

Plumbing Board
National Code Review Committee – Meeting Minutes
September 17, 2013 – 9:00 a.m.
Department of Labor and Industry
443 Lafayette Road No., Saint Paul, MN 55155-4344
DLI.CCLDBOARDS@State.MN.US

Committee Members Present

Phillip Sterner
Joe Beckel
Chad Filek
John Parizek
Mike McGowan
Larry Justin
Jim Kittelson
Jim Lungstrom

Board Members Present

Ron Thompson (MDH)

Committee Members Absent

Grant Edwards
Gale Mount
Pete Moulton
John Flagg

DLI Staff & Visitors

Mike Herman (MWQA)
Gary Ford (Metro Testing)
Brian Noma (MDH)
Al Kreutz (Owatonna Public Utilities)
David Rindal (MDH)
Dave Parney (Cast Iron Soil Pipe Inst.)
David Ybarra (MPTA)
Jeffrey Hill (Robert B. Hill Co.)
Lance Stegman (Schier Products)
Todd Pennington (Brekke Sales)
Scott Schiesser (MWQA)
Charlie Ismert (Schier Products)
Mike Ritter (MWQA)
Gary Thaden (MMCA)
Matt Marciniak (IAPMO)
Luke Westman (PHCC)
David Ghostley (MWQA)
Cathy Tran (DLI)
Jim Peterson (DLI)
Lyndy Lutz (DLI)

I. Call to Order

The meeting was called to order by Chair Lungstrom at 9:02 a.m. Introductions and housekeeping announcements were made.

II. Approval of Meeting Agenda

Justin made a motion, seconded by Kittleson to approve the Agenda. The vote was unanimous and the motion carried.

III. Regular Business

- A) Approval of the August 26, 2013 Meeting Minutes
 - a. Justin made a motion, seconded by Beckel, to approve minutes with change showing that 610.3 (Quantity of Water) be shown as “Tabled; September”. The vote was unanimous and the motion carried.
 - b. Approval of Expense Reports and Per Diems
Parizek approved the expenses as presented.

IV. Special Business

A. Review Suggested Changes to UPC
Suggested changes being brought forth have been developed by National Code Committee members, interested parties, and members of the public. Suggested changes were proposed for the following chapters:

- I. Discuss previously tabled items from various chapters
- II. Chapter 14 – No proposed changes – Discuss
- III. Chapter 9 – Venting

The following table is a summary of suggested changes to the 2012 Uniform Plumbing Code for incorporation into the MN version of the code. See attached Exhibits for language.

Proposer	Section	Motion To	Motion/Seconded	Comments/Discussion	Vote	Exh. No.
¹ DLI	314.1 (Trenching)	Accept: Motion to delete 314.1	Parizek / Beckel	OSHA standards were discussed and members agreed that contractors are aware of OSHA standards and can be deleted from UPC to avoid conflicting requirements.	Carries	1
Parizek	505.4.1, 603.5.4 to 603.5.4.2 (Heat Exchangers)	Accept	Kittleson / Parizek	Moved 505.4.1 to 603.5.4.1 Class 1 heat toxicity rating is open to interpretation – main concern is that any hazards don't wind up in potable water system. Added Item #4 regarding RPZs. Issues were raised regarding steam boilers going to double-wall.	Carries	2
Greenway	Ch. 6 / 603.5.4 (Heat Exchangers)	No Motion	No proposed language/No Vote		N/A	3
² MDH	Ch. 6 / 603.5.23 to 603.5.23.4	Motion to accept with friendly amendments: <ul style="list-style-type: none"> • All Testable Devices: Insert language that all of these ASSE devices be included: 1013, 1015, 1020, 1047, 1048, & 1056. • 603.5.23.2: Strike "...and overhaul intervals shall not exceed five years." • 603.5.23.4 to read: "The <u>authority having jurisdiction, in addition to</u>" ¶the public water supplier, must be notified...." 	Parizek / Sterner Adopt proposed language per Parizek friendly amendment: <i>Revise anywhere in the language that is specific to RPZ valves, that all of these ASSE devices be included.</i>	New language provides a notification requirement to community public water supply systems when an RPZ is added or removed; adds the testing and rebuilding requirements. Lengthy discussion: <ul style="list-style-type: none"> • Is there a statutory authority to require this? • 5-year rebuild program language protects the customer but could be an undue cost to the owner • Enforcement will assure more qualified plumbers are doing the work • ASSE 5000 – testing of all devices 	Carries	4

