

Plumbing Board
 c/o Department of Labor and Industry
 443 Lafayette Road North
 St. Paul, MN 55155-4344
www.dli.mn.gov
 Email: DLI.cclboards@state.mn.us

PB0168.RFA.Jeff Hill
Section 611.0.Revised 11/6/2024
Includes letters of support from Clean Water
Council (10.28.2024) & MPCA (10.29.2024)
Plumbing Board Request for Action

PRINT IN INK or TYPE

NAME OF SUBMITTER	PURPOSE OF REQUEST (check all that apply): <input type="checkbox"/> New Code		
	<input type="checkbox"/> Code Amendment <input type="checkbox"/> Repeal of an existing Rule		
The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at https://epubs.iapmo.org/2020/MPC/			
Specify the purpose of the proposal: If recommendation for code change for appurtenance or method (check all that apply)			
<input type="checkbox"/> Appurtenance (e.g., water conditioning equipment) <input type="checkbox"/> Test Method			
<input type="checkbox"/> Other (describe)			
Does your submission contain a Trade Secret? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If Yes, mark "TRADE SECRET" prominently on each page of your submission that you believe contains trade secret information. Minnesota Statutes, section 13.37, subdivision 1(b), defines "trade secret" as follows: "Trade secret information" means government data, including a formula, pattern, compilation, program, device, method, technique or process (1) that was supplied by the affected individual or organization, (2) that is the subject of efforts by the individual or organization that are reasonable under the circumstances to maintain its secrecy, and (3) that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. Note that, although "trade secret" information is generally not public, the Board and its committees may disclose "trade secret" information at a public meeting of the Board or committee if reasonably necessary for the Board or committee to conduct the business or agenda item before it (such as your request.) The record of the meeting will be public.			
Describe the proposed change. The Minnesota Plumbing Code (Minnesota Rules Chapter 4714) is available here: https://epubs.iapmo.org/2020/MPC/			
NOTE:			
<ul style="list-style-type: none"> • Please review the Minnesota Plumbing Code and include all parts of the Code that require revision to accomplish your purpose. • The proposed change, including suggested rule language, should be <i>specific</i>. If modifying existing rule language, <u>underline new words</u> and strike through deleted words. Please list all areas of the Minnesota Plumbing Code that would be affected.			
For Office/Committee Use Only Proposal received completed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date Proposer notified of gaps:	Mode of notification (e.g., e-mail)	Date returned to Proposer:	Date materials re-received:
Office Use Only			
RFA File No.	Date Received by DLI	Dated Received by Committee	Date of Forwarded to Board
Title of RFA		:By	
Committee Recommendation to the Board: <input type="checkbox"/> Accept <input type="checkbox"/> Reject <input type="checkbox"/> Abstain			
Board approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No		Board approved as modified: <input type="checkbox"/> Yes <input type="checkbox"/> No	

Need and Reasons For the Change. Thoroughly explain the need and why you believe it is reasonable to make this change. During a rulemaking process, the need and reasonableness of all proposed rule changes must be justified; therefore, a detailed explanation is necessary to ensure the Board thoroughly considers all aspects of the proposal.

If your product/method standard(s) is not currently listed in a national code, your Request For Action will not be considered by the Board or its committees, however, you are welcome to present at any Board meeting during the Open Forum section of the Agenda.

The proposal must be accompanied by copies of any published standards, the results of testing, and copies of any product listings, as documentation of the health, sanitation and safety performance of any materials, methods, fixtures, and/or appurtenances. If none are available, please explain:

Please attach electronic scanned copies of any literature, standards and product approvals or listings. Printed or copyrighted materials, **along with written permission from the publisher to distribute the materials at meetings**, and email to DLI.cclboards@state.mn.us

Primary reason for change: (check only one)

<input type="checkbox"/> Protect public, health, safety, welfare, or security	<input type="checkbox"/> Mandated by legislature
<input type="checkbox"/> Lower construction costs	<input type="checkbox"/> Provide uniform application
<input type="checkbox"/> Encourage new methods and materials	<input type="checkbox"/> Clarify provisions
<input type="checkbox"/> Change made at national level	<input type="checkbox"/> Situation unique to Minnesota
<input type="checkbox"/> Other (describe) _____	

Anticipated benefits: (check all that apply)

<input type="checkbox"/> Save lives/reduce injuries	<input type="checkbox"/> Provide more affordable construction
<input type="checkbox"/> Improve uniform application	<input type="checkbox"/> Provide building property
<input type="checkbox"/> Improve health of indoor environment	<input type="checkbox"/> Drinking water quality protection
<input type="checkbox"/> Provide more construction alternatives	<input type="checkbox"/> Decrease cost of enforcement
<input type="checkbox"/> Reduce regulation	<input type="checkbox"/> Other (describe) _____

The Following Information is Optional. This Information can Assist in Evaluating a Request for Action and in Rulemaking and Should be Provided if Known.

