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MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

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March 5, 2015

Legislative Reference Library
645 State Office Building
100 Constitution Avenue
St. Paul, Minnesota 55155
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SENT VIA E-MAIL

Re: In The Matter of the Proposed Permanent Rules of the Minnesota Plumbing Board Governing the Minnesota Plumbing Code, *Minnesota Rules*, Chapter 4714; Revisor's ID Number R-04139

Dear Librarian:

The Minnesota Plumbing Board ("Board") intends to adopt rules governing the Minnesota Plumbing Code, Minnesota Rules, chapter 4714. The Minnesota Department of Labor and Industry provides administrative support to the Board, including rulemaking support. The Board plans to publish a Dual Notice of Hearing in the March 9, 2015, *State Register*.

The Board has prepared a Statement of Need and Reasonableness. As required by Minnesota Statutes, sections 14.131 and 14.23, the Board is sending the Library an electronic copy of the Statement of Need and Reasonableness at the same time we are mailing our Notice of Intent to Adopt Rules.

If you have questions, please contact me at 651-284-5851 or email me at suzanne.todnem@state.mn.us.

Yours very truly,

Suzanne Todnem
General Counsel

Attached: Statement of Need and Reasonableness

Minnesota Plumbing Board

STATEMENT OF NEED AND REASONABLENESS

Proposed Permanent Rules Governing the Minnesota Plumbing Code and Adopting the 2012 Uniform Plumbing Code, *Minnesota Rules*, chapter 4714, and Repeal of *Minnesota Rules*, chapter 4715; Revisor's ID Number R-04139

INTRODUCTION

Plumbing in Minnesota has been supervised by a state entity since 1933. In 2007, the rulemaking authority for the Minnesota Plumbing Code was transferred to the then newly-established Minnesota Plumbing Board ("Board").[1] The Board consists of 14 members.[2]

The Minnesota Plumbing Code ("Plumbing Code") is part of the State Building Code.[3] Although the Plumbing Code is adopted by the Board, it is administered and enforced by the Minnesota Department of Labor and Industry ("Department"). The Board proposes to repeal the current Plumbing Code in chapter 4715 and replace it with a new Plumbing Code in chapter 4714.

The current Plumbing Code is a homegrown code. The Board proposes to incorporate the 2012 Uniform Plumbing Code by reference, with amendments, to replace the existing Plumbing Code. The Board formed an advisory committee, the Plumbing Board National Code Review Committee ("Review Committee"), at the April 2010 board meeting. The Review Committee was charged with reviewing two national codes and the current Plumbing Code and making a recommendation to the full Board as to whether to pursue a national code adoption and if so, which one. Based on request for action forms received, the Review Committee considered the International Plumbing Code ("IPC") published by the International Code Council ("ICC") and the Uniform Plumbing Code ("UPC") published by the International Association of Plumbing and Mechanical Officials ("IAPMO"). Representatives from ICC and IAPMO presented to the whole Board at the April 2011 meeting. A motion to adopt a national code was passed with the statutorily required two-thirds majority vote at the April 2011 meeting.[4] A separate motion to adopt the UPC with amendments also passed with the statutorily required two-thirds majority vote at the April 2011 meeting.[5] The Review Committee met thirteen times from February 2011 to September 2013 and followed the open meeting laws.[6] The Review Committee and others proposed specific UPC amendments to the Board; the Board discussed each suggested amendment at board meetings and ultimately developed the proposed rules. The Board, pursuant to statute and Board bylaws, approved the proposed rules presented here by an affirmative two-thirds or more majority vote of all the voting members of the Board.[7]

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[1] See (as Minnesota Statute, section 326.37) 2007 c 135 art 3 s 19, 20 at www.revisor.mn.gov/laws/?doctype=Chapter&year=2007&type=0&id=140.
[2] A list of current Board members is available at www.dli.mn.gov/PDF/pb/members.pdf
[3] See Minnesota Rules, part 1300.0050.
[4] See meeting minutes at www.dli.mn.gov/PDF/pb/minutes0411.pdf and statutory requirement at www.revisor.mn.gov/statutes/?id=326B.435 (note that only 13 of the 14 members are voting members.
[5] Id.
[6] See www.dli.mn.gov/pbCodeReview.asp.
[7] Minnesota Statutes, section 326B.435, subdivision 6(c). The Board took the official vote at the October 2014 board

ALTERNATIVE FORMAT

Upon request, this information can be made available in an alternative format, such as large print, braille, or audio. To make a request, contact Suzanne Todnem at Minnesota Department of Labor and Industry, 443 Lafayette Road North, 651.284.5006, fax at 651.284.5725 or dli.rules@state.mn.us.

STATUTORY AUTHORITY

The Board's statutory authority to adopt the proposed rules is stated in the following Minnesota Statutes:

326B.43, Subdivision 1.**Rules.** The Plumbing Board may, by rule, prescribe minimum standards which shall be uniform and which shall be effective for all new plumbing installations performed anywhere in the state, including additions, extensions, alterations, and replacements.

326B.435, Subd. 2.**Powers; duties; administrative support.**

(a) The board shall have the power to...(3) adopt the Plumbing Code that must be followed in this state and any Plumbing Code amendments thereto. The Plumbing Code shall include the minimum standards described in sections 326B.43, subdivision 1, and 326B.52, subdivision 1. The board shall adopt the Plumbing Code and any amendments thereto pursuant to chapter 14 and as provided in subdivision 6, paragraphs (b), (c), and (d)."

This rulemaking repeals and replaces existing rules for which the Legislature has not newly revised the statutory authority; therefore, time limits in Minnesota Statutes, section 14.125, do not apply.

Under these statutes, the Board has the necessary statutory authority to adopt the proposed rules.

REGULATORY ANALYSIS

Minnesota Statutes, section 14.131, sets out eight factors for a regulatory analysis that must be included in the Statement of Need and Reasonableness ("SONAR"). Paragraphs (1) through (8) below quote these factors and then give the Board's response.[8]

(1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule

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meeting. The minutes are available at www.dli.mn.gov/PDF/pb/minutes1014.pdf. Final modifications to the proposed rule were approved at the January 2015 Board meeting. The link to the minutes will be available at www.dli.mn.gov/pb.asp but are not available as of the completion of this document.

[8] Because the paragraphs quote the statute, note that "agency" means the Board in this document.

The proposed rules will likely affect plumbing contractors, journeymen, apprentices, master plumbers, restricted master plumbers, restricted journeymen, plumber's apprentices, employers of person who perform plumbing work, persons who wish to perform plumbing work, plumbing inspectors, building officials, engineers, persons in the water conditioning industry, residential and commercial building contractors and owners, and the general public.

(2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues

The Board adopts the Plumbing Code but does not administer or enforce it; therefore, the Board will not incur any costs associated with the adoption of the proposed rules.

Costs to the Department include the costs of purchasing code books for state employees who address Plumbing Code questions. Adoption of the proposed rules will not affect state revenues because it is a self-funded program through collection of fees.

(3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule

The purpose of the proposed rules "is to promote the public health and safety through properly designed, acceptably installed, and adequately maintained plumbing systems."[9] No other less costly or less intrusive methods would establish minimum plumbing standards and adequately maintain plumbing systems. In this case, the proposed rule adopts a model code.

(4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule

The Board seriously considered three options: 1) update the existing Minnesota Plumbing Code; 2) adopt the International Plumbing Code ("IPC"), with amendments; and 3) adopt the Uniform Plumbing Code, with amendments.[10] The Board rejected the first option because the existing Code is outdated; updating it would be as time-consuming as adopting a model code but would not yield the benefits of adopting a model code. The second option was rejected because the Board wished to adopt a model code, the UPC most closely resembles the existing Minnesota Plumbing Code, and the UPC is adopted in three of the four states adjacent to Minnesota, two of which have reciprocity agreements with Minnesota, providing consistency.[11] Therefore, adopting the UPC presents an easier transition from the existing code than the IPC would.

(5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals

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[9] Minnesota Statutes, section 326B.41.

[10] The Board received two Requests For Actions ("RFA") in regard to considered incorporating by reference a model code; one RFA asking the Board to consider the International Plumbing Code and one RFA for consideration of the Uniform Plumbing Code.

[11] Minnesota has plumbing license reciprocity agreements with North Dakota and South Dakota. The UPC is adopted in: ND, SD, and IA.

Plumbers, municipal inspection departments and designers will need to purchase copies of the UPC. Training curriculum will need to be updated to incorporate any changes in the code.

Costs to new home or commercial buildings or other plumbing to which the code applies is anticipated to be neutral. Some changes might result in higher expenses than the existing rule requirements but other code changes will result in cost savings. For example, the proposed rules allow more products to be used without additional local approval, resulting in more available options than the existing code.

Costs to retrain to the new code are not anticipated to be significantly different from the existing code because training is already required under the existing code.

(6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals

The existing code is already outdated so not adopting the proposed rules would result in a Plumbing Code that is further outdated. Other costs or consequences include eliminating new technologies from the pool of available products and methods. These costs and consequences would ultimately fall to the building owner.

(7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference

There are no applicable federal regulations that address Plumbing Code issues in the construction of non-federally owned buildings.

(8) an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule. . . . '[C]umulative effect' means the impact that results from incremental impact of the proposed rule in addition to other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor but collectively significant rules adopted over a period of time.

There are no other state or federal regulations related to the specific purpose of the proposed rules.

PERFORMANCE-BASED RULES

The Plumbing Code is performance-based in that it balances the method with the end result of the plumbing work within a framework of standards. The proposed rules are performance-based standards to the extent practicable.

ADDITIONAL NOTICE

This Additional Notice Plan was reviewed by the Office of Administrative Hearings ("OAH") and approved in a February 9, 2015, order by Administrative Law Judge Jeanne M. Cochran.

This Notice Plan also includes giving notice required by statute. We will mail or email the Notice of Intent to Adopt to everyone who has registered to be on the Department's and Board's rulemaking mailing or emailing lists under Minnesota Statutes, section 14.14, subdivision 1a. We will also give notice to the Legislature per Minnesota Statutes, section 14.116.

In addition to the rulemaking lists required by statute, the Board will be mailing or emailing the Notice of Intent to Adopt to organizations and trade associations anticipated to be substantially affected by the proposed rules. Those organizations and associations are as follows:

1. American Backflow Prevention Association (ABPA) – Region 10
2. American Society of Plumbing Engineers (ASPE) – Minnesota Chapter
3. American Society of Civil Engineers – Minnesota Section
4. American Council of Engineering Companies of Minnesota
5. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) – Minnesota Chapter
6. American Waterworks Association – Minnesota Chapter
7. Associated Builders and Contractors
8. Association of General Contractors of Minnesota
9. Association of Minnesota Building Officials (AMBO)
10. Association of Minnesota Counties
11. Building Officials licensed in Minnesota
12. Building Owners and Managers Association (BOMA)/Duluth
13. Building Owners and Managers Association (BOMA)/Minneapolis
14. Building Owners and Managers Association (BOMA)/St. Paul
15. Builders Association of Minnesota (BAM)
16. Builders Association of the Twin Cities
17. City Engineers Association of Minnesota
18. Laborers-Employers Cooperation Education Trust – Minnesota Chapter (LECET)
19. League of Minnesota Cities
20. Metropolitan Council
21. Minnesota Association of Plumbing and Mechanical Officials
22. Minnesota Association of Townships
23. Minnesota Department of Agriculture
24. Minnesota Department of Natural Resources
25. Minnesota-licensed plumbers and plumbing contractors
26. Minnesota Mechanical Contractors Association
27. Minnesota Nursery & Landscape Association
28. Minnesota Onsite Wastewater Association (MOWA)
29. Minnesota Pipe Trades Association
30. Minnesota Plumbing, Heating and Cooling Contractors Association
31. Minnesota Pollution Control Agency; Municipal Division
32. Minnesota Rural Water Association
33. Minnesota State Fire Chiefs Association
34. Minnesota State Fire Marshal Division
35. Minnesota Utilities Contractors Association

36. Minnesota Water Quality Association (MWQA)
37. U. S. Green Building Council – Minnesota Chapter
38. United Association of Plumbers and Gasfitters Local Union #15
39. University of Minnesota Extension Program: Onsite Sewage Treatment Program
40. Water conditioning engineers licensed in Minnesota
41. Water Quality Association (WQA)

This Notice Plan does not include notifying the Commissioner of Agriculture because the proposed rules do not affect farming operations per Minnesota Statutes, section 14.111.

This Notice Plan does not include notifying the state Council on Affairs of Chicano/Latino People per Minnesota Statutes, section 3.9223 because the proposed rules will not have their primary effect on Chicano/Latino people.

CONSULTATION WITH MMB ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, the Board consulted with Minnesota Management and Budget (MMB). The Board did this by sending MMB copies of the documents that we send to the Governor's Office for review and approval. The documents included: the Governor's Office Proposed Rule and SONAR Form; the near-final proposed rules; and the near-final SONAR. MMB Executive Budget Officer Elisabeth Hammer responded, in part, as follows in a letter dated February 2, 2015: "Based upon the information provided to me by the Department of Labor and Industry, there does not appear to be significant costs to local units of government that are not recoverable through local fees as a result of this proposed rule."

The Board will submit a copy of the cover correspondence and the response received from Minnesota Management and Budget to OAH at the hearing or with the documents it submits for Administrative Law Judge ("ALJ") review.

DETERMINATION ABOUT RULES REQUIRING LOCAL IMPLEMENTATION

As required by Minnesota Statutes, section 14.128, subdivision 1, the agency has considered whether these proposed rules will require a local government to adopt or amend any ordinance or other regulation in order to comply with these rules. The Board has the rulemaking authority in this case and therefore has made the required determination. The Board has determined that the only required amendment to a local ordinance that the Board is aware of would be a change in any specific references from chapter 4715 to chapter 4714.

COST OF COMPLYING FOR SMALL BUSINESS OR CITY

Agency Determination of Cost

As required by Minnesota Statutes, section 14.127, the Board has considered whether the cost of complying with the proposed rules in the first year after the rules 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. The Board has determined that the cost of complying with the proposed rules in the first year after the rules take effect will not exceed $25,000 for any small business or small city.

LIST OF WITNESSES

If the proposed rules go to a public hearing, the Board anticipates having the following witnesses testify in support of the need for and reasonableness of the rules:

1. Mr. Jim Peterson, Plumbing Inspection Section Chief, Department of Labor and Industry, will testify about the technical information about the Plumbing Code and the background of the proposed amendments.
2. Ms. Cathy Tran, P.E., Public Health Engineer, Department of Labor and Industry, will testify about the technical aspects of the proposed amendments.
3. Mr. John Parizek, Chair, Minnesota Plumbing Board, will testify about the Board's interest in amending the Plumbing Code.
4. Other Department of Labor and Industry staff, if necessary.

RULE-BY-RULE ANALYSIS

4714.0050 TITLE; INCORPORATION BY REFERENCE.

This rule part adopts portions of the 2012 Uniform Plumbing Code, with amendments, by incorporation by reference.

4714.0100 BASIC PLUMBING PRINCIPLES.

This section lists 23 basic principles of health, sanitation, and safety that serve as the basis of this code. This language is carried forward from part 4715.0200 of the current Plumbing Code, with minor grammatical clarifications. The Board has determined that these principles are necessary for protection of public health and the safety of all Minnesotans and will be used to clarify the intent of the code. This list of plumbing principles has been used for many years in the Minnesota Plumbing Code. The listed principles are necessary and reasonable to guide interpretation for unforeseen situations that are not covered in the code.

4714.0101 CONFORMANCE WITH CODE.

Subpart 1. Scope. Subpart 1 states that "this code" applies to "all new plumbing installations performed anywhere in the state." The proposed language is taken from Minnesota Statutes, sections 326B.43 and 326B.52. It is reasonable to clearly state the scope of the code.