Proposer	Section	Motion To	Motion/Seconded	Comments/Discussion	Vote	Exh. No.
<i>Broke at 10:26 a.m. and reconvened at 10:43 a.m.</i>						
² MDH	610.3 / Quantity of Water	Accept the language as written, no amendments	Justin/McGowan	Addressed in UPC, page 104. In some cases systems won't be able to supply the quantity of water as stated in Table 610.3 – new language exempts well water systems that are incapable of supplying the calculated quantity. Discussion: <ul style="list-style-type: none"> • Would this provide an out for Contractors to put in smaller systems? • Applies to new and existing construction; new construction would allow contractors to deviate from basic safety & health issues and this raises a concern • The language - "Incapable" - will not be able to be enforced by plan review • Concerns with smaller commercial buildings not being forced to supply adequate water supply for basic sanitation to meet Plumbing Code therefore, would not meet State Building Code either • This language gives authorization to the local authorities on what they will approve • Do wells supply backflow protection? MDH would reference the plumbing code 	Carries	5
MWQA ³	611.0 to 611.4 (Drinking Water Conditioning Equipment)	Accept with language amendment: 611.1.2: Wetted materials used in drinking water conditioning equipment meet shall <u>comply with</u> <u>ANSI/NSF61</u> <u>standards, or the</u> <u>equipment shall</u> <u>comply with the</u> <u>applicable NSF</u> <u>standards as</u> <u>listed in Table</u> <u>1401.1.</u>	Justin / McGowan Motion to approve w/ revised language	Lengthy discussion regarding meeting NSF61 standards. The system doesn't have to be to the standard, but the wetted parts need to be. <i>Recommended to add a table for enforcement:</i> Drinking water conditioning equipment meeting performance and safety standards, then list the standards that are in the original NSF code 42, 43, 44, 53, 55, and 58	Carries	6

Proposer	Section	Motion To	Motion/Seconded	Comments/Discussion	Vote	Exh. No.
<i>Broke for lunch at 11:45 a.m. and resumed meeting at 12:48 p.m.</i>						
¹ DLI	Ch. 10 – 2012 UPC	Motion to accept with language amendment to read: 1014.3.7 Abandoned Gravity Grease Interceptors. “Abandoned grease interceptors shall be pumped and filled <u>as required</u> per the authority having jurisdiction.	Justin/Filek	Discussion regarding stricken language in 1014.3.7: <ul style="list-style-type: none"> • Stricken language is already covered under city ordinance as relating to Abandonment of grease interceptors • Regulation issues • Hesitation on removing language • Disposal issue, not a plumbing issue, conflicts with PCA • If this section is not deleted then we have to deal with section 722.0 	Carries	7
¹ DLI	Ch. 10 – 2012 UPC	Motion to deny recommended language by DLI and keep UPC language, with the following friendly amendment: 1017.2 Design of Interceptors. <u>Oil separators are to be designed to the standards as listed in chapter 14.</u> Each manufactured interceptor that is rated shall be stamped or labeled by the manufacturer with an indication of its full discharge rate in gpm (L/s). The full discharge rate to such an interceptor shall be determined at full flow. Each interceptor shall be rated equal to or greater than the incoming flow. and shall be provided with an overflow line to an underground tank.	Justin/Filek	DLI proposal is to strike UPC language and inserts what is in the Minnesota Code. Current UPC language implies you can have an oil or flammable liquid interceptor, but not required to handle both types of waste Discussion regarding: <ul style="list-style-type: none"> • UPC not specifying certain types of material for construction • DLI pointed out that floor drains need to be untrapped upstream of interceptor due to flammables and is of concern. UPC does not require • Sizing concerns. No minimum interceptor size required per UPC. If this is the case, there is no purpose of installing an interceptor • DLI commented that there is lack of guidance for construction material • UPC language could conflict with fire code as it relates to storing flammables/oil storage tanks? • Polyethylene was discussed and DLI questioned if an acceptable material for flammables and if it has been tested to be suitable 	Carries	7

	Ch. 10 – 2012 UPC Continuation from previous page			<ul style="list-style-type: none"> • Performance standards ASTM and PS80, in relation to MN code, no sizing is being done. Reality one size fits all approach is not a good approach • Spill off storage tank is only required when you have an oil and flammable interceptor that is rated by the manufacturer and not necessary for the units that are not rated • Concerns were raised that UPC does not require an interceptor for certain types of oily/flammables, but MN does: parking lots and car washes, gasoline engines. This will be problematic • MN is more stringent than UPC 		
Justin	1101.11.3 to 1101.11.3.2 (Siphonic Roof Drainage System)	Accept with amendments: <ul style="list-style-type: none"> • 1101.11.3.1 “...in part 41014715.2710” ”, replace with 1101.11 • Add language to D. <u>Minnesota Rules</u>, chapter 1305. 	Parizek / Kittleson	<ul style="list-style-type: none"> • Hydrostatic and engineered systems were discussed • Engineers have requested language for siphonic roof drainage systems • Siphonic roof drainage system allows reduction of pipe size (4 inch instead of 8 or 10 inch), and use 100 year rainfall per hour • Due to errors in ASPE 45 Standards, DLI recommends keeping siphonic roof drainage system under the engineered systems in Chapter 3 instead of adopting specific languages. Enforcement will be an issue if adopt specific languages • DLI also indicated that sizing of storm drainage must be at 4 inches per hour regardless if engineered system or not • Members emphasized that since it’s being engineered that it may use 100 year rainfall rates throughout Minnesota to size the engineered system 	Carries	8

