is not limited to ion exchange water softeners, backwashing water filters, oxidizing water filters, cartridge filters, chemical feed cartridges, ultraviolet lights, and equipment for reverse osmosis, ultrafiltration, nanofiltration, pH adjustment, nitrate and arsenic removal, and adsorption onto activated carbon.

4714.0301 SECTION 301.0 GENERAL.

Subpart 1. **Section 301.2.5 Existing Buildings.** UPC subsection 301.2.5 is deleted in its entirety.

Subp. 2. **Section 301.3.** UPC section 301.3 is amended to read as follows:

301.3 Alternate Materials and Methods of Construction Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Prior to installation, technical documentation shall be submitted to the Authority Having Jurisdiction to demonstrate equivalency. Unless prohibited by this code or by law, the Authority Having Jurisdiction shall have the authority to approve or disapprove the system, method, or device for the intended purpose.

However, the exercise of this discretionary approval by the Authority Having Jurisdiction shall have no effect beyond the jurisdictional boundaries of the Authority Having Jurisdiction. An alternate material or method of construction so approved shall not be considered as in accordance with the requirements, intent, or both of this Code for a purpose other than that granted by the Authority Having Jurisdiction where the submitted data does not prove equivalency.

UPC subsections 301.3.1, 301.3.1.1, and 301.3.1.2 are preserved without amendment.

Subp. 3. **Section 301.5.6.** UPC section 301.5.6 is amended to read as follows:

301.5.6 Inspection and Testing. The alternative engineered design shall be tested and inspected in accordance with the submitted testing and inspection plan and the requirements of this code. Prior to the final plumbing inspection, the registered professional engineer shall provide written certification to the administrative authority that the system has been visually inspected by the registered professional engineer or

the registered professional engineer's designee, and the installation has been properly implemented according to the certified plans, calculations, and specifications.

4714.0313 HANGERS AND SUPPORTS.

Subpart 1. **Section 313.** Table 313.3 is amended to read as follows:

TABLE 313.3

HANGERS AND SUPPORTS

MATERIALS	TYPES OF JOINTS	HORIZONTAL	VERTICAL
Cast	Lead and Oakum	5 feet, except 10 feet where 10 foot lengths are installed[1,2,3]	Base and each floor, not to exceed 15 feet
	Compression Gasket	Every other joint, unless over 4 feet then support each joint[1,2,3]	Base and each floor, not to exceed 15 feet
Cast-Iron Hubless	Shielded Coupling	Every other joint, unless over 4 feet then support each joint[1,2,3,4]	Base and each floor, not to exceed 15 feet
Copper & Copper Alloys	Soldered, Brazed, Threaded, or Mechanical	1-1/2 inches and smaller, 6 feet; 2 inches and larger, 10 feet	Each floor, not to exceed 10 feet[5]
Steel Pipe for Water or DWV	Threaded or Welded	3/4 inch and smaller, 10 feet; 1 inch and larger, 12 feet	Every other floor, not to exceed 25 feet[5]
Steel Pipe for Gas	Threaded or Welded	1/2 inch, 6 feet; 3/4 inch and 1 inch, 8 feet; 1-1/4 inches and larger, 10 feet	1/2 inch, 6 feet; 3/4 inch and 1 inch, 8 feet; 1-1/4 inches every floor level
Schedule 40 PVC and ABS DWV	Solvent Cemented	All sizes, 4 feet; allow for expansion every 30 feet[3,6]	Base and each floor; provide mid-story guides; provide for expansion every 30 feet[6]
CPVC	Solvent Cemented	1 inch and smaller, 3 feet; 1-1/4 inches and larger, 4 feet	Base and each floor; provide mid-story guides
CPVC-AL-CPVC	Solvent Cemented	1/2 inch, 5 feet; 3/4 inch, 65 inches; 1 inch, 6 feet	Base and each floor; provide mid-story guides

Lead	Wiped or Burned	Continuous Support	Not to exceed 4 feet
Steel	Mechanical	In accordance with standards acceptable to the Authority Having Jurisdiction	
PEX	Cold Expansion, Insert, and Compression	1 inch and smaller, 32 inches; 1-1/4 inches and larger, 4 feet	Base and each floor; provide mid-story guides
PEX-AL-PEX	Metal Insert and Metal Compression	1/2 inch; 3/4 inch; 1 inch All sizes 98 inches	Base and each floor; provide mid-story guides
PE-AL-PE	Metal Insert and Metal Compression	1/2 inch; 3/4 inch; 1 inch All sizes 98 inches	Base and each floor; provide mid-story guides
PE-RT	Insert and Compression	1 inch and smaller, 32 inches; 1-1/4 inches and larger, 4 feet	Base and each floor; provide mid-story guides
Polypropylene (PP)	Fusion Weld (socket, butt, saddle, electrofusion), Threaded (metal threads only), or Mechanical	1 inch and smaller, 32 inches; 1-1/4 inches and larger, 4 feet	Base and each floor; provide mid-story guides

For SI units: 1 inch = 25.4 mm, 1 foot = 304.8 mm

Notes:

[1] Support adjacent to joint, not to exceed 18 inches (457 mm).

[2] Brace not to exceed 40-foot (12,192 mm) intervals to prevent horizontal movement.

[3] Support at each horizontal branch connection.

[4] Hangers shall not be placed on the coupling.

[5] Vertical water lines shall be permitted to be supported in accordance with recognized engineering principles with regard to expansions and contraction, where first approved by the Authority Having Jurisdiction.

[6] For expansion joints, see Table 313.3.1.

Subp. 2. **Section 313.** Table 313.3.1 is added to read as follows:

TABLE 313.3.1

Schedule 40 PVC and ABS DWV and Storm Pipe Expansion Table

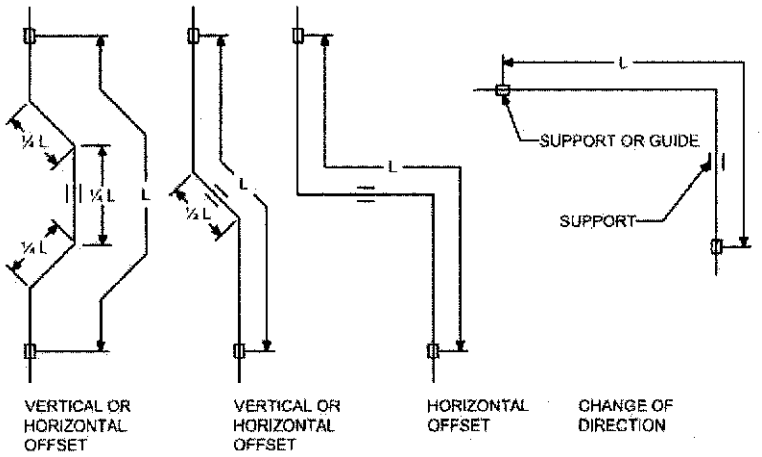
Inside the building thermal envelope

	Length of Run (ft.)		
	10[1]	20[1]	30
Pipe Size	Expansion joint length (in.) = L		
1.5"	20	28	34
2"	22	31	38
3"	27	38	46
4"	30	43	52
6"	37	52	63
8"	42	59	72
10"	47	66	80
12"	51	72	88

Outside the building thermal envelope

	Length of Run (ft.)		
	10[1]	20[1]	30
Pipe Size	Expansion joint length (in.) = L		
1.5"	26	36	44
2"	29	41	50
3"	35	49	60
4"	40	56	68

6"	48	68	83
8"	55	77	94
10"	61	86	105
12"	66	94	114



[1] Multiple offsets shall be allowed to provide expansion for each 30-foot developed length of run.

Subp. 3. **Section 313.7.** UPC section 313.7 is deleted in its entirety.

4714.0403 [Renumbered 4714.0412]

4714.0412 URINALS.

UPC subsection 412.1.1 is amended to read as follows:

412.1.1 Nonwater Urinals. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where a nonwater urinal is installed, a water-supplied fixture shall be installed upstream of the nonwater urinal at the end of that same drainage branch.

4714.0405 PROHIBITED FIXTURES.

UPC section 405.3 is deleted in its entirety.

4714.0406 [Renumbered 4714.0405]

4714.0407 LAVATORIES.

Subpart 1. **UPC section 407.3.** UPC section 407.3 is amended as follows:

407.3 Limitation of Hot Water Temperature for Public Lavatories. Hot water delivered from public-use lavatories shall be limited to a maximum temperature of 110 degrees Fahrenheit (43 degrees Celsius). The maximum temperature shall be regulated by one of the following means:

(1) a limiting device conforming to ASSE 1070/ASME A112.1070 /CSA B125.70; or

(2) a water heater conforming to ASSE 1084.

Subp. 2. UPC section 407.4 is deleted in its entirety.

4714.0408 SHOWERS.

UPC section 408.7 is amended to read as follows:

408.7 Lining for Showers and Receptors. Shower receptors built onsite shall be watertight and shall be constructed from approved-type dense, nonabsorbent, and noncorrosive materials. Each such receptor shall be adequately reinforced; shall be provided with an approved flanged floor drain designed to make a watertight joint on the floor; and shall have smooth, impervious, and durable surfaces. Unless the shower receptor is poured on the ground as part of a slab, an approved shower liner must be provided in accordance with the requirements of this section.

Shower receptors shall have the subfloor and rough side of walls to a height of not less than 3 inches (76 mm) above the top of the finished dam or threshold shall be first lined with sheet plastic, lead, or copper, or shall be lined with other durable and watertight

materials. Showers that are provided with a built-in place, permanent seat or seating area that is located within the shower enclosure, shall be first lined with sheet plastic, lead, copper, or shall be lined with other durable and watertight materials that extend not less than 3 inches (76 mm) above horizontal surfaces of the seat or the seating area.