Economic impact: (explain all answers marked "yes")

1. Does the proposed change increase or decrease the cost of enforcement? Yes No If yes, explain

2. Does the proposed change increase or decrease the cost of compliance? Yes No If yes, explain
Include the estimated cost increase or decrease, and who will bear the cost increase or experience the cost decrease:

3. Are there less costly or intrusive methods to achieve the proposed change? Yes No If yes, explain

4. Were alternative methods considered? Yes No If no, why not? If yes, explain what alternative methods were considered and why they were rejected.

5. If there is a fiscal impact, try to explain any benefit that will offset the cost of the change. If there is no impact, mark "N/A."

6. Provide a description of the classes of persons affected by a proposed change, who will bear the cost, and who will benefit.

7. Does the proposed rule affect farming operations? (Agricultural buildings are exempt from the Minnesota Building Code under Minnesota Statutes, Section 326B.121.) Yes No If yes, explain

Are there any existing Federal Standards? Yes No If yes, list:

Are there any differences between the proposed change and existing federal regulations? Yes No
 Not applicable Unknown If yes, describe each difference & explain why each difference is needed & reasonable.

Minnesota Statutes, section 14.127, requires the Board to determine if the cost of complying with proposed rule changes in the first year after the changes take effect will exceed \$25,000 for any small business or small city. A small business is defined as a business (either for profit or nonprofit) with less than 50 full-time employees and a small city is defined as a city with less than ten full-time employees.

During the first year after the proposed changes go into effect, will it cost more than \$25,000 for any small business or small city of comply with the change? Yes No If yes, identify by name the small business(es or small city(ies).

Will this proposed plumbing code amendment require any local government to adopt or amend an ordinance or other regulation in order to comply with the proposed plumbing code amendment? Yes No, If yes, identify by name the government(s) and ordinances(s) that will need to be amended in order to comply with the proposed plumbing code amendment.

Additional supporting documentation may also be attached to this form. Are there any additional comments you feel the Committee/Board may need to consider? If so, please state them here:

Information regarding submitting this form:

- Submissions are received and heard by the Committee on an “as received” basis. **Any missing documentation will delay the process, and your proposal will be listed as the date it was received “Complete.”**
- **Submit any supporting documentation to be considered**, such as manufacturer’s literature, approvals by other states, and engineering data electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Action form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.
- For copyrighted materials that must be purchased from publishers, such as published standards, product approvals or testing data, listings by agencies (IAPMO, ASSE, ASTM, etc..) you may send (or email) two copies, *along with written permission from the publisher to distribute the materials at meetings*, via U.S. Mail to: Plumbing Board, c/o Department of Labor and Industry, 443 Lafayette Road No., St. Paul, MN 55155-4344.
- For materials that must be submitted by U.S. Mail, please include a copy of your “Request For Action” form originally submitted and reference your assigned RFA file number.

Information for presentation to the Committee and/or Board:

- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the proposal and any documentation.

Information regarding Committee and/or Board function:

- The Plumbing Board or designated Committee.

I understand that any action is a recommendation to the Plumbing Board and is not to be considered final action.

NAME		EMAIL ADDRESS	FIRM NAME	
NAME, PHONE NUMBER AND E-MAIL ADDRESS OF PRESENTER TO THE COMMITTEE (if different):				
MAILING STREET ADDRESS			CITY	STATE
PHONE	SIGNATURE (original or electronic)		DATE	

For Assistance or questions on completing this form, contact Mike Westemeier, Department of Labor and Industry at michael.westemeier@state.mn.us or by phone 651-284-5898.