Proposer	Section	Motion To	Motion/Seconded	Comments/Discussion	Vote	Exh. No.
¹ DLI	Chapter 14	Accept as is, no changes	Kittleson / Justin	No changes to propose/discuss	Carries	N/A
¹ DLI	Chap 9 (Venting)	Motion to Deny DLI proposed language in Chapter 9, but we do not eliminate Appendix C – We want to keep it as an Appendix	Parizek / Filek	907.1 – proposed new language was discussed: <ul style="list-style-type: none"> • DLI commented that buildings under 10 stories do not need a vent stack per the UPC. This will be an issue in design and administration of drainage and vent stacks for hi-rise plumbing. Every design will be reviewed as an alternate method if not adopted. Proper venting is one of the basic fundamental in protecting traps from siphoning especially at bases of stacks for multi-stories • Members commented that it's working in other states and that this issue should be dealt with at national level and not state level • IAPMO section regarding vent stacks and pressure changes regarding tall stack were read aloud 	Carries	9

¹DLI = Department of Labor and Industry ²MDH = Minnesota Department of Health ³MWQA = Minnesota Water Quality Association

V. Open Forum

There were no requests to speak during open forum.

VI. Discussion

A motion by Parizek, seconded by Sterner, to carry forward all proposed code language recommendations to the Plumbing Board for review. The vote is unanimous and the motion carried.

VII. Announcements

The next Plumbing Board meeting will be on October 15, 2013 at 9:30 a.m. There are no meetings scheduled at this time for the National Code Review Committee.

VIII. Adjournment

A motion was made by Kittleson, seconded by Sterner, to adjourn the meeting at 2:54 p.m. The vote was unanimous and the motion carried.

Respectfully submitted,

Jim Lungstrom

Jim Lungstrom

**DLI - 314.1: Proposal accepted
to delete section 314.1**

GENERAL REGULATIONS

314.0 Trenching, Excavation, and Backfill.

~~**314.1 Trenches.** Trenches deeper than the footing of a building or structure and paralleling the same shall be not less than 45 degrees (0.79 rad) therefrom, or as approved in accordance with Section 301.0 of this code.~~

Recommendation Accepted: Moved 505.4.1 to 603.5.4.1

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NATIONAL CODE COMMITTEE COMMENT FORM
FOR PROPOSED AMENDMENTS TO THE UPC
(This form must be submitted electronically)

Author/requestor: John Parizek

Email address: jparizek@dunwoody.edu

Telephone number: 612-581-1314

Firm/Association affiliation, if any: Plumbing Board

Proposed Code Change - Language

Please provide your proposed UPC amendment in strikeout/underline format. Provide the *specific* language you would like to see changed, with new words underlined and words to be deleted should be ~~stricken~~. Also, state whether the language contained in your proposal is from a code book or from an amendment currently found in Minnesota Rule. (You may provide the language (electronically) on a separate, attached sheet).

~~505.4.1 Single-Wall Heat Exchanger. Indirect-fired water heater that incorporate a single-wall heat exchanger shall meet the following requirements:~~

- ~~(1) Connected to a low-pressure hot water boiler limited to a maximum of 30 pounds-force per square inch gauge (psig) (207 kPa) by an approved safety or relief valve.~~
- ~~(2) Heater transfer medium is either potable water or contains fluids having a toxicity rating or Class of 1.~~
- ~~(3) Bear a label with the word "Caution," followed by the following statements:~~
 - ~~(a) The heat transfer medium shall be water or other nontoxic fluid having a toxic rating or Class of 1 as listed in Clinical Toxicology of Commercial Products, 5th edition.~~
 - ~~(b) The pressure of the heat transfer medium shall be limited to a maximum of 30 psig (207 kPa) by an approved safety or relief valve.~~

~~The word "Caution" and the statements in letters shall have an uppercase height of not less than 0.120 of an inch (3.048 mm). The vertical spacing between lines of type shall be not less than 0.046 of an inch (1.168 mm). Lowercase letters shall be compatible with the uppercase letter size specification.~~

~~603.5.4 Heat Exchangers. Heat exchangers used for heat transfer, heat recovery, or solar heating shall protect the potable water system from being contaminated by the heat-transfer medium. Single-wall heat exchangers used in indirect-fired water heaters shall meet the requirements of Section 505.4.1.~~

603.5.4.1 Single-Wall Heat Exchanger. Indirect-fired water heater that incorporate an installation of a single-wall heat exchanger shall meet all of the following requirements:

- (1) Connected to a low-pressure hot water boiler limited to a maximum of 30 pounds-force per square inch gauge (psig) (207 kPa) by an approved safety or relief valve.
- (2) Heater transfer medium is either potable water or contains fluids having a toxicity rating or Class of 1.
- (3) Bear a label with the word "Caution," followed by the following statements:
 - (a) The heat transfer medium shall be water or other nontoxic fluid having a toxic rating or Class of 1 as listed in Clinical Toxicology of Commercial Products, 5th edition.
 - (b) The pressure of the heat-transfer medium shall be limited to a maximum of 30 psig (207 kPa) by an approved safety or relief valve.

The word "Caution" and the statements in letters shall have an uppercase height of not less than 0.120 of an inch (3.048 mm). The vertical spacing between lines of type shall be not less than 0.046 of an inch (1.168 mm). Lowercase letters shall be compatible with the uppercase letter size specification.

- (4) A reduced-pressure principle backflow prevention assembly shall be installed on the building supply before the first branch.