Lining materials shall be pitched 1/4 inch per foot (20.8 mm/m) to weep holes in the subdrain of a smooth and solidly formed subbase. Such lining materials shall extend upward on the rough jambs of the shower opening to a point not less than 3 inches (76 mm) above the horizontal surfaces of the seat or the seating area, the top of the finished dam or threshold and shall extend outward over the top of the permanent seat, permanent seating area, or rough threshold and be turned over and fastened on the outside face of both the permanent seat, permanent seating area, or rough threshold and the jambs.

Nonmetallic shower subpans or linings shall be permitted to be built up on the job site of not less than three layers of standard-grade 15-pound (6.8 kg) asphalt-impregnated roofing felt. The bottom layer shall be fitted to the formed subbase and each succeeding layer thoroughly hot-mopped to that below. Corners shall be carefully fitted and shall be made strong and watertight by folding or lapping, and each corner shall be reinforced with suitable webbing hot-mopped in place.

Folds, laps, and reinforcing webbing shall extend not less than 4 inches (102 mm) in all directions from the corner, and webbing shall be of approved type and mesh, producing a tensile strength of not less than 50 pounds per square foot (lb/ft^2) (244 kg/m^2) in either direction. Nonmetallic shower subpans or linings shall be permitted to consist of multilayers of other approved equivalent materials suitably reinforced and carefully fitted in place on the job site as elsewhere required in this section.

Linings shall be properly recessed and fastened to the approved backing so as not to occupy the space required for the wall covering, and shall not be nailed or perforated at a point that is less than 1 inch (25.4 mm) above the finished dam or threshold. An approved

type subdrain shall be installed with a shower subpan or lining. Each such subdrain shall be of the type that sets flush with the subbase and shall be equipped with a clamping ring or other device to make a tight connection between the lining and the drain. The subdrain shall have weep holes into the waste line. The weep holes located in the subdrain clamping ring shall be protected from clogging.

UPC subsections 408.7.1 through 408.7.5 are maintained without amendment.

4714.0409 BATHTUBS AND WHIRLPOOL BATHTUBS.

Subpart 1. UPC section 409.1 is amended to read as follows:

409.1 Application. Bathtubs shall comply with ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, CSA B45.5/IAPMO Z124, or CSA B45.12 /IAPMO Z402. Whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10. Pressure sealed doors within bathtubs or whirlpool bathtub enclosures shall comply with ASME A112.19.15. Whirlpool pedicure tubs shall comply with general requirements and water retention sections of ASME A112.19.7 /CSA B45.10, Hydromassage Bathtub Systems.

Subp. 2. UPC section 409.4 is amended to read as follows:

409.4 Limitation of Hot Water Temperature in Bathtubs and Whirlpool Bathtubs. The maximum hot water temperature discharging from the bathtub and whirlpool bathtub filler shall be limited to 120 degrees Fahrenheit (49 degrees Celsius). The maximum temperature shall be regulated by one of the following means:

(1) a limiting device conforming to either ASSE 1070/ASME A112.1070 /CSA B125.70 or CSA B125.3; or

(2) a water heater conforming to ASSE 1084.

4714.0410 BIDETS.

UPC section 410.3 is amended to read as follows:

410.3 Limitations of Water Temperature in Bidets. The maximum hot water temperature discharging from a bidet shall be limited to 110 degrees Fahrenheit (43 degrees Celsius). The maximum temperature shall be regulated by one of the following means:

(1) a limiting device conforming to either ASSE 1070/ASME A112.1070 /CSA B125.70 or CSA B125.3; or

(2) a water heater conforming to ASSE 1084.

4714.0414 DISHWASHING MACHINES.

UPC section 414.3 is amended to read as follows:

414.3 Drainage Connection. Domestic dishwashing machines shall discharge indirectly in accordance with section 807.3 into a waste receptor, a wye branch fitting on the tailpiece of a kitchen sink, or dishwasher connection of a food waste disposer. Commercial dishwashing machines shall discharge indirectly through an air break or direct connection. The indirect discharge for commercial dishwashing machines shall be in accordance with section 807.1, and the direct discharge shall be in accordance with section 704.3.

4714.0416 EMERGENCY EYEWASH AND SHOWER EQUIPMENT.

UPC section 416.2 is amended to read as follows:

416.2 Water Supply. Emergency eyewash and shower equipment shall not be limited in the water supply flow rates. Where hot and cold water is supplied to an emergency shower or eyewash station, the temperature of the water supply shall be controlled by a temperature actuated mixing valve complying with ASSE 1071. Where water is supplied directly to an emergency shower or eyewash station from a water heater, the water heater shall comply

with ASSE 1085. Flow rate, discharge pattern, and temperature of flushing fluids shall be provided in accordance with ISEA Z358.1 based on the hazardous material.

4714.0417 FAUCETS AND FIXTURE FITTINGS.

UPC section 417 is amended by adding subsection 417.6 to read as follows:

417.6 Low-Pressure Water Dispenser. Beverage faucets shall comply with ASME A112.18.1/CSA B125.1. Low-pressure water dispensers that dispense electrically heated water and have a reservoir vented to the atmosphere shall comply with ASSE 1023. Electric devices that heat water shall comply with UL 499.

4714.0418 FLOOR DRAINS.

Subpart 1. **Section 418.4.** UPC section 418.4 is amended to read as follows:

418.4 Food Storage Areas. Where drains are provided in storerooms, walk-in freezers, walk-in coolers, refrigerated equipment, or other locations where food is stored, the drains shall have indirect waste piping. Separate waste pipes shall be run from each food storage area, each with an indirect connection to the building sanitary drainage system. Traps shall be provided in accordance with section 801.3.2 and shall be vented.

Indirect drains shall be permitted to be located in freezers or other spaces where freezing temperatures are maintained, provided that traps, where supplied, shall be located where the seal will not freeze. Otherwise, the floor of the freezer shall be sloped to a floor drain located outside of the storage compartment.

Subp. 2. **Section 418.** UPC section 418 is amended by adding the following subsections.

418.6 Elevator Pit Drain. An elevator pit drain shall discharge to the sanitary sewer using an indirect connection that precludes the possibility of sewage backup into the pit. If a sump is used, it shall be outside the pit with a dry pan drain flowing to it.

418.7 Garage and Parking Area Floor Drains. Floor area drains in open parking areas, including open areas of parking ramps, shall discharge to the storm sewer or to a place of disposal satisfactory to the sewer authority. Floor drains in parking areas that are enclosed, and floor drains in areas open or enclosed that are used for maintenance or as vehicle wash bays, shall discharge to the sanitary sewer if a municipal sewer is available. An oil and flammable liquid interceptor shall comply with section 1017 and shall be provided if required by sections 1009.1, 1011.1, and 1017.1.

Exception: Floor drains in private garages serving one- and two-family dwellings may discharge to daylight if approved by the administrative authority.

4714.0420 SINKS.

UPC section 420.4 is amended to read as follows:

420.4 Waste Outlet. Kitchen and laundry sinks shall have a waste outlet and fixture tailpiece not less than 1-1/2 inches (40 mm) in diameter, except commercial pot and scullery sinks shall be provided with waste outlets not less than 2 inches (50 mm) in diameter. Service sinks shall have a waste outlet and fixture tailpiece not less than 2 inches (50 mm) in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.1 for drainage piping, provided, however, that the connections where exposed or accessible shall be permitted to be of seamless drawn brass not less than No. 20 B & S Gauge (0.032 inches) (0.81 mm). Waste outlets shall be provided with an approved strainer.

4714.0423 TRENCH DRAINS.

Section 423 is added as follows:

423.0 Trench Drains.

423.1 Trench Drains. Trench drains shall comply with ASME A112.6.3, ASME A112.3.1, or be constructed of watertight material and watertight joints, and be tested for watertightness by filling with water to the level of the flood rim of the trench drain.

4714.0501 GENERAL.

UPC section 501.1 is amended to read as follows:

501.1 Applicability. The regulations of this chapter shall govern the construction, location, and installation of fuel-burning and other water heaters heating potable water. The minimum capacity for storage water heaters shall be in accordance with the first hour rating listed in Table 501.1(2). No water heater shall be hereinafter installed that does not comply with the type and model of each size thereof approved by the Authority Having Jurisdiction. A list of accepted water heater appliance standards is referenced in Table 501.1(1). Listed appliances shall be installed in accordance with the manufacturer's installation instructions. Unlisted water heaters shall be permitted in accordance with section 504.3.2.

4714.0504 WATER HEATER REQUIREMENTS.

Subpart 1. **Sections 504.1 to 504.2.** UPC sections 504.1 to 504.2 are deleted in their entirety.

Subp. 2. **Section 504.6.** UPC section 504.6 is amended to read as follows:

504.6 Temperature, Pressure, and Vacuum Relief Devices. The installation of temperature, pressure, and vacuum relief devices, or combinations thereof, shall be installed in accordance with the terms of their listings and the manufacturer's installation instructions. A shutoff valve shall not be placed between the relief valve and the water heater or on discharge pipes between the valves and the atmosphere. The hourly British thermal units (Btu) (kW h) discharge capacity or the rated steam relief capacity of the device shall be not less than the input rating of the water heater. Discharge piping shall be installed in accordance with section 608.5.

4714.0507 OTHER WATER HEATER INSTALLATION REQUIREMENTS.

Subpart 1. **Sections 507.6 to 507.11 and 507.14 to 507.23.** UPC sections 507.6 to 507.11 and 507.14 to 507.23 are deleted in their entirety.

