

Meeting Minutes: Plumbing Board

Date: July 16, 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

Richard Becker
Jeff Brown – via teleconference
Michael Dryke – via teleconference
Kent Erickson
John Flagg (Vice Chair)
Mike Herman (Secretary)
Rick Jacobs (Chair)
Phillip Sterner
Cathy Tran (DLI Commissioner’s Designee)
David Weum (DOH Commissioner’s Designee)

Members Absent

Justin Parizek
David Wagner

DLI Staff & Visitors

Matt Jobe (Gen. Counsel, DLI)
Kate Perushek (DLI)
Lyndy Logan (DLI)
Jim Peterson (DLI)
Brad Jensen (DLI)
Trevor Ogilvie (City of Mpls)
Matt Marciniak (IAPMO)
Dwight Engen (LECET)
Adam Hanson (ABC)
Mike Johnson (J-Berd)
Megan Henkemeyer (J-Berd)
Gary Thaden (MMCA)
Scott Thompson (My Plumbing Training)
Fonda Ruth Thompson (My Plumbing Training)
Stephanie Manning (MUCA)
Jennifer Schaff (County Materials Corp)
Robert Christensen
Scott Rusert (Hobart)
Joel Hipp (Hobart)
Tom McCarthy (Local 34)
Aaron Ganson (ADS)
David Radziej (Metro PHCC)

1. Call to Order

The meeting was called to order by Chair Jacobs at 9:34 a.m. Roll call was taken by Secretary Sterner and a quorum was declared with 8 of 11 voting members, and one non-voting member, present in person or via teleconference. (Mike Herman joined the meeting at 9:40 a.m. resulting in 9 of 11 members present in person or via teleconference).

2. Approval of meeting agenda

A motion was made by Flagg, seconded by Becker, to approve the agenda with the following modification – Add language to item 6D as shown below in *italics*. The roll call vote was unanimous with 8 votes in favor; the motion carried.

6. Special Business

- D. Discuss 2018 Uniform Plumbing Code and review “Ad Hoc Code Review and Rulemaking Committee 2018 UPC Recommendations to the Board” document - *Will break from review at 2:00 p.m. to continue with agenda items and return if time permits.*

3. Approval of previous meeting minutes

- A motion was made by Sterner, seconded by Becker, to approve the April 16, 2019, regular meeting minutes as presented. The roll call vote was unanimous with 7 votes in favor and one abstention; the motion carried.

Mike Herman joined the meeting resulting in 9 of 11 members present in person or via teleconference.

- A motion was made by Flagg, seconded by Erickson, to approve the June 17, 2019, special meeting minutes as presented. The roll call vote was unanimous with 8 votes in favor and one abstention; 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 met on May 30, 2019.

The CCAC has a public meeting scheduled for July 18, 2019.

- Representative: Mike Herman
- Alternate: John Flagg

6. Special Business

A. 2019 Legislative Session update – Kate Perushek

Perushek, Director of Legislative Affairs, provided an update on legislation that impacts the department. Additional funding was authorized in the following areas:

- Workers’ Comp Modernization project
- Wage Theft Initiative
- Workforce Development
- Youth Skills Training Grant Program

- Helmets to Hardhats apprenticeship program

The licensing of solar contractors as electrical contractors did not pass.

The Housekeeping Bill passed as part of the Omnibus Budget Bill which included repealing an outlier section related to plumber advertising – previously part of the Consumer Protection statute – so that plumbers are treated the same as other licensed individuals under the CCLD licensing statute. In addition, a requirement was added that plumbers display their name and license number on their vehicles – already currently required of electrical contractors. The Omnibus Bill (House File #2) can be viewed at: https://www.revisor.mn.gov/bills/text.php?session=ls91&number=HF0002&session_number=1&session_year=2019&version=list

B. Court of Appeals matter A18-1810, Relator ITW Food Equipment Group, LLC, a/k/a Hobart, update

Matt Jobe gave an update. The Decision of the Court of Appeals was filed on July 1, 2019 and will become final on July 31, 2019. The Decision states:

DECISION: A final interpretation of the plumbing code issued by the plumbing board pursuant to Minn. Stat. § 326B.127, subd. 5, is subject to certiorari review by this court in the manner provided by Minn. Stat. § 14.69. Minn. R. 4714.0603.2 and Table 603.2 unambiguously prohibit any valve from being installed downstream of an AVB. Because the board's final interpretation of Minn. R. 4714.0603.2 was based upon the plain language of Table 603.2, it was not legally erroneous, arbitrary and capricious, or unsupported by substantial evidence. The board did not deprive ITW FEG of any protected constitutional interest when it issued a final interpretation of Minn. R. 4714.0603.2 in response to ITW FEG's request.

C. Request for Final Interpretation – Robert Christensen – Section 602.2, et al.

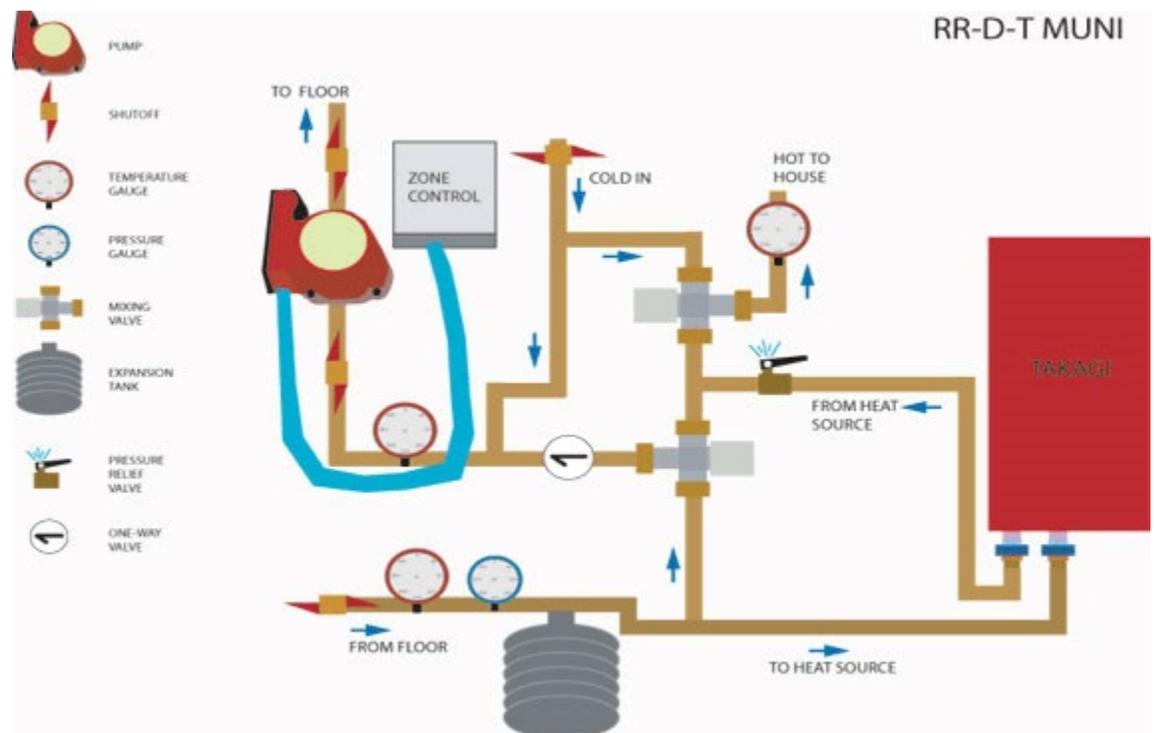
Christensen addressed the Board – **see Attachment A** – and said that MN Rule 4714.602.2 states that water used for cooling or heating of equipment or other purposes shall not be returned to the potable water system. The system Christensen wants to install does not return water used for cooling or heating of equipment or other purposes to the potable water system as described in 4714.602.2, the water within the system always remains potable as it is part of the system. Christensen said that in the domestic hot water open loop system, the potable supply water can only enter the system via the NSF-rated PEX tubing used for radiant heating. This is made possible by an NSF-rated check valve which ensures the supply water will never become stagnant in the tubing because it cannot bypass the radiant tubing and flow directly to the NSF-rated Takagi on-demand hot water heater that is designed for this purpose and follows manufacturer guidelines. Furthermore, the system protects the potable supply water by means of an NSF-rated backflow device as prescribed within the code.