603.5.4.2 Double-Wall Heat Exchanger. Double-wall heat exchangers shall separate the potable water from the heat-transfer medium by providing a space between the two walls that are vented to the atmosphere.

Proposed Code Change – Need and Reason

Please provide a thorough explanation of the need for this amendment and why this proposed amendment is a reasonable change. During the rulemaking process, the Agency must defend the need and reasonableness of all its proposed changes. The Agency must submit evidence that it has considered all aspects of the proposal. (You may provide the need and reason (electronically) on a separate attached sheet).

Section 603.5.4 addresses requirements for heat exchangers and refers to section 505.4.1 for single-wall heat exchangers. Section 505.4.1 has been blended into section 603.5.4 to avoid repetition and 505.4.1 deleted. A concern with single-wall heat exchangers has always been the replacement of the heat transfer medium with a higher toxicity rated substance after the initial installation. By requiring the installation of a properly maintained reduced-pressure principle backflow prevention assembly on the building water supply, upstream of the first branch, the possible contamination of the potable water supply will be eliminated. Any contamination of the potable water due to failure of a single-wall heat exchanger will be contained within the building.

Proposed Code Change – Cost/Benefit Analysis

Please consider whether this proposed amendment will increase/decrease costs or indicate that it will not have any cost implications and explain how it will not. If there is an increased cost, will this cost be offset somehow by a life safety or other benefit? If so, please explain. Are there any cost increases/decreases to enforce or comply with this proposed code change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate, attached sheet).

There would be no additional cost since installation of a single-wall heat exchanger is an optional. This amendment to the UPC is also less restrictive than existing Minnesota Plumbing Code, part 4715.1941, subpart 3 and more cost effective. In addition, the potable water supply will have added protection.

- 601.2.2 – Recommendation Denied
- **603.5.4 – Nothing to vote on, no motion/vote**
- 603.5.11 – Recommendation Denied
- 604.2 – Recommendation Denied
- 605.6.1 – Recommendation Denied

Submitted by Arvella Greenway, member of Plumbers Local 15 Minneapolis, MN

2-27-2013

Arvella H. Greenway arvella.greenway@gmail.com

Comments on Possible Amendment to Rules Governing the Minnesota Plumbing Code,
Minnesota Rules, Chapter 4715; Revisor's ID Number R-4139

Exhib

General: The adoption of the 2012 Uniform Plumbing Code by the State of Minnesota is overall a positive thing as it brings the state in line with a national code that is recognized as one of the best in the country.

- Chapter 3

301.3.1 Flood Hazard Areas Subject to High Velocity Wave Action: Does not apply in Minnesota

Table 313.1 Hangers and Supports:

Cast Iron Hubless- Support should be on both sides of the coupling within 18"

Schedule 40 PVC and ABS DWV- Support should be every 32" and continuously supported where a dishwasher or other appliance with hot water discharges into plastic waste lines above grade on a horizontal branch.

- Chapter 4

405.2 Continuous Wastes: No. 17 B&S Gauge would last longer than No. 20 and offer continuity with other sections of this Code under traps.

407.2 Special Use Sinks: Restaurant kitchen equipment shall be NSF approved of stainless steel material.

408.7 Lining for Showers and Receptors: Nonmetallic shower subpans and linings consisting of 3 layers of standard grade asphalt impregnated roofing felt should be omitted as there are better and less expensive products on the market.

415.3 Drainage Connection: Drinking Fountains shall be connected directly to the drainage system. Omit indirectly through an air break as it could pose a sanitary risk.

420.3 Waste Outlet: No. 17 B&S Gauge would last longer than No. 20 and offer continuity with other sections of this Code under traps.

- Chapter 6

601.2.2 Color and Information: Marking should not only be required "every 20' but not less than once per room, and shall be visible from the floor", but also on each side of partitioning wall penetrations.

603.5.4 Heat Exchangers: The current Minnesota Single Wall Heat Exchanger standard is very clear and very safe. With the proposed change the system will be permanently marked and only "safe" transfer mediums are supposed to be introduced into the system, but there is no fall safe.

603.5.11 Nonpotable Water Piping: All cross connections between non-potable and potable piping must be corrected.

604.2 Copper Tube: Type M copper tube should not be allowed underground.

605.6 Galvanized Steel Pipe and Joints

605.6.1 Mechanical Joints: Shall be of a cut groove type.

- Chapter 7

704.2 Single Vertical Drainage Pipe: A side by side installation would be hard to service.

705.10.2 Expansion Joints: If expansion joints are allowed all expansion joints shall be accessible.

712.1 Testing Media: we have been successfully air testing plastic piping for years and would find it hard to perform a water test in the middle of the winter on an unheated jobsite.

- Chapter 9

902.2 Bars, Soda Fountains, and Counter: We have not run into a circumstance where it is impossible to vent these fixtures with island vents, so omit not needing to be vented and being able to be drained into a floor sink indirectly.

906.1 Roof Termination and 906.7 Frost or Snow Closure: The proposed 10" would be covered by most winters. We should keep the current minimum of 12" above.

911.1 General: Since this section is titled Engineered Vent System is the registered design professional a professional engineer or a licensed plumbing contractor?