Subp. 2. [See repealer.]

4714.0508 APPLIANCES ON ROOFS.

UPC sections 508.1 to 508.3.3 are deleted in their entirety.

4714.0509 VENTING OF APPLIANCES.

UPC sections 509.0 to 509.15, including all tables and figures, are deleted in their entirety.

4714.0601 HOT AND COLD WATER REQUIRED.

UPC section 601.2 is amended to read as follows:

601.2 General. Each plumbing fixture shall be provided with an adequate supply of potable running water piped to it in an approved manner, so arranged as to flush and keep the fixture in a clean and sanitary condition without danger of backflow or cross-connection. Water closets and urinals shall be flushed by means of an approved flush tank or flushometer valve.

Exception: Listed fixtures that do not require water for their operation and are not connected to the water supply.

601.2.1 Hot Water Required. In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, laundry, cooking purposes, dishwashing, and maintenance. In occupancies where plumbing fixtures are installed for public use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements for individual temperature control limitations for public lavatories, bidets, bathtubs, whirlpool bathtubs, and shower control valves.

601.2.2 Hot Water Recirculation. Hot water supply systems in four-story buildings or higher, or buildings where the developed length of hot water piping from the source

of hot water supply to the farthest fixture supplied exceeds 100 feet, shall be of the return circulation type.

4714.0603 CROSS-CONNECTION CONTROL.

[For text of subparts 1 to 3, see Minnesota Rules]

Subp. 4. **Section 603.5.17.** UPC section 603.5.17 is amended to read as follows:

603.5.17 Potable Water Outlets and Valves. Potable water outlets, freeze-proof yard hydrants, combination stop-and-waste valves, or other fixtures that incorporate a stop-and-waste feature that drains into the ground shall not be installed underground except for a freeze-proof yard hydrant that is located at least two feet above the water table and at least ten feet from any sewer or similar source of contamination.

Subp. 5. **Section 603.5.** UPC section 603.5 is amended by adding the following subsections:

603.5.22 Barometric Loop. A barometric loop is an acceptable method of protection of water connections where an actual or potential backsiphonage hazard exists that is not subject to backpressure.

603.5.23 Installation of Testable Backflow Prevention Assembly. Testable backflow prevention assemblies meeting ASSE Standard 1013, 1015, 1020, 1047, 1048, or 1056 shall be installed, tested, maintained, and removed in accordance with sections 603.5.23.1 through 603.5.23.4.

603.5.23.1 Notification of Installation. The administrative authority shall be notified before installation of a testable backflow prevention assembly. The public water supplier shall be notified of the installed testable backflow preventer assembly within 30 days following installation on a community public water system.

603.5.23.2 Testing and Maintenance. The installation of a testable backflow prevention assembly is permitted only when a periodic testing and inspection program conducted by qualified personnel is provided by an agency acceptable to the administrative authority. Inspection intervals shall not exceed one year. The administrative authority may require more frequent testing if deemed necessary to ensure protection of the potable water. A testable backflow prevention assembly shall be inspected after initial installation to ensure that it has been properly installed and that debris resulting from the piping installation has not interfered with the functioning of the assembly.

603.5.23.3 Inspection and Records. A test and inspection tag shall be affixed to the testable backflow prevention assembly. The tester shall date and sign the tag and include the tester's backflow prevention tester certification number. Written records of testing and maintenance shall be maintained and submitted to the administrative authority, and to the public water supplier, within 30 days of testing if installed on a community public water system.

603.5.23.4 Notification of Removal. The Authority Having Jurisdiction, in addition to the public water supplier, shall be notified within 30 days following removal of a testable backflow prevention assembly from a community public water system.

4714.0607 POTABLE WATER SUPPLY TANKS.

Subpart 1. **Section 607.3.** UPC section 607.3 is amended to read as follows:

607.3 Venting. Tanks used for potable water shall be tightly covered and vented in accordance with manufacturer's installation instructions. Such vent shall open downward and be screened with a corrosion-resistant material of not less than number 24 mesh. The vent opening shall not be located in an environment that can contaminate the water supply.

Subp. 2. **Section 607.4.** UPC section 607.4 is amended to read as follows:

607.4 Overflow. Tanks shall have an overflow that opens downward and is screened with a corrosion-resistant material of not less than number 24 mesh. The overflow pipe shall be of sufficient diameter to permit waste of water in excess of the maximum filling rate. The overflow pipe shall discharge through an air gap.

4714.0608 WATER PRESSURE, PRESSURE REGULATORS, PRESSURE RELIEF VALVES, AND VACUUM RELIEF VALVES.

UPC section 608.5 is amended to read as follows:

608.5 Discharge Piping. The discharge piping serving a temperature relief valve, pressure relief valve, or combination of both shall have no valves, obstructions, or means of isolation and shall:

(1) be equal to the size of the valve outlet and shall discharge full size to the flood level of the area receiving the discharge and pointing down;

(2) consist of materials rated at not less than the operating temperature of the system and shall be approved for such use or comply with ASME A112.4.1;

(3) discharge independently by gravity through an air gap to a safe place of disposal or within 18 inches of the floor. Relief valve drains shall not terminate in a building's crawl space;

(4) discharge in such a manner that does not cause personal injury or structural damage;

(5) not consist of any part that may be trapped or subject to freezing;

(6) not consist of a threaded terminal end of the pipe; and

(7) not discharge from a relief valve into a water heater pan.

4714.0609 INSTALLATION, TESTING, UNIONS, AND LOCATION.

Subpart 1. **Section 609.1.** UPC section 609.1 is amended to read as follows:

609.1 Installation. Water piping shall be adequately supported in accordance with Table 313.3. Burred ends shall be reamed to the full bore of the pipe or tube. Changes in directions shall be made by the appropriate use of fittings, except that changes in direction in copper or copper alloy tubing shall be permitted to be made with bends, provided that such bends are made with bending equipment that does not deform or create a loss in the cross-sectional area of the tubing. Changes in direction are allowed with flexible pipe and tubing without fittings in accordance with the manufacturer's instructions. Provisions shall be made for expansion in hot-water piping. Piping, equipment, appurtenances, and devices shall be installed in a workmanlike manner in accordance with the provisions and intent of this code. Building supply and yard piping shall be located not less than 12 inches (305 mm) below the maximum local frost depth, in accordance with Section 312.6, or an alternative approved by the Authority Having Jurisdiction. The cover shall be not less than 12 inches (305 mm) below finish grade.

Subpart 1. [Renumbered subp 2]

Subp. 2. **Section 609.6.** UPC section 609.6 is amended to read as follows:

609.6 Location. Except as provided in section 609.7, no building supply shall be located in a lot other than the lot that is the site of the building or structure served by the building supply.

609.6.1 Water Supply Near Sources of Contamination. Potable water supply pipes shall not be located in, under, or above cesspools, septic tanks, septic tank drainage fields, seepage pits, soil treatment systems, contaminated soil, sewer manholes, catch basins, storm water storage tanks, buried tanks containing chemicals or petroleum products, or any other source of contamination that in the judgment of the administrative authority might contaminate the potable water supply. A horizontal separation of ten feet shall be maintained between the outer edge of the water supply pipe and the outer edge of the contamination source.

Subp. 2. [Renumbered subp 4]

Subp. 3. **Section 609.10.** UPC section 609.10 is amended to read as follows:

609.10 Water Hammer. Building supply systems where water hammer occurs shall be provided with water hammer arrestors to absorb the resulting high pressures. Water hammer arrestors shall be approved mechanical devices that comply with ASSE 1010 or PDI-WH-201 and shall be installed as close as possible to quick-acting valves.

Subsection 609.10.1 Mechanical Devices is not amended.

Subp. 4. **Section 609.** UPC section 609 is amended by adding the following subsection:

609.12 Water Meters. Water meters shall be located in an approved location inside a building as close as possible to the point of entrance of the potable water supply pipe, installed at least 12 inches above the finished floor, and readily accessible. All water meter installations shall be rigidly supported with a permanent support in order to prevent the meter from vibrating when the water is passing through it.

Exceptions: Where installation inside a building is not possible, the water meter may be installed in an enclosed structure not subject to flooding, high groundwater, or surface drainage runoff, provided the meter is protected from freezing. Provisions shall be made to install the meters above grade when possible. When installed below grade, the top of the structure shall be located at least 12 inches above the finished grade, be secured, and be accessible. This structure shall not be connected to any storm or sanitary sewer system.

4714.0611 WATER CONDITIONING EQUIPMENT.

Subpart 1. **Section 611.** UPC sections 611.0 to 611.3 are amended to read as follows:

611.0 Water Conditioning Equipment.

611.1 Application. Water conditioning equipment shall comply with the requirements in this section.

611.1.1 Manufacture and Assembly. Water conditioning equipment shall: (1) be manufactured as a complete system; or (2) be assembled as a complete system by a licensed plumbing contractor or licensed water conditioning contractor, using various types of water conditioning equipment. Wetted surface materials used in water conditioning equipment shall comply with ANSI/NSF 61 standards, or the equipment shall comply with the applicable NSF standards as listed in Table 1701.1.

Exception: Water conditioning equipment that treats water for nonpotable uses that are protected by an approved backflow device, assembly, or method as required in Chapter 6, as amended.

611.1.2 Labeling. All conditioning equipment shall be labeled by:

(1) the manufacturer of equipment manufactured as a complete system; or

(2) the licensed plumbing contractor or licensed water conditioning contractor who assembled the complete system

so as to clearly identify the type of equipment and the name and address of the manufacturer, licensed plumbing contractor, or licensed water conditioning contractor.