When the system requires heat, the thermostat turns on an NSF-rated circulating pump and allows the hot water to flow through the check valve and enter into the supply system and operates in the same pre-described method as found in 4714.601.1.2 "Hot Water Recirculation." It passes through the on-demand hot water heater and is

tempered by a mixing valve as required in section 1002, Water Heaters, of the 2015 Minnesota Mechanical and Fuel Gas Code ("1002.2 Water heaters utilized for space heating. Water heaters utilized both to supply potable hot water and provide hot water for space-heating applications shall be listed and labeled for such applications by the manufacturer and shall be installed in accordance with the manufacturer's installation instructions and the International Plumbing Code") before entering the domestic hot water portion of the system.

Code section 4714.602.2 only assumes that the potable hot water utilized for radiant heat somehow becomes contaminated, it does not take in account the system design as a whole as to whether the hot water within the system remains potable or not. It does not allow or acknowledge 4714.301.2, Alternate Materials and Methods of Construction Equivalency, which states: "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."

Flagg asked if the heating system is used year-round and Christensen said no. There is no water in the system. Christensen referred to the diagram shown below and explained how his system works.



Christensen explained how his system works: There are two water heaters side by side, cold water feeding both but with a valve that separates the two systems. Mr. Christensen explained that his system is a one zone with four loops and confirmed there are no balancing valve to control the four loops, but just the pump. Becker asked if the separate system would sit stagnant and Christensen replied yes. Tran said the current

code does not allow use by potable water for space heating systems. Becker said the code does not allow reusing water that was used in a water heating system.

Jacobs reiterated Becker's comments and said a system used previously for heating cannot be used for your specific installation.

Jobe advised the Board to make a determination on the RFI. Is the water used for floor heating, equipment or other purposes? Did it ever leave the potable water system? Would 602.2 be applicable to the drawing Christensen submitted?

There were multiple types of systems and details of heating systems discussed. Becker said in his opinion the drawing submitted (diagram above) meets the 602.2 requirements of the code, assuming all the piping is new and wasn't used previously for something other than potable water.

Tran stated that the question to be interpreted should be broader and not specific to this particular situation as the diagram is only one of many types of combination water heating and space heating systems. The question to be interpreted can be, do combination water heating and space heating systems violate Code Section 602.2? Jacob further stated that the Board should only deal with the specific RFI and not the broader question. Jacobs added that the question should be does the system as described in the RFI, and as presented, violate section 602.2?

Board discussions and questions on the specific system on Mr. Christensen's RFI. Mr. Christensen clarified he is intending on reusing the existing piping from his previous hydronic system for the new combination water heating and space heating system. He was advised the reuse of the existing underground hydronic piping is a violation of the code (Section 604.7) and he will not be able to reuse any existing hydronic piping for potable water systems.

Jacobs told Christensen he could submit two new RFI's – one for his specific project and another to specifically state what needed interpretation from the Board. This would allow the opportunity to comment on one of the diagrams, not the two different systems that were submitted in the RFI. Christensen said he understands now that he is not allowed to reuse the existing piping.

Jacobs suggested that Christensen submit a new RFI with a schematic of the system and a material list, and whether the RFI is specific to a specific project or a general question in regard to combination domestic and space heating. Because Christensen submitted two different drawings, Jacobs said that two RFIs could be submitted if both issues needed to be addressed.

Christensen withdrew his RFI and said he would submit a new one.

The Board skipped to the Open Forum section at 12:11 p.m.

- D. Discuss 2018 Uniform Plumbing Code and review “Ad Hoc Code Review and Rulemaking Committee 2018 UPC Recommendations to the Board” document – See Attachment B**

The Board returned from lunch and skipped to Officer Elections followed by item D above.

E. Officer elections (*Turn meeting over to Commissioner’s Designee*)

1. Board Chair person

Flagg made a motion, seconded by Herman, to nominate Rick Jacobs. No other nominations were given. The roll call vote was unanimous with 8 votes in favor [Sternner was not present]; the nomination passed. Jacobs was re-elected as Chair.

2. Board Vice Chair person

Herman made a motion, seconded by Jacobs, to nominate John Flagg. No other nominations were given. The roll call vote was unanimous with 9 votes in favor; the nomination passed. Flagg was re-elected as Vice-Chair. [Sternner had returned].

3. Board Secretary

Jacobs made a motion, seconded by Flagg, to nominate Mike Herman as Secretary. No other nominations were given. The roll call vote was unanimous with 9 votes in favor; the nomination passed. Herman was elected as Secretary.

(Turn meeting over to Board Chair)

D. Committees and Committee appointments

The Chair dismissed the Inspection Uniformity Committee.

7. Complaints

Nothing to report.

8. Open Forum

Scott Rusert, attorney representing Hobart/ITW-FEG addressed the Board and asked the proper way to bring a Petition for Variance to the Board. Jacobs said there is a specific process laid out in MN Statute sections [14.055](#) and [14.056](#). Jobe said he would have Suzanne Todnem contact Rusert to explain the process.

Joel Hipp, Hobart Corporation, said he was not present at the meeting where their RFA [\[PB00100\]](#) was reviewed by the Ad Hoc Committee and asked if anyone had questions or needed clarification. Jacobs said the Committee and the Board reviewed the RFA and is still in the process of considering whether to adopt the 2018 UPC. If the Board does adopt the 2018 UPC with amendments, the public will still have an opportunity to comment on specific proposed amendments.

The Board broke for lunch at 12:30 p.m. and returned at 1:15 p.m.

9. Correspondence

Jason Kruger submitted an email to the Board – shown below – and Jacobs said the Board will take this into consideration when PB0123 is reviewed. The email from Mr. Kruger is considered a public comment to PB0123.

7-11-19

Minnesota Plumbing Board:

The concrete pipe industry in Minnesota, represented by the Minnesota Concrete Pipe Association, requests that the Minnesota Plumbing Board modify an RFA that's currently under consideration.

The RFA is on page 19, Line #78 of this link (PB0123):

<https://www.dli.mn.gov/sites/default/files/pdf/RFA-recommend.pdf>

On the page titled "Proposed Changes," about half way down the page under 1102.2.1 "Mechanical Joints" for concrete pipe, it states the joint shall have an elastomeric gasket in accordance with C1628.

The Minnesota Concrete Pipe Association, representing the concrete pipe industry, requests that the reference to C1628 be eliminated and replaced with ASTM C443. C443 is the standard for gasketed concrete pipe joints in Minnesota, and all concrete pipe manufacturers that supply concrete pipe in Minnesota make their joints in accordance with ASTM C443. Minnesota government agencies like the Minnesota Department of Transportation, municipalities and county highway departments require ASTM C443 for their concrete pipe joints.

Please contact me at any time if you have questions.

Thank you,

Jason Kruger, B.S.C.E. Technical Resource Director

Minnesota Concrete Pipe Association (MnCPA)

10. Board Discussion

None

11. Announcements

Next regularly scheduled meeting in 2019 – all meetings will be held at 9:30 a.m. in the Minnesota Room. The Executive Committee meetings occur at 8:30 a.m. prior to each regular meeting in the Minnesota Room.

A. October 15, 2019

12. Adjournment

A motion was made by Becker, seconded by Sterner, to adjourn the meeting at 3:22 p.m. The roll call vote was unanimous with 9 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 Robert L Christensen II	Rule(s) to be interpreted (e.g., 4714.0330) 4714.602.2
-----------------------------------------------------	------------------------------------------------------------------

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: 602.2	Name of DLI employee gave interpretation: Corey Frain	Date interpretation originally requested: 06/10/2019
----------------------------------------------	-----------------------------------------------------------------	----------------------------------------------------------------

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 or other official?

Yes No

If Yes, state the name or type of official

Richard Meyer, Building inspector, City of North Branch MN.