- Chapter 10

1017.0 Oil and Flammable Waste Interceptors

1017.1 Interceptors Required: Shall be installed in covered parking garages housing 4 or more vehicles. Define "Covered" as not open to the sky to directly receive rainwater.

- Chapter 11

1101.1 Where Required: Storm water shall not be directed to flow over public sidewalks.

1101.5.2 Sump: Sump covers shall be of a structural design and the discharge piping shall have an approved backwater valve and gate or full port ball valve for servicing the pump.

1101.11.2.2{B} Combined System: If a combined system is approved flow switches shall be installed on the horizontal overflow system before the combined connection and shall be monitored.

- Appendix D

Sizing Storm Water drainage Systems: We currently use a 4" per hour model to size rain leader systems; the Table D1.1 would have us use a 3" model which would decrease pipe sizes and increase flow velocities and pressures. The University of Minnesota's Climatology Center gives a rate of 5.7" per hour for a hundred year event or a 1% chance event. There are multiple lawsuits and insurance claims every year from rain leaders blowing apart from the current sizing method. Reducing the pipe sizing further would be irresponsible. At a minimum we should keep our current standard of 4" per hour or even increase it to protect property.

- Appendix I

Installation Standard for ABS Building Drain, Waste and Vent Pipe and Fittings:

2.3.2 Support: Shall be continuous if a dishwasher discharges into a horizontal line above grade.

Table 1 Thermal Expansion Table: Temperature variations in Minnesota are -20 degrees F to 100 degrees F. Runs over 35 feet will expand and contract enough to break the branch intervals off, or push them up taking the pitch out of the horizontal branch lines no matter how well they are anchored to prevent such from occurring.

Installation Standard for PVC Building Drain, Waste, and Vent Pipe and Fittings

2.5.2 Support: Shall be continuous if a dishwasher discharges into a horizontal line above grade.

Table 1 Thermal Expansion Table: Temperature variations in Minnesota are -20 degrees F to 100 degrees F. Runs over 35 feet will expand and contract enough to break the branch intervals off, or push them up taking the pitch out of the horizontal branch lines no matter how well they are anchored to prevent such from occurring.



NATIONAL CODE COMMITTEE COMMENT FORM FOR PROPOSED AMENDMENTS TO THE UPC

(This form must be submitted electronically)

Author/requestor: Minnesota Department of Health

Email address: ronald.thompson@state.mn.us

Telephone number: (651) 201-3658

Firm/Association affiliation, if any:

Motion to accept with friendly amendments:

- **All Testable Devices:** Insert language that all of these ASSE devices be included: 1013, 1015, 1020, 1047, 1048, & 1056.
- **603.5.23.2:** Strike "...and overhaul intervals shall not exceed five years."
- **603.5.23.4** to read: "The authority having jurisdiction, in addition to" ~~the~~ public water supplier, must be notified...."
- *Revise anywhere in the language that is specific to RPZ valves, that all of these ASSE devices be included*

Proposed Code Change - Language

Please provide your proposed UPC amendment in strikeout/underline format. Provide the *specific* language you would like to see changed, with new words underlined and words to be deleted should be ~~stricken~~. Also, state whether the language contained in your proposal is from a code book or from an amendment currently found in Minnesota Rule. (You may provide the language (electronically) on a separate, attached sheet).

XXXX.XXXX CHAPTER 6, WATER SUPPLY AND DISTRIBUTION

UPC section 603.5 is amended as follows:

603.5.23 Installation of Reduced-Pressure Principle Backflow Prevention Assembly. A reduced-pressure principle backflow prevention assembly must be installed, tested, maintained, and removed in accordance with Section 603.5.22.1 through Section 603.5.22.4.

603.5.23.1 Notification of installation. The administrative authority must be notified before installation of a reduced-pressure principle backflow prevention assembly. The public water supplier must be notified of the installed reduced-pressure principle backflow preventer assembly within 30 days following installation on a community public water system.

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

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

603.5.23.4 Notification of removal. The public water supplier must be notified within 30 days following removal of a reduced-pressure principle backflow prevention assembly from a community public water system.

Proposed Code Change – Need and Reason

Please provide a thorough explanation of the need for this amendment and why this proposed amendment is a reasonable change. During the rulemaking process, the Agency must defend the need and reasonableness of all its proposed changes. The Agency must submit evidence that it has considered all aspects of the proposal. (You may provide the need and reason (electronically) on a separate attached sheet).

The proposed change adopts existing part 4715.2161 of the Minnesota Plumbing Code with amendments specific to reduced pressure principle backflow prevention assemblies. Reduced pressure principle backflow prevention assemblies are installed to protect potable water systems from the most dangerous and toxic contaminants. The Uniform Plumbing Code (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 reduced-pressure principle backflow prevention assembly oversight, rebuilding (overhaul every 5 years), inspection tags, and reporting as required in current Minnesota rules. In addition to adopting the existing Minnesota rule language, the proposal adds a requirement that a community public water supplier (typically a municipal water utility) be notified when a reduced pressure backflow prevention assembly is installed, tested, or removed on their 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 terminology is changed from “reduced pressure backflow preventer” as used in the current Minnesota Plumbing Code, to “reduced pressure principle backflow prevention assembly” consistent with the term as used in the UPC.