611.2 Airgap Discharge. Any discharge from water conditioning equipment shall enter the drainage system through an airgap in accordance with Table 603.3.1 or an airgap device in accordance with Table 603.2, NSF 58, or IAPMO PS 65.

611.3 Connection Tubing. The tubing to and from water conditioning units shall be of a size and material as recommended by the manufacturer. The tubing shall comply with the requirements of NSF 14, NSF 42, NSF 44, NSF 53, NSF 55, NSF 58, NSF 62, or the appropriate material standards referenced in Table 1701.1.

Subp. 2. **Section 611.5.** Section 611.5 is added.

611.5 Isolation and Bypass. Every water conditioning installation shall include the installation of isolation valves and a bypass valve which would allow the equipment to be serviced or removed without the need for shutting off the water service completely.

4714.0701 MATERIALS.

UPC section 701.2 is amended to read as follows:

701.2 Drainage Piping. Materials for drainage piping shall be in accordance with one of the referenced standards in Table 701.2 except that:

(1) Galvanized wrought-iron and galvanized steel pipe shall not be used underground and shall be kept not less than 6 inches (152 mm) aboveground.

(2) ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 701.2.

(3) No vitrified clay pipe or fittings shall be used aboveground or where pressurized by a pump or ejector. They shall be kept not less than 12 inches (305 mm) belowground.

(4) Copper tube for drainage and pipe venting shall have a weight of not less than that of copper drainage tube type DWV.

(5) Stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground.

(6) Cast-iron soil pipe and fittings shall be listed and tested in accordance with standards referenced in Table 701.2. Such pipe and fittings shall be marked with country of origin and identification of the original manufacturer in addition to markings required by referenced standards.

UPC Table 701.2 is not amended.

4714.0707 CLEANOUTS.

UPC section 707.4 is amended to read as follows:

707.4 Location. Each horizontal drainage pipe shall be provided with a cleanout at its upper terminal and each run of piping that is more than 100 feet (30,480 mm) in total developed length shall be provided with a cleanout for each 100 feet (30,480 mm), or fraction therof, in length of such piping. An additional cleanout shall be provided in a drainage line for each aggregate horizontal change in direction exceeding 135 degrees (2.36 rad). A cleanout shall be installed above the fixture connection fitting, serving each urinal, regardless of the location of the urinal in the building.

Exceptions:

(1) Cleanouts shall be permitted to be omitted on a horizontal drain line less than 5 feet (1,524 mm) in length unless such line is serving sinks or urinals.

(2) Cleanouts shall be permitted to be omitted on a horizontal drainage pipe installed on a slope of 72 degrees (1.26 rad) or less from the vertical angle (one-fifth bend).

(3) Excepting the building drain, its horizontal branches, kitchen sinks, and urinals, a cleanout shall not be required on a pipe or piping that is above the floor level of the lowest floor of the building.

(4) An approved type of two-way cleanout fitting, installed inside the building wall near the connection between the building drain and the building sewer or installed outside of a building at the lower end of a building drain and extended to grade, shall be permitted to be substituted for an upper terminal cleanout.

4714.0710 DRAINAGE OF FIXTURES LOCATED BELOW THE NEXT UPSTREAM MANHOLE OR BELOW THE MAIN SEWER LEVEL.

Subpart 1. **Section 710.10.** UPC section 710.10 is amended to read as follows:

710.10 Sump and Receiving Tank Covers and Vents. Sumps and receiving tanks shall be provided with substantial covers having a bolt-and-gasket-type manhole or equivalent opening to permit access for inspection, repairs, and cleaning. The top shall be provided with a vent pipe that shall extend separately through the roof or, where permitted, be combined with other vent pipes. The vent pipe shall be large enough to maintain atmospheric pressure within the sump under normal operating conditions and in no case shall be less in size than that required by Table 703.2 for the number and type of fixtures discharging into the sump, nor less than 1-1/2 inches (40 mm) in diameter. Where the preceding requirements are met and the vent, after leaving the sump, is combined with vents from fixtures discharging into the sump, the size of the combined vent need not exceed that required for the total number of fixtures discharging into the sump. No vent from an air-operating sewage ejector shall combine with other vents.

Exception: Vents serving sumps connected to elevator pit drains or swimming pool deck drains need not extend through the roof and must not connect to any other vent pipe.

Subpart 1. [Renumbered subp 2]

Subp. 2. **Section 710.12.** UPC section 710.12 is amended to read as follows:

710.12 Grinder Pump Ejector. Grinder pumps shall be permitted to be used. The sump basin storage volume and the pump capacity shall be sized adequately to prevent overloading and shall at a minimum accommodate water demand peak flow from all fixtures.

710.12.1 Discharge Piping. The discharge piping shall be sized in accordance with the manufacturer's installation instructions and shall be not less than 1 1/4 inches (32 mm) in diameter. A check valve and fullway-type shutoff valve shall be located within the discharge line.

Subp. 2. [Renumbered subp 3]

Subp. 3. **Section 710.13.** UPC section 710.13 is amended to read as follows:

710.13 Macerating Toilet Systems. Listed macerating toilet systems shall be permitted as an alternate to a sewage pump system only in one- or two-family dwellings when gravity flow is not possible. Not more than one bathroom group is permitted to discharge into a macerating toilet system. One bathroom group consists of: a toilet; a lavatory; and a shower or bathtub. Components of macerating toilet systems shall be accessible.

710.13.1 Sumps. The sump shall be watertight and gastight.

710.13.2 Discharge Piping. The discharge piping shall be sized in accordance with the manufacturer's instructions and shall be not less than 3/4-inch (20 mm) in diameter. The developed length of the discharge piping shall not exceed the manufacturer's instructions. A check valve and fullway-type shutoff valve shall be located within the discharge line or internally within the device.

710.13.3 Venting. The plumbing fixtures that discharge into the macerating device shall be vented in accordance with this code. The sump shall be vented in accordance with the manufacturer's instructions and the vent shall be permitted to connect to the fixture venting.

4714.0712 TESTING.

[For text of subpart 1, see Minnesota Rules]

Subp. 2. **Section 712.** UPC section 712 is amended by adding subsections to read as follows:

712.4 Negative Test. Concrete manholes and sewer lines shall be tested by negative pressure in accordance with ASTM Standards C1214-19 and C1244-17 or the Hydrostatic Test Method in section 1107.2.3(B).

712.5 Finished Plumbing. After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proven gastight and watertight by plugging the stack openings on the roof and the building drain where it leaves the building, and air introduced into the system equal to the pressure of a 1-inch water column. Such pressure shall remain constant for 15 minutes or the duration of the inspection without the introduction of additional air.

712.6 Test Plugs or Caps. Test plugs or caps for roof terminals shall extend above or outside the end of the vent pipe to provide a visible indication for removal after the test has been completed.

4714.0717 SIZE OF BUILDING SEWERS.

UPC section 717, Table 717.1, is amended to read as follows:

TABLE 717.1

Maximum/Minimum Fixture Unit Loading on Building Sewer Piping

	SLOPE (inches per foot)		
Size of Pipe (inches)	**1/16**	**1/8**	**1/4**
6 and smaller	(As specified in Table 703.2/No minimum loading)		
8*	1950/1500	2800/625	3900/275
10*	3400/1600	4900/675	6800/300
12*	5600/1700	8000/725	11 200/325

*Loadings less than the listed minimums must be approved by the Authority Having Jurisdiction.

For SI units: 1 inch = 25 mm, 1 inch per foot = 83.3 mm/m

4714.0719 CLEANOUTS.

UPC section 719.6 is amended to read as follows:

719.6 Manholes. Approved manholes shall be permitted to be installed in lieu of cleanouts, where first approved by the Authority Having Jurisdiction. The maximum distance between manholes shall not exceed 300 feet (91,400 mm). Connections to manhole and similar structures must be provided as follows:

1. The inlet and outlet connections shall be made by the use of a flexible compression joint not less than 12 inches (305 mm) and not exceeding 3 feet (914 mm) from the manhole. No flexible compression joints shall be embedded in the manhole base.

2. Approved resilient rubber joints must be used to make watertight connections to manholes, catch basins, and other structures.

4714.0724 RECREATIONAL VEHICLE.

UPC chapter 7 is amended by adding the following sections:

724.0 Recreational Vehicle Sanitary Disposal Station.

724.1 Construction. Each recreational vehicle sanitary disposal (dump) station shall have a concrete slab with the drainage system located as to be on the road (left) side of the recreational vehicle. The slab shall be not less than 3 feet by 3 feet (914 mm by 914 mm), not less than 3-1/2 inches (89 mm) thick, and properly reinforced. The slab surface shall be troweled to a smooth finish and sloped from each side inward to a drainage system inlet.

The drainage system inlet shall consist of a 4-inch (102 mm), self-closing, foot-operated hatch of materials meeting these rules with the cover milled to fit tight. The hatch body shall be set in the concrete of the slab with the lip of the opening flush with its surface to facilitate the cleansing of the slab with water. The hatch shall be properly connected to a drainage system inlet, which shall discharge to a public or private sewer meeting the same requirements as provided in this code for building sewers.

724.2 Flushing Device. The recreational vehicle sanitary disposal station flushing device shall consist of a supported riser terminating not less than 2 feet (610 mm) above the ground

surface, with a 3/4-inch (20 mm) valved outlet adaptable for a flexible hose. The flexible hose shall be designed such that it cannot lie on the ground. The water supply to the flushing device shall be protected from backflow by means of a listed vacuum breaker or backflow prevention device located downstream from the last shutoff valve. A pressure-type vacuum breaker backflow device must be provided if a shut-off valve is installed downstream of the backflow device. Direct connections between:

(1) the water piping and sewer-connected waste piping; and

(2) the water piping and the recreational vehicle holding tank;

are not allowed to exist under any condition with or without backflow protection.