Subpart 2. New buildings. Subpart 2 clarifies that all new plumbing installations in new buildings must meet the full provisions of this code.

Subpart 3. Existing buildings. Subpart 3 requires new materials and work to existing plumbing installations in existing buildings to meet the full provisions of the code when they are added, altered, renovated, or replaced. Although the scope stated in subpart 1 includes additions, alterations, and replacements, this subpart explicitly includes them in existing buildings. However,

deviation from this code in existing buildings may be approved by the Authority Having Jurisdiction if there is undue hardship or excessive difficulty to meet this code and the public would not be endangered. This deviation is necessary and reasonable because public safety is maintained while balancing preservation of existing buildings in a more cost-effective manner than requiring full compliance with this code.

Subpart 4. Changes in building occupancy. Subpart 4 requires plumbing installations in existing buildings or structures undergoing a change in use or occupancy to meet the plumbing requirements of the new use or occupancy. It is necessary and reasonable to require a building or structure to have plumbing installations consistent with its use and occupancy and the current code.

Subpart 5. Moved buildings. Subpart 5 requires buildings moved into the jurisdiction of the code to comply with the code. Moved buildings may have been compromised through the removal and re-install process. It is reasonable to test moved buildings as new to properly assess them for health and safety of the occupants.

Subpart 6. Health and safety. Subpart 6 allows existing plumbing and drainage systems to operate and be maintained in accordance with an earlier code under which it was installed unless the Authority Having Jurisdiction deems the plumbing or drainage system to be dangerous, unsafe, unsanitary or a nuisance or hazard to life, health or property. This is necessary and reasonable for health protection and safety yet balanced to permit existing plumbing and drainage systems.

Subpart 7. Commissioner's authority. Subpart 7 clarifies that although some local jurisdictions may be delegated authority to enforce this code, the commissioner retains ultimate authority to enforce this code. This is particularly important in regard to code enforcement disputes between the enforcing entity and the regulated party.

4714.0203 TERMS DEFINED BEGINNING WITH A.

Subpart 1. Added Definitions.

Administrative Authority. The proposed amendment adds a definition of the term "administrative authority" to mean the commissioner of labor and industry except when a local governing body adopts, maintains, and enforces this code in its entirety. The term is added because it is a term used in the existing plumbing code and is therefore a familiar term with regulated parties. It is necessary and reasonable to define the term for clarity.

Subpart 2. Amended Definitions.

Approved. The proposed amendment amends the UPC's definition of the term "approved." The amended definition is consistent with the definition for "approved" in other Minnesota State Building Code chapters and provides objective approval parameters that the UPC definition lacks.[12] It is reasonable to provide coordinated definitions of frequently used terms throughout the building code to avoid conflicts or confusion of terms from one chapter to another.

12 See e.g., Minn. R. parts 1311.0202, subp.1; 1303.2401, subp. 2; and 1322.0202, subp. 1.

Authority Having Jurisdiction. This is a term used throughout the UPC over 500 times. Instead of amending each use of the term in the UPC, the Board proposes to amend the definition to have the same meaning as "administrative authority," the established and familiar term in the existing plumbing code. Furthermore, the UPC definition would cause confusion if used in Minnesota because it is too broad and includes possible authorities having jurisdiction that cannot be regulated by the plumbing code.

4714.0204 TERMS DEFINED BEGINNING WITH B.

Barometric loop. The proposed definition is taken from the current rule part 4715.0100, subpart 14, with modifications to clarify that "35 feet" is a minimum requirement.

4714.0205 TERMS DEFINED BEGINNING WITH C.

Subpart 1. Amended Definitions.

Certified Backflow Assembly Tester. The proposed definition refers to the definition in Minnesota Statutes, section 326B.42, subdivision 1c to clarify that this term has the same meaning as "backflow prevention tester." The two terms have the same intended meaning but "backflow prevention tester" is specific to Minnesota.

Clear Water Waste. The proposed definition clarifies that "clear water waste" must be uncontaminated waste discharges, groundwater discharges and similar discharges. The UPC definition includes all discharges from heating and cooling equipment including contaminated discharges. Contaminated discharges pose a risk to health and public safety. Including contaminated discharges in the definition could conflict with or cause confusion with other parts of this code or other codes in Minnesota. The proposed amendment is reasonable to protect the health and safety of the public and coordinates with other rules for proper disposal of discharges from heating and cooling equipment.

Code. The proposed definition clarifies that the term "code" means the Minnesota Plumbing Code, MN Rules, Chapter 4714. The UPC definition is generic and not useful as applied to the plumbing code.

Subpart 2. Added Definitions.

Commissioner. The proposed definition clarifies that "commissioner" means the commissioner of labor and industry or a duly designated representative of the commissioner who is either an employee or a person working under contract with the department of labor and industry. This is needed and reasonable for consistent use and enforcement of the term used in this code.

4714.0206 TERMS DEFINED BEGINNING WITH D.

Drainage System. The proposed amendment modifies the UPC definition to clarify that pipes conveying rainwater are considered part of a drainage system of a plumbing system. It is the intent of the Board to continue to include rainwater pipes in the definition of "drainage system" as it is in the existing plumbing code. See Minnesota Rules, part 4715.0100, subpart 42. The proposed definition is

reasonable and necessary to maintain consistent use and enforcement of drainage system regulation. The UPC definition of "drainage system" includes piping only for "sewage or other liquid wastes."[13] The UPC definition is unclear as to whether rainwater is included. The proposed amendment clarifies the definition by explicitly listing rainwater. Because rainwater catchment systems and storm drainage systems are regulated in this code, it is reasonable to clarify that drainage systems that convey rainwater are generally subject to drainage system requirements.

4714.0210 TERMS DEFINED BEGINNING WITH H.

Subpart 1. Amended Definitions.

Hydromechanical Grease Interceptor. The proposed definition removes item D from the UPC definition. Item D of the UPC definition permits indirect connection without external flow control, to a drainage system, which conflicts with the drainage system installation requirements in sections 704.3 as amended. Section 704.3 requires commercial kitchen fixtures to be directly connected to the drainage system. Therefore, it is reasonable to remove the item that conflicts with another part of the code.

Subpart 2. Added Definitions.

Health Authority. The proposed definition of "health authority" clarifies that the entity with authority over the drinking water supply is different from the Authority Having Jurisdiction, administrative authority or commissioner. It clarifies that it is the entity which has established rules governing the drinking water supply.

4714.0218 TERMS DEFINED BEGINNING WITH P.

Plumbing System. The proposed definition of "plumbing system" is amended to include nonpotable water piping serving plumbing fixtures whereas the UPC definition does not include nonpotable water piping. Nonpotable water piping can be part of a plumbing system and therefore has been added to this definition. This amendment is necessary in order to include nonpotable water piping serving plumbing fixtures in the rainwater catchment system regulations in UPC Chapter 17, as amended in this code.

Potable Water. The proposed definition amends "health authority having jurisdiction" to "health authority" to coordinate with health authority defined above. Furthermore, the term is consistent with the definition of "health authority" as defined in part 4714.0210.

Private Sewage Disposal System. The proposed definition reflects the term used by the Minnesota Pollution Control Agency (MPCA) because MPCA regulates private sewage disposal systems in Minnesota. MPCA uses the term subsurface sewage treatment system. Because MPCA regulates this type of system, it is reasonable to include MPCA's preferred terminology here and refer to MPCA for clarification and coordinated enforcement.

[13] Liquid waste is defined in the UPC as "The discharge from a fixture, appliance, or appurtenance in connection with a plumbing system that does not receive fecal matter." See UPC section 214.

4714.0220 TERMS DEFINED BEGINNING WITH R

Registered Professional Engineer. The phrase "registered professional engineer" is commonly used throughout the 2012 UPC. The definition also includes references to "engineer" and "registered engineer" because the UPC uses those terms as well to mean the same thing. The term "registered professional engineer" was chosen to coordinate with licensure requirements for the practice of professional engineering as described in Minnesota Statutes, section 326.02, subdivision 3, that are specific to the State of Minnesota as a professional engineer by the Board of Architecture, Engineering, Land Surveying, Landscape architecture, Geoscience, and Interior Design. The proposed amendment is needed and reasonable for consistent and clear use of the term in this code.

4714.0221 TERMS DEFINED BEGINNING WITH S.

Single-family Dwelling. The proposed definition references the definition for dwelling, single-family in Minnesota Rules, Chapter 1309. Chapter 1309 is the Minnesota Residential Code chapter and part of the Minnesota State Building Code. Referencing the definition in 1309 is reasonable and necessary because doing so coordinates the definition with other state rules for consistent use and enforcement of the term.

4714.0301 SECTION 301.0 MATERIALS - STANDARDS AND ALTERNATIVES.

Subpart 1. Section 301.1 Minimum Standards.

The proposed amendment to UPC 301.1 deletes the reference to the mechanical code language requirements since it's not regulated in this code.

Subsection 301.1.2. The proposed amendment removes the language regarding whether Appendix I is part of the code or not because Appendix I, with some exceptions, is proposed for incorporation by reference in part 4714.0050. To avoid confusion about whether Appendix I is available for convenience or part of the code, this language is deleted.

Subsection 301.1.3. The proposed amendment deletes this UPC subsection in its entirety because plumbing in existing buildings is addressed in part 4714.0101, subparts 3 and 6.

Subpart 2. Section 301.2 Alternate Materials and Methods of Construction Equivalency.

The proposed amendment adds "Prior to installation" to the second sentence to clarify that technical documentation of alternate materials and methods to the code that demonstrate equivalency must be submitted for approval before installation occurs. Approval before installation eliminates additional costs that might result if installation begins before the alternates are approved and need revision per the Authority Having Jurisdiction. Additional proposed amendment to this section clarifies that alternates to the code submitted for approval shall not be prohibited elsewhere in the code or law. The proposed amendments establish reasonable requirements that permit alternates from the code to keep current with new technologies while maintaining public safety and reasonable costs.

Language explicitly preserving subsections 301.2.1, 301.2.1.1 and 301.2.1.2 clarifies how those subsections should be treated.

Subpart 3. Section 301.4.6 Inspection and Testing.

The UPC section requires alternative engineered designs be tested and inspected. The proposed amendment further specifies that the registered professional engineer must certify that the registered professional engineer (or designee) has visually inspected the system and that installation was properly implemented. That is, the proposed amendments provide clarity to the vague UPC language. Most alternative engineered designs are complex and require expertise in the registered professional engineer's field. Therefore, visual inspection by the registered professional engineer or their designee reasonably ensures that the installation is in accordance with the engineered design.

4714.0307 LOCATION.

Section 307.1 System.

The proposed amendment deletes the words "private sewage disposal system" from the list of items to which the section applies. Private sewage disposal systems are regulated by the Minnesota Pollution Control Agency under Minnesota Rules, Chapter 7080.

4714.0311 INDEPENDENT SYSTEMS.

Subpart 1. Section 311.0 Use of Public Sewer and Water Systems Required.

The proposed amendment retitles the section from "Independent Systems" to "Use of Public Sewer and Water Systems Required" to more accurately describe the proposed amendments in subpart 2 below.

Subpart 2. Section 311.1 General.

The proposed amendment replaces the entire UPC section 311.1, including the exception, with language that requires connections of building services to public water and sewer when available and feasible, unless otherwise permitted by the Administrative Authority. The UPC section is conceptually similar to the proposed amendment. The UPC exception allows the extension of a front building drain to a rear building if no private sewer is available. This is deleted because connecting a new building sewer to another building sewer restricts access to a sewer for maintenance, presents potential legal property damage ramifications from sewer back-ups into another building and possible trespassing issues. The proposed language is largely taken from the existing Minnesota Plumbing Code, part 4715.0310, with grammatical changes and updates. This requirement offers economic benefits for property owners and better public health protection. Maximizing use of available public water and sewer systems offers lower costs to each participant and consistent maintenance of the systems. The public sewer and water systems are coordinated in a way to provide efficient and safe systems. Private sewer and water, while sometimes a better option, are typically second to public systems in terms of overall quality and safety.

4714.0312 PROTECTION OF PIPING, MATERIALS, AND STRUCTURES.

Subpart 1. Section 312.7 Fire-Resistant Construction.

The proposed amendment replaces the UPC reference to "the building code and Chapter 15, 'Firestop Protection'" with "the State Building Code." UPC chapter 15 is not incorporated by

reference in this code. Firestop protection as it is used here is regulated in the Minnesota State Building Code. The Board does not have statutory authority to regulate fire-resistant construction.

Subpart 2. Section 312.9 Steel Nail Plates.

The proposed amendment replaces the UPC reference to "Section 1210.3.3" in the exception with "Minnesota Rules, chapter 1346, Minnesota Mechanical and Fuel Gas Codes." Chapter 12, Fuel Gas Piping, of the UPC is not incorporated by reference into this code. In Minnesota, fuel gas piping is regulated in chapter 1346. The Board does not have statutory authority to regulate gas piping.

4714.0313 HANGERS AND SUPPORTS.

Section 313.7 Gas Piping.

The proposed amendment deletes UPC section 313.7 because it is a gas piping requirement. In Minnesota, gas piping is regulated in chapter 1346, the Minnesota Mechanical and Fuel Gas Code. The Board does not have statutory authority to regulate gas piping.

4714.0314 TRENCHING, EXCAVATION, AND BACKFILL.

Section 314.0 Trenching, Excavation, and Backfill.

The proposed amendment deletes this section in its entirety. This section is in conflict with federal Occupational Safety and Health Administration (OSHA) laws and regulations relating to requirements of trenching, excavation, and backfill. Trenching regulations are governed by Federal OSHA laws in 29 CFR and not this code. The UPC section is not necessary. The Board does not have statutory authority to regulate trenching, excavation and backfill.

4714.0315 JOINTS AND CONNECTIONS.

Section 315.1 Unions.

The proposed amendment deletes the language that references gas piping. Gas piping is regulated in chapter 1346, the Minnesota Mechanical and Fuel Gas Code. The Board does not have statutory authority to regulate gas piping. The proposed change is needed and reasonable to eliminate conflicts with other state code requirements.

4714.0317 FOOD-HANDLING ESTABLISHMENTS.

Section 317.1 General.

The proposed amendment clarifies what the plumbing requirements are for drainage piping installed over food preparation, and storage areas. The UPC language is amended to require soil or drain pipes installed over food areas to have minimum protection to prevent food contamination. Possible contamination of food being stored or prepared below the drainage piping can lead to sickness and public health outbreaks at food establishments. Therefore, it is reasonable to establish specific requirements to protect the health and safety of the public.

The proposed amendment also deletes redundant requirements of code-approved drainage piping materials that are already addressed under Section 701.1 and Table 1401.1.

4714.0319 MEDICAL GAS AND VACUUM SYSTEMS.

The proposed amendment deletes UPC section 319.0 in its entirety. The Board regulates the licenses of persons installing medical gas systems. See Minnesota Statutes, section 326B.435. However, the Plumbing Code only applies to plumbing systems and water conditioning systems, not medical gas and vacuum systems. See Minnesota Statues, section 326B.435, subdivision 2(a)(3). The Board does not have statutory authority to regulate the installation of medical gas and vacuum systems.

4714.0403 WATER-CONSERVING FIXTURES AND FITTINGS.

Section 403.3.1 Nonwater Urinals.

The proposed amendment removes the UPC requirement to install a water distribution line rough-in that allows for installation of an approved backflow prevention device in the event of a retrofit. This will reduce installation costs. Instead, the proposed amendment requires a water-supplied fixture be installed upstream of the nonwater urinal at the end of the same drainage branch. The UPC requirement creates dead-ends where water lines are capped, causing stagnant water which could lead to concerns about the growth of organisms in dead-ends. Such growths would affect the quality of drinking water and become a public health concern. The proposed change offers better public health protection and is less expensive than the UPC requirement.