Proposed Code Change – Cost/Benefit Analysis

Please consider whether this proposed amendment will increase/decrease costs or indicate that it will not have any cost implications and explain how it will not. If there is an increased cost, will this cost be offset somehow by a life safety or other benefit? If so, please explain. Are there any cost increases/decreases to enforce or comply with this proposed code change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate, attached sheet).

The proposed change adopts current requirements in Minnesota Rules. A very minimal increase in time/cost will be incurred to contact the public water supplier for assemblies on public water supplies. This nominal effort will help protect the integrity of the entire public water system.

Other Factors to Consider Related to Proposed Amendment

1. Is this proposed code change meant to:

change language contained in a published code book? If so, list section(s).
The proposal amends Section 603.5

change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

delete language contained in a published code book? If so, list section(s).

delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

neither; this language will be new language, not found in the code book or in Minnesota Rule.

2. Is this proposed code change required by a Minnesota Statute or new legislation? If so, please provide the citation to the Statute or legislation.

no

3. Will this proposed code change impact other sections of a published code book or of an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

no

4. Will this proposed code change impact other parts of the Minnesota State Building Code? If so, please list the affected parts of the Minnesota State Building Code.

no

5. Who are the parties affected or segments of industry affected by this proposed code change?
The public, community public water suppliers, and plumbers

6. Can you think of other means or methods to achieve the purpose of the proposed code change? If so, please explain what they are and why your proposed change is the preferred method or means to achieve the desired result.

no

7. Are you aware of any federal requirement or regulation related to this proposed code change? If so, please list the regulation or requirement.

no

NATIONAL CODE COMMITTEE COMMENT FORM FOR PROPOSED AMENDMENTS TO THE UPC

(This form must be submitted electronically)

Author/requestor: Minnesota Department of Health

Recommendation Accepted

Email address: ronald.thompson@state.mn.us

Telephone number: (651) 201-3658

Firm/Association affiliation, if any:
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Proposed Code Change - Language

Please provide your proposed UPC amendment in strikeout/underline format. Provide the *specific* language you would like to see changed, with new words underlined and words to be deleted should be ~~stricken~~. Also, state whether the language contained in your proposal is from a code book or from an amendment currently found in Minnesota Rule. (You may provide the language (electronically) on a separate, attached sheet).

XXXX.XXXX CHAPTER 6, WATER SUPPLY AND DISTRIBUTION

UPC Section 610.3 is amended as follows:

610.3 Quantity of Water. The quantity of water required to be supplied to every plumbing fixture shall be represented by fixture units, as shown in Table 610.3 except for well water systems that are incapable of supplying the calculated quantity. Equivalent fixture values shown in Table 610.3 include both hot and cold water demand.

Proposed Code Change – Need and Reason

Please provide a thorough explanation of the need for this amendment and why this proposed amendment is a reasonable change. During the rulemaking process, the Agency must defend the need and reasonableness of all its proposed changes. The Agency must submit evidence that it has considered all aspects of the proposal. (You may provide the need and reason (electronically) on a separate attached sheet).

Some areas of Minnesota, typically in the northeast and southwest parts of the state have inadequate groundwater resources to supply sustained water yields. Wells may only produce 1 gallon per minute or less. In these cases, larger storage or pressure tanks can provide some relief but cannot practically or financially provide a sustained yield of 10 gallons per minute or more depending on the use.

Proposed Code Change – Cost/Benefit Analysis

Please consider whether this proposed amendment will increase/decrease costs or indicate that it will not have any cost implications and explain how it will not. If there is an increased cost, will this cost be offset somehow by a life safety or other benefit? If so, please explain. Are there any cost increases/decreases to enforce or comply with this proposed code change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate, attached sheet).

The proposed amendment will reduce costs in some instances.

Other Factors to Consider Related to Proposed Amendment

1. Is this proposed code change meant to:

change language contained in a published code book? If so, list section(s).

The proposed change amends Section 610.3.

change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

delete language contained in a published code book? If so, list section(s).

delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

neither; this language will be new language, not found in the code book or in Minnesota Rule.

2. Is this proposed code change required by a Minnesota Statute or new legislation? If so, please provide the citation to the Statute or legislation.

no

3. Will this proposed code change impact other sections of a published code book or of an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

no

4. Will this proposed code change impact other parts of the Minnesota State Building Code? If so, please list the affected parts of the Minnesota State Building Code.

no

5. Who are the parties affected or segments of industry affected by this proposed code change?

Persons with low yielding water supplies

6. Can you think of other means or methods to achieve the purpose of the proposed code change? If so, please explain what they are and why your proposed change is the preferred method or means to achieve the desired result.

no

7. Are you aware of any federal requirement or regulation related to this proposed code change? If so, please list the regulation or requirement.

no

Accept with language amendment: 611.1.2:

Wetted materials used in drinking water conditioning equipment meet shall comply with ANSI/NSF61 standards, or the equipment shall comply with the applicable NSF standards as listed in Table 1401.1.