5. If there is a fiscal impact, try to explain any benefit that will offset the cost of the change.

In the area of chloride discharge, the MPCA believes strongly that a reduction in chloride discharge is necessary. If this is accomplished by the plumber, water conditioning contractor or homeowner the environmental benefit would be significant. Chloride is creating considerable cost to municipalities due to the difficulty of permitting wastewater treatment. Alternate solutions include large central water treatment plants - including municipal R.O. The proposed code language involves plumbers and water conditioning contractors in reducing chloride discharge through proper selection and adjustment of equipment. The failure to reduce chloride discharge will have costs associated with softener bans, plumbing scale, equipment damage and energy consumption.

6. Provide a description of the classes of persons affected by a proposed change, who will bear the cost, and who will benefit.

Plumbers, water conditioning contractors and homeowners will have to know or test the water hardness and set equipment accordingly. The owner will likely see a reduced salt cost and the environment will benefit from lower water use and salt discharge. Assemblers and manufacturers of water conditioners will have the task to label equipment, but building owners and service personnel will be better able to assess and repair equipment. Health based drinking water treatment will have clearly understood standards, assuring the correct product is applied.

611.0 Differences

Water Conditioning Recommendations for Minnesota Plumbing Code 2024

These are the main areas of differentiation from UPC:

1. 611.0 Title & Scope. UPC 2024 titles section 611.0 as “Drinking Water Treatment Units.” Minnesota Statue has a good and broad definition of Water Conditioning as “appliances, appurtenances, and fixtures designed to treat water so as to alter, modify, add or remove mineral, chemical or bacterial content.”
Minnesota 2015 code used that language and continued that water conditioning “includes but is not limited to ion exchange water softeners, backwashing water filters, oxidizing water filters, cartridge filters, chemical feed cartridges, ultraviolet lights and equipment for reverse osmosis, ultrafiltration, nanofiltration, pH adjustment, nitrate and arsenic removal and absorption onto activated carbon. The Plumbing Board might consider returning this language to code to assist Building Officials, plumbers and water conditioning contractors to understand the scope of 611.0 more broadly than “Drinking Water Treatment Units.”
1. Right to assemble. We wish to continue the code language in MN 2015 and MN 2020 that allows Minnesota licensed people to assemble equipment with certified safe materials. Water conditioning often requires customization to the site and to the local water. Minnesota supports several small manufacturers that produce equipment for local conditions. While building codes move inexorably toward testing and certification of all products, this does not fit well in water conditioning – particularly for private wells. In water conditioning systems – softeners and backwashing filters in particular – this eliminates the ability of dealers and manufactures to customize equipment for unique water or unique water use applications. Minnesota manufacturers are today responding to combinations of emerging contaminants – arsenic, nitrate, PFOS - with unique combinations of water treatment. Testing and certification of every combination as a specific model would significantly reduce the options available to consumers.
2. Listed standards.
 - a. General. We wish to simplify the listed standards. We support WQA efforts nationwide for appropriate standards to convince regulators of the “Final Barrier” concept, which is the use of POU/POE for health-related contamination. This requires certification. We list here the important standards.
 - b. Alkaline Water. Alkaline water is given the highest priority in the UPC 2024 code – at least it is the first thing mentioned. Alkaline water might be eliminated -- or at least reduced in prominence.

- c. **Scale Reduction.** Similarly, scale reduction is given prominence (#2 mention) although there are not technology based certified devices. There are now two phosphate feeders that have now met the standard Z601.
3. **Labeling.** Much of the water conditioning installed in Minnesota is unidentifiable as to its purpose. For a new homeowner or new servicing technician, there is no way to know if a tank has carbon, catalytic media, arsenic media or filter sand. While softeners are identifiable by their brine tank, there is often no manufacturer, capacity, or model number.
4. **Chloride discharge.** Time clocks are banned. A water softener should be set for the water and the installation, and the settings documented.
5. **Isolation and bypass.** UPC 2024 does not call for bypasses, and it should. MN 2020 calls for bypasses too broadly – RO units do not need a bypass. We have attempted to define necessary valving.



P: 3/28/24

611.0 Water Conditioning Equipment

611.1 Application. Water conditioning equipment consists of appliances, appurtenances and fixtures designed to treat water so as to alter modify add or remove mineral chemical or bacterial content. Water conditioning equipment shall comply with the requirements in this section.