State the circumstances of the initial dispute:

I applied for a permit to replace two aging tank water heaters with one on-demand capable of supplying potable hot water for domestic and space - heating purposes as allowed for by MN Mechanical code section 1002. The city inspector asked questions over a two week period to which I satisfied all his questions with answers as to the safety of the components and to the potable water supply itself and demonstrated that there was no way that the system could ever be cross contaminated. In the end I was told I was being denied by the cross-contamination section of code 4714.602.2 which states; Water used for cooling or heating of equipment or other purposes shall not be returned to the potable water system.

Explain what you disagree with the interpretation given to you by DLI staff:

The system I am installing does not return water used for cooling or heating of equipment or other purposes to the potable water system as pre-described in 4714.602.2, the water within the system always remains potable as it is part of the system. In the domestic hot water open loop system I am purposing the potable supply water can only enter the system via the NSF rated PEX tubing used for radiant heating this is made possible by a NSF rated check valve which ensures the supply water will never become stagnant in the tubing thus remaining fresh as it cannot bypass the radiant tubing and flow directly to the NSF rated Takagi on-demand hot water heater that is designed for this purpose and follows manufacture guidelines. Furthermore the system protects the potable supply water by means of a NSF rated backflow device as prescribed within the code.

When the system requires heat the thermostat turns on a NSF rated circulating pump and allows the hot water to flow thru the before mentioned check valve and enter into the supply system and operates in the same pre-described method as found in 4714.601.1.2 "Hot Water Recirculation" thus it passes thru the on-demand hot water heater and is tempered by a mixing valve as required in SECTION 1002 WATER HEATERS of the 2015 Minnesota Mechanical and Fuel Gas Code ("1002.2 Water heaters utilized for space heating. Water heaters utilized both to supply potable hot water and provide hot water for space-heating applications shall be listed and labeled for such applications by the manufacturer and shall be installed in accordance with the manufacturer's installation instructions and the International Plumbing Code") before entering the domestic hot water portion of the system.

Code 4714.602.2 only assumes that the potable hot water utilized for radiant heat somehow becomes contaminated, it does not take in account the system design as a whole as to whether the hot water within the system remains potable or not. It does not allow or acknowledge 4714.301.2 Alternate Materials and Methods of Construction Equivalency. Which states; "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."

What is your interpretation of the language:

Code 4714.602.2 was intended to protect the potable water system from (1) pipes, conduits, or fixtures containing or carrying water from any other source or containing or carrying water that has been used for any purpose whatsoever, or (2) any piping carrying chemicals, liquids, gases, or substances whatsoever. It assumes water used for heating is being contaminated by materials not allowed for use in potable water systems. Furthermore it assumes when the heating loop is not in use the water within the system remains stagnant in my proposed system it does not, it remains in flux all the time there for remaining potable.

Cross contamination is not the case in this system you simply cannot cross contaminate potable water with more potable water.

List any other information you would like the Board to consider:

In this system the potable water contained within 1400 feet of NSF PEX tubing in my system equates to 12.89 gallons, this calculation is based on every 100 feet for 1/2" NFS PEX containing 0.921 volume gal. per manufacture standards. This means that at a minimum on an average day the system the potable hot water system will be completely exchanged with fresh potable water 5 times per day by showers alone this is based on 4 showers at 17.2 gallons consumed per shower which is the national average. When you add washing clothes, dishes and hands this exchange rate increases. The current 50 gallon water heater for domestic hot water only exchanges 1.376 times a day based on these numbers and by nature this is not even a complete exchange as the cold and hot water mixes. Engineering would the suggest that the water contained within a properly designed potable open loop hot water system will always be fresher than that of a conventional system and in my opinion safer as the supply water is being brought to a temperature of 160 F by a 199,000 BTU on-demand water heater versus a 50 gallon tank hot water heater which operates at 140F at 40,000 BTU. I would never allow anything in my house that could possibly make my family ill.

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.	Date Received by DLI	Dated Received by Board	Date of Board Meeting
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		
Robert L. Christensen II	Property Owner		
ADDRESS	CITY	STATE	ZIP CODE
6594 Pine St	North Branch	MN	55056
PHONE	SIGNATURE (original or electronic)	DATE	
612-770-7650	<i>Robert L Christensen II</i> Robert L. Christensen II	06/12/2019	

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

Christensen, Robert

From: Robert Christensen >
Sent: Wednesday, June 12, 2019 8:39 PM
To: Christensen, Robert
Subject: Fwd: Minnesota Code for Hot water heaters

[External Email]

Begin forwarded message:

From: Richard Meyer <>
Subject: Re: Minnesota Code for Hot water heaters
Date: June 7, 2019 at 4:27:01 PM CDT
To: Robert Christensen <>
Cc: Rick Martin <>, [Art Ross <>](#), [Cheyne Grimes <>](#)

602.2 states water used for cooling or heating of equipment or other purposes shall not be returned to the potable water system. I understand how the proposed system will work but the way I read the code it is not permitted.

I recommend that you discuss this issue with the plumbing folks at the Department of Labor and Industry. Contact Cathy Tran at 651-284-5898 or Brad Jensen at 218-290-1591.

Thank you!

*Richard Meyer
Building Inspector
City of North Branch*

On Tue, Jun 4, 2019 at 2:44 AM Robert Christensen <> wrote:

Rich,

Code 602.2 is a combination of UPC and IPC. The IPC portion of the deals with the water used for heating and cooling of equipment. In my case this does not apply as I am not heating or cooling any equipment, also it implies to solar hot water heating and geothermal systems.

My system works in the following manner;

The potable cold water enters the hot water system via the PEX tubing in the floor. I have 1400 feet of 1/2 inch NSF rated tubing the volume of water contained in 1400 ft of 1/2 inch PEX amounts to 12.96 gallons. An average shower uses 17.2 gallons of water, in my house we take 4 showers a day as my wife and I shower 2X daily. This means that the potable water contained

within the PEX in the floor will be exchanged 5.3 times daily by showers alone that's not counting washing dishes, laundry, hand washing, ETC.

Plus the new Takagi water heater heats that water 160 degrees F with 199,000 BTU's before it enters the hot water pipes. The old 50 gallon hot water heater which is a Rheem power vent only heats the water to 120 F with 40,000 BTU and only cycles twice daily and is mixing the hot and cold water as it resupply's thus there is possibility of contamination within the water heater tank itself. There is no stagnate water in my new open loop the system and you would have to agree 160F kills a lot more bacteria than 120F which is why the code calls for mixing valves to temper the water back to 120F which my system has.

Heated hot water only enters the PEX for heating when the temperature called for by the house thermostat requires the pump to run to deliver heat, even then this water is potable and is not stagnate.

Since everything in the new system is NSF rated and approved how is it possible for my looped system to get contaminated?

I stated the old system already has back-flow protection to the cold potable water supply so it even meets the 602.2 requirement.

I can not for the life of me understand what I could possibly cross contaminate the hot water system with?, potable water?

Respectfully,
Robb Christensen

On Jun 3, 2019, at 4:53 PM, Richard Meyer < wrote:

MN Plumbing Code 602.2 prohibits water used for cooling or heating from being returned to the potable water system. Please see attached section.

Thank you!

*Richard Meyer
Building Inspector
City of North Branch*

On Sat, Jun 1, 2019 at 8:56 AM Robert Christensen < wrote:

Rich,

I forgot to attach this as well it is located on the bottom of page 41.

<Notice.png>

The last bullet states the illustration is a concept only, the heating coil (used with air-handler) can also be a radiant floor heating coil system as long as the system is designed as such. The systems depicted in photo's provided by Radiant floor company clearly show the unit I am installing which is a Takagi T-H3-DV-N being utilized for radiant floor heating. The water heater is highly rated for the application for which I am installing it for. Also the specifications are listed below.