Unlike water supplied plumbing fixtures, nonwater urinal does not use water to flush the urine or to dilute urine in the fixture drainage piping. An additional requirement is added to require a water supplied fixture upstream of the nonwater urinal installation to dilute the urine in the fixture drainage piping. This is necessary to reduce and prevent build-up of urine in the fixture drainage piping when installing nonwater urinals to minimize premature failures of the drainage system.

4714.0406 PROHIBITED FIXTURES.

Section 406.3 Miscellaneous Fixtures.

The proposed amendment deletes the subsection in its entirety. Subsection 406.3 specifically prohibits certain fixtures including wooden and tile wash trays for domestic use. UPC section 401.1, which is not amended in this code, addresses the quality of fixtures and applies to all plumbing fixtures. Any non-code-approved fixtures are not considered a standard plumbing fixture and must be reviewed and approved by the Authority Having Jurisdiction in accordance with UPC section 301.1 and 301.2, as amended. It is redundant to keep subsection 406.3 and therefore might cause confusion. Dry or chemical toilets which include composting and portable chemical toilets are not allowed for installation in a building used for human habitation. Furthermore, this subsection gives the "health officer" authority or discretion over these fixtures but the term "Health Officer" is not defined in the UPC or elsewhere in Minnesota plumbing rules or statutes. Lastly, "health officers" are not the administrative authority or Authority Having Jurisdiction with authority to approve plumbing fixtures. Therefore, deletion of this section prevents confusion regarding review and approval of alternate plumbing materials and fixtures.

4714.0409 BATHTUBS AND WHIRLPOOL BATHTUBS

Section 409.1, Application.

The proposed amendment specifically adds requirements for whirlpool pedicure tubs. Whirlpool pedicure tubs are plumbing appliances and function similarly to typical whirlpool bathtubs. The differences are that the whirlpool pedicure tub size is much smaller than a typical whirlpool bathtub and only feet are submerged instead of the entire body like a typical whirlpool bathtub. Whirlpool pedicure tub fixtures raise concerns of sanitation because disease could be spread through water retained in the tubs and recirculated or unitized jet components similar to a typical whirlpool bathtub, particularly when used in commercial salons. Whirlpool pedicure tubs are intended for submerging only feet so suction and hair entrapment requirements are not safety concerns that need to be addressed here. The whirlpool bathtub standards are ASME A112.19.7, Hydromassage Bathtub Appliances, and IAPMO IGC 155, Pipeless Whirlpool Bathtub Appliances. The applicable sections in ASME A112.19.7 that apply to whirlpool pedicure tubs are general requirements that cover material construction, water pump standard UL 1795, and circulation/air piping; water retention requirements are included. The applicable sections of IAPMO IGC 155 are all sections of this standard. Therefore, minimum requirements for health and sanitation are established to protect public health.

4714.0415 DRINKING FOUNTAINS.

Section 415.2, Public Use Fountains.

The proposed amendment adds language taken from a portion of existing Minnesota Rules, part 4715.1260, with two changes. The existing language includes the word "bubbler" after "drinking fountain" but is not included in the proposed language because the term is no longer used in common language and is not defined. Also, "must" is changed to "shall." The proposed amendment prohibits a combined faucet and drinking fountain unit unless there is at least an 18-inch separation between the drinking fountain and any other faucet spout. The required separation prevents unsanitary conditions such as the spread of disease from hands, saliva, and water flow off body parts splashing from the use of fixtures.

4714.0418 FLOOR DRAINS.

Subpart 1. Section 418.4, Food Storage Areas.

The proposed amendment is not substantively different from the UPC language. There are some minor grammar changes but the proposed amendment largely replicates the UPC language. This section requires that drains located where food is stored, such as in walk-in coolers, must have indirect waste piping to the drainage system and vented traps. This code does not regulate when drains can be located in food storage areas but does regulate their installation when they are. Indirect drains in spaces where freezing temperatures are maintained must be located where the seal will not freeze. The requirements in this section are necessary to protect food from a sewer back-up or contamination of food storage areas/compartments, or walk-in coolers and freezers when drains are allowed to be installed by the licensing authority.

Subpart 2. Section 418 additions.

Section 418.6 Elevator Pit Drain.

The proposed amendment adds this subsection to address specifically elevator pit drains. The language is in the existing Minnesota Plumbing Code, with the exception of a word change from "must" to "shall." The amendment requires the proper method of draining elevator pits consistent with the Minnesota Elevators and Related Devices Code, chapter 1307. Because elevator pits collect hydraulic fluid, grease, and oily waste from elevator equipment, elevator pits must drain to the building sanitary system. Furthermore, the elevator pits must drain dry at all times and must discharge waste to the building sanitary system by an indirect connection to protect a sewage backup into the elevator pit creating an unsanitary condition in the pit.[14] When a sump is used to receive pit drainage, the sump must be placed outside the elevator pit with a dry pan drain installed in the pit that flows into the sump. Sumps are located outside elevator pits for direct access for maintenance and inspections of the sumps and pumps without entering the elevator pit.

Section 418.7 Garage and parking area floor drains.

The proposed amendment is taken from the existing Plumbing Code and adds a section that requires drains in enclosed garages to discharge to the sanitary sewer while floor drains in open parking areas must discharge to the storm sewer.[15] Drains in enclosed garages generally do not collect rainwater, but will collect oil, grease, even vehicle wash waste, and other types of waste from vehicles that need proper treatment and discharge to the sanitary sewer. Open areas of parking ramps will collect significant amounts of rainwater and must discharge to the storm sewer with an exception that the municipal sewer authority may determine other approved places of disposal as necessary for open parking ramp drainage.

Exception. An exception for floor drains in one- and two-family dwellings allows discharge to "daylight" when approved by the local administrative authority. "Daylight" is an industry term used to mean outdoors; in this case, outside of the garage. The need for local administrative authority approval is necessary to ensure the discharge is within the owner's property line, does not cross other properties, and does not flow into surface water. The scope is limited to one- and two-family dwellings so no commercial or industrial garages may discharge to daylight. This practice is currently in use and was coordinated with and acceptable to the Minnesota Pollution Control Agency.[16]

4714.0420 SINKS.

Section 420.3 Waste Outlet.

The proposed amendment largely replicates the UPC language but clarifies that commercial pot and scullery sinks must be provided with waste outlets that are at least two inches in diameter because these sinks have large compartments holding a large volume of water and must be able to handle commercial kitchen functions.[17] For these reasons, the waste outlet of each compartment of

[14] Drain dry means that the pits will drain to complete dryness at all times so no waste remains in the elevator pit.
[15] See Minnesota Rules, part 4715.1300, subpart 6, for the existing rule.
[16] See www.pca.state.mn.us/publications/wq-wwists4-05.pdf
[17] Commercial kitchen functions include use and washing of large-scale pots and pans and a larger quantity and frequency of washing as compared to household kitchen functions, for example.

the sink must be provided with minimum 2-inch waste outlets for proper draining. A 1-1/2 inch waste outlet would take longer to drain than a 2-inch waste outlet and the concern is that if the sinks do not drain quickly enough, unapproved methods resulting in unsanitary conditions will be used and put the drainage system at risk.

4714.0421 FIXTURES AND FIXTURE FITTINGS FOR PERSONS WITH DISABILITIES.

Section 421.2 Limitation of Hot Water Temperature for Public Lavatories.

The proposed amendment limits the maximum temperature to 110 degrees Fahrenheit where the UPC limit is 120 degrees Fahrenheit. This amendment is necessary because Minnesota Rules chapter 1323, the Commercial Energy Code, incorporates by reference the 2012 International Energy Conservation Code, Commercial Provisions, which limits the maximum temperature for public lavatories to 110 degrees Fahrenheit.[18] This amendment is consistent with the Minnesota Commercial Energy Code.

4714.0422 MINIMUM NUMBER OF REQUIRED FIXTURES.

Subpart 1. Section 422.1 Required Minimum Number of Fixtures

Minimum fixture requirements are regulated by the Minnesota Building Code, Chapter 1305, not the Minnesota Plumbing Code. Therefore, the proposed amendment references the Minnesota Building Code in chapter 1305. The proposed amendment also clarifies that the minimum fixture requirements listed in the Minnesota Building Code apply to all facilities subject to the Minnesota Plumbing Code.

Subpart 2. Sections 422.1.1 to 422.5.

These UPC sections regulate different types of facilities and the minimum number of required fixtures in them. Because the minimum fixture requirements are regulated in the Minnesota Building Code, Chapter 1305, these sections are proposed to be deleted.

Subpart 3. Table 422.1

Table 422.1 is titled, "Minimum Plumbing Facilities." It is referenced only in UPC section 422.1. However, the amended section 422.1 deletes all references to Table 422.1 because minimum plumbing fixture requirements for facilities are regulated in the Minnesota Building Code, Chapter 1305. Therefore, UPC Table 422.1 is proposed for deletion.

4714.0501 GENERAL.

Section 501.1 Applicability

The proposed amendment clarifies that this chapter as amended applies to the construction, location and installation of fuel-burning and other water heaters heating potable water. The proposed amendment deletes "together with chimneys, vents, and their connectors" because the Board does not have statutory authority to regulate the chimneys, vents and connectors.

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[18] See section C404.3 Temperature Controls of the 2012 International Energy Conservation Code, as amended.

4714.0503 INSPECTION.

The proposed amendment deletes UPC sections 503.0 to 503.2. Section 503.0 is just the section title. Section 503.1 regulates inspections of chimneys or vents. This section is proposed for deletion because the Board does not have statutory authority to regulate chimneys or vents, including inspections of them.[19] Therefore, such inspections cannot be part of the Plumbing Code. Section 503.2 regulates final inspection of water heaters. This section is proposed for deletion because Minnesota Rules, part 1300.0215 authorizes the administrative authority to inspect installation and construction authorized by the permit, including for water heaters.[20] If this section is not deleted, there would be redundant water heater inspection rules.

4714.0504 WATER HEATER REQUIREMENTS.

Subpart 1. Sections 504.1 to 504.2

The proposed amendment deletes UPC sections 504.1 through 504.2 because they contain venting, self-closing, and door requirements for water heater installations in bedrooms and bathrooms. These venting, self-closing and door requirements go to the structure near and around the water heater and are not part of plumbing.[21] The Board does not have statutory authority to promulgate rules regarding non-plumbing regulations. The proposed deletion also eliminates conflicts with other code requirements.

Subpart 2. Section 504.6.

The proposed amendment deletes the reference to automatic gas shut-off devices because those are regulated in the Minnesota Mechanical Code, Chapter 1346. The Board does not have statutory authority to regulate such devices.

4714.0505 OIL-BURNING AND OTHER WATER HEATERS.

This subsection regulates single-wall heat exchangers. The proposed amendment deletes section 505.4.1 [22] "Single-Wall Heat Exchanger" but relocates the text, with grammatical amendments, to a proposed new section 603.5.4.1 [23] "Single-Wall Heat Exchanger." The requirements relocated from section 505.4.1 to section 603.5.4.1 establish safety parameters for single-wall heat exchangers to protect the potable water system and prevent cross-connection contamination. It is well-established in the Minnesota plumbing industry that regulation of single-wall heat exchangers will be covered under potable water protection rather than specifically under water heaters. It is reasonable to locate these requirements under "Heat Exchangers," section 603.5.4, instead of under the limited parameter of water heaters, section 505.

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[19] Chimneys and vents are regulated in the Minnesota Mechanical and Fuel Gas Code in chapter 1346.

[20] Minnesota Rules, part 1300.0215.

[21] Venting, self-closing and door requirements are regulated in the Minnesota Mechanical Code, Minnesota Rules, Chapter 1346.

[22] The headings this location falls under are section 505 Oil-Burning and Other Water Heaters; 505.4 Indirect-Fired Water Heaters; 505.4.1 Single-Wall Heat Exchanger.

[23] The headings this location falls under are section 603 Cross-Connection Control; 603.5 Specific Requirements; 603.5.4 Heat Exchangers; 603.5.4.1 Single-Wall Heat Exchanger.

4714.0506 AIR FOR COMBUSTION AND VENTILATION.

UPC sections 506.0 to 506.9 regulate portions of heating, ventilation and air conditioning ("HVAC") systems. In Minnesota, HVAC systems are regulated in the Minnesota Mechanical Code, Chapter 1346. The Board does not have statutory authority to regulate HVAC systems.

4714.0507 OTHER WATER HEATER INSTALLATION REQUIREMENTS.

Subpart 1. Sections 507.6 to 507.11 and 507.14 to 507.23.

The proposed amendment deletes UPC sections 507.6 to 507.11 and 507.14 to 507.23 because they provide requirements for gas appliances; specifically, use of air for combustion and ventilation, fire resistance constructions installed in commercial garages and air craft hangars, and gas piping and venting of gas appliances, all of which are HVAC-related requirements. Gas appliances and HVAC systems are governed by the Minnesota Mechanical Code, Chapter 1346. The Board does not have statutory authority to regulate gas appliances or HVAC systems.

Subpart 2. Section 507.5 Relief Valve Discharge.

The proposed amendment adds one sentence to the end of the UPC language, "Discharge relief valves shall terminate to a safe place of disposal or within 18 inches of the floor." This added language is taken from the existing Plumbing Code, with minor grammatical differences for clarification.[24] The proposed amendment specifies a location for the discharge of a water heater relief valve to supplement the UPC's general statement of prohibition. Because the temperature relief valve is set by the manufacturer to release at 210 degrees Fahrenheit, unsafe conditions, including the risk of scalding the public and occupants, exist if the valve discharge is not located in a safe place. It is reasonable for a water heater relief valve to discharge to a location that will not create an unsafe situation.

4714.0508 APPLIANCES ON ROOFS.

UPC section 508 contains requirements for appliances on roofs. Because these requirements are not considered "plumbing," the proposed amendment deletes the entire section. Appliances on roofs are regulated in the Minnesota Mechanical Code, Chapter 1346. The Board does not have statutory authority to regulate appliances on roofs.

4714.0509 VENTING OF APPLIANCES; 4714.0510 SIZING OF CATEGORY I VENTING SYSTEMS; 4714.0511 DIRECT-VENT APPLIANCES.

UPC sections 509 through 511 regulate venting of appliances. These requirements are not considered "plumbing." In Minnesota, venting of appliances is regulated in the Minnesota Mechanical Code, Chapter 1346. The Board does not have statutory authority to regulate venting of appliances.

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[24] See Minnesota Rules, part 4715.2210, subpart 4.

4714.0601 HOT AND COLD WATER REQUIRED.

Section 601.1 General.

UPC section 601.1 provides general potable running water requirements. The proposed amendments make minor grammatical changes for clarification and add language. The new language requires return circulation type hot water supply systems in buildings that are four stories or higher and buildings where the developed length of hot water piping from the source of hot water supply to the farthest fixture supplied exceeds 100 feet . This requirement is added to conserve water and safely maintain adequate hot water demand within a reasonable time period. The threshold length of 100 feet is an industry standard because lengths beyond 100 feet will result in unnecessary amounts of potable water being wasted while waiting for hot water to dispense and also poses insufficient washing conditions.

4714.0602 UNLAWFUL CONNECTIONS.

Subpart 1. Section 602.2, Cross-contamination

The proposed amendment reorganizes the UPC language to clarify that a backflow prevention device is required in order for certain connections to the domestic water supply to exist. The proposed amendment also supplements the UPC requirement to clarify that each point of use in the water supply system shall be separately protected. Potentially contaminated water used in cooling, heating, and similar processes must be properly discharged into the drainage system and must not return to the potable water system. Much of this new language is in the existing plumbing code at part 4715.1912, with the addition of water used for heating equipment. The proposed rule protects the potable water systems from contaminants including oil, grease, other petroleum products, chemicals, refrigerants, and any substance that may contaminate the potable water system. This is a reasonable measure to protect safe drinking water.