611.0 Drinking Water Conditioning Equipment.

611.1 Application. Drinking Wwater conditioning equipment shall comply with the standards requirements in this section.

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

611.1.2 Design, Construction Manufacture and Assembly. Drinking Wwater conditioning equipment may be manufactured as a complete system or may be designed, constructed and assembled as a complete system from by a licensed plumber or licensed water conditioning contractor using various types of drinking water conditioning equipment. Wetted materials used in drinking water conditioning equipment shall comply with ANSI/NSF61 standards, or the equipment shall comply with the applicable NSF standards as listed in Table 1401.1.

~~**611.1.2.1 Safe Materials.** Water conditioning equipment shall be made of safe materials so as not to degrade the safety of water for human consumption.~~

~~**611.1.2.2 Principal Standard.** The principal standard for materials safety is the requirement prohibiting the imparting of materials into potable water as defined in ANSI/NSF 61.~~

611.1.3 Labeling. All water conditioning equipment must be labeled by the manufacturer, licensed plumber or by the licensed water conditioning contractor who ~~designed, constructed~~ manufactured or assembled the equipment so as to clearly identify the type of equipment and the name and address of the manufacturer, licensed plumber or licensed contractor who ~~designed, constructed~~ manufactured or assembled the equipment.

611.2 Airgap Discharge. Any discharge from drinking water conditioning equipment shall enter the drainage system through an airgap in accordance with Table 603.3.1 or an airgap device in accordance with Table 603.2, NSF 58, or IAPMO PS 65. ~~Salt regenerating and backwashing water treatment equipment are low hazard devices and require no more backflow protection than provided by a properly sized airgap in accordance with Table 603.3.1.~~

611.3 Connection Tubing. The tubing to and from drinking water conditioning equipment shall be of a size and material as recommended by the manufacturer. The tubing shall comply with the requirements of NSF 14, NSF 42, NSF 44, NSF 53, NSF 55, NSF 58, NSF 62 or the appropriate material standards referenced in Table 1401.1.

611.4 Sizing of Residential Softeners. Residential-use water softeners shall be sized in accordance with Table 611.4.

**TABLE 611.4
SIZING OF RESIDENTIAL WATER SOFTENERS⁴**

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

For SI units: 1 inch = 25 mm

Notes:

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

GP:3496011 v

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NATIONAL CODE REVIEW COMMITTEE SUGGESTION FORM

(This form must be submitted electronically)

Author/requestor: Cathy Tran

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Telephone number: 651/284-5898

Firm/Association affiliation, if any: DLI

Suggested Code Change - Language

Please provide your suggested change using a strikeout and underline format. Provide the *specific* language you would like to see changed, with new words underlined and ~~strikeout~~ the words to be deleted. Tell us whether the language you are suggesting or changing is from a code book or from Minnesota Rules, chapter 4715. (You may provide the language (electronically) on a separate attached sheet).

2012 UPC Chapter 10 -See attached documentation.

Suggested Code Change – Need and Reason

Please provide a thorough explanation of the need for the suggested changed and why the change is a reasonable one. During the rulemaking process, the Board must defend the need for and reasonableness of all its proposed changes. (You may provide the need and reason (electronically) on a separate attached sheet).

See attached documentation.

Suggested Code Change – Cost/Benefit Analysis

Please explain whether the change you suggest will increase or decrease costs, or that the change will not have any cost implications. If there is an increased cost, will this cost be offset somehow by a life-safety or other benefit? If so, please explain. Are there any cost increases or decreases to enforce or comply with the suggested change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate attached sheet).

No cost implications.

6/18/13 National Code Committee

Please explain:

1. Is the suggested change meant to:
 - change language contained in a published code book? If so, list section(s).
 - change language contained in an existing Minnesota Rule in chapter 4715? If so, list the Rule part(s).
 - delete language contained in a published code book? If so, list section(s).
 - delete language contained in an existing Minnesota Rule in chapter 4715? If so, list Rule the part(s).
 - neither; the suggested change is new language and is not in a code book or in Minnesota Rules, chapter 4715.
2. Is the suggested change required by a federal requirement or regulation, state statute or new legislation? If so, please explain and provide the citation to the regulation, statute or legislation.
MN Statutes 326b.43
3. Will the suggested change impact other sections of a published code book or the Minnesota State Building Code or other administrative rules? If so, please list the affected sections or rule parts.
4. Who are the parties affected or segments of industry that might be affected by the suggested change?
5. Can you think of other means or methods to achieve the purpose of the suggested change? If so, please explain what they are and why your suggested change is the preferred method or means to achieve the desired result.
no
6. Are you aware of any federal requirement or regulation related to this proposed code change? If so, please list the regulation or requirement.
No

1014.3.7 – Accepted with amendments

CHAPTER 10 - 2012 UPC DLI Proposed changes

Chapter 10 Proposed Amendments:

1001.1 Where Required. Each plumbing fixture, shall be separately trapped by an approved type of liquid seal trap. This section shall not apply to fixtures with integral traps. Not more than one trap shall be permitted on a trap arm. Food waste disposal units installed with a set of restaurant, commercial, or industrial sinks shall be connected to a separate trap. Each domestic clothes washer and each laundry tub shall be connected to a separate and independent trap, except that ~~a trap serving a laundry tub~~ shall be permitted to also receive the waste from a clothes washer set adjacent thereto. The vertical distance between a fixture outlet and the trap weir shall be as short as practicable, but in no case shall the tailpiece from a fixture exceed 24 inches (610 mm) in length. One trap shall be permitted to serve a set of not more than three single compartment sinks or laundry tubs of the same depth or three lavatories immediately adjacent to each other and in the same room where the waste outlets are not more than 30 inches (762 mm) apart and the trap is centrally located where three compartments are installed.