SPECIFICATION FOR T-H3 MODEL

The fully modulating, on-demand, condensing gas red tankless water heater(s) shall be Takagi model T-H3-DV or T-H3-OS, having a maximum input rating of 199,000 Btu/h and available in NG or LP. The heater shall have 3/4 in. male NPT water and gas connections. The inlet gas supply pressures shall be 4.0 in. WC (min.) up to 10.5 in. WC (max) for NG and 8.0 in. WC (min.) up to 14 in. WC (max.) for LP. The indoor heater(s) shall incorporate an integrated temperature controller that will provide diagnostic information, fault history, and heater set temperature. The outdoor heater(s) shall be factory supplied with

a temperature remote, 100209924, that can be installed up to 400 ft. from the heater using 18 gauge (minimum) control wire. The temperature remote shall provide diagnostic information, fault history, and heater set temperature. The heater(s) shall operate using 120 V / 60 Hz power source. The indoor heater(s) will incorporate a factory installed power cord.

The indoor heater(s) shall be vented with 3" or 4" diameter schedule 40 PVC, CPVC, ABS, or Category IV vent pipe with a length not to exceed 70 ft. (equivalent) for 3" vent or 100 ft. (equivalent) for 4" vent, terminating horizontally or vertically. The intake pipe may use material such as PVC, ABS, aluminum, or Category IV pipe and cannot exceed 70 ft. (equivalent) for 3" vent or 100 ft. (equivalent) for 4" vent. The outdoor heater(s) shall be constructed with an integral exhaust vent on the front of the heater.

The water heater(s) shall use a commercial-grade copper, n tube primary heat exchanger with quick release brass or bronze waterways. The secondary heat exchanger shall be constructed from stainless steel 316L. The heater(s) shall be controlled by an on-board solid-state printed circuit board which uses the following factory installed components: thermistors to monitor water temperature and exhaust temperature; a ow sensor to measure ow rate; a ame sensor to monitor combustion; an Air-Fuel Ratio Rod to measure and adjust air input in order to maintain optimal combustion ef ciency. The heater also consists of in-line fusing and surge absorbers for electrical surge protection, an electronic spark igniter, aluminized stainless steel burners, hi-limit temperature switches to monitor water and exhaust temperatures, modulating gas valve, dual freeze protection that will automatically re the heater (indoor model only) and use heating blocks to protect the heat exchanger, and an overheat cutoff fuse.

The heater(s) can manifold to Easy-Link up to 4 heaters to provide additional capacity. The Easy-Link controls shall be built onto the on-board solid-state printed circuit board and does not require external controls. The linking control wire shall be supplied with the heater. The heater(s) can use a Multi-Unit controller, 100112691, to manifold 5-20 heaters. The Easy-Link and Multi- Unit Controller shall modulate the system for the most ef cient performance. The Easy-Link and Multi-Unit Controller shall rotate the priority heater every 12 hours of operation time or 100 starts for balanced duty/cycle operation.

The heater(s) shall be design certi ed by CSA according to ANSI Z21.10.3, approved for sale in the United States and Canada, ENERGY STAR® quali ed, has a minimum uniform energy factor

of 0.93, meets the energy efficiency requirements of the U. S. Department of Energy and ASHRAE 90.1-2007, complies with Ultra-Low NOx emissions of 14 ng/J or 20 ppm, and shall be certified by NSF to NSF/ANSI 5 Standard.

Let me know if you need some other information.

Thank you again,

Robb Christensen

On Jun 1, 2019, at 2:48 AM, Robert Christensen
◇ wrote:

Rich,

Thank you for your diligence to make sure that my installation is one that keeps me and my family safe.

However your conclusions are not correct, please see my comments to your assertions below in black. Please believe me when I say I appreciate your concern and position. I realize a lot of people say a lot of BS to get you to go along with them or in most cases they do not even bother to file a permit, I did and went the extra mile to make sure it was understood what I was doing before I pulled the permit.

I know you did not give any credence to what I said for a living but in all actuality you should, I am a field engineer for Westinghouse in Nuclear power plants, my first job / obligation is to protect the public from a nuclear catastrophe therefore I am obligated legally to play by the rules same as you are.

I have researched fully what I am doing and will provide any information you require but ask that you read it as it is presented. Often technical information as you know does not always address every application as specific as we desire, in some cases it requires us to ask further questions to gain the understanding we need to make a determination but often we can decipher what is presented in order to draw our own conclusions.

I have addressed every question or concern you have but forth and will do so till you are satisfied but I ask that you also believe me when I say I am not trying to slide something by you. I have no intention of revising my plan unless there is an issue, I am here to work with you in order to satisfy your requirements or concerns but the system is designed to, and follows current Minnesota code.

Respectfully,

Robert Christensen

<Reg-80ci.pdf>
<tn-17_crosslinked_polyethylene_pex.pdf>
<IMG_7972.jpeg>
<IMG_7974.jpeg>

On May 31, 2019, at 6:00 PM, Richard Meyer
<> wrote:

The installation of the water heater/space heating appliance can not be approved as proposed. The appliance is listed for water heating and space heating, however the installation manual (Page 41 that you provided is very specific about the method, referencing a fan coil and not radiant in-floor tubing. Not true it is not specific it is only provided as an example of a suggested application.

The other information provided refers to guidelines from the Radiant Panel Association. These guidelines are not specific to your piece of equipment. What piece are you referring to?

Pex tubing used for in-floor heating is not listed for use for potable water distribution. Pex tubing for potable water is not listed for use as radiant heating. Therefore the two materials can not be used in conjunction. Again not true, the PEX in my floor is rated ASTM F876/877. Attached you will find a picture of the tubing and the spec sheet that clearly states my PEX is rated for Potable applications and radiant heating.

The Mechanical Code sections that are shown do permit water heating to be utilized for both space heating and potable hot water provided that they be installed per the manufacturers installation instructions. The manufacturers installation instructions, as shown on page 41, show the use of a fan coil and do not indicate an alternate method for radiant in-floor tubing. Again the diagram provided is an example which I agree is

not specific to my application. It does require interpretation on behalf of the reader, I can inquire to the manufacture to see if they can provide an exact example however I will more than likely be charged an added expense for this but it is easy to see how it relates to my application. What do you prefer I do?

Minnesota does not adopt the International Plumbing Code. The 2015 Minnesota Plumbing Code is based on the Uniform Plumbing Code. References to the IPC in the Mechanical Code are not correct. The section I listed is what is provided in the Minnesota code book and does follow UPC code. Please explain how you believe it does not conform.

Additionally please see attached Minnesota Plumbing Code Section 602.2 which prohibits water for heating or cooling to be returned to the potable water supply. My potable water supply is already protected by a back flow prevention device as required at the time the original system was installed I fail to see how this would be an issue. Again please see attached picture of the device and a spec sheet for what is already in place.

Please provide revised plans and information for review prior to proceeding with the installation. I find that no revision is necessary as the described system meets your objections.

Thank you!

*Richard Meyer
Building Inspector
City of North Branch*

On Fri, May 31, 2019 at 7:57 AM Robert Christensen <> wrote:
Rich,

I located this in the Minnesota Mechanical Code 2015;
Please see section 1002.2:

Section 1002 Water Heaters

1002.1 General

Potable [water heaters \[up.codes\]](#) and hot water storage tanks shall be listed and [labeled \[up.codes\]](#) and installed in accordance with the manufacturer's installation instructions, the *International Plumbing Code* and this code. All [water heaters \[up.codes\]](#) shall be capable of being removed without first removing a permanent portion of the building structure. The potable water connections and relief valves for all [water heaters \[up.codes\]](#) shall conform to the requirements of the *International Plumbing Code*. Domestic electric [water heaters \[up.codes\]](#) shall comply with UL 174 or UL 1453. Commercial electric [water heaters \[up.codes\]](#) shall comply with UL 1453. Oil-fired [water heaters \[up.codes\]](#) shall comply with UL 732. Solid-fuel-fired [water heaters \[up.codes\]](#) shall comply with UL 2523. Thermal solar [water heaters \[up.codes\]](#) shall comply with [Chapter 14 \[up.codes\]](#) and UL 174 or UL 1453.

1002.2 Water heaters utilized for space heating

[Water heaters \[up.codes\]](#) utilized both to supply potable hot water and provide hot water for space-heating applications shall be listed and [labeled \[up.codes\]](#) for such applications by the manufacturer and shall be installed in accordance with the manufacturer's installation instructions and the *International Plumbing Code*.