Adjacent to the recreational vehicle sanitary disposal station shall be posted a sign of durable material not less than 2 feet by 2 feet (610 mm by 610 mm) in size. Inscribed on the sign in clearly legible letters shall be the following:

"DANGER - NOT TO BE USED FOR DRINKING OR DOMESTIC PURPOSES."

724.3 Drainage Pipe Sizes. The minimum pipe diameters of drainage pipes serving recreational vehicle sites shall be in accordance with Table 724.3.

TABLE 724.3

DRAINAGE PIPE SIZES

Maximum Number of Recreational Vehicles Served	Minimum Pipe Sizes (Inches)
36	4
71	5
120	6
440	8

4714.0801 INDIRECT WASTES.

Subpart 1. **Section 801.3.2.** UPC section 801.3.2 is amended to read as follows:

801.3.2 Walk-In Coolers. Floor drains shall not be located inside walk-in coolers unless they are specifically required by the licensing authority. Where required, floor drains shall be connected to a separate drainage line discharging into an outside receptor. The flood-level rim of the receptor shall not be less than 6 inches (152 mm) lower than the lowest floor drain. The floor drains shall be trapped and individually vented. Cleanouts shall be provided at 90 degree (1.57 rad) turns and shall be accessibly located. The waste shall discharge through an air gap or air break into a trapped and vented receptor, except that a full-size air gap is required where the indirect waste pipe is under vacuum.

Subp. 2. **Section 801.3.3.** UPC section 801.3.3 is amended to read as follows:

801.3.3 Food-Handling Fixtures. Cooking ranges, steam kettles, potato peelers, ice cream dipper wells, and similar equipment shall be indirectly connected to the drainage system by means of an air gap. Bins, cooling counters, compartments, and other equipment having drainage connections and used for the storage of unpackaged ice used for human ingestion, or used in direct contact with ready-to-eat food, shall be indirectly connected to the drainage system by means of an air gap. Each indirect waste pipe from food-handling fixtures, storage or holding compartments, or equipment shall be separately trapped and piped to the indirect waste receptor and shall not combine with other indirect waste pipes. The piping from the equipment to the receptor shall be not less than the drain on the unit, and in no case less than 3/4 inch (20 mm).

Subp. 3. **Section 801.4.** UPC section 801.4 is deleted in its entirety.

4714.0807 APPLIANCES.

UPC section 807.3 is amended to read as follows:

807.3 Domestic Dishwashing Machine. No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved

dishwasher air gap fitting on the discharge side of the dishwashing machine or run the discharge line as high as possible under the countertop, securely fastened. Listed air gaps shall be installed with the flood level (FL) marking at or above the flood level of the sink or drainboard, whichever is higher.

4714.0810 STEAM AND HOT WATER DRAINAGE CONDENSERS AND SUMPS.

UPC section 810 is amended to read as follows:

810.0 Steam and Hot Water Drainage Condensers and Sumps.

810.1 High-Temperature Discharge. No steam pipe shall be directly connected to a plumbing or drainage system, nor shall water having a temperature above 140°F (60°C) be discharged under pressure directly into a drainage system.

4714.0811 PLASTIC WASTE AND VENT PIPES.

UPC section 811 is amended to add subsection 811.9 as follows:

811.9 Waste and Vent. Thermal expansion and contraction compensation shall be provided for every 30 feet of developed horizontal or vertical length of run for thermoplastic piping as shown in Table 313.3.1.

4714.0813 SWIMMING POOLS.

UPC section 813.1 is amended to read as follows:

813.1 General. Pipes carrying wastewater from swimming or wading pools, including pool drainage and backwash from filters, water from scum gutter drains and pool deck drains, shall be installed as an indirect waste. Pool deck drains need not be trapped and vented per section 803.1. Pool deck drain piping must be pitched at a minimum of 1/8-inch per foot for pipe sizes 3 inches and larger. Where a pump is used to discharge waste pool water to the drainage system, the pump discharge shall be installed as an indirect waste.

4714.0814 CONDENSATE WASTES AND CONTROL.

Subpart 1. **Section 814.1.** UPC section 814.1 is amended to read as follows:

814.1 Condensate Disposal. Where discharged into the drainage system, equipment shall drain by means of an indirect waste pipe.

Subp. 2. **Table 814.3.** UPC Table 814.3 is deleted.

Subp. 3. **Section 814.3.** UPC section 814.3 is deleted in its entirety.

Subp. 4. **Section 814.5.** UPC section 814.5 is amended to read as follows:

814.5 Point of Discharge. Air-conditioning condensate waste pipes shall connect indirectly to the interior drainage system through an air gap or air break to: (1) properly trapped and vented receptors; (2) the tailpiece of an approved plumbing fixture; or (3) an exterior place of disposal approved by the Minnesota Pollution Control Agency.

Condensate waste shall not drain over a public way or in areas causing a nuisance.

4714.0903 MATERIALS.

UPC section 903.1 is amended to read as follows:

903.1 Applicable Standards. Vent pipes and fittings shall comply with the applicable standards referenced in Table 701.2, except that:

(1) Galvanized steel or 304 stainless steel pipe shall not be installed underground and shall be not less than 6 inches (152 mm) aboveground.

(2) ABS and PVC DWV piping installations shall be in accordance with the applicable standards referenced in Table 1701.1.

4714.1001 TRAPS REQUIRED.

UPC section 1001.2 is amended to read as follows:

1001.2 Where Required. Each plumbing fixture shall be separately trapped by an approved type of liquid seal trap. This section shall not apply to fixtures with integral traps. Not more than one trap shall be permitted on a trap arm. Food waste disposal units installed with a set of restaurant, commercial, or industrial sinks shall be connected to a separate trap. Each domestic clothes washer and each laundry tub shall be connected to a separate and independent trap, except that a laundry tub shall be permitted to also receive the waste from a clothes washer set adjacent thereto. The vertical distance between a fixture outlet and the trap weir shall be as short as practicable, but in no case shall the tailpiece from a fixture exceed 24 inches (610 mm) in length. One trap shall be permitted to serve a set of not more than three single compartment sinks or laundry tubs of the same depth or three lavatories immediately adjacent to each other and in the same room where the waste outlets are not more than 30 inches (762 mm) apart and the trap is centrally located where the three compartments are installed.

4714.1002 TRAPS PROTECTED BY VENT PIPES.

UPC section 1002.2 is amended to read as follows:

1002.2 Fixture Traps. Each fixture trap shall have a protecting vent located so that the developed length of the trap arm from the trap weir to the inner edge of the vent shall be within the distance given in Table 1002.2 but in no case less than two times the diameter of the trap arm.

Exception: Emergency floor drains, tell tale floor drains, and floor drains not used as waste receptors installed within 25 feet of a vented branch or main.

4714.1006 FLOOR DRAIN TRAPS.

UPC section 1006.1 is amended to read as follows:

1006.1 General. Floor drains shall connect into a trap constructed so that the trap can be readily cleaned and be of a size to efficiently serve the purpose for which the trap is intended.

The drain inlet shall be located so that it is in full view. Where subject to the reverse flow of sewage or liquid waste, such drains shall be equipped with an approved backwater valve.

Exception: Floor drains or trench drains that connect to sand interceptors or oil and flammable liquid interceptors do not need to be trapped.

4714.1009 INTERCEPTORS (CLARIFIERS) AND SEPARATORS.

Subpart 1. UPC section 1009.2 is amended to read as follows:

1009.2 Approval. The size, type, and location of each interceptor (clarifier) or separator shall meet the requirements of this chapter.

Exception: Interceptors or separators that are engineered and manufactured and are documented by the manufacturer and the project registered professional engineer to be properly designed and sized for the specific project, and are approved by the Authority Having Jurisdiction.

No wastes other than those requiring treatment or separation shall be discharged into an interceptor (clarifier) or separator unless specifically permitted elsewhere in this code.

Subp. 2. Section 1009.4 is amended to read as follows:

1009.4 Relief Vent. Interceptors (clarifiers) shall be so designed that they will not become air-bound where closed covers are used. Each interceptor (clarifier) shall be properly vented. Interceptor (clarifier) and neutralization tank vent ports shall be located above the highest liquid flow level.

4714.1016 SAND INTERCEPTORS.

UPC section 1016.4 is amended to read as follows:

1016.4 Separate Use. Sand and similar interceptors shall be so designed and located as to be readily accessible for cleaning, have a water seal of not less than 6 inches (152 mm), and be vented.

Exception: Sand interceptors connecting to oil and flammable liquid interceptors meeting the requirements of section 1017 do not require a water seal or vent.