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

<u>Filters (aesthetic)</u>	<u>NSF/ANSI 42</u>
<u>Filters (health claims)</u>	<u>NSF/ANSI 53</u>
<u>Ultraviolet Disinfection</u>	<u>NSF/ANSI 55</u>
<u>Reverse Osmosis</u>	<u>NSF/ANSI/CAN 58</u>
<u>Distillation</u>	<u>NSF/ANSI 62</u>
<u>Alkaline Water</u>	<u>IAPMO/IGC 322</u>
<u>Water Softeners</u>	<u>NSF/ANSI 44</u>

The Committee and Jeff Hill agreed to strike "residential" and "CAN" and add Water Softeners NSF/ANSI44.

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

611.1.2 (submitted as 611.1.3, revised by Committee on 11/6 and approved by Hill) Labeling.

All conditioning equipment shall be labeled by:

- (1) the manufacturer of the equipment manufactured as a complete system; or
- (2) the licensed plumbing contractor or licensed water conditioning contractor who assembled the complete system so as to clearly identify the type of equipment and the name and address of the manufacturer, licensed plumbing contractor, or licensed water conditioning contractor.

611.2 Air Gap Discharge. ~~Any~~ Discharge from drinking water treatment units shall enter the drainage system through an air gap in accordance with Table 603.3.1, or an air gap device that complies with Table 603.2, NSF/ANSI 58, or IAPMO PS 65.

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

611.4 Sizing of Residential Softeners Water Conditioners.

611.4.1 Sizing. Residential-use point-of-entry water softeners conditioners shall be sized in accordance with Table 611.4.

TABLE 611.4

Sizing of Residential Point-of-Entry Water Conditioners ⁴

Required Flow at a Maximum Pressure Loss of 15 PSI		
Hot and Cold Conditioned (GPM)	Hot Only Conditioned (GPM)	Number of Bathroom Groups Served ¹
7	5	1- 2 ²
9	7	3
10	8	4 ³

For SI units: 1 gpm = 3.7 L/min or 0.23 m³/hr

New Table

REQUIRED SIZE OF SOFTENER CONNECTION (inches)	NUMBER OF BATHROOM GROUPS SERVED ¹
3/4	up to 2 ²
1	up to 4 ³

For SI units: 1 inch = 25 mm

Strikeout (MN 2020)

Notes:

- ¹ Installation of a kitchen sink and dishwasher, laundry sink, and automatic clothes washer are permitted without additional size increase.
- ² ~~An~~ One additional water closet and lavatory are permitted.
- ³ Over four-bathroom groups, the ~~softener conditioner~~ shall be engineered sized for the specific installation.
- ⁴ See also Appendix A Recommended Rules for Sizing the Water Supply System, and Appendix C, Alternate Plumbing Systems, for alternate methods of sizing water supply systems.

At the meeting on 11/6/2024, the Committee tabled the Notes section until appendices can be reviewed

611.4.2 Chloride Discharge. Residential water softeners shall be sized, designed, and programmed for salt efficiency and to minimize excess discharge of chloride. Softeners shall include water meters, hardness sensors, or other devices designed to initiate regeneration only when media is exhausted or when

protection from media fouling is required. ~~Water softeners relying on time clocks alone for initiation of regeneration are prohibited.~~ Water softeners shall be labeled by the installer with efficiency information, including incoming water hardness as grains per gallon, softener capacity as gallons per regeneration, method of regeneration initiation, and salt use in pounds per regeneration.

The Committee and Jeff Hill agreed to strike this language at the meeting on Nov. 6, 2024.

611.5 Scale Reduction Devices. Water conditioning equipment for scale reduction other than by ion exchange water softening shall comply with IAPMO/ANSI Z 601.

611.6 Isolation and By-pass. Every water conditioning installation shall include the installation of ~~isolation valves and a by-pass valve~~ a shut off valve. Point of entry equipment and equipment serving multiple domestic fixtures shall have a by-pass appurtenance or a by-pass valve and isolation valves on the inlet and outlet of the equipment which would allow the equipment to be serviced or removed without the need for shutting off the water service completely.

October 28, 2024

Mr. Richard Becker
Chair, 2024 UPC ad hoc Rulemaking Committee
Minnesota Plumbing Board
443 Lafayette Road N
St. Paul, MN 55155

Ms. Lyndy Logan
Executive Secretary, CCLD
Minnesota Plumbing Board
443 Lafayette Road N
St. Paul, MN 55155

Re: Letter of Support for PB 0168, 611.4.2 Chloride Discharge

Dear Mr. Becker and Ms. Logan:

On behalf of the Minnesota Clean Water Council, I would like to express support for proposed changes to the plumbing code in the request for action numbered PB 0168.