1002.2.1 Sizing

[Water heaters \[up.codes\]](#) utilized for both potable water heating and space-heating applications shall be sized to prevent the space-heating load from diminishing the

required potable water-heating capacity.

1002.2.2 Temperature limitation

Where a combination potable water-heating and space-heating system requires water for space heating at temperatures higher than 140°F (60°C), a temperature actuated mixing valve that conforms to ASSE 1017 shall be provided to temper the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less.

We have already provided you with the manufacture information which lists the on-demand unit is sized and list as such. As well we provided a layout of the single zone system which shows the mixing valves as stated in section 1002.2.

I assume that this satisfies your questions as to whether or not my installation meets code and I will be in this morning to get my permit.

Thank you for for help in resolving this issue.

Best regards,

Robert Christensen

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From: [Robert Christensen](#)
To: [Christensen, Robert](#)
Subject: Fwd: water heaters
Date: Wednesday, June 12, 2019 8:38:42 PM

[External Email]

Begin forwarded message:

From: "Frain, Corey (DLI)" <>
Subject: water heaters
Date: June 12, 2019 at 12:42:57 PM CDT
To: "" <>

Water cannot be used for your in-floor heating system then returned to the potable water system that is serving plumbing fixtures per Section 602.2 of the MN Plumbing Code.

Corey Frain, P.E.
651/284-5882

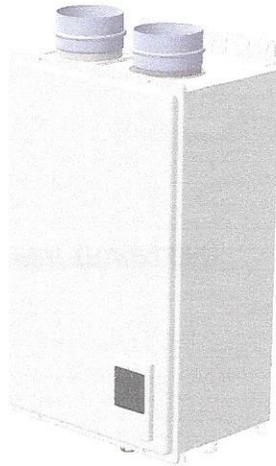
On-Demand Water Heater Installation Manual and Owner's Guide



ANSI Z21.10.3 and CSA 4.3

Model

- 140 Indoor (T-H3M-DV)
- 140 Outdoor (T-H3M-OS)



Gas Tankless Water Heater™

*Suitable for potable water heating and space-heating
Please refer to local codes for space-heating compliance.*

FEATURING

- ENDLESS HOT WATER
- ON-DEMAND USAGE
- COMPACT, SPACE SAVING
- ENERGY CONSERVATION
- COMPUTERIZED SAFETY
- NO PILOT LIGHT
- Satisfies the 2012 SCAQMD Rule 1146.2 for Ultra-Low NOx Emissions



WARNING

If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
 - Do not try to light any appliance.
 - Do not touch any electric switch, do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

If you have any questions, please
call or write to:

500 Tennessee Waltz Parkway
Ashland City, TN 37015
Toll Free: 1-877-737-2840

NIBCO[®] PEX is a Complete System

NIBCO[®] PEX tubing, fittings, valves, and manifolds are designed to be used as a complete system. Therefore, NIBCO cannot guarantee that tubing and/or components from other systems are compatible for use with the NIBCO[®] PEX system. NIBCO offers more versatility with the choice of three different connections - crimp, clamp or sleeve.

The NIBCO[®] PEX Manufacturing Process

Cross-linking is the process that gives NIBCO[®] PEX tubing its superior characteristics. The long, simple chains in a polyethylene molecule are altered to form a more stable, three-dimensional network. This process changes the material from a thermoplastic into a thermoset. A thermoset differs from a thermoplastic because a thermoset cannot be melted and then reformed. This change in molecular structure creates a polyethylene product with enhanced mechanical properties. Many manufacturers use a chemical additive to activate the cross-linking process, but NIBCO employs a sterile, electron beam process that provides superior properties. This process, which is called PEX-c, delivers the highest quality PEX tubing available today, while reducing the use of chemicals.

Standards and Approvals

NIBCO[®] PEX is an outside diameter controlled tubing of one standard dimension ratio (SDR 9) that is manufactured to comply with the requirements of CSA B137.5, ASTM F 876, and ASTM F 2023. NIBCO[®] PEX insert fittings and copper crimp rings are manufactured to comply with CSA B137.5 and ASTM F 1807. NIBCO[®] PEX tubing, fittings, and crimp rings are tested as a system to the requirements of ASTM F 877. NIBCO[®] PEX tubing components are listed for compliance to NSF/ANSI 14 and NSF/ANSI 61 by NSF International for use in potable water systems. NIBCO[®] PEX tubing has also been tested and certified by the International Association of Plumbing and Mechanical Officials (IAPMO).



Operating Limits

Water: 160 PSI @ 73° F (1.10 MPa @ 23° C)
100 PSI @ 180° F (0.69 MPa @ 82° C)
80 PSI @ 200° F (0.55 MPa @ 93° C)

Chlorinated Water: 80 PSI @ 140° F (0.55 MPa @ 60° C)

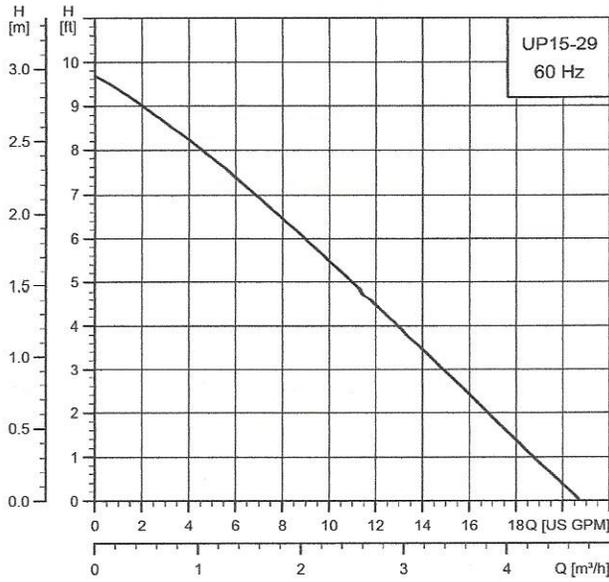
The water temperature must be 140° F (60° C) or lower and the water pressure must be 80 PSI (0.55 MPa) or lower

Thermal Expansion

Heated water expands and must be accommodated within the plumbing system. Protection against increased water pressure from thermal expansion utilizing a pressure relief valve and expansion tank to keep pressure under the maximum of 80 PSI (0.55 MPa) must be incorporated in the system.

Visit our website for the most current information.

UP 15-29 SU/SF



Flow range: 0-20.5 gpm (0-4.7 m³h)
 Head range: 0-9.7 ft (0-2.2 m)
 Motors: 2-pole, single-phase
 Max. liquid: 230 °F (110 °C) and 150 °F
 Min. liquid temperature: 36 °F (2 °C)
 Max. system pressure: 145 psi (10 bar)
 Open system

Note: If the UP pump is equipped with a timer, the maximum liquid temperature is 150 °F (66 °C).