4714.0602 Subp. 2. Section 602.4, Approval by Authority

The proposed amendment deletes the UPC references to "Health Department, or other department having jurisdiction" in order to prevent confusion or conflict as to what agency is qualified and authorized to approve connections that could potentially contaminate the water supply system. The amended section is consistent with the existing plumbing code in part 4715.1920 and reasonably protects the drinking water system.

4714.0603 CROSS-CONNECTION CONTROL.

Subpart 1. Section 603.2, Approval of Devices or Assemblies

The proposed amendment deletes one reference to the Authority Having Jurisdiction as the authority that approves a device or assembly to clarify that the device or assembly must be approved as defined in this code.[25] The backflow prevention devices or assemblies must also meet testing

[25] The definition of "Approved" is amended in part 4714.0203, subpart 2, to mean "approval by the administrative authority, pursuant to the Minnesota Plumbing Code, by reason of inspection, investigation, or testing; accepted principles; computer simulations; research reports; or testing performed by a nationally recognized testing laboratory." This definition is consistent with other chapters of the Minnesota State Building Code. See, e.g., parts 1311.0202, subp. 1; 1303.2401, subp. 2; and 1322.0202, subp. 1.

requirements and comply with Table 603.2, "Backflow Prevention Devices, Assemblies, and Methods," unless excepted in sections 603.5.1 through 603.5.23. The proposed amendment changes the UPC reference from "603.5.21" to "603.5.23" because the proposed amendment adds two provisions (subsections 603.5.22 and 603.5.23).

In the last paragraph, the words, "or otherwise approved by the Authority Having Jurisdiction" are deleted because who can perform backflow testing is regulated in Minnesota Rules, chapter 4716, the plumbing licensing and apprentice registration rules.

Subpart 2. Section 603.5.4, Heat Exchangers

The proposed amendment amends the UPC language by replacing the reference to section 505.4.1 with the requirements of 505.4.1. Along with relocating the requirements to this section, the language is reformatted for clarity and modified to permit connection to low-pressure steam systems but is otherwise replicated exactly. It is reasonable to put all requirements for single wall water heaters in one location, here in section 603.5.4, for the convenience of users of this code.

Subpart 3. Section 603.5.12, Beverage Dispensers

The proposed amendment adds "made of copper" to the prohibitions that apply to carbonated beverage dispenser piping materials that are downstream of the backflow preventer. The water is carbonated downstream of the backflow preventer. Copper reacts strongly with carbon dioxide and dissolves at a rate that greatly exceeds the federal Maximum Contaminant Level of 1.3 milligrams per liter, a standard established to prevent short term gastrointestinal illness and long term liver or kidney damage. The amendment prohibits use of copper piping where carbonated water will flow.

Subpart 4. Section 603.5.18 Potable Water Outlets and Valves

The proposed amendment adds an exception to the UPC language that reads, "except for a freeze-proof yard hydrant that is located at least two feet above the water table and at least ten feet from any sewer or similar source of contamination." The added language is largely taken from the existing Minnesota Plumbing Code, part 4715.1800, subpart 1, with modifications. It is reasonable to permit freeze-proof yard hydrants to be underground, subject to the location requirements, because they are commonly used in Minnesota and have previously been permitted under the existing Plumbing Code.

Subpart 5. Section 603.5.22, Barometric Loop

The proposed amendment adds this subsection that regulates the use of barometric loops to the list of specific requirements. Barometric loops are permitted in the existing-Plumbing Code as an acceptable method of cross-connection control. Barometric loops are an accepted cross-connection control method for use in the water distribution system where back siphonage hazards may exist when there is no backpressure backflow. The barometric loop method is an option available in some situations to provide cross-connection control without the testing and maintenance requirements of other cross-connection control options. It is reasonable to offer this safe, simple and non-mechanical method for certain installations.

Section 603.5.23 Installation of Testable Backflow Prevention Assembly

The proposed amendment adds this subsection that regulates use of testable backflow prevention assemblies (devices) to the list of specific requirements. Testable backflow prevention assemblies are installed to protect potable water systems from the most dangerous and toxic contaminants. The standards listed in the proposed amendment (ASSE 1013, 1015, 1020, 1047, 1048 or 1056) address the material quality, performance requirements and design of the assembly but not specific field installation, testing, maintenance or removal of the assemblies. The UPC requires approval and annual testing of all devices or assemblies installed for the prevention of backflow in sections 603.2 and 603.4.2. However, the UPC does not address testing and inspection tags, and reporting as required in current Minnesota rules.[26] In addition to adding the existing Minnesota rule requirements to the UPC requirements, the proposed amendment adds a requirement that a community public water supplier (typically a municipal water utility) be notified when a testable backflow assembly is installed, tested, or removed from a community public water system. The proposed language does not require community public water supplier approval, but does require notification so that the public water supplier is aware of changes to the public water system that could negatively affect water quality and safety of the entire public system. The testing notification requirement is reasonable and not overly burdensome for persons performing the test and it is reasonable for the administrative authority and water supplier to be aware that the testing has been performed. The proposed amendment would align the testing notification requirement with the testing requirements.

4714.0604 MATERIALS.

Section 604.11, Lead Content

The proposed amendment replaces "8 percent" with "a weighted average of 0.25 percent in the wetted surface material, as established in the Safe Drinking Water Act, section 1417(d)" as the maximum lead content of water pipe and fittings that convey potable water. Effective January 4, 2014, the federal Reduction of Lead in Drinking Water Act amended the federal Safe Drinking Water Act (SDWA), reducing the allowable amount of lead from 8% lead content (currently in the Plumbing Code, Minnesota rules part 4715.0500) to "not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures."[27] This amendment is necessary to comply with federal law.

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

Section 608.5, Drains.

The proposed amendment reformats part of the UPC language for clarity and deletes other UPC language that permits drain tube and piping to terminate outside of a building. Instead of permitting discharge to the outside of a building, the proposed amendment requires discharge "to a safe place of disposal or within 18 inches of the floor," both of which are indoors. Considerations for

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[26] See Minnesota Rules, part 4715.2161, subparts 2 and 3. Wording and terminology from the current Minnesota Plumbing Code is modified for clarity and for consistency with the UPC along with the new requirement.

[27] The amended statute is 42 U.S.C. section 300g-6(d)(1)(B) (2014). See Public Law 111-380 at: www.doli.state.mn.us/CCLD/PDF/pe_lead.pdf.

"a safe place of disposal" include whether the discharge will not cause damage to property or injure persons from high temperature discharge. The proposed amendment is reasonable because it provides a specific safe place to discharge to while leaving flexibility to reasonably accommodate unique situations.

4714.0609 INSTALLATION, TESTING, UNIONS, AND LOCATION.

Subpart 1. Section 609.6 Location.
Subsection 609.6.1 Water supply near sources of contamination.

The proposed amendment adds a new subsection that establishes the required minimum separation distance between water supply and potential sources of contamination. Specifically, a minimum of ten feet horizontal separation distance is required between a water supply and a source of contamination. The proposed amendment takes language from the existing Minnesota Plumbing Code, with amendments.[28] This requirement has been used and enforced for many years to protect the water supply system from contamination. Ten feet is a reasonable distance from possible sources of contamination because it is far enough to protect the water supply but not so far as to require excessive space; it balances the need to protect the water supply, risk and cost.

Subpart 2. Section 609. 11. Water Meters.

The proposed amendment adds requirements for water meter installation. The amendment clarifies that water meters must be located inside a building, installed at least 12 inches above a finished floor, readily accessible and rigidly supported. When it is not possible to install the water meter inside a building, an exception is available to accommodate location outside a building if other requirements are satisfied. The other requirements for meters located outside the building are: the meter must be enclosed in a structure not subject to flooding, high groundwater, or surface drainage runoff, must be protected from freezing and must be installed above grade when possible. If a water meter is installed below grade, the top of the structure must be located at least 12 inches above the finished grade, must be secured and must be accessible. The structure shall not be connected to any storm or sanitary sewer system. This amendment is reasonable because it maintains water meters safely while providing reasonable accommodations when optimal conditions are not possible.

4714.0610 SIZE OF POTABLE WATER PIPING.

Table 610.3 Water Supply Fixture Units (WSFU) and Minimum Fixture Branch Pipe Sizes

This table lists appliances, appurtenances or fixtures and provides the minimum fixture branch pipe size and the number of units required for private use, public use, and assembly.[29] Included in the list of appliances in the UPC is "Lavatory." The proposed amendment changes it to read, "Lavatory (each basin), or hand sink." The additions clarifies that "lavatory" means each basin and adds hand sinks to have the same minimum water piping sizing as lavatories. Lavatories are plumbing fixtures located in restrooms for hand washing. A hand sink is known in the plumbing industry to refer to a plumbing fixture used for hand washing in hospitals, clinics, and commercial

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[28] See part 4715.2280.

[29] "Assembly" is a term used in the 2012 International Building Code ("IBC"), proposed for incorporation by reference in Minnesota Rules, chapter 1305. See IBC section 303. See proposed rule 1305.0011, subp. 1, proposing to incorporate the 2012 IBC. www.dli.mn.gov/PDF/docket/1305draftrule.pdf

kitchens. That is, hand sinks are not typically in a room with a toilet whereas lavatories are. Because the two plumbing fixtures are similar in design and function (washing hands for sanitation). It is reasonable that the two fixtures have the same minimum piping sizes.

4714.0611 WATER CONDITIONING EQUIPMENT.

Sections 611.0 to 611.3

These sections provide general minimum requirements for water conditioning equipment in plumbing systems. The proposed amendments replace terminology, including the UPC title of section 611, "Drinking Water Treatment Units" with a new title, "Water Conditioning Equipment" to be consistent with the terms used in Minnesota Statutes for licensing and installation rules relating to water conditioning equipment. Drinking water treatment units are a type of water conditioning equipment. The proposed amendments establish a clear title in this rule for installers, designers, and the public that is consistent with the terminology in licensing statutes and installation rules.

Section 611.1 Application

The proposed amendment replaces UPC section 611.1 with Minnesota-specific requirements laid out in three subsections of water conditioning equipment. The changes are necessary to permit a variety of products, ranging from completely manufactured water conditioning equipment products to custom design equipment, available to the public while maintaining health and safety.

Subsection 611.1.1 Definition.

The proposed amendment adds a definition of "water conditioning equipment" to clarify the scope of this section. Clarification is particularly important here to know when this section applies.

Subsection 611.1.2 Manufacture and Assembly.

The UPC requires all water conditioning equipment (a.k.a. water treatment units) to comply with various national standards. Such a requirement is very limiting. The proposed amendments permit water conditioning systems to be manufactured as a complete system *or* to be assembled as a complete system by a licensed plumbing contractor or licensed water conditioning contractor. Complete systems that are assembled must be assembled by a licensed professional to ensure assembly is done correctly and the system is safe. Allowing assembly of a system by a licensed contractor allows for more water conditioning system options for treatment of potable water system and provides for less costly installation because third-party certification is not required for assembled systems. There is a limited number of listed water conditioning products available to consumers and third-party testing of larger water conditioning equipment is not available in some cases. Therefore, permitting a licensed plumbing contractor or licensed water conditioning contractor accommodates the availability challenges while safely conditioning the water.

An exception is given to water conditioning equipment that is used for non-potable use and is installed downstream of a code-approved backflow preventer. These systems pose less risk to public health since the water treated by these systems is not intended for potable use. Therefore, it is reasonable that these systems do not need to comply with standards established for potable water use.

Subsection 611.1.3 Labeling

The proposed amendment requires water conditioning equipment be labeled to identify the type of equipment and contact information of the manufacturer or licensed professional who assembled the system. Labeling is a reasonable requirement because it is easy to do and inexpensive but extremely useful.

Section 611.2 Airgap Discharge

The proposed amendment replaces "drinking water treatment units" with "water conditioning equipment" for consistency and clarity in the amendments. No substantive changes were made.

Section 611.3 Connection Tubing

The proposed amendment replaces "drinking water treatment units" with "water conditioning units" for consistency and clarity in the amendments. No substantive changes were made.

Section 611.4 and Table 611.4

UPC subsection 611.4 and Table 611.4 are not amended.

4714.0701 MATERIALS.

Section 701.1, Drainage Piping

The proposed amendment makes grammatical changes for clarity and deletes the fire stop protection language because fire stop protection is not regulated by the plumbing code in Minnesota. The Board does not have statutory authority to regulate fire stop protection even when applied to piping installations.

4714.0702 FIXTURE UNIT EQUIVALENTS.

Section 702, Table 702.1, Drainage Fixture Unit Values (DFUs)

The proposed amendment adds "Shower," in front of "Multi-head, Each" to clarify what the line is referencing. The proposed amendment adds, "Commercial Pot or Scullery" to the plumbing appliances, appurtenances, or fixtures list along with minimum requirements (2-inch trap and trap arm, four drainage fixture units for public buildings and four units for assembly occupancies). "Commercial Pot or Scullery" are sinks that are designed, generally, with three compartments. Each compartment has a large holding capacity for washing commercial equipment and discharges to the drainage system.[30] A minimum 2-inch size trap and trap arm and four drainage fixture units for commercial pot and scullery sinks allows the sinks to drain within a reasonable period of time for sanitary purposes as these sinks are used in commercial applications.

The proposed amendment deletes footnote 6 in the UPC which reads, "Water closets shall be computed as 6 fixture units where determining septic tank sizes based on Appendix H of this code." The Minnesota Pollution Control Agency regulates septic tank sizing. The Board does not have statutory authority to regulate septic tank sizing. Table 422.1 also is proposed for deletion, so

[30] Commercial Pot or Scullery is added because it is different from Commercial With Food Waste appliances, which are already in the table. Commercial With Food Waste appliances typically receive more food waste than a commercial pot or scullery.

references to that table have been deleted.[31] UPC footnotes and references numbered 7 and 8 are renumbered to 6 and 7, respectively.

4714.0704 FIXTURE CONNECTIONS (DRAINAGE).

Section 704.3 Commercial Dishwashing Machines and Sinks

The proposed amendment adds two types of sinks used in licensed commercial food establishments to the scope of this requirement, "commercial kitchen sinks" and "beverage service sinks." These sinks have similar functions and similar sanitary concerns as the other sink types listed and must have the same protection as any other commercial sinks prescribed in this section. It is reasonable to clarify that this requirement applies to commercial kitchen sinks and beverage service sinks.

This section requires a floor drain be connected to the fixture drain to protect any possible sewage backups into the fixture. The original UPC language requires a floor drain. The proposed amendment adds that the floor drain must be "constructed without backwater valves." Specifying that the floor drain must not have backwater valves is important to prevent sewage backup into the fixture it intends to protect. Backwater valves, as defined in the UPC, are devices "installed in a drainage system to prevent reverse flow." That is, if a backwater valve is installed in the floor drain adjacent to the fixture, sewage would backup into the sink instead of through the floor drain, causing possible contamination of the fixture. Other minor grammatical clarifications are made but do not alter the technical requirement. It is reasonable to specify that the floor drain must be constructed without a backwater valve for effective protection.

4714.0705 JOINTS AND CONNECTIONS.

Section 705.10.2 Expansion Joints.

The proposed amendment deletes the following language from the UPC, "except where in vent piping or drainage stacks" because that language provided an exception to the requirement that the expansion joints be accessible. Expansion joints are mechanical devices which are subject to failure regardless of location and need to be accessible for maintenance and repair. Expansion joints in vent piping or drainage stacks are equally subject to failure as expansion joints in other locations. Therefore, it is reasonable to delete language excepting them being accessible for maintenance and repair.

4714.0707 CLEANOUTS.

Section 707.4.1 Back-to-Back.