The Clean Water Council is a state advisory council created in Minn. Stat. 114D.30 to advise on the administration and implementation of the Clean Water Legacy Act. The Council is concerned with reducing or avoiding impairments to Minnesota's surface waters among other duties.

Among our top priorities is chloride, both from road de-icer and water softeners. More efficient water softeners discharge less chloride into wastewater treatment, allowing wastewater treatment plants to stay within their chloride effluent limits for their discharge permits.

To that end, the Clean Water Council has supported the phasing out of timed water softeners in its policy platform. The proposed changes to 611.4.2 in the PB0168 amendment would fulfill this objective.

Thank you for your consideration, and please contact me at paul.gardner@state.mn.us or 651-757-2384 if you have any questions.

Sincerely,



Paul Gardner
Administrator

October 29, 2024

SENT VIA EMAIL

Richard Becker
Chair, 2024 UPC ad hoc Rulemaking
Committee
Minnesota Plumbing Board
richardb@steeneng.com

Lyndy Logan
Executive Secretary, CCLD, DLI
Minnesota Plumbing Board
lyndy.logan@state.mn.us

RE: Letter of Support: PB 0168, 611.4.2 Chloride Discharge

Dear Richard Becker and Lyndy Logan:

I am writing on behalf of the Minnesota Pollution Control Agency (MPCA) to express support for the Minnesota Water Quality Association's proposed update to Minnesota Plumbing Code 611.4.2 Chloride Discharge.

Chloride is a toxic pollutant to aquatic life. Very small amounts can pollute lakes and rivers, and once chloride enters a water body it cannot be removed. The longer we take to properly manage this pollutant, the more expensive and challenging it will be to address it in the future. Because of this, the most effective way to protect water resources from chloride pollution is to prevent its release to lakes and rivers.

The MPCA created a Chloride Reduction Program that has been in operation since 2017. This program is responsible for assisting communities reduce chloride at the source. Our program provides training to a wide range of audiences and tools to permittees and stakeholders to reduce the amount of chloride entering our surface waters and groundwater and offers financial assistance to communities and businesses for chloride reduction activities. We are also in process of developing a training to educate and support plumbers and water softening professionals to reduce chloride discharges from water softening activities. While we have made important progress in adding source reduction tools to the chloride management toolbox, more options are needed to protect our water resources.

Chloride from water softening activities is one of the largest sources of chloride pollution to water resources. Water softening discharges travel to wastewater treatment plants, where they are released straight into lakes and rivers. Almost 100 such facilities exist in Minnesota. In private septic systems, chloride from water softening is not degraded. It gradually moves into and contaminates groundwater. Therefore, it is important that we continue to find ways to reduce the amount of chloride from water softening activities to reduce chloride from this source.

Richard Becker
Lyndy Logan
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October 29, 2024

We understand that the Minnesota Water Quality Association has proposed language for Minnesota Plumbing Code to assist in the reduction of chloride discharge from water softeners. The Minnesota Pollution Control Agency is supportive of the proposed language: **611.4.2 Chloride Discharge. Residential water softeners shall be sized, designed, and programmed for salt efficiency and to minimize excess discharge of chloride. Softeners shall include water meters, hardness sensors, or other devices designed to initiate regeneration only when media is exhausted or when protection from media fouling is required. Water softeners relying on time clocks alone for initiation of regeneration are prohibited. Water softeners shall be labeled by the installer with efficiency information, including incoming water hardness as grains per gallon, softener capacity as gallons per regeneration, method of regeneration initiation, and salt use in pounds per regeneration.**

We hope that the committee will implement this proposed update to the Plumbing Code. Minnesota needs to move to modern, high efficiency water softeners and appropriate selection, adjustment, and programming by their installers. Building officials, building owners, licensed plumbers and water conditioning contractors will be a significant part of a solution to reduce chloride pollution to surface and groundwaters. Please feel free to contact me with questions on MPCA's chloride reduction activities or how the MPCA can assist with communication to the plumbing community.

Sincerely,

Dana A. Vanderbosch

This document has been electronically signed.

Dana A. Vanderbosch
Assistant Commissioner for Water Policy and Agriculture
Minnesota Pollution Control Agency