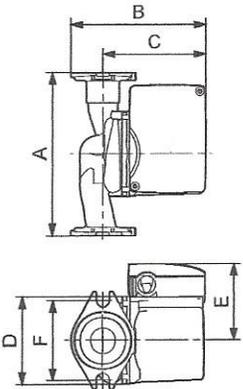
Model	Volts	Amps	Watts	Hp	Capacitor
UP 15-29 SF	115	0.75	87	0.12	10µF/180 V
UP 15-29 SUC		0.75	87	0.12	
UP 15-29 SU	230	0.42	97	0.15	2µF/400 V

TM03 8847 4412

Approvals

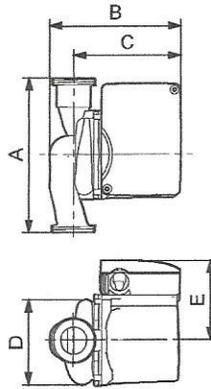


UP 15-29 SF



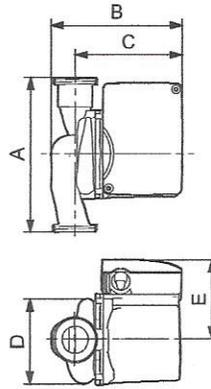
TM03 8778 2507

UP 15-29 SU



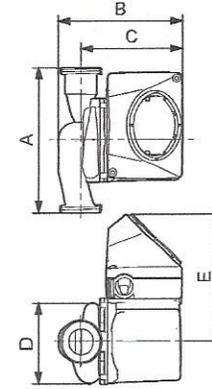
TM03 8777 2507

UP 15-29 SU/LC



TM03 8777 2507

UP 15-29 SU/TLC



TM03 8778 250

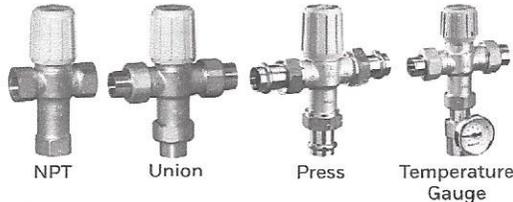
Model type	Product number		Dimensions [inches]						Connection type and size	Shipping weight [lbs]
	115 V	230 V	A	B	C	D	E	F		
UP 15-29 SF	59896771	-	6.50 (165)	5.50 (140)	4.13 (105)	3.88 (98)	2.94 (75)	3.13 (79)	GF15/26	6.0 (2.7)
UP 15-29 SU	59896775	59896784	5.88 (149)	5.50 (140)	4.13 (105)	3.44 (88)	2.94 (75)	—	GU125	5.4 (2.5)
UP 15-29 SU/LC	59896776	-	5.88 (149)	5.50 (140)	4.13 (105)	3.44 (88)	2.94 (75)	—	GU125	5.7 (2.6)
UP 15-29 SUC/TLC	59896777	-	5.88 (149)	5.50 (140)	4.13 (105)	3.44 (88)	2.94 (75)	—	GU125	6.2 (2.8)

Note: LC/TLC models have 6 ft (1.8 m), 3-prong power cord.
 Dimensions in inches unless otherwise noted.

Honeywell

AM-1 Series™

PROPORTIONAL THERMOSTATIC MIXING AND DIVERTING VALVE STANDARD AND "C" TEMPERATURE RANGE MODELS - NPT, UNION SWEAT, THREAD, CPVC, UNION PROGRESS AND PEX MODELS

INSTALLATION INSTRUCTIONS**INSTALLATION**

NPT

Union

Press

Temperature Gauge

IMPORTANT

Mounting must comply with all local codes.

NOTE TO INSTALLER: This product should be installed by a qualified individual, in accordance with local codes and ordinances. It is the responsibility of the installer to properly select, install and adjust these devices as specified in these instructions. For installations which require compliance with Building/Mechanical/Plumbing Codes, the appropriate AM-1 Series™ valve must be chosen and installed, and the discharge temperature set and locked according to these instructions. AM-1 "C" Series models with the temperature range, 70°F–120°F (21°C–49°C) and "Standard" models with temperature range 70°F–145°F (21°C–63°C) are ASSE[®] 1017 (point of source application) certified, and CSA^{™a} and IAPMO[®] listed. These models shall be used to supply water to tubs, showers, bathing facilities and other outlets. These valves should be installed where they will be accessible for cleaning, servicing or adjustment.

APPLICATION

The AM-1 Series™ family of quality valves in a variety of temperature ranges and connections, for master mixing or diverting applications.

SPECIFICATIONS**Media Temperature Ranges:**

Cold Inlet: 39°F–80°F (4°C–27°C)

Hot Inlet: 120°F–180°F (49°C–82°C)

Mixed Outlet:

C Model: 70°F–120°F (21°C–49°C)

Standard Model: 70°F–145°F (21°C–63°C)

Connections:

Straight-through design (HOT and COLD at same level).

Construction:

Nickel plated brass construction. EPDM o-rings. Made in USA.

Lead Free Plumbing Code Compliance: The wettable surfaces of lead free models contain less than .25% of lead by weighted average

Operating Pressure: 150 psi (1034 kPa) maximum.

Patent Information: U.S. Patent No. 6,079,625.

Temperature Gauge Adapter: Lead-free brass, EPDM o-ring

ASSE 1017 Applications—Point of Source

These AM-1 Series models can be installed in any position consistent with the intended use. For domestic hot water supply, the valve must be installed as shown in Fig. 1. There shall be no shut-off valves installed between the cold water line and the cold water connection on the AM-1 Series valve. Check valves shall be installed as indicated for NPT models; all AM-1 models with union fittings are supplied with integral check valves on both the hot and cold ports. A cold water service valve may be installed, as indicated, between the cold water supply line to the distribution system and the cold water line supplying both the water heater and the AM-1 Series valve.

^a -UCPVC and -UPEX models are not CSA listed.



62-3075EFS-06

WATER HEATER THERMAL EXPANSION TANKS

Owner's Manual

Models: 2 - 5 Gallon Capacity

- Safety Instructions
- Installation
- Maintenance
- Warranty



Certified to NSF/ANSI 61

	! WARNING
	<p>Read and understand manual and safety messages before installing, operating or servicing this water heater.</p> <p>Failure to follow instructions and safety messages could result in death or serious injury.</p>

Thank You for purchasing this Thermal Expansion Tank. Properly installed and maintained, it should give you years of trouble free service.

KEEP THIS MANUAL FOR FUTURE REFERENCE WHENEVER MAINTENANCE ADJUSTMENT OR SERVICE IS REQUIRED.

ENGINEERING SPECIFICATION

Material & Cross Linking: Tubing shall be made of cross-linked high density polyethylene. The PEX shall be made in copper tube size dimensions (CTS-OD) with a standard dimension ratio (SDR) of 9 controlling the wall thickness. The cross-linking method shall be accomplished by grafting organosilane molecules onto the base polyethylene chain by use of a catalyst blended with the resin before extrusion and then completed in a steam process. The oxygen barrier layer on the outside of the tubing shall be made of ethylene vinyl alcohol (EVOH). EVOH is highly resistant to the passage of oxygen.

Standards: Tubing shall meet the following standards:

- ASTM specifications of F 876 (Standard Specification for Crosslinked Polyethylene (PEX) Tubing)
- ATM F 877 (Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems)
- DIN 4726.070 Oxygen Permeation
- NSF standards 61 and 14 as suitable for use with potable water

Performance: Pressure and temperature ratings shall be 80psi @ 200°F, 100psi @ 180°F, and 160psi @ 73°F. Oxygen permeation shall be less than .01grams/m³/day.

PRODUCT DESCRIPTION

NIBCO INC. BARRIER-PEX is cross-linked polyethylene tubing used to transport fluids in hydronic radiant heating/cooling/snow-melt systems where oxygen permeation into the system is not desired. This is important where ferrous metal components are used. Fluids in a radiant system shall be of a water or water/glycol mix. The tubing shall also be suitable for use in potable plumbing applications. The tubing may be placed in concrete, thin slab, sand, behind walls, and in or under wood flooring. BARRIER-PEX is an orange color to distinguish it from other types of PEX tubing and is available in multiple sizes in both sticks and coils.