The proposed amendment adds a new subsection to require a cleanout on the vertical drain or vent serving back-to-back fixtures when a common vent at the same level is utilized. A cleanout is a capped or plugged opening in a drain pipe that can be accessed to unclog a pipe such as with a drain auger. When a sanitary cross is used in common venting, cleaning equipment cannot always be easily directed into the vertical drain from the trap arm unless the trap adapter is immediately adjacent to the

[31] See 4714.0422, pages 16-17 of this SONAR.

sanitary cross.[32] Because the horizontal distance between the sanitary cross and the trap opening will vary with building construction or drainage piping arrangement, discretion is also given to eliminate the cleanout where the vertical drain is accessible through the trap opening.

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

Section 710.12, Grinder Pump Ejector; 710.12.1 Discharge Piping.

The proposed amendment adds requirements that the sizing of the sump and pump capacity for grinder pumps must be adequate to prevent overloading.[33] Grinder pumps are generally designed with low discharge rates and small sumps so the sumps can fill up quickly, creating an unsanitary condition in the building. The plumbing system designer must consider sizing of the sumps and pumps when using grinder pumps in the plumbing design. It is reasonable and more cost-effective to address pump capacity and sump basin size properly in the design to prevent sewage backing up into the building drainage system rather than trying to retrofit larger capacities after installation.

Section 710.13, Macerating Toilet Systems.

The proposed amendment deletes "where approved by the Authority Having Jurisdiction" from the first sentence. It is replaced with, "only in one- or two-family dwellings when gravity flow is not possible. Not more than one bathroom group is permitted to discharge into a macerating toilet system. One bathroom group consists of: a toilet; a lavatory; and a shower or bathtub. Components of macerating toilet systems shall be accessible." A macerating toilet system is a system comprised of a toilet and a sump with a macerating pump instead of relying on gravity flow with flushed water. Macerating toilet systems are not designed for commercial application regardless of the number of bathroom groups or when gravity is not possible. The proposed amendment is reasonable because it specifies parameters when macerating toilet systems are appropriate rather than leaving unbridled discretion with the Authority Having Jurisdiction.

Minor grammatical changes are proposed to subparts 710.13.1, 710.13.2 and 710.13.3 but no substantive changes have been made.

4714.0712 TESTING.

Section 712.1. Media

The proposed amendment deletes "except that plastic pipe shall not be tested with air" from the first sentence. This exception is deleted to accommodate winter conditions in Minnesota. Without the proposed deletion, the water test would be required on plastic pipe. In the winter, this would not be possible due to freezing temperatures and most buildings under construction are not heated. Testing plastic pipes with air is well known to Minnesota plumbing contractors .

The proposed amendment modifies the language that allows the Authority Having Jurisdiction to require "the necessary points of access" to the plumbing system to isolate and add air for testing

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[32] A sanitary cross is a fitting where vertical pipe and horizontal pipe intersect as a single unit. Trap arms are always on the horizontal arms of a sanitary cross.

[33] A grinder pump is a wastewater conveyance device used to facilitate the removal of waste from an appliance, such as a toilet, through the pipes to the sewer system or septic tank.

purposes. The modification clarifies that it is necessary to remove openings, including cleanouts, to test the plumbing system.

Section 712.4 Negative Test

The proposed amendment adds this subsection that requires negative pressure test or hydrostatic test for concrete manholes and concrete sewer lines. The negative pressure test must meet one of two recognized standards listed in the rule. The hydrostatic test must comply with section 1109.2.2. Negative pressure testing and hydrostatic testing are commonly used methods to test sewers. Negative pressure testing and hydrostatic testing are safe methods of testing manholes and sewer lines. Air testing concrete manholes and concrete sewer piping is unsafe to perform because there is risk of severe injury in large sewer pipes and manhole structures holding pressurized air as compared to air testing small drain pipes. It is unsafe because the pipe might explode. The proposed amendment reasonably requires safe methods of testing concrete manholes and concrete sewer lines that are similar in burden and cost as with the more dangerous methods.

Section 712.5 Finished Plumbing

The proposed amendment adds this subsection that requires a specific final test after plumbing fixtures have been set up to test their connections. It is reasonable to require final testing and this test is reasonable because it is effective, not overly burdensome and a standard final test method in the plumbing industry. A final test of newly constructed plumbing systems detects potential leaks and allows for repair before the systems are fully activated. Detecting and repairing leaks in a new plumbing system is easier to do before activation than after it is fully in use. Any leakage in fixture connections can result in unsanitary health conditions.

Section 712.6 Test Plugs or Caps.

The proposed amendment adds this subsection to require test plugs and caps for roof terminals to "extend above or outside the end of the vent pipe to provide visible indication for removal after the test has been completed." That is, when a plumbing system is tested, test plugs and caps are used during the process. These test plugs and caps must be removed for the system to function normally when not being tested. In order to ensure all test plugs and caps are removed after testing, they must be visible.

4714.0713 SEWER REQUIRED.

Subpart 1. Section 713.1 Where Required

The proposed amendment deletes the UPC reference to section 101.8, existing construction, because chapter one of the UPC is not adopted by this rule. The proposed amendment adds a reference to part 4714.0101, subpart 6 because, like section 101.8, that rule part addresses plumbing and drainage systems in existing buildings.

Subpart 2. Section 713.5 Permit

The proposed amendment deletes this section that prohibits permits for the installation, alteration, and repair of a private septic system if a public sewer is available. Permits for private septic

systems are not under the authority of the Board or the Department. Rather, permits for private septic systems are issued by Minnesota Pollution Control Agency.[34]

Subpart 3. Section 713.7 Installation

The proposed amendment replaces "a department other than the Authority Having Jurisdiction" with "a municipal utility easement" because the amendment is more specific, clear and customized to apply to Minnesota. In Minnesota, building sewers under a municipal utility easement are not subject to the Minnesota Plumbing Code. The proposed amendment adds two-family dwellings to the exception for consistency with other sections of this code and the Minnesota Residential Code in rules chapter 1309 and makes grammatical clarifications.

4714.0714 DAMAGE TO PUBLIC SEWER OR PRIVATE SEWAGE DISPOSAL SYSTEM.

The proposed amendment deletes, "or the Health Officer" because it is unclear who the Health Officer is and the Board does not have statutory authority to promulgate rules administered by other state agencies.[35] If not deleted, the term will create confusion and inconsistency about which entity grants approvals.

4714.0715 BUILDING SEWER MATERIALS.

Section 715.3 Existing Sewers

The proposed amendment adds, "cured-in-place pipe lining" to the first sentence to specify the type of trenchless methodology that is allowed under this code. The proposed amendment also adds, "Replacement using cured-in-place pipe liners shall not be used on collapsed piping or when the existing piping is compromised to a point where the installation of the liners will not eliminate hazardous or insanitary conditions." The new sentence clarifies that conditions where the existing sewers are significantly damaged to the point that the lining will not provide sufficient remedy are not appropriate for using cured-in-place lining technology. It is reasonable to clearly prohibit the use of cured-in-place pipe lining when the existing sewers are substantially damaged to prevent insanitary conditions.

4714.0717 SIZE OF BUILDING SEWERS.

Section 717, Table 717.1 Maximum/Minimum Fixture Unit Loading on Building Sewer Piping

The proposed amendment deletes the asterisk reference to Appendices C (Alternate Plumbing Systems) and H (Private Sewage Disposal Systems). Neither appendix is adopted into this code. Private sewage disposal systems are regulated by Minnesota Pollution Control Agency rules and are not part of this code. The table is otherwise unchanged. It is reasonable and necessary to maintain this table because portions of plumbing piping intersects with sewer piping regulated by MPCA but delete the reference to the appendices because they are not part of this code. It is important to coordinate state codes.

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[34] See Minnesota Rules, part 7082.0500.

[35] Rules that the Minnesota Plumbing Board promulgate are administered and enforced by the Minnesota Department of Labor and Industry.

4714.0721 LOCATION

Table 721.1 Minimum Horizontal Distance Required from Building Sewer (feet)

UPC Table 721.1 provides required minimum horizontal distances from building sewer for various things. The proposed amendment deletes four of the six lines and related footnotes in the table because they are ambiguous, regulated by a different state agency or do not offer a benefit to the public such as adding protection to public health or the environment. The remaining two lines are amended.

Table line one regarding "Buildings or structures" is deleted. Buildings or structures have not historically had a minimum distance required from the building sewer. No benefit is apparent from this requirement (UPC requires two feet minimum distance). Because there is no benefit from this requirement but it would add a burden, it is reasonable to delete this line.

Table line two regarding "Property line adjoining private property" is deleted. UPC Table 721.1 lists the minimum horizontal distance from the property line adjoining private property to the building sewer as "clear." There is a footnote that references section 312.3. Section 312.3 regulates building sewer and other piping as it relates to material and distance to a building or structure. It is unclear how this reference applies to the distance listed in line two of this table.

Table line three regarding "Water supply wells" is amended. The table sets the minimum horizontal distance between building sewers and water supply wells at 50 feet. The proposed amendment replaces that measurement with a reference to Minnesota Rules, Chapter 4725, Wells and Borings, under the Minnesota Department of Health. Chapter 4725 contains distance requirements from building sewers. This amendment is necessary to avoid duplicative or conflicting regulations.

Table line four regarding "Streams" is deleted. The table sets the minimum horizontal distance between building sewers and streams at 50 feet. The proposed amendment deletes this line because the Board does not have statutory authority to regulate the minimum horizontal distance between building sewers and streams. Although the Minnesota Department of Natural Resources (DNR) does not regulate a horizontal distance requirement between streams and building sewers, DNR staff impose the table in light of Minnesota Rules, Chapter 6120 and supported the recommendation to delete line four from the table. The proposed amendment is reasonable and necessary to avoid confusion.

Table line five regarding "On-site domestic water service line" is amended. The proposed amendment renames this line to "Building supply" to coordinate with the definition of "building supply" in the UPC. "Domestic water service line" is not defined in the UPC and is often misunderstood to mean water supply lines only to a residence. Rather, the requirement applies to water service lines that serve commercial and public buildings as well as homes. The proposed amendment is necessary and reasonable because it removes ambiguity by using an existing, defined term in the table.

The minimum horizontal distance between building sewer and building supply is amended from one foot to 10 feet and the footnote is amended to read, "Unless otherwise permitted by the

Administrative Authority and when installed in accordance with Section 720.0." The proposed amendment provides increased protection of the building supply line from building sewer piping and is consistent with the recommended guidelines that are followed for water mains and sewers. The Minnesota Department of Health ("MDH") is a member of the Great Lakes – Upper Mississippi River Board that has issued "Recommended Standards for Water Works."[36] MDH follows those recommended standards.[37] In regard to the horizontal distance between water mains and sewers or septic tanks, the guidelines require 10 horizontal feet unless not practical, subject to review and approval. Because the water mains and sewer lines approach the property line being 10 feet apart, horizontally, it is reasonable that those lines remain 10 horizontal feet apart when they pass over the property line as building sewer and building supply lines. The exception in the table footnote allows the Administrative Authority to approve a minimum horizontal distance less than 10 feet if the building supply is installed in accordance with section 720.0. The proposed amendment is reasonable and necessary because it coordinates with regulations of the pipes outside the property line and establishes safe practices while allowing case-by-case determinations when necessary.

Table line six regarding "Public water main" is deleted. The proposed amendment deletes line six, "Public water main" because public water mains are regulated by the Minnesota Department of Health. The Board does not have statutory authority to regulate this requirement. It is reasonable and necessary to delete a requirement the Board does not have authority to promulgate.

4714.0722 ABANDONED SEWERS AND SEWAGE DISPOSAL FACILITIES.

Sections 722.0 to 722.5

The proposed amendment deletes sections 722.0 to 722.5 in their entirety. The Board does not have statutory authority to regulate abandoned sewage disposal facilities. Abandoned sewers are regulated by the Minnesota Pollution Control Agency (Minnesota Rules, Chapters 7080 and 7081), and by local ordinances. It is necessary and reasonable to delete these subsections to avoid conflict with existing local ordinances and to avoid promulgating regulations without statutory authority.

4714.0723 BUILDING SEWER TEST.

Section 723.1

The proposed amendment deletes the language which prohibits testing DWV (plastic) piping using an air test method. The following sentence is added in its place: "Testing of building sewers shall be in accordance with Section 712.0, as amended." Section 712.0 relates to Minnesota climate conditions. This provides consistent testing requirements and avoids redundant language that has already been established in another section.

4714.0724 RECREATIONAL VEHICLE SANITARY DISPOSAL STATION.

The proposed amendment adds this new section outlining the construction requirements of the sanitary disposal or "dump" stations which commonly exist at recreational vehicle parks, at

[36] See www.10statesstandards.com/.

[37] These guidelines are commonly referred to as the "10 States Standards." Please see 10statesstandards.com/waterrev2012.pdf.

campgrounds, gas stations, and highway rest stops. The dump station allows owners of recreational vehicles to empty the sewage holding tank. The stations typically have a source of water to wash any spilled sewage. There are public health concerns associated with these functions, and therefore the minimum construction requirements are necessary for preventing human contact with, and disease transmission from, feces and other sewage components and preventing backflow of sewage into the water supply system.

Section 724.1 Construction.

This section establishes the minimum size of the concrete pad for the "dump" station and the pitch on the concrete pad to the center so proper drainage is possible. This will facilitate the cleaning while providing a self-closing, foot-operated hatch for a tight fit for the 4-inch drain inlet connecting to the sewer system for proper disposal of the sewage from RV holding tanks.

Section 724.2 Flushing Device.

Consistent with past and current practices in Minnesota, this section establishes a flushing device which is a handheld water supply hose secured to a post at a minimum required height to allow for cleaning while requiring proper backflow to protect the water supply system.

Lastly, signage is required to be posted adjacent to the dump station to clearly state that the use of the water from the handheld water supply is not safe for drinking or domestic use. This is necessary since the water supply downstream of a backflow preventer on the handheld device is now considered non-potable water piping and must clearly state so to the public.

4714.0801 INDIRECT WASTES.

Subpart 1. section 801.2.2 Walk-In Coolers

The proposed amendment adds to the beginning of the subsection, "Floor drains shall not be located inside walk-in coolers unless they are specifically required by the licensing authority. Where required,..." The UPC does not clarify when floor drains should or should not be used in walk-in coolers. The Board does not have statutory authority to regulate *when* floor drains are required in walk-in coolers. The Board has statutory authority to regulate only *how* they are installed when they are required. The amendment makes this clarification. The UPC language carried forward has minor grammatical amendments for clarity but no substantive changes to the installation of floor drains in walk-in coolers.

Subpart 2. section 801.2.3 Food-Handling Fixtures

The proposed amendment changes the listed types of food-handling fixtures by deleting "food preparation sinks" and "sinks" and adding cooking ranges, cooling counters, compartments and storage or holding compartments. The additions are consistent with licensing regulations. The proposed amendment changes the minimum drain pipe size from ½ inch to ¾ inch and adds a trap requirement. A ¾ inch minimum pipe size is needed to provide a sufficient opening for the equipment discharge without clogging. The trap prevents insects or other living creatures from crawling into the food compartments. The amendments are reasonable and necessary because they clearly identify common equipment and fixtures that are in food establishments and establish a minimum pipe size that will properly drain the fixtures without adding significant cost to the fixture or installation.

Subpart 3. Section 801.3 Bar and Fountain Sink Traps

The proposed amendment deletes this section in its entirety. The UPC section provides an alternative discharge option involving an air gap or air break for sinks in bars, soda fountains or counters that have traps that cannot be vented. Sinks in a bar, soda fountain, or counter must be directly connected and vented properly for sanitation purpose and for consistency with other state agencies. When a conventional vent is not possible for these sinks, there are other venting options available in this code.[38]

4714.0804 INDIRECT WASTE RECEPTORS.

Section 804.2 Domestic or Culinary Type Fixtures Prohibited as Receptors

The proposed amendment adds this subsection to clarify that sinks that are intended for domestic purposes or food preparation, including in commercial settings, must not receive any indirect waste piping. An exception allows domestic use dishwashers in residential settings to discharge into a sink, sink tailpiece or food-waste grinder if properly installed. The amendment is reasonable and necessary to prevent contamination of food in domestic and culinary plumbing fixtures.