4714.1017 OIL AND FLAMMABLE LIQUID INTERCEPTORS.

Subpart 1. **Section 1017.1.** UPC section 1017.1 is amended to read as follows:

1017.1 Interceptors Required. Repair garages and gasoline stations with grease racks or grease pits, parking garages over 1,000 square feet, vehicle wash facilities, and factories that have oily waste, flammable waste, or both as a result of manufacturing, storage, maintenance, repair, or testing processes, shall be provided with an oil or flammable liquid interceptor that shall be connected to necessary floor drains. The separation or vapor compartment shall be independently vented to the outer air. Where two or more separation or vapor compartments are used, each shall be vented to the outer air or shall be permitted to connect to a header that is installed at a minimum of 6 inches (152 mm) above the spill line of the lowest floor drain and vented independently to the outer air. The minimum size of a flammable vapor vent shall be not less than 2 inches (51 mm) and, where vented through a sidewall, the vent shall be not less than 10 feet (3,048 mm) above the adjacent level at an approved location. The interceptor shall be vented on the sewer side and shall not connect to a flammable vapor vent. Oil and flammable interceptors shall be provided with gastight cleanout covers that shall be readily accessible. Drains discharging into interceptors must not be designed to retain liquid waste. The waste line shall be not less than 3 inches (80 mm) in diameter with a full-size cleanout to grade. Where an interceptor is provided with an overflow, it shall be provided with an overflow line, not less than 2 inches (50 mm) in diameter, to an approved waste oil tank having a minimum capacity of 550 gallons (2,082 L) and meeting the requirements of the Authority Having Jurisdiction. The waste oil from the separator shall flow by gravity or shall be pumped to a higher elevation by an automatic pump. Pumps shall be adequately sized and accessible. Waste oil tanks shall have a 2 inch

(50 mm) minimum pumpout connection at grade and a 1-1/2 inch (38 mm) minimum vent to atmosphere at an approved location not less than 10 feet (3,048 mm) above grade.

Subp. 2. **Section 1017.2.** UPC section 1017.2 is amended to read as follows:

1017.2 Design of Interceptors. Each manufactured interceptor that is rated shall be stamped or labeled by the manufacturer with an indication of its full discharge rate in gpm (L/s). The full discharge rate of such an interceptor shall be determined at full flow. Each interceptor shall be rated equal to or greater than the incoming flow and shall be provided with an overflow line to an underground tank.

Interceptors not rated by the manufacturer shall have a depth of not less than 2 feet (610 mm) below the invert of the discharge drain. The outlet opening shall have not less than an 18 inch (457 mm) water seal and shall have a minimum capacity as follows: Where not more than three motor vehicles are serviced, stored, or both, interceptors shall have a minimum capacity of 6 cubic feet and 1 cubic foot of capacity shall be added for each vehicle up to 10 vehicles. Above 10 vehicles, each interceptor shall have a holding capacity of not less than 35 cubic feet. Where vehicles are serviced and not stored, interceptor capacity shall be based on a net capacity of 1 cubic foot (0.03 m^3) for each 100 square feet (9.29 m^2) of the surface to be drained into the interceptor, with a minimum of 6 cubic feet (0.2 m^3).

1017.2.1 Maintenance. Service and maintenance records shall be kept by the owner and available for viewing by the Authority Having Jurisdiction upon request. The service and maintenance records shall demonstrate periodic removal of accumulated substances in the oil and flammable liquid interceptor based on the interceptor's capacity as required by the manufacturer's recommended maintenance instructions. Where the Authority Having Jurisdiction determines that an interceptor is not being properly cleaned or maintained, the Authority Having Jurisdiction shall have the authority to mandate a maintenance program.

4714.1101 GENERAL.

Subpart 1. **Section 1101.2.** UPC section 1101.2 is amended to read as follows:

1101.2 Where Required. Roofs, paved areas, yards, courts, courtyards, vent shafts, light wells, or similar areas having rainwater, shall be drained into a separate storm sewer system or into a combined sewer system where a separate storm sewer system is not available, or to some other place of disposal satisfactory to the Authority Having Jurisdiction. In no case shall water from roofs or any building roof drainage flow onto the public sidewalk. In the case of one- and two-family dwellings, storm water shall be permitted to be discharged on flat areas, such as lawns, so long as the storm water shall flow away from the building and away from adjoining property and shall not create a nuisance.

Subp. 2. **Section 1101.3.** UPC section 1101.3 is amended to read as follows:

1101.3 Storm Water Drainage to Sanitary Sewer Prohibited. Storm water shall not be drained into sewers intended for sanitary drainage unless approved by the municipal sewer authority or stated elsewhere in this code.

Subp. 3. **Section 1101.4.** UPC section 1101.4 is amended to read as follows:

1101.4 Material Uses. Rainwater piping placed within the interior of a building or run within a vent or shaft shall be of cast-iron, galvanized steel, wrought iron, brass, copper, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground], or other approved materials. Changes in direction shall be in accordance with Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1701.1.

UPC subsections 1101.4.1 through 1101.4.6 are maintained without amendment.

Subp. 4. **Section 1101.12.** UPC section 1101.12 is amended to read as follows:

1101.12 Roof Drainage.

1101.12.1 Primary Roof Drainage. When roof areas of a building are drained by roof drains, the location and sizing of the drains shall be coordinated with the structural design and pitch of the roof in accordance with section 1106 or as permitted elsewhere in this code. The roof drainage system shall be sized on a basis of a rate of rainfall of at minimum 4 inches per hour.

1101.12.2 Secondary Drainage. Secondary (emergency) roof drainage shall be provided in accordance with Minnesota Rules, chapter 1305.

1101.12.2.1 Location. Unless roof design is certified by a Registered Design Professional specializing in Structural Engineering for the maximum possible depth of water that will pond in accordance with Minnesota Rules, chapter 1305, secondary roof drainage shall be located 2 inches above the lowest point of the roof surface.

1101.12.2.2 Engineered System. Engineered siphonic roof drainage systems must not be utilized in the design of a secondary roof drainage system.

UPC Table 1103.1 is not amended.

Subp. 5. ~~**Sections**~~ **Subsections** ~~**1101.12.2.1, 1101.12.2.2,**~~ **1101.12.2.2.1~~,~~ and 1101.12.2.2.2.** UPC subsections ~~1101.12.2.1, 1101.12.2.2,~~ 1101.12.2.2.1~~,~~ and 1101.12.2.2.2 are deleted in their entirety.

4714.1106 [Renumbered 4714.1103]

4714.1103 SIZE OF LEADERS, CONDUCTORS, AND STORM DRAINS.

UPC sections 1103.1, 1103.2, and 1103.3 are amended to read as follows:

1103.1 Vertical Conductors and Leaders. Vertical conductors and leaders shall be sized by the maximum projected roof area and Table 1103.1. For sizes not listed under Table 1103.1, a minimum rainfall rate of 4 inches per hour must be used to size the rainwater piping.

1103.2 Size of Horizontal Storm Drains and Sewers. The size of building storm drains, or building storm sewers or their horizontal branches shall be based on the maximum projected roof or paved area to be handled and Table 1103.2. For sizes not listed under Table 1103.2, a minimum rainfall rate of 4 inches per hour must be used to size the rainwater piping.

1103.3 Reduction in Size Prohibited. Except for siphonic roof drainage systems, storm drain piping shall not reduce in size in the direction of flow, including changes in direction from horizontal to vertical.

4714.1108 [Renumbered 4714.1105]

4714.1105 CONTROLLED-FLOW ROOF DRAINAGE.

UPC section 1105.1 is amended to read as follows:

1105.1 Application. The controlled-flow roof drainage system shall be sized on the basis of controlled flow and storage of the storm water on the roof, provided the design is based on a minimum of 4 inches per hour and the following conditions are met:

(1) The water from a 25-year-frequency storm shall not be stored on the roof for more than 24 hours.

(2) During the storm, the water depth on the roof shall not exceed the depths specified in Table 1105.1(1).

(3) Not less than two drains shall be installed in roof areas of 10,000 square feet (929 m^2) or less, and not less than one additional drain shall be installed for each additional 10,000 square feet (929 m^2) or less of roof area.

(4) Each roof drain shall have a precalibrated, fixed (nonadjustable), and proportional weir (notched) in a standing water collar inside the strainer. No mechanical devices or valves shall be allowed.

(5) Pipe sizing shall be based on the precalibrated rate of flow (gpm) (L/s) of the precalibrated weir for the maximum allowable water depth, and Tables 1103.1 and 1103.2.

(6) The height of stones or other granular material above the waterproofed surface shall not be considered in water depth measurement, and the roof surface in the vicinity of the drain shall not be recessed to create a reservoir.

(7) Roof design, where controlled-flow roof drainage is used, shall be such that the design roof live load is not less than 40 lb/ft^2.

(8) Scuppers shall be provided in parapet walls. The distance of scupper bottoms above the roof level at the drains shall not exceed the maximum distances specified in Table 1105.1(2).

(9) Scupper openings shall be not less than 4 inches (102 mm) high and have a width equal to the circumference of the roof drain required for the area served, sized in accordance with Table 1103.1.

(10) Flashings shall extend above the top of the scuppers.

(11) At a wall or parapet, 45-degree (0.79 rad) cants shall be installed.

(12) Separate storm and sanitary drainage systems shall be provided within the building.

(13) Calculations for the roof drainage system shall be submitted, along with the plans, to the Authority Having Jurisdiction for approval.

UPC Table 1105.1(1) and Table 1105.1(2) are not amended.

4714.1109 [Renumbered 4714.1107]

4714.1107 TESTING.

Subpart 1. **Section 1107.1.** UPC section 1107.1 is amended to read as follows:

1107.1 Testing Required. Building storm drainage systems that are new and parts of existing systems that have been altered, extended, or repaired shall be tested in accordance with

section 712 to disclose leaks and defects, except as provided in section 1107.2.3. Any section of the building storm sewer that passes through contaminated soils or contaminated water must be air tested in accordance with section 712.3.

Subp. 2. **Section 1107.2.3.** UPC subsection 1107.2.3 is amended to read as follows:

1107.2.3 Exceptions.

(A) Testing is not required for:

(1) outside leaders;

(2) perforated or open drain tile; or

(3) portions of storm drainage system and sewers that are located more than ten feet from buildings, more than ten feet from buried water lines, and more than 50 feet from water wells, and that do not pass through soil or water identified as being contaminated.