PRODUCT DIMENSIONS

Size	Figure Number	Description	NOM. I.D.	O.D.	Volume gal. per 100'
½"	NP75	½" Orange BARRIER-PEX	0.475"	⅝"	0.921
⅝"	NP75	⅝" Orange BARRIER-PEX	0.574"	¾"	1.340
¾"	NP75	¾" Orange BARRIER-PEX	0.671"	⅞"	1.837
1"	NP75	1" Orange BARRIER-PEX	0.862"	1 ⅛"	3.025

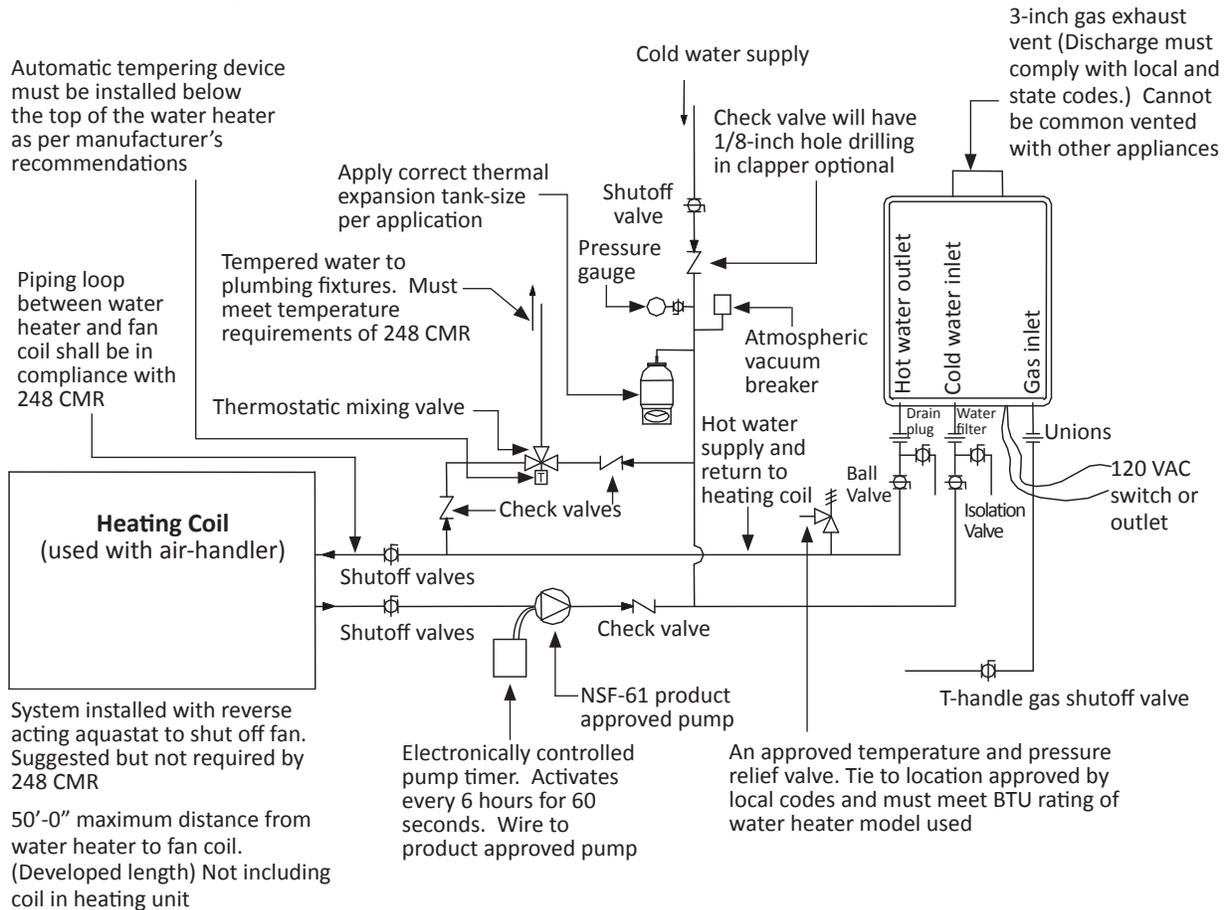
OPERATING TEMPERATURE AND PRESSURE

The NIBCO INC. BARRIER-PEX tubing has a pressure rating of 80 PSI at 200°F, 100 PSI at 180°F and 160 PSI at 73°F.

**-Dual-purpose hot water heating-
(Domestic and Space Heating):**

Diagrammatic layout of radiant heating and domestic water heater.

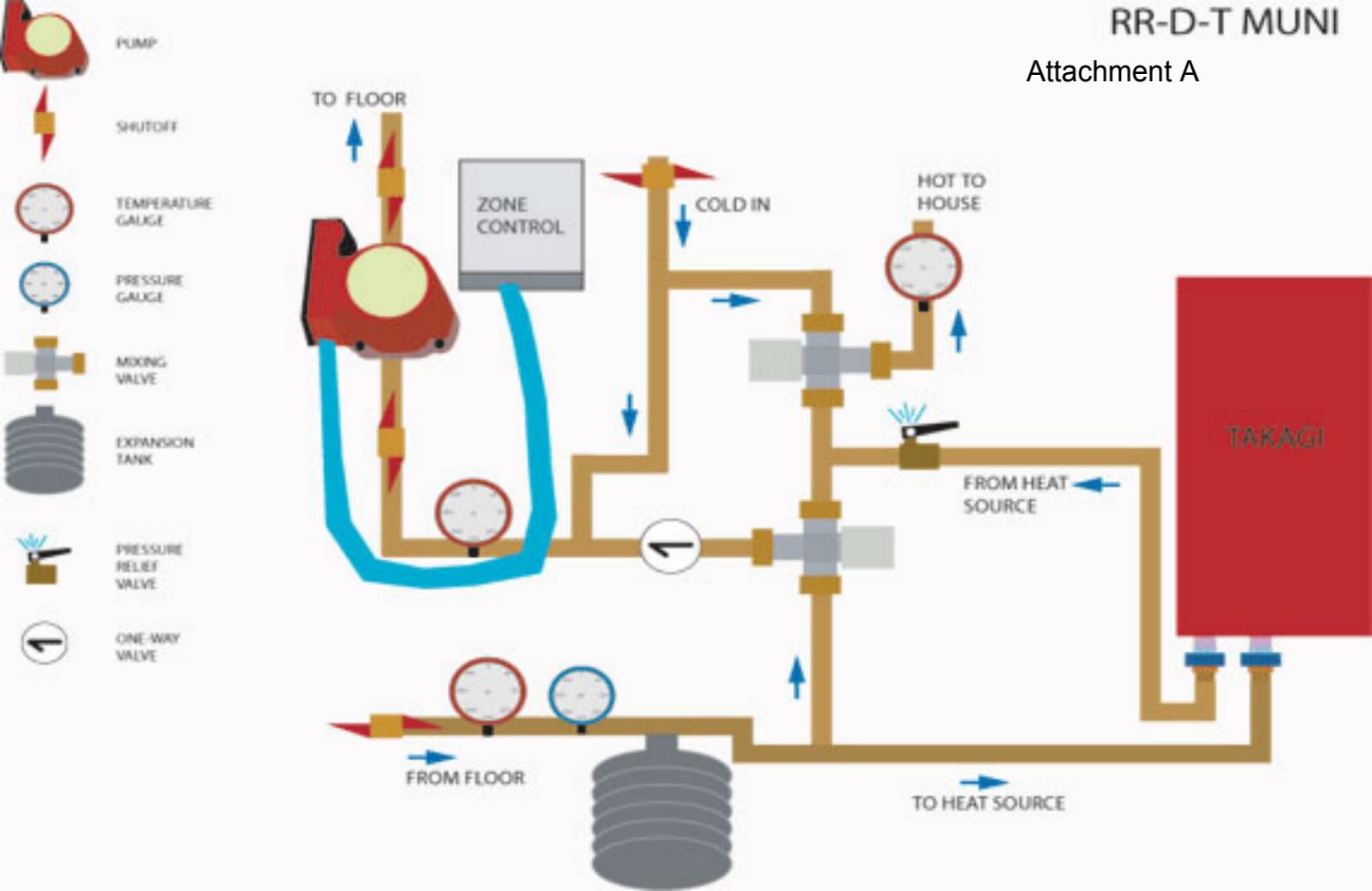
All water piping should be insulated in accordance with 780 CMR (Massachusetts energy code)



The recirculation pump is to provide no less than 2 GPM (7.5 L/min) and no more than 4 GPM (15 L/min) through each activated unit in the system

NOTICE

- **Priority Control Devices** such as a flow switch, an Aquastat or other electronic controller can be used to prioritize the domestic water system over the heating system.
- Follow all local codes, or in the absence of local codes, follow the current edition of the National Standard Code, ANSI Z21.10.3 • CSA 4.3.
- This illustration is a concept design only. The reference to the 1/8th hole in check is only for the State of Massachusetts. There are a wide variety of variations to the application of controls and equipment presented. Designers must add all necessary safety and auxiliary equipment to conform to code requirements and design practice. For more details, contact the manufacturer.