4714.0813 SWIMMING POOLS.

Section 813.1 General

The proposed amendment adds, "water from scum gutter drains and pool deck drains" to this section to clarify that water from the pool gutters and deck drains must also discharge to the drainage system through an indirect connection. This is reasonable and necessary to prevent sewage back-ups into areas of the pool that would contaminate pool water and expose swimmers to contaminated water and unhealthy conditions.

4714.0814 CONDENSATE WASTES AND CONTROL.

Subpart 1. UPC section 814.1 Condensate Disposal, including Table 814.1

The proposed amendment deletes the reference to Table 814.1; and deletes the last sentence of the UPC paragraph that reads, "Condensate or wastewater shall not drain over a public way" because it is redundant with subpart 4 of this part. It is reasonable and necessary to delete references to tables no longer a part of the code and eliminate redundant requirements.

Subpart 2. Table 814.1 Minimum Condensate Pipe Size

The proposed amendment deletes Table 814.1, Minimum Condensate Pipe Size. The Minnesota Mechanical Code already regulates condensate pipe sizes and the Board does not have statutory authority to regulate condensate pipes sizes.[39] The proposed amendment is reasonable and

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[38] See UPC section 909.0 Special Venting for Island Fixtures and UPC section 910.0 Combination Waste and Vent Systems.

[39] Condensate pipe sizing is regulated in section 307 of the 2012 International Mechanical Code, which is incorporated by reference in Minnesota Rules, chapter 1346, the Minnesota Mechanical Code, effective January 24, 2015. See www.dli.mn.gov/PDF/docket/1346docket.pdf.

necessary to avoid conflicting requirements between the two codes and to delete regulations that the Board does not have statutory authority to promulgate.

Subpart 3. Section 814.2

The proposed amendment deletes this section because this section specifies condensate waste pipe sizes which are regulated by the Minnesota Mechanical Code. It is reasonable and necessary to delete this section to avoid conflict with another code and because the Board does not have the statutory authority to regulate condensate waste pipe sizes.

Subpart 4. Section 814.3

The proposed amendment reorganizes the existing language, makes some additions and deletes one portion. The phrase "dry wells, leach pits" is deleted because MPCA regulates dry wells and leach pits. A new place to discharge to, "an exterior place of disposal approved by the Minnesota Pollution Control Agency" is added in its place. The proposed amendments reorganize the UPC requirements so language clearly indicates that condensate must discharge into a code approved receptor for receiving this waste and the added option for disposal on the exterior of the building when disposal methods and locations are approved by rules governed by MPCA. The proposed amendment adds to the requirement that condensate waste shall not drain over a public way, "or in areas causing a nuisance." An example of an area "causing a nuisance" is discharging into a swale, which might enter the neighbor's property and cause unintended erosion, cracking of walk-ways or slippery conditions on other hard surfaces. Another example is discharging to the ground surface where the discharge overflows onto a public walkway. The proposed amendments are necessary and reasonable because the rule is clearer and coordinated with existing rules of other state agencies.

4714.0902 VENTS NOT REQUIRED.

Section 902.2 Bars, Soda Fountains, and Counter

The proposed amendment deletes this section because all sinks, including bar, soda fountain and counter sinks, must be directly connected, trapped and vented. This section offers an exception that does not align with food licensing requirements of other state agencies that regulate commercial food businesses because it does not adequately protect public health. This change is consistent with the proposed amendments to section 801.3 for proper sanitation and consistency with the food licensing authority's requirements.

4714.0903 MATERIALS.

Section 903.1 Applicable Standards

The proposed amendment rewords the UPC requirements in the affirmative rather than negative to be clearer and deletes the reference to Chapter 15 because Chapter 15 is not proposed for adoption in this code.[40]

[40] Chapter 15, Firestop Protection, is not adopted into this code because the Board does not have statutory authority to adopt firestop protection rules.

4714.0905 VENT PIPE GRADES AND CONNECTIONS.

Section 905.3 Vent Pipe Rise

The proposed amendment requires these vent pipe rise requirements unless otherwise provided elsewhere in the plumbing code. The UPC language allows deviation from this section if "structural conditions" prohibit this vent pipe rise. The proposed amendment also deletes the language that allows plumbing vents to be installed less than 6 inches above the flood-level rim of a fixture. Proper venting is important to prevent siphoning of the traps and prevent sewer gas from escaping to the environment. Proper vents require at least 6 inches above the flood-level rim of a fixture. The proposed amendment is reasonable and necessary because public health and safety is increased without being overly burdensome.

4714.0906 VENT TERMINATION.

Subpart 1, Section 906.1 Roof Termination

The proposed amendment changes the UPC requirement that vent pipes and stacks terminate "not less than 6 inches (152 mm) above the roof nor less than 1 foot (305 mm) from a vertical surface" to "not less than 12 inches (305 mm) above the roof." It is common to have snow load higher than 6 inches on the roof in a typical winter in Minnesota which may block the opening of the vent pipe and cause improper functioning of the plumbing system including possible exposure to sewer gas. Because of the change from 6 inches to 12 inches, the UPC language "nor less than 1 foot (305 mm) from a vertical surface" is no longer necessary. The proposed amendment is reasonable and necessary because it addresses Minnesota winter conditions without substantially increasing the burden.

Subpart 2 Section 906.3 Use of Roof

The proposed amendment changes the requirement for vent pipes to terminate above roofs from 6 inches to 12 inches to align with the proposed amendment to section 906.1 relating to Minnesota winter conditions. In addition, the reference to "fire wall" is deleted because this term might cause confusion and result in vent designs that terminate through a side wall instead of through the roof, which is not allowed. There are minor changes for grammatical clarity. The proposed amendment is necessary and reasonable because it economically accommodates Minnesota winter conditions.

Subpart 3 Section 906.7

The proposed amendment deletes the conditional UPC language specifying this section applies only where frost or snow closure is likely. Because frost or snow closure is likely in Minnesota, the conditional language is deleted. The proposed amendment changes the requirement that vent pipes "terminate not less than 10 inches" to "not less than 12 inches" to be consistent with the proposed amendments in sections 906.1 and 906.3 relating to Minnesota winter conditions. The proposed amendment clarifies with grammatical changes that the vent terminal minimum size is 2 inches in diameter. The proposed amendment is reasonable and necessary because temperatures in Minnesota winters are often below zero degrees Fahrenheit. The proposed amendment accommodates Minnesota winters by removing any contingency as to when this requirement must be followed and does not add much cost to the UPC requirement; extending a pipe from 10 inches to 12 inches is not costly.

4714.1001 TRAPS REQUIRED.

Section 1001.1 Where Required

The proposed amendment clarifies that a laundry tub is an acceptable receptor for waste discharge from an adjacent clothes washer. The UPC language is unclear and likely to be interpreted to mean that a trap of a laundry tub is permitted to receive discharge from a clothes washer. It is not clear that the waste discharge goes through the laundry tub and not directly into the drain pipe. The proposed amendment reasonably clarifies the requirement.

4714.1007 TRAP SEAL PROTECTION.

Section 1007

The proposed amendment deletes this section in its entirety. This section requires a trap seal primer on floor drains or similar traps directly connected to the drainage system and subject to infrequent use. This requirement adds cost to the plumbing project, requires long-term maintenance, and involves a mechanical device which is subject to failure. The benefit is minimal. The existing Minnesota Plumbing code does not require a trap primer. It is reasonable to delete a requirement that offers little benefit but adds cost and maintenance.

4714.1008 BUILDING TRAPS.

Section 1008

The proposed amendment deletes this section in its entirety. This section requires building traps when the Authority Having Jurisdiction requires them and provides requirements for the traps when they are required. Building traps are in addition to other traps and venting required for individual plumbing fixtures. Historically, building traps were needed to prevent sewer gas from entering into the storm drainage system in buildings served by combined storm and sanitary sewers. Combined sewers (containing storm and sanitary) are no longer a standard construction method and are extinct or nearly extinct. Installation of a building trap may negatively affect the plumbing system by interfering with the flow of air and sewage in the system. The proposed amendment is necessary and reasonable because it deletes a requirement that is not applicable in Minnesota and results in safer conditions with less cost.

4714.1009 INDUSTRIAL INTERCEPTORS (CLARIFIERS) AND SEPARATORS.

Section 1009.2 Where Required

The proposed amendment deletes the requirement that the Authority Having Jurisdiction must approve the size, type and location of each interceptor (clarifier) and separator. Instead of approval for each unit, the proposed amendment states that all interceptors (clarifiers) and separators are subject to chapter 10 with an exception. The exception is for units that are engineered and manufactured, with documentation from the manufacturer and the project registered professional engineer, for specific projects and approved by the Authority Having Jurisdiction. It is reasonable to require all units to comply with this chapter and require approval from the Authority Having Jurisdiction only for special units rather than every unit, which would be unnecessarily burdensome.

The formatting of the exception conveys the information more clearly than the single paragraph in the UPC.

The UPC language reads, "Except where otherwise specifically permitted, no wastes other than those requiring treatment or separation shall be discharged into an interceptor (clarifier)." The proposed amendment largely keeps this language but relocates it to follow the proposed exception, reorganizes for grammatical clarity, adds "or separator" to be included in this scope, and deletes "except where otherwise specifically permitted." As a result of the deletion, there is no exception to what wastes can be discharged into an interceptor (clarifier) or interceptor.

4714.1010 SLAUGHTERHOUSES, PACKING ESTABLISHMENTS, ETC.

Section 1010 Slaughterhouses.

This section is specific to slaughterhouses, packing establishments and other establishments that process animals, which may produce unwanted wastes from processing of animals that will clog the drainage system. The proposed amendment provides more specific requirements than the UPC language. The UPC lists specific types of animal product processing establishments and requires them to be connected to and drain into an approved grease interceptor (clarifier). The proposed amendment refers generally to slaughtering and dressing room drains and requires separators or interceptors that are approved by the administrative authority. The proposed amendment provides a description of the purpose of the separators or interceptors; to "prevent the discharge into the drainage system of feathers, entrails, or other material likely to clog the drainage system."

4714.1014 GREASE INTERCEPTORS.

Section 1014.3.7 Abandoned Gravity Grease Interceptors.

The UPC section requires all abandoned grease interceptors be pumped and filled as required for abandoned sewers and sewage disposal facilities in section 722.0. A proposed amendment discussed previously deletes section 722.0. The proposed amendment to this section also requires abandoned gravity grease interceptors be pumped and filled but "as required by the Authority Having Jurisdiction." It is reasonable to delete a reference to a section that is proposed for deletion, clarify that this applies to gravity grease interceptors because headings are not enforceable and to refer to an entity with jurisdiction to determine when and how abandoned gravity grease interceptors are pumped and filled.

4714.1101 GENERAL.

Subpart 1. Section 1101.1 Where Required.

The proposed amendment adds a sentence that reads, "In no case shall water from roofs or any building roof drainage flow onto the public sidewalk." The amendment prohibits water from building roofs from being discharged onto public sidewalks, including discharges from primary and secondary roof drainage systems. This prohibition is needed and reasonable because water on sidewalks is a nuisance to the public and creates unsafe conditions for walking and safe egress from buildings, especially when there are concerns of freezing and thawing in Minnesota.

Subpart 2. Section 1101.2 Storm Water Drainage to Sanitary Sewer Prohibited.

The proposed amendment adds an allowance for storm water to drain into sanitary drainage when "approved by the municipal sewer authority or stated elsewhere in this code." In cases such as open parking ramps or exterior drains in washing areas, the storm water might be contaminated and need treatment. Discharge to a sanitary sewer undergoes treatment where typical storm water drainage does not. Specific approval from the sewer authority is necessary and emphasized to ensure that the storm water must connect to sanitary sewer for treatment. Provisions must be made to prevent flooding of the sanitary sewer system if required by the sewer authority and the sanitary sewer system is properly sized to handle the additional storm water load.

Subpart 3. Section 1101.3 Material Uses.

The proposed amendment makes one grammatical change for clarity and deletes firestop protection references and regulations because the Board does not have statutory authority to regulate firestop protection. Firestop protection and flame spread materials are governed by the State Fire Code and the Minnesota Building Code.

Subpart 4 Section 1101.11 Roof Drainage.

Section 1101.11.1 Primary Roof Drainage. The proposed amendment reorganizes the language for clarity, deletes references to gutters and changes the circumstances and calculation for sizing the roof drainage system to be based on a minimum rate of rainfall of four inches per hour. References to gutters are deleted because the Board does not have statutory authority to regulate gutters. As with other references to gutters in the UPC, these are deleted here because they are regulated by the Minnesota Building Code. The roof drainage system size calculation is changed from "60 minutes duration and 100 year return period" and the reference to Table D in Appendix D is deleted because Appendix D is not adopted into this code and the proposed calculation is a clearer method of determining the adequate drainage system size for storm drainage in Minnesota. The exception language allowing the Authority Having Jurisdiction to require a different size calculation is deleted. Lastly, the proposed rule clarifies that the coordination with the structural design and pitch of the roof must be done in accordance with section 1106.

Section 1101.11.2 Secondary Drainage. The proposed amendment refers to Minnesota Rules, chapter 1305, Adoption of the International Building Code, which specifies the requirements for secondary roof drainage systems including scuppers for all buildings.

Subpart 5 Section 1101.11.2.1, 1101.11.2.2, 1101.11.2.2 (A), and 1101.11.2.2 (B).

Subsections 1101.11.2.1, 1101.11.2.2, 1101.11.2.2 (A), and 1101.11.2.2 (B) are all requirements governed by other chapters of the Minnesota Building Code and therefore must be deleted from the Plumbing Code.

4714.1106 SIZE OF LEADERS, CONDUCTORS, AND STORM DRAINS.

Section 1106.3 Reduction in size prohibited.

The proposed amendment prohibits storm drain piping from reducing in size in the direction of flow. If piping reduces in size in the direction of flow, debris will collect and cause obstructed flow. Obstructed flow will likely cause a clog and rainwater will become backed up onto the roof, which

compromises the building structure because it was not designed to hold the weight of backed up rainwater. The proposed amendment is necessary and reasonable because it prevents obstruction of flow (including where there are changes in direction from horizontal to vertical) without adding burden or cost and reduces pipe maintenance and system cleaning needs.

4714.1108 CONTROLLED-FLOW ROOF DRAINAGE.

1108.1 Application.

This section regulates sizing of the storm drainage system. It allows sizing to be based on controlled flow and storage of the storm water on the roof provided thirteen conditions are met. The proposed amendment makes minor grammatical changes for clarity and in item (7), changes the design roof live load from "not less than 30 lb/ft^2" to "not less than 40 lb/ft^2." The current Plumbing Code requires not less than 40 lb/ft^2 and is based on a minimum rate of rainfall of four inches per hour consistent with Section 1101.11.1, as amended.

The proposed amendment also deletes the remainder of item (7) language that reads, "...to provide a safety factor exceeding the 15 lb/ft^2 (73 kg/m^2) represented by the depth of water stored on the roof in accordance with Table 1108.1(2)." That language is deleted because it explains the calculation for determining the "not less than 30 lb/ft^2" requirement which has been changed to 40 lb/ft^2.

The proposed amendment is reasonable and necessary because it provides Minnesota-specific design conditions for building protection.

4714.1109 TESTING.

Subpart 1 Section 1109.1

The proposed amendment replaces references to Section 1109.2.1 or Section 1109.2.2 with a reference to section 712, makes minor grammatical clarifications, and adds "except as provided in section 1109.2." Section 712, as amended, establishes all testing requirements that are necessary for Minnesota-specific conditions. Section 1109.2 provides specific exceptions to section 712 testing. It is necessary to coordinate testing requirements to provide consistency and avoid redundant requirements.