(B) Building storm sewers shall be tested in accordance with section 712 or the Hydrostatic Test Method from the City Engineers Association of Minnesota. The Hydrostatic Test Method, provisions E2 and E3, as specified in Standard Utilities Specifications for Watermain and Service Line Installation and Sanitary Sewer and Storm Sewer Installation, written and published by the City Engineers Association of Minnesota, 2018 edition, is incorporated by reference, is not subject to frequent change, and is available in the office of the commissioner of labor and industry.

4714.1110 [Renumbered 4714.1106]

4714.1106 SIPHONIC ROOF DRAINAGE SYSTEM.

UPC chapter 11 is amended by adding a new section and subsections as follows:

1106.0 Siphonic Roof Drainage System.

1106.1 General Requirements. Siphonic roof drainage systems shall be designed as an engineered siphonic roof drainage system when allowed by the administrative authority.

The engineered siphonic roof drainage system shall meet the requirements of sections 1106.2 and 1106.3.

1106.2 Design Criteria. The siphonic roof drainage system shall be designed and certified by a registered professional engineer.

1106.2.1 Sizing. The system shall be sized on the basis of a minimum rate of rainfall of 4 inches per hour.

1106.2.2 Design. The drainage system shall be designed according to ASPE Standard 45, Siphonic Roof Drainage, and according to the manufacturer's recommendations and requirements. Manufacturer design software shall be in accordance with ASPE Standard 45.

1106.2.3 Roof Drain Bodies. Roof drains shall meet ASME A112.6.9, Siphonic Roof Drains.

1106.2.4 Water Accumulation. When designed for water accumulation, the roof shall be designed for the maximum possible water accumulation according to section 1105.1 (7), as amended in this code, and Minnesota Rules, chapter 1305.

1106.2.5 Pipe Size and Cleanouts. Minimum pipe size shall be 1-1/2 inches. All pipe sizes and cleanouts in the drainage system shall be designed and installed according to ASPE Standard 45.

1106.2.6 Horizontal Pipes. Horizontal pipe size shall not reduce in the direction of flow.

1106.2.7 Plans and Specifications. The plans and specifications for the drainage system shall indicate the siphonic roof drainage system as an engineered method used for the design.

1106.2.8 Markings. The installed drainage system shall be permanently and continuously marked as a siphonic roof drainage system at approved intervals and clearly at points where piping passes through walls and floors. Roof drains shall be marked in accordance with ASME A112.6.9.

1106.2.9 Transition Locations. The transition locations from the siphonic roof drainage system to a gravity system shall be determined by the registered professional engineer at a location approved by the administrative authority. The design, sizing, and venting of the transition location shall be in accordance with ASPE Standard 45. The gravity portion of the building storm sewer system receiving the siphonic roof drainage system shall be sized for the design rate but not less than a rainfall rate of 4 inches per hour and in accordance with section 1103.0.

1106.2.10 Required Submissions. All plans, specifications, and calculations shall be signed and sealed by the registered professional engineer and submitted to the administrative authority. The submitted calculations shall include performance data for the drainage system for the required rainfall rate, including the minimum and maximum calculated operating pressures and velocities verifying that the design solution is within the operating parameters required by the design standard. All performance data shall be reported as the extreme maximum and minimum calculations and shall not be presented as averaged data.

1106.3 Proof of Suitability. Upon completion of the project: proper tests, inspections, and certification of the siphonic roof drainage system shall be performed according to items 1106.3.1 and 1106.3.2:

1106.3.1 Testing. Testing shall be performed according to ASPE Standard 45.

1106.3.2 Written Certification. Prior to the final plumbing inspection, the registered professional engineer shall provide written certification to the administrative authority that the system has been visually inspected by the registered professional engineer or

the registered professional engineer's designee and the installation has been properly implemented according to the certified design, plans, calculations, and specifications. The submitted written certification shall include any field modification from the initial design involving dimensions, location, or routing of the siphonic roof drainage system that shall be reapproved and recertified by the registered professional engineer and be accompanied by a final as-built design of the altered system and supported by calculated data to show that the overall system remains in accordance with ASPE Standard 45.

4714.1401 [Renumbered 4714.1701]

4714.1605 INSPECTION AND TESTING.

UPC section 1605.3 is amended to read as follows:

1605.3 Cross-Connection Inspection and Testing. The potable and rainwater catchment water systems shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with sections 1605.3.1 through 1605.3.4.

1605.3.1 Visual System Inspection. Prior to commencing the cross-connection testing and annually thereafter, a dual system inspection shall be conducted as follows:

Pumps, equipment, equipment room signs, and exposed piping in an equipment room shall be inspected for visible cross-connections, proper operation, and damage.

1605.3.2 Cross-Connection Test. The following procedure shall be followed by the plumbing contractor in the presence of the Authority Having Jurisdiction to determine whether a cross-connection has occurred:

(1) The potable water system shall be activated and pressurized. The rainwater catchment water system shall be shut down and completely drained.

(2) The potable water system shall remain pressurized while the rainwater catchment water system is completely drained. The minimum period the rainwater catchment water system is to remain completely drained shall be determined based on the

size and complexity of the potable water system and rainwater catchment water distribution system, but in no case shall that period be less than one hour.

(3) Fixtures, potable water, and rainwater, shall be tested and inspected for flow. Flow from a rainwater catchment water system outlet indicates a cross-connection. No flow from a potable water outlet indicates that it is connected to the rainwater catchment water system.

(4) The drain on the rainwater catchment water system shall be checked for flow during the test and at the end of the testing period.

(5) The potable water system shall then be completely drained.

(6) The rainwater catchment water system shall then be activated and pressurized.

(7) The rainwater catchment water system shall remain pressurized for a minimum time specified by the Authority Having Jurisdiction while the potable water system is completely drained. The minimum period the potable water system is to remain completely drained shall be based on the size and complexity of the potable water system and rainwater catchment water distribution system but in no case shall that period be less than one hour.

(8) Fixtures, potable and rainwater catchment, shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from a rainwater catchment water outlet indicates that it is connected to the potable water system.

(9) The drain on the potable water system shall be checked for flow during the test and at the end of the testing period.

(10) Where there is no flow detected in the fixtures that would indicate a cross-connection, the potable water system shall be repressurized.

1605.3.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

(1) Rainwater catchment water piping to the building shall be shut down at the meter and the rainwater water riser shall be drained.

(2) Potable water piping to the building shall be shut down at the meter.

(3) The cross-connection shall be uncovered and disconnected.

(4) The building shall be retested following procedures listed in sections 1605.3.1 and 1605.3.2.

(5) The potable water system shall be chlorinated with 50 ppm chlorine for 24 hours.

(6) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.

1605.3.4 Inspection. An annual inspection of the rainwater catchment water system, following the procedures in Section 1605.3.1, shall be required. Cross-connection testing, following the procedures listed in section 1605.3.2, shall be required every five years.

Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.

4714.1701 REFERENCED STANDARDS.

Subpart 1. UPC Table 1701.1 is modified to add the following:

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
ASSE 1084-2018	Water Heaters with Temperature Limiting Capacity	Appliances	407.3, 409.4, 410.3
ASSE 1085-2018	Water Heaters for Emergency Equipment	Appliances	416.2
ASTM Standards C1214-19	Concrete Pipe Sewerlines by Negative Air Pressure (Vacuum) Test Method		712.4
ASTM Standards C1244-17	Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill		712.4
CSA B125.3-2018	Plumbing Fittings	Fittings	409.4, 410.3
Hydrostatic Test Method (City Engineers Association of Minnesota) - 2018	Standard Utilities Specifications for Watermain and Service Line Installation and Sanitary Sewer and Storm Sewer Installation	Storm Drainage	1107.2.3(B)

Subp. 2. UPC Table 1701.1 is modified by amending the following:

STANDARD NUMBER	**STANDARD TITLE**	**APPLICATION**	**REFERENCED SECTIONS**
ASME A112.6.9-2005	Siphonic Roof Drains	DWV Components	1106.2.3, 1106.2.8
ASME A112.18.1 - 2018 / CSA B125.1 - 2018	Plumbing Supply Fittings	Fittings	408.3, 417.1, 417.2, 417.3, 417.4 ,417.6, 603.5.19

ASPE Standard 45	Siphonic Roof Drainage	Roof Drainage	1106.2.2 1106.2.5, 1106.2.9, 1106.3.1, 1106.3.2
ASSE 1023-2019	Electrically Heated or Cooled Water Dispensers	Appliances	417.6

Unless amended above, all other entries in UPC Table 1701.1 are not amended.

Subp. 3. UPC Table 1701.2 is modified to delete the following:

STANDARD NUMBER	**STANDARD TITLE**	**APPLICATION**
ASSE 1023-1979	Hot Water Dispensers Household Storage Type - Electrical	Appliances

Subp. 4. UPC Table 1701.2 is modified by adding the following:

STANDARD NUMBER	**STANDARD TITLE**	**APPLICATION**
ASSE 1082-2018	Water Heaters with Integral Temperature Control Devices for Hot Water Distribution Systems	Appliances

4714.1701 [Renumbered 4714.1601]

4714.1601 GENERAL.

Subpart 1. **Section 1601.1.** UPC section 1601.1 is amended to read as follows:

1601.1 Applicability. The provisions of this chapter shall apply to the installation, construction, alteration, and repair of rainwater catchment systems for nonpotable applications listed in section 1602.1.