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)cept (R)eject (M)odify
1.	PB0097	RFA	Thomas Johnson	Chapter 1	Add chapter 1 of the UPC into the Plumbing Code	<p>Proposal: add chapter 1 of the UPC to the Plumbing Code.</p> <p>Recommendation: do not add chapter 1 of the UPC because MN uses rule chapter 1300 for code administration.</p>			
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.			
3.	PB0135	RFA (2018 UPC) Also see Final Interpretation at line #8	DLI	Chapter 2 definitions	Definition of "building supply" and registered design professional	<p>Proposal: amend definitions of "building supply" and change term "Registered Professional Engineer" to "Registered Design Professional"</p> <p>Recommendation: amend the definitions of "building supply" and "Registered Professional Engineer" as proposed. See PB0135.</p>			
4.	PB0128	RFA (2018 UPC)	Scott Thompson	Chapter 2	Definition of "floor drain" and "floor drain – emergency"	<p>Proposal: amend definition of "floor drain" and "floor drain – emergency" as proposed.</p> <p>Recommendation: define "floor drain – emergency" as "Floor drains that are located in restrooms, under emergency eyewash/shower equipment and in laundry rooms." No definition for "floor drain."</p>			

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
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.			
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			
7.	PB0083	Final Interpretation	Patrick Lorio, City of Minneapolis	2012 UPC, sections 414.3 & 807.4, MN Rule 4714.0050	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? 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.		5.11.2016: No, a domestic dishwasher cannot drain to a lower floor without the installation of 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.		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	2012 UPC section 204, Table 604.1, and IS 7	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		Final Interpretation issued June 15, 2016. Yes, polyethylene piping, when used for building supply, can be installed inside and under buildings	

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
			Water Well Assoc	(2.6.1), MN Rule, part 4714.0050		supply, be installed inside and under buildings? Answer: Yes.			
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 part of a fire protection system.	<p>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 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?</p> <p>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</p>		Final interpretation issued March 20, 2017	

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)cept (R)eject (M)odify
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 table made by Becker based on ΔT 50 and ΔT 100	6/17/19	Becker said he would revise the tables to incorporate formulas for ABS and PVC and bring back to the Board at a later date.	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	Table 313.3 is connected to the above tables; therefore, it will be discussed when tables above are revised and brought back to Board.	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

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
16.	N/A	N/A	Committee	407.4	Transient Public Lavatories	Proposal: delete section 407.4 Transient Public Lavatories Recommendation: delete section 407.4 of 2018 UPC.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
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	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

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
						for "open parking garage" and "enclosed parking garage."			
20.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0421	chapters 3-5, various	<p>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).</p> <p>Recommendation: delete Minn. rule 4714.0421, result: change temperature from 110 degrees F to 120 degrees F.</p>	6/17/19	The Board agreed to accept recommendation as presented.	Accept
21.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0501	chapters 3-5, various	<p>Proposal: Amend Minn. rule 4714.0501 to exclude chimneys, vents and their connectors because not plumbing.</p> <p>Recommendation: Amend Minn. rule 4714.0501 to exclude chimneys, vents and their connectors because not plumbing.</p>	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	<p>Proposal: Amend Minn. rule 4714.0504, subp. 2, to add "Discharge piping shall be installed in accordance with Section 608.5."</p> <p>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.</p>	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.	6/17/19	No recommendation	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
						No recommendation.			
24.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0507	chapters 3-5, various	<p>Proposal: Amend Minn. rule 4714.0507, subp. 2 regarding Relief Valve Discharge, to replace the Minnesota amendment and use 2018 UPC language.</p> <p>Recommendation: Amend Minn rule 4714.507, subp. 2 regarding Relief Valve Discharge, to replace the Minnesota amendment and use 2018 UPC language.</p>	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	<p>Proposal: 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.</p> <p>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.</p>	6/17/19	The Board agreed to accept recommendation as presented.	Accept
26.	PB0102	RFA (2018 UPC)	Cathy Tran, DLI	4714.0509	chapters 3-5, various	<p>Proposal: Amend Minn. rule 4714.0509 to include deletion of UPC section 509.15, Venting of Appliances.</p> <p>Recommendation: delete section 509 in its entirety, including 509.15, of the 2018 UPC.</p>	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	<p>Proposal: Delete UPC sections 509.0 through 510.2.27 in their entirety.</p> <p>Recommendation: Delete UPC sections 509.0 through 510.2.27; these deletions</p>	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
						already covered in other recommendation or already in Minn. rule 4714.0510.			
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
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?	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)cept (R)eject (M)odify
						<p>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.</p> <p>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?</p> <p>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.</p>			
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.	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: 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.			
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. Recommendation: Incorporate (new) 2018 UPC section 603.5.21 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)cept (R)eject (M)odify
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)cept (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	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

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)cept (R)eject (M)odify
						"maximum frost depth" or find a published source of maximum frost depth.			
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. Recommendation: amend Minn. rule 4714.0609.11 as drafted in RFA.	6/17/19	The Board agreed to accept recommendation as presented.	Accept
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 611.0 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	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	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
						Recommendation: add subsection 611.3.1 as proposed. See RFA PB0115 .		MODIFIED Recommendation: add subsection 611.5 as proposed. See RFA PB0115 .	
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 Recommendation: amend as proposed. See 3/11/19 meeting minutes .	6/17/19	The Board agreed to accept recommendation as presented.	Accept
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).	6/17/19	MODIFIED recommendation: <ul style="list-style-type: none"> Add footnote *** With no change in direction Add the ASTM standards with updated numbering per the UPC 2018 under building sewer pipe and fittings. <p>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.</p>	Accept as modified
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

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)cept (R)eject (M)odify
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)	7/16/19	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, <u>kitchen sinks</u> , 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.	Accept as modified
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 <u>vent pipe</u> .	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	7/16/19	Final Interpretation issued on 8/29/2018 The board agreed to take no action.	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
						are covered by a utility easement, then the Plumbing Code does not apply.			
62.	PB0127	RFA (2018 UPC)	Scott Thompson	Sec. 712.1	Amend section 712.1 [and 4714.0712, subp. 1]	<p>Proposal: repeal MN amendment to section 712.1 and use 2018 UPC 712.1 language.</p> <p>Recommendation: keep current MN amendment in Minn. rule part 4714.0712.</p>	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
63.	PB0121	RFA (2018 UPC)	DLI	715 - CIPP	chapter 7, various	<p>Proposal: amend Minn. rule 4714.0715 regarding section 715.3 to reflect the language of UPC 2018</p> <p>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.</p>	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	<p>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."</p> <p>Recommendation: add language as proposed. See RFA PB0121.</p>	7/16/19	The Board agreed to accept the recommendation as presented.	Accept
65.	PB0121	RFA (2018 UPC)	DLI	719.6	chapter 7, various	<p>Proposal: add an additional option to join pipe to manholes and similar structures to provide a water tight connection</p>	7/16/19	The Board agreed to accept the recommendation as presented but noted that the word "follow" should be "follows" as shown below.	Accept w-amend

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 .		<u>Connections to manhole and similar structures must be provided as follows:</u> [add s]	
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) Recommendation: keep section 908.2 in its entirety.	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)cept (R)eject (M)odify
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

Line #	PB #	RFA/RFI	Submitter	Rules affected	Brief Title	Proposal and Committee recommendation	Date reviewed by PB	PB action	(A)cept (R)eject (M)odify
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
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. 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)	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	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
								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 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 .			
80.	PB0125	RFA (2018 UPC)	Cathy Tran, DLI	Chapter 11	Chapter 11, various	Proposal: amend sections 1103.1 and 1103.2 (renumbered from 1106). Add to both sections. Recommendation: amend as submitted. See PB0125 .			
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.			
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.			
83.	PB0124	RFA (2018 UPC)	MDH	Table 1702.9.4	Update Table 1702.9.4	Proposal: Amend Table 1702.9.4 as proposed.			

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 Table 1702.9.4 as proposed in PB0124 .			
84.	N/A	N/A	Committee	Chpts. 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			
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			

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.