The proposed amendment adds a sentence requiring an air test for any building storm sewer that passes through contaminated soils or contaminated water in accordance with section 712.3. Any storm sewer that passes through contaminated soils or contaminated waters is at risk of infiltration of contaminants into the sewer and possibly entering into waters of the state (lakes, ponds, streams, etc.). Therefore, it is reasonable to subject such storm sewers to an air test to ensure the sewer is air-tight to prevent contamination.

Subpart 2 Section 1109.2. Exceptions

The proposed amendment replaces the UPC section and subsections with exceptions to the testing requirement in Section 1109.1. The two proposed subsections contain language from the existing Minnesota Plumbing Code.

The first subsection, 1109.2.1, provides specific exceptions when testing is not required for building storm drainage systems. The proposed amendment does not require testing for any outside leaders, perforated or open drain tiles, or portions of the storm drainage system and storm sewers that are located more than ten feet from buried water lines, and more than 50 feet from water wells. These exceptions are reasonable because perforated pipes are intended for groundwater removal and storm drainage systems and storm sewers carry rainwater and other contaminants that enter into the storm sewers through rainwater. Testing is not necessary in these specific, limited situations because the contaminants carried in these situations do not pose a threat to public health like sanitary sewers (which require testing).

The second subsection, 1109.2.2, offers an alternative testing option for building storm drainage systems and sewers in lieu of the test in section 712. The proposed amendment offers the hydrostatic test method from the City Engineers Association of Minnesota, 2013 edition as a testing option. It is reasonable to adopt the hydrostatic test method to test building storm sewers because it is a commonly used method in the utility industry and storm sewer sizes might have too large a diameter that renders the tests prescribed in section 712 impracticable or unsafe.

4714.1110 SIPHONIC ROOF DRAINAGE SYSTEM.

The proposed amendment adds this section to establish minimum requirements for engineered siphonic roof drainage systems. The language is largely taken from the existing Minnesota Plumbing Code. The requirements in this section ensure proper design and installation of the system.

Section 1110.1 General Requirements

This proposed section provides the general requirements for siphonic roof drainage systems. Siphonic roof drainage systems must be engineered systems that meet design criteria and special considerations for suitability for each construction project. Because of these unique parameters and criteria, engineered siphonic roof drainage systems may be used for building roof drainage only when approved by the administrative authority.

Section 1110.2 Design Criteria

This proposed section establishes the minimum requirements and adopts standards that must be met in the design of siphonic roof drainage systems. The first requirement is that a registered professional engineer, licensed by the State of Minnesota, must design and certify the siphonic roof drainage system. Siphonic roof drainage systems are engineered systems and the designs require a higher level of technical understanding by the designer than conventional roof drainage systems prescribed in section 1106. The proper design of the building roof drain system is critical to protect against roof collapse and to preserve public safety.

1110.2.1 Sizing

This proposed subsection establishes the specific minimum requirement of four inches per hour rainfall rate in the design of a siphonic roof drainage system. This rate is consistent with the requirements proposed for all building roof drainage systems in this code.

1110.2.2 Design

This proposed subsection specifies that the siphonic drainage system design must meet ASPE Standard 45 ("ASPE 45"), Siphonic Roof Drainage. The standard establishes design criteria, parameters, materials, methods, and performance specifications for siphonic roof drainage systems. In addition, ASPE 45 describes the basis for the design and manufacturer of siphonic roof drain products and procedures. For example, all materials must be installed in accordance with the referenced standard in ASPE 45 under which materials are acceptable and approved, and in accordance with manufacturers' written instructions for siphonic roof drainage systems. All manufacturer design software used in the design and sizing of the system must meet ASPE Standard 45. Because of the complexities of the siphonic design calculation, it is important for the manufacturers of these roof drains to use an established and proven design software program that is based on ASPE Standard 45. Assurance that the manufacturer's design software meets ASPE Standard 45 is necessary for accurate and consistent designs and calculations among the different manufacturers of roof drains.

1110.2.3 Roof drain bodies

This proposed subsection requires roof drain bodies to meet ASME Standard A112.6.9, Siphonic Roof Drains. ASME Standard A112.6.9 establishes minimum design, testing, and performance standards for the roof drain bodies for the proper functioning of siphonic roof drainage systems.

1110.2.4 Water accumulation.

This proposed subsection requires roofs designed for water accumulation to be designed for the maximum possible water accumulation according to Section 1108.1(7), as amended, and chapter 1305, the Adoption of the International Building Code. This requirement is necessary to prevent roof collapse when a roof is designed for water accumulation to control the flow from the roofs beyond the minimum required depth for the priming of the siphonic roof drains.

1110.2.5 Pipe size and cleanouts.

This proposed subsection sets a minimum pipe size of 1-1/2 inch and requires all pipe sizes and cleanouts in the drainage system to be designed and installed according to ASPE Standard 45. ASPE Standard 45 provides plumbing standards for siphonic drainage systems. A minimum pipe size of 1-1/2 inch gives the registered professional engineer flexibility while maintaining the scouring velocity properties of the siphonic pipe work. The 1-1/2 inch pipe is the smallest size used in ASPE 45 for sizing and configuration in the designs of siphonic roof drainage systems for siphonic draining action and is specified in this rule section to ensure smaller sizes are not used in any design of a siphonic roof drainage system.

1110.2.6 Horizontal pipes.

This proposed subsection prohibits any reduction in horizontal pipe size in the direction of flow because such a reduction will lead to clogging and interrupt proper pipe flow. This is necessary and reasonable because debris and rainwater might collect at the point of reduction. This requirement does not have any negative affect on the design of siphonic roof drainage systems, does not add significant cost, and minimizes maintenance and cleaning needs of the system.

1110.2.7 Plans and specifications.

This proposed subpart establishes requirements for identification of plans and specifications to indicate the siphonic roof drainage system as the engineered method used for the building roof drain design. It is critical that there is a clear record of the method used in sizing the building roof drainage system because a siphonic roof drainage system is a specialized engineered system. Code officials, plan reviewers, and owners must consider the hydraulics related to the siphonic roof drainage system for future modifications or re-design to ensure that design parameters are safely maintained by the registered professional engineer.

1110.2.8 Markings.

This proposed subsection requires markings of all piping at each floor, wall, and approved interval as necessary. Roof drain markings must meet the requirements in ASME A112.6.9, which is also referenced in subsection 1110.2.3. Markings are necessary for inspections, maintenance, and replacements to maintain the proper functioning and condition of this type of system after construction. Owners and maintenance personnel must be able to clearly identify the installed system to avoid improper maintenance or modifications.

1110.2.9 Transition locations.

The proposed subsection requires the transition location from siphonic to gravity to be determined by the registered professional engineer and approved by the administrative authority. Designing a reduction in velocity at the transition location of siphonic to gravity flow protects the building drainage system and ultimately the property in general. The siphonic roof drainage, by design, is primed and fully pressurized in order to function and the transition location is the relief point of the system. The gravity system receiving the siphonic system discharge must be able to handle the higher flow capacities and velocities from the siphonic system. At this transition location, the siphonic system turns into gravity flow so air is mixed into the rainwater at this point. Therefore, the transition location from siphonic to gravity flow must be adequately vented so the system does not become airbound. The subsection also requires gravity storm drainage sizing to comply with the gravity sizing requirements of section 1106.0. This requirement is necessary and reasonable because the system needs a proper pressure relief location to protect the roof drainage system.

1110.2.10 Required submissions.

This proposed subsection requires plans, specifications, and calculations for the siphonic roof drainage system to be signed and certified by a registered professional engineer and submitted to the administrative authority for review and approval. This subsection also specifies that extreme calculations, as compared to averaged data, must be included in the design calculations of the system in the submittal to the administrative authority for review and approval. This requirement is necessary and reasonable because the role of the registered professional engineer is critical to the safe design of siphonic roof drainage systems and averaged calculations can be misleading. Submitting signed certification is not overly burdensome, particularly when compared with the safety benefit a safe system offers and extreme calculations offer accurate, useful information while not being any more burdensome than average calculations.

Section 1110.3 Proof of Suitability

This proposed section and subsections address requirements for testing, inspections, and certification of the siphonic roof drainage system that must be submitted to the administrative authority prior to the issuance of the certificate of occupancy. Engineered siphonic roof drainage systems must demonstrate proof of suitability upon completion of the installation by meeting testing requirements in accordance with ASPE Standard 45 to verify system integrity. The testing demonstrates that the system functions under all pressures when tested to worst-case siphonic conditions in the design.

Also, registered professional engineers are required to physically perform a final field inspection and provide written certification that the system has been installed in accordance with the design, plans, specifications, and any field modifications. This requirement is necessary because a siphonic roof drainage system is a complex engineered system that requires special expertise and an understanding of hydraulics, proper pipe configuration for balancing the system, and precise installation, to ensure the correct application of the system; field certification by the registered professional engineer is a reasonable method to ensure safe design and testing is done.

4714.1401 REFERENCED STANDARDS

Table 1401.1. This is a table in the UPC that contains all referenced standards throughout the UPC. Some of the proposed amendments reference additional standards that are not referenced elsewhere in the UPC and therefore are not included in Table 1401.1. Therefore, this proposed amendment adds the five newly referenced standards to Table 1401.1.

4714.1701 GENERAL.

1701.1 Applicability.

The proposed amendment modifies the UPC wording to clarify that rainwater is considered nonpotable and that this chapter applies to rainwater collected for use in nonpotable applications. The proposed amendment adds a reference to UPC section 1702.1 to clarify the nonpotable applications to which this chapter applies.

1701.1.1 Irrigation.

The proposed amendment adds this subsection to clarify that rainwater catchment systems used for outdoor lawn irrigation, whether surface or subsurface, are not regulated by this chapter. This language does not prohibit the use of captured rainwater for irrigation but clarifies that such systems are not regulated here.

1701.1.2 Combination Systems.

The proposed amendment adds this subsection to clarify that combination systems used for both lawn irrigation and approved nonpotable applications in 1702.1 are regulated under this chapter. All portions or components of the rainwater catchment system used for both lawn irrigation and approved nonpotable applications shall meet the requirements of this chapter; this includes the minimum water quality requirements in Table 1702.9.4. The treated rainwater used in the rainwater catchment system is susceptible to contamination and must be protected in a manner similar to the potable water system. Proper backflow protection or an air gap is required to separate the nonpotable water distribution system from the irrigation system to protect the nonpotable water distribution

system from possible contamination. The irrigation system must meet the same backflow protection requirements as irrigation systems supplied from a potable water distribution system.

4714.1702 NONPOTABLE RAINWATER CATCHMENT SYSTEMS.

Subpart 1. 1702.1 General.

The proposed amendment removes the term "irrigation" because this code does not apply to irrigation systems downstream of proper backflow protection. Vehicle washing facilities are increasingly using captured rainwater. The proposed amendment specifically lists vehicle washing facilities to clarify they are subject to this chapter. The term "similar" has replaced the term "other" to clarify and narrow the scope of acceptable uses for captured rainwater. The commissioner of Labor and Industry has authority to approve the "similar" uses in order to provide consistency throughout the state. The proposed amendment is needed to identify the common applications which may be approved.

Subpart 2. 1702.2 Plumbing Plan Submission.

The proposed amendment deletes redundant language and references Minnesota Rules, part 1300.0215, subpart 6, of the Minnesota State Building Code, which regulates plumbing plans and specification approval, in place of the Authority Having Jurisdiction.[41] Part 1300.0215, subpart 6, provides clearer requirements than the UPC language. The UPC section, if not amended, would be redundant or in conflict with part 1300.0215. The proposed amendment reasonably regulates plan and specification approval within existing Minnesota rules.

Subpart 3. 1702.4 Connections to Potable or Reclaimed (Recycled) Water Systems.

This section prohibits rainwater catchment systems from having a direct connection to a potable water supply or alternate water source system and provides acceptable means of supplying makeup water to a rainwater catchment system and backflow protection. The proposed amendment maintains those requirements and adds that an automatic makeup water system must be installed as backup in the event that rainfall is inadequate to supply the system or in the case of system failure. The proposed amendment ensures proper and continuous operation of the rainwater catchment system.

Subpart 4. 1702.5 Initial Cross-Connection Test.

This section requires an initial cross-connection test of rainwater catchment systems to ensure the potable water system has not been compromised. The proposed amendment does not substantially change the requirement. The proposed amendment adds, "as amended" to clarify that the amended version of section 1702.11.2 should be followed and replaces "installer" with "plumbing contractor" to clarify who must perform the cross-connection test. The proposed amendment deletes "by the Authority Having Jurisdiction" from the last sentence; the reference is redundant because the proposed definition of "approval" includes who approves.

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[41] Plumbing permits are statutorily required in Minnesota Statutes, section 326B.49, subdivision 3.

Subpart 5. 1702.7 Rainwater Catchment System Materials.

This section states the subsections that contain specific material requirements for rainwater catchment systems. There is no proposed amendment to this section but it is included in the rule draft for context of the following amendments.

1702.7.1 Water Supply and Distribution Materials.

This proposed amendment does not substantively change this section. The proposed amendment adds a reference to "Chapter 6, as amended in this code" to specify where water supply and distribution materials are regulated and to clarify that the amended version of UPC chapter 6 should be followed.

1702.7.2 Rainwater Catchment System Drainage Materials.

This proposed amendment does not substantively change this section. The proposed amendment adds a reference to "Chapter 11, as amended in this code" to specify where storm drainage is regulated and to clarify that the amended version of UPC chapter 11 should be followed.

1702.7.3 Storage Tanks.

This proposed amendment adds, "as amended in this code" after the reference to Section 1702.9.5 to clarify that the amended version of section 1702.9.5 should be followed.

1702.7.4 Collection Surfaces.

There are no proposed amendments to the requirement but rather a grammatical correction to the section heading. Specifically, the term "Collections" is amended to the singular form.

Subpart 6. 1702.9.3 Collection Surfaces.

This section limits the source of collected rainwater for rainwater catchment systems to rainwater collected only from roof surfaces. The proposed amendment adds "only" to emphasize the limitation. To further clarify this point, the section lists three areas where rainwater cannot be collected for such catchment systems. The proposed amendment adds one more item, a catchall item that reads, "similar nonroof surfaces." Although rainwater sometimes collects on various surfaces such as the prohibited areas listed in the section, the water collected from the prohibited areas might be contaminated in a way that the rainwater catchment system is not designed to handle safely. Because all surfaces that collect rainwater cannot be listed, the additional language is needed to clarify that rainwater from nonroof locations shall not be used in rainwater collection systems. The proposed additional item is reasonably broad to include surfaces intended but not explicitly listed yet specific enough to be clear ("nonroof").

1702.9.3.1 Prohibited Discharges.

The proposed amendment adds "condensate, and other waste disposal" to the items that shall not discharge onto roof surfaces that collect rainwater for rainwater catchment systems. The chemical composition of water from condensate and other waste discharged from overflows and bleed-off pipes to roof surfaces is often unknown and could contaminate collected rainwater. The proposed amendment reasonably prohibits potential contaminants from discharging onto roof surfaces that collect rainwater for rainwater catchment systems.

Subpart 7. 1702.9.4 Minimum Water Quality.

The proposed amendment modifies terminology for consistency throughout this chapter and introduces Table 1702.9.4, which contains the minimum water quality limits for rainwater catchment systems, in lieu of the narrative provided in the UPC. In the unamended UPC, the Authority Having Jurisdiction determines the minimum required water quality standard which could lead to inconsistency throughout the state. This code does not regulate water quality requirements for irrigation systems, whether subsurface or non-sprinkled, so the proposed amendment deletes the UPC language that addresses them.