1601.1.1 Irrigation. Rainwater catchment systems used for lawn irrigation are not covered under this chapter.

1601.1.2 Combination Systems. Rainwater catchment systems used for lawn irrigation in combination with any uses listed in section 1602.1 shall meet the requirements of

this chapter. The irrigation system shall be separated by an air gap or proper backflow protection as required for potable water.

Subp. 2. **Section 1601.11.** UPC section 1601.11 is amended to read as follows:

1601.11 Abandonment. All rainwater catchment systems that are no longer in use and fail to be maintained in accordance with section 1601.5 shall be considered abandoned. Abandoned rainwater catchment systems are subject to sections 1601.11.1 and 1601.11.2.

1601.11.1 General. Every abandoned rainwater catchment system or part thereof covered under the scope of this chapter, as amended in this code, shall be disconnected from any remaining systems, drained, plugged, and capped per the requirements of this code. Storm drainage systems of abandoned rainwater catchment systems must comply with chapter 11, Storm Drainage, as amended.

1601.11.2 Underground Tank. Every underground water storage tank that has been abandoned or otherwise discontinued from use in a rainwater catchment system covered under the scope of this chapter, as amended in this code, shall be completely drained and filled with earth, sand, gravel, or concrete or removed in a manner approved by the administrative authority.

4714.1702 NONPOTABLE RAINWATER CATCHMENT SYSTEMS.

Subpart 1. [Renumbered 4714.1602 subpart 1]

Subp. 2. [Renumbered 4714.1602 subp 2]

Subp. 3. [Renumbered 4714.1602 subp 3]

Subp. 4. [Renumbered 4714.1602 subp 4]

Subp. 5. [Renumbered 4714.1602 subp 5]

Subp.6. [Renumbered 4714.1602 subp 6]

Subp.7. [Renumbered 4714.1602 subp 7]

Subp.8. [Renumbered 4714.1602 subp 8]

Subp. 9. [Renumbered 4714.1603 subpart 1]

Subp. 10. [Renumbered 4714.1603 subp 2]

Subp. 11. [Renumbered 4714.1603 subp 3]

Subp. 12. [Renumbered 4714.1603 subp 4]

Subp. 13. [Renumbered 4714.1603 subp 5]

Subp. 14. [Renumbered 4714.1603 subp 6]

Subp. 15. [Renumbered 4714.1603 subp 7]

Subp. 16. [Renumbered 4714.1604]

Subp. 17. [Renumbered 4714.1605]

Subp. 18. [See repealer.]

Subp. 19. [See repealer.]

Subp. 20. [See repealer.]

Subp. 21. [See repealer.]

Subp. 22. [Renumbered 4714.1601 subp 2]

4714.1602 NONPOTABLE RAINWATER CATCHMENT SYSTEMS.

Subpart 1. **Section 1602.1.** UPC section 1602.1 is amended to read as follows:

1602.1 General. The installation, construction, alteration, and repair of rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains

and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner.

Subp. 2. **Section 1602.2.** UPC section 1602.2 is amended to read as follows:

1602.2 Plumbing Plan Submission. No permit for a rainwater catchment system shall be issued until complete plumbing plans have been submitted and approved by the commissioner in accordance with Minnesota Rules, part 1300.0215, subpart 6.

Subp. 3. **Section 1602.4.** UPC section 1602.4 is amended to read as follows:

1602.4 Connections to Potable or Reclaimed (Recycled) Water Systems. Rainwater catchment systems shall have no direct connection to a potable water supply or alternate water source system. Potable or reclaimed (recycled) water is permitted to be used as makeup water for a rainwater catchment system provided the potable or reclaimed (recycled) water supply connection is protected by an air gap or reduced-pressure principle backflow preventer in accordance with this code. An automatic means to supply the rainwater catchment system with makeup water shall be installed when there is insufficient rainwater to meet the required demand or due to system failure.

Subp. 4. **Section 1602.5.** UPC section 1602.5 is amended to read as follows:

1602.5 Initial Cross-Connection Test. Where a portion of a rainwater catchment system is installed within a building, a cross-connection test is required in accordance with section 1605.3, as amended. Before the building is occupied or the system is activated, the plumbing contractor shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction. The test shall be ruled successful before final approval is granted.

Subp. 5. **Section 1602.7.** UPC section 1602.7 is amended to read as follows:

1602.7 Rainwater Catchment System Materials. Rainwater catchment system materials shall comply with sections 1602.7.1 through 1602.7.4.

1602.7.1 Water Supply and Distribution Materials. Rainwater catchment water supply and distribution materials shall comply with Chapter 6, as amended in this code, and the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.

1602.7.2 Rainwater Catchment System Drainage Materials. Materials used in rainwater catchment drainage systems, including gutters, downspouts, conductors, and leaders shall be in accordance with Chapter 11, as amended in this code, and the requirements of this code for storm drainage.

1602.7.3 Storage Tanks. Rainwater storage tanks shall comply with section 1603.1, as amended in this code.

1602.7.4 Collection Surfaces. The collection surface shall be constructed of a hard, impervious material.

Subp. 6. **Section 1602.9.** UPC sections 1602.9.3 and 1602.9.5 are amended to read as follows:

1602.9.3 Collection Surfaces. Rainwater catchment systems shall collect rainwater only from roof surfaces. Rainwater catchment systems shall not collect rainwater from:

(1) vehicular parking surfaces;

(2) surface water runoff;

(3) bodies of standing water; or

(4) similar nonroof surfaces.

1602.9.5 Prohibited Discharges. Overflows and bleed-off pipes from roof-mounted equipment and appliances, condensate, and other waste disposal shall not discharge onto roof surfaces that collect rainwater for rainwater catchment systems.

Subp. 7. **Section 1602.9.** UPC section 1602.9.6 is amended to read as follows:

1602.9.6 Minimum Water Quality. The minimum water quality for rainwater catchment systems shall meet the applicable water quality recommendations in Table 1602.9.6.

Subp. 8. **Table 1602.9.6.** UPC Table 1602.9.6 is amended to read as follows:

TABLE 1602.9.6

Measure	**Limit**
E. coli (MPN/100 mL)	2.2
Odor	Non-offensive
Temperature (degrees Celsius)	MR
Color	MR
pH	MR

MR = measured and recorded only

Treatment:

100-micron or smaller filter

Minimum 3.5-log reduction of bacteria

Subp. 17. [Renumbered 4714.1605]

Subp. 18. [See repealer.]

Subp. 19. [See repealer.]

Subp. 20. [See repealer.]

Subp. 21. [See repealer.]

Subp. 22. [Renumbered 4714.1601 subp 2]

4714.1603 RAINWATER STORAGE TANKS.

Subpart 1. **Section 1603.2.** UPC section 1603.2 is amended to read as follows:

1603.2 Construction. Rainwater storage shall be constructed of solid, durable materials not subject to excessive corrosion or decay, watertight, and suitable for rainwater storage.

Subp. 2. **Section 1603.7.** UPC section 1603.7 is amended to add the following:

1603.7 Animals and Insects. Rainwater tank openings shall be protected to prevent the entrance of insects, birds, or rodents into the tank and piping system. Screen installed on vent pipes, inlets, and overflow pipes shall be corrosion-resistant and have an aperture of not greater than 1/16 inch (1.6 mm) and shall be close-fitting.

Subp. 3. **Section 1603.9.** UPC section 1603.9 is amended to read as follows:

1603.9 Storage Tank Venting. A vent shall be installed on each tank. The vent shall extend from the top of the tank and terminate a minimum of 12 inches above grade, shall be a minimum of 1-1/2 inches in diameter, and shall be turned downward.

Subp. 4. **Section 1603.10.** UPC section 1603.10 is amended to read as follows:

1603.10 Pumps. Pumps serving rainwater catchment systems shall be listed. Pumps supplying water to water closets, urinals, and trap primers shall be capable of delivering not less than 15 pounds-force per square inch (psi) (103 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in the rainwater supply system within the building exceeds 80 psi (552 kPa), a listed pressure-reducing valve reducing the pressure to 80 psi (552 kPa) or less to water outlets in the building shall be installed in accordance with this code.

Subp. 5. **Section 1603.11.** UPC section 1603.11 is amended to read as follows:

1603.11 Roof Drains. Primary and secondary roof drain systems shall be designed and installed in accordance with Chapter 11, as amended in this code. Secondary roof drains shall be equipped with a working alarm.

Subp. 6. **Section 1603.12.** UPC section 1603.12 is amended to read as follows:

1603.12 Water Quality Devices and Equipment. The rainwater catchment system shall include filtration and disinfection to maintain the minimum water quality requirements in Table 1602.9.6. At a minimum, a 100-micron absolute filter shall be provided along with disinfection to provide a 3.5-log reduction of bacteria. Devices and equipment used to treat rainwater shall be suitable for rainwater catchment system applications, properly designed, sized, and documented for the specific project by a Minnesota registered professional engineer.

Subp. 7. **Sections 1603.15 and 1603.16.** UPC sections 1603.15 and 1603.16 are deleted in their entirety.

4714.1604 SIGNS.

UPC section 1604.2 is amended to read as follows:

1604.2 Commercial, Industrial, and Institutional Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies using nonpotable rainwater for water closets, urinals, or both. Each sign shall contain 1/2-inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to users. Each sign shall contain one of the following texts as determined by the application:

1604.2 (A) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS AND URINALS.

1604.2 (B) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS.

1604.2 (C) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH URINALS.

1604.2 (D) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO *_____*

_____ shall indicate the rainwater usage.

REPEALER. Minnesota Rules, parts 4714.0314; 4714.0421; 4714.0507, subpart 2; 4714.0511; 4714.0604; 4714.0705; and 4714.1702, subparts 18, 19, 20, and 21, are repealed.