Subpart 8. Table 1702.9.4.

The proposed amendment adds this table to section 1702.9.4. The main concern when using rainwater for nonpotable applications is the quality of the water and whether it will be safe for its intended use. After consultation with various state departments, these minimum water quality standards and indicators are established to ensure only safe rainwater is used in rainwater catchment systems.[42] The limits in this table have been recommended by the Minnesota Department of Health ("MDH"), Noncommunity Public Water Supply Unit, Duluth, and were based on a review of current guidelines and recommendations (e.g. NSF Standard 350, EPA Guidelines for Water Reuse, and others), and general knowledge of surface water treatment and water quality indicators, and the Minnesota Department of Labor and Industry, Plan Review Division.[43] Turbidity is measured in Nephelometric Turbidity Units (NTU), which is the standard unit of measurement for turbidity. E. coli is measured in Most Probable Number per 100 milliliters of water (MPN/100 mL), which is the standard unit of measurement for E. coli. It is reasonable to provide objective water quality standards for rainwater catchment systems in lieu of subjective determination authority granted to the Authority Having Jurisdiction with no consistent parameters or criteria in place.

Subpart 9. 1702.9.5.1 Construction.

This section regulates storage tank construction. The proposed amendment deletes the language granting the Authority Having Jurisdiction approval power including, "approved applicable standards." There are no such standards specific to rainwater storage tanks. The proposed amendment retains the performance-based requirement that the materials be suitable for rainwater storage and the listed features. It is reasonable to regulate materials and construction generally to ensure safe storage of rainwater. It is reasonable to address the suitability of rainwater storage tanks and not require an exact standard be met when there is none. On a practical level, verification of storage tank suitability meeting the performance-based standards and intent of this section will be accomplished during the plan review process. Although rainwater storage tank standards are not yet established, approved potable water storage tanks, for which there are established standards, would likely satisfy this requirement.

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[42] The Board consulted with the Minnesota Department of Labor and Industry, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources and the Minnesota Department of Health.

[43] The MDH Noncommunity Public Water Supply Unit consists of MDH staff, including field staff and compliance staff, and is responsible for assuring the compliance of noncommunity water systems with the federal Safe Drinking Water Act. See www.health.state.mn.us/divs/eh/water/ncom/.

Subpart 10. 1702.9.5.6(A) Animals and Insects.

The proposed amendment does not substantively change the requirement. The proposed amendment adds, "and piping system" to the scope of what must be protected and adds requirements including a minimum screen aperture for covering the openings. This requirement reasonably clarifies the requirement and protects the rainwater catchment system from contamination from animals and insects.

Subpart 11. 1702.9.5.8 Storage Tank Venting.

The proposed amendment adds this subsection to require that each storage tank have a vent. Rainwater storage tanks must remain at atmospheric pressure to avoid a positive or negative pressure forming inside the storage tank which could impede proper operation. The proposed amendment prevents the installation of unvented tanks or a vent smaller than 1½ inches in diameter which is consistent with the receiving tank vent requirement in 710.10.

Subpart 12. 1702.9.6 Pumps.

The proposed amendment does not substantively change the requirement. The proposed requirement clarifies that the required pressure-reducing valve to reduce the pressure to 80 psi or less must be listed. When excessive pressure is present, proper performance of a pressure-reducing valve is necessary for the continuous operation of the rainwater catchment water distribution system. It is reasonable to require that all installed pressure-reducing valves be listed to a product standard.

Subpart 13. 1702.9.7 Roof Drains.

The proposed amendment replaces "roof drains, conductors, leaders, and gutters shall" with "roof drain systems shall." The Board does not have statutory authority to regulate gutters (which are typically installed entirely on the exterior of buildings, such as single family dwellings) but does have authority to regulate roof drain systems (which have discharge piping through the interior of the building).

The proposed amendment adds a specific reference to chapter 11 of the UPC, as amended, to replace the original UPC language that generically refers to "this code." Chapter 11 contains the specific design and installation requirements applicable to storm drainage and roof drains. When secondary roof drainage systems activate and supply rainwater catchment systems, it is difficult to determine if the primary or secondary drainage system is supplying rainwater. A working alarm on the secondary system to indicate that flow has been detected is a reasonable requirement to provide notice that the primary system is plugged or otherwise incapable of sufficiently draining the roof area.

Subpart 14. 1702.9.8 Water Quality Devices and Equipment.

The proposed amendment replaces the general UPC requirement for listed or labeled equipment with specific standards and characteristics. Instead of referring to just the function of the equipment ("to treat rainwater to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction"), the proposed amendment clarifies that the system shall include filtration and disinfection to maintain the water quality requirements in Table 1702.9.4, a 5-micron absolute filter and a 0.5-log inactivation of viruses. The proposed amendment also adds the requirement that a Minnesota registered professional engineer design, size, document and select

devices and equipment used in the rainwater catchment system. Utilizing a qualified individual will ensure the system is sufficient to satisfy its intended use and meet the minimum quality requirements.

Subpart 15. Sections 1702.9.11 and 1702.9.12.

The proposed amendment deletes subsection 1702.9.11 because the proposed amendment to section 1702.9.8 requires filters in the rainwater catchment system, which is redundant with the filter requirement here ("for rainwater supplied to water closets, urinals, trap primers, and drip irrigation system"). The filter required in 1702.9.11, "not larger than 100 microns," is in direct conflict with the more stringent requirements in Table 1702.9.4 and the filter requirement in the proposed amendment to 1702.9.8, "a 5-micron absolute filter" and "0.5-log inactivation of viruses." The proposed amendment deletes subsection 1702.9.12, "Roof Gutters." The Plumbing Board published a Notice of Final Interpretation on November 21, 2011, stating that a gutter installed entirely outside of a building is not regulated by the plumbing code. Roof gutters are gutters installed entirely outside of a building. Therefore, the Board does not regulate roof gutters.

Subpart 16. 1702.10.1 Commercial, Industrial, and Institutional Restroom Signs.

This subsection regulates signage to inform individuals using restrooms that nonpotable rainwater is used in the restroom. The proposed amendment replaces the UPC language that authorizes the Authority Having Jurisdiction to determine the number and location of signs with language that describes the location requirements of the signs. It is not necessary for the Authority Having Jurisdiction to specifically determine the number of signs because the requirement regarding sign location will indirectly regulate the number of signs. Also, the UPC language does not provide any parameters or criteria that the Authority Having Jurisdiction would use to determine the number of signs. The proposed amendment expands the options of required sign text from one, "TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS AND URINALS" to four variations of that text. The proposed amendment adds 1702.10.1 (A) through 1702.10.1(D) where the additional text options are listed:(A) "TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS AND URINALS"; (B) "TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS"; (C) "TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH URINALS"; and (D) "TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO **." Option D is open-ended to allow appropriate sign text for other rainwater usage not listed in A through C.

Subpart 17. 1702.11.2 Cross-Connection Inspection and Testing.

The first proposed amendment to this section is the deletion of "Annual" before "Cross-Connection" in the section heading to avoid confusion; this section applies to the initial inspection as well as the annual inspections. As a result of that deletion, the first sentence of the UPC language is redundant and therefore deleted. The proposed amendments are necessary and reasonable to clarify this requirement.

1702.11.2.1 Visual System Inspection.

This section specifies what will be visually inspected initially before cross-connection testing and annually thereafter. The proposed amendment adds "and annually thereafter" to clarify that the visual inspection should occur not just initially but also annually. The UPC language does not clearly convey the annual visual inspection requirement except in the heading (where it is proposed for

deletion) and narrative of 1702.11.2. The proposed amendment deletes the language that states the Authority Having Jurisdiction "and other authorities having jurisdiction" will conduct the dual system inspection because Table 1702.12, "Minimum Alternate Water Source Testing, Inspection, and Maintenance Frequency" addresses who will perform the cross-connection inspection. The proposed amendment adds, "inspected for visible cross-connections, proper operation, and damage" to replace "checked" in the UPC. The proposed amendment clarifies what it means to "check" the equipment listed. The proposed amendments coincide with the requirements in proposed Table 1702.12, "Minimum Alternate Water Source Testing, Inspection, and Maintenance Frequency." The proposed amendments clarify what is required. An inspection by the Authority Having Jurisdiction is already required to be performed under the requirements covered in the plan review and permitting process.[44]

1702.11.2.2 Cross-Connection Test.

In addition to grammatical changes for clarity, the proposed amendment replaces "applicant" with "plumbing contractor" to clarify who will conduct the cross-connection test. "Plumbing contractor" is a term already used in Minnesota statutes and rules. It is not clear who the "applicant" is in this context. The proposed amendments to the cross-connection test procedure clarify the requirements by streamlining terms and language used, clarifying parameters, and making grammatical corrections. For example, the UPC uses "completely drained," "is empty," and "depressurized" to describe the same condition; the proposed amendment streamlines all these references to be "completely drained." The proposed amendments do not substantively change the requirements or process in this section. It is reasonable to require that a plumbing contractor, having the knowledge and experience in water distribution systems and related equipment, perform the test. The proposed amendments are reasonable and needed because they clarify the intent of the UPC language and add consistency to the language.

1702.11.2.3 Discovery of Cross-Connection.

This section is included in the rule draft for context as the surrounding subparts are amended. There is a minor grammatical correction to item (1) where an unnecessary comma is deleted.

1702.11.2.4 Inspection.

The proposed amendment removes the word "Annual" from the section heading and sets a defined length of time between cross-connection tests. Visual inspections (1702.11.2.1) must occur annually and cross-connection testing (1702.11.2.2) is required every five years. The original UPC language requires visual inspection annually but also requires cross-connection testing annually "unless site conditions do not require it" but in "no event shall the test occur less than once in 4 years." The UPC language is confusing and ambiguous because there are no parameters describing what "site conditions" would render annual inspections unnecessary and quadrennial testing sufficient. The existing Minnesota Plumbing Code requires rebuilding of a reduced pressure zone backflow prevention assembly every five years.[45] Testing every five years is reasonable because it is in addition to annual visual inspections and is a reasonable balance of the expense of cross-connection testing and public water safety.

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[44] See section 1702.11.1, as amended.

[45] See overhaul intervals set in Minnesota Rules, part 4715.2161. This rule part is proposed to be repealed in this rulemaking.

Subpart 18. 1702.12 Maintenance and Inspection.

The proposed amendment adds section 1702.12, including Table 1702.12, and subsections 1702.12.1 through 1702.12.3. The added section, subsections and table provide specific requirements for regularly scheduled maintenance of the system, inspections and testing. They further define the requirements to keep a maintenance log and designate the individual responsible for the system.

1702.12.1 Frequency.

This proposed subsection references Table 1702.12 and requires rainwater catchment systems and components to be inspected and maintained, at a minimum, in accordance with the table. Manufacturers of equipment used in rainwater catchment systems may require more frequent inspection and maintenance of the equipment than the schedule in Table 1702.12. It is reasonable to establish minimum inspection and maintenance frequency requirements while also deferring to manufacturer inspection and maintenance schedules when they are stricter than the table.

1702.12.2 Maintenance Log.

This proposed subsection requires property owners or designated appointees to keep records that document the frequency of testing, inspection and maintenance listed in Table 1702.12. These records will show whether Table 1702.12 or manufacturer schedules were followed. This requirement ensures proper inspection and maintenance, and ultimately operation, of the rainwater catchment system in a continuous and safe manner.

1702.12.3 Maintenance Responsibility.

This proposed subsection specifies that the property owner is ultimately responsible for the proper upkeep of a rainwater catchment system. It is reasonable to make the property owner the responsible party because he or she will likely incur the costs of inspection, maintenance, repairs, and collateral damage resulting from improperly operating systems. Property owners are the responsible party for other mechanical systems. It is further reasonable to assign this responsibility clearly.

Subpart 19. Table 1702.12 Minimum Alternate Water Source Testing, Inspection, and Maintenance Frequency.

The table is taken from UPC Chapter 16.[46] Chapter 16 is not adopted into this code. This table is added to Chapter 17 as it lists the frequency of minimum required testing, inspections and maintenance of rainwater catchment systems and is referenced in Chapter 17. When a potable water distribution system and an alternate source of nonpotable water such as a rainwater catchment water distribution system are located together, there is always a concern about cross-connection. The cross-connection test must be performed by a licensed plumber because he or she will have the necessary knowledge and experience in water distribution systems and related equipment to perform the tests. The additional requirement of certification to ASSE Standard 5120, Professional Qualifications Standard for Cross-Connection Control Surveyors, verifies that the plumber has received specialized training to identify existing and potential cross-connections hazards. ASSE Standard 5120, contained in the ANSI accredited ASSE Series 5000 Standards, is a nationally recognized professional qualification. Minnesota Rules Chapter 4716, currently requires certification

46 See UPC Table 1601.5.

to ASSE Standard 5110 and 5130, also part of Series 5000, as proof that an individual has received specialized training related to the protection of the potable water system.[47]

The requirement in the footnote that a plumber licensed under Minnesota Statutes, section 326B.46 and certified to ASSE Standard 5120 will conduct the cross-connection inspections and tests is reasonable because of the importance of the test and skill necessary to perform the test correctly.

Subpart 20. 1702.13 Operation and Maintenance Manual.

The proposed amendment adds this section to require the rainwater catchment system designer to supply the building owner with a manual that includes: a system diagram listing components and location, operating instructions, water quality requirements, deactivation of system instructions and manufacturer contact information. The proposed amendment is needed for the proper operation and maintenance of the rainwater catchment system and a reasonable method to supply this information. It is reasonable to require this information from the system designer because the information contained in the manual would be difficult to obtain from another source or would be disproportionately expensive.

Subpart 21. 1702.14 Separation Requirements.

The proposed amendment adds this section to reference the underground separation requirements relating to the installation of the building sewer, potable water pipes and nonpotable water pipes. This amendment is reasonable because it coincides with other parts of this code, section 609.2, and common industry practice.

Subpart 22. 1702.15 Abandonment.

The proposed amendment adds this section to address abandoned rainwater catchment systems, which it defines as rainwater catchment systems that are no longer in use and are not maintained in accordance with this code. The UPC does not address abandoned rainwater catchment systems. The most similar UPC section addresses abandonment of sewers and sewage disposal facilities, section 722, but it is proposed to be deleted since these systems are regulated by the Minnesota Pollution Control Agency. However, abandoned rainwater catchment systems can pose a serious risk to public health and safety, requiring proper abandonment to be addressed. This amendment safeguards against improperly maintained systems and unapproved uses other than the original intent of the rainwater catchment system.

1702.15.1 General.

The proposed amendment adds this subpart to establish the first requirement for abandoned systems: disconnect, drain, plug and cap. Abandoned rainwater catchment systems include all piping, equipment and storage tanks. Disconnecting abandoned systems from systems that remain in use reasonably eliminates the possibility of contamination of the potable water system still in use. Draining and disconnecting by plugging or capping abandoned systems is a reasonable method to eliminate a potential or actual cross-connection to the potable water system in a controlled manner. It is reasonable to require that abandoned rainwater catchment systems be properly disconnected, drained, plugged and capped.

47 See Minnesota Rules, part 4716.0096, subparts 1 and 2.

1702.15.2 Underground Tank.

The proposed amendment adds this subsection which requires underground tanks of abandoned systems to be drained and filled with an approved material or removed in an approved manner. It is reasonable to regulate abandoned underground tanks to protect the public from the tank being used for an unapproved or unmonitored purpose. The proposed rule offers two methods of approved abandonment.

Repealer.

The entire current plumbing code (Chapter 4715) is proposed to be repealed because the proposed Chapter 4714 will replace it entirely.

CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

2-20-2015
Date

John Parizek, Chair
Minnesota Plumbing Board

This SONAR is made available for public review, per OAH Rules, part 1400.2070, subpart 1, item E, as of 2-20-2015