Sonar: The proposed change is to clarify that a laundry tub is a receptor and may receiving the indirect waste discharge from a clothes washer. As written and without proposing the change, it may be interpreted that a trap of a laundry tub to receive discharges from a clothes washer adjacent to it. Concerns of having physical connection into the trap of the laundry tub would siphon dirty waste from the laundry tub or its trap during the clothes washer spinning cycle.

1009.2 Approval. The size, type, and location of each interceptor (clarifier) or separator shall meet the requirements of this chapter, except for interceptors or separators which are engineered and manufactured and which are documented by the manufacturer and the project design engineer to be properly designed and sized for the specific project, and be approved by the Authority Having Jurisdiction. Except where otherwise specifically permitted, no wastes other than those requiring treatment or separation shall be discharged into an interceptor (clarifier).

Sonar: The proposed change is to clarify that engineered units are acceptable and are needed for special uses or designs where interceptors that are approved in this chapter would not address the needed design or special types of waste for a specific project. Therefore, the proposed change allows an option for interceptors and separators which are engineered, design, size, and manufacture for a specific use when documentation from the manufacturer and the project engineer stating the interceptor is properly designed and sized for the specific project.

~~**1014.3.7 Abandoned Gravity Grease Interceptors.** Abandoned grease interceptors shall be pumped and filled as required for abandoned sewers and sewage disposal facilities in Section 722.0.~~

Sonar: This section refers to Section 722.0. Section 722.0 has been proposed to be deleted and therefore no longer would exist in this code. Consistent with Section 722.0, this part is proposed for deletion since private sewage treatment regulations are governed by the MPCA rules and not the MN Plumbing Code.

Delete languages in 1017.1 and 1017.2 entirely and replace with proposed changes:

1017.0 Oil and Flammable Liquid Interceptors.

~~**1017.1 Interceptors Required.** Repair garages and gasoline stations with grease racks or grease pits, and factories that have oily, flammable, or both types of wastes as a result of manufacturing, storage, maintenance, repair, or testing processes, shall be provided with an oil or flammable liquid interceptor that shall be connected to necessary floor drains. The separation or vapor compartment shall be independently vented to the outer air. Where two or more separation or vapor compartments are used, each shall be vented to the outer air or shall be permitted to connect to a header that is installed at a minimum of 6 inches (152 mm) above the spill line of the lowest floor drain and vented independently to the outer air. The minimum size of a flammable vapor vent shall be not less than 2 inches (51 mm), and, where vented through a sidewall, the vent shall be not less than 10 feet (3048 mm) above the adjacent level at an approved location. The interceptor shall be vented on the sewer side and shall not connect to a flammable vapor vent. Oil and flammable interceptors shall be provided with gastight cleanout covers that shall be readily accessible. The waste line shall be not less than 3 inches (80 mm) in diameter with a full size cleanout to grade. Where an interceptor is provided with an overflow, it shall be provided with an overflow line [not less than 2 inches (50 mm) in diameter] to an approved waste oil tank having a minimum capacity of 550 gallons (2082 L) and meeting the requirements of the Authority Having Jurisdiction. The waste oil from the interceptor shall flow by gravity or shall be pumped to a higher elevation by an automatic pump. Pumps shall be adequately sized and accessible. Waste oil tanks shall have a 2 inch (50 mm) minimum~~

pump-out connection at grade and a 1¹/₂-inch (38-mm) minimum vent to atmosphere at an approved location not less than 10 feet (3048 mm) above grade.

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

Interceptors not rated by the manufacturer shall have a depth of not less than 2 feet (610 mm) below the invert of the discharge drain. The outlet opening shall have not less than an 18-inch (457 mm) water seal and shall have a minimum capacity as follows: Where not more than three motor vehicles are serviced, stored, or both, interceptors shall have a minimum capacity of 6 cubic feet (0.2 m³), and 1 cubic foot (0.03 m³) of capacity shall be added for each vehicle up to 10 vehicles. Above 10 vehicles, the Authority Having Jurisdiction shall determine the size of the interceptor required. Where vehicles are serviced and not stored, interceptor capacity shall be based on a net capacity of 1 cubic foot (0.03 m³) for each 100 square feet (9.29 m²) of surface to be drained into the interceptor, with a minimum of 6 cubic feet (0.2 m³).

1017.0 Oil and Flammable Liquid Interceptors.

1017.1 Interceptors Required. Enclosed garages of over 1,000 square feet or housing more than four motor vehicles, repair garages, gasoline stations with grease racks, work or wash racks, auto washes, and all buildings where oily and/or flammable liquid wastes are produced as a result of manufacturing, storage, maintenance, repair, or testing processes shall have an interceptor installed into which all oil, grease, and sand bearing and/or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal, when floor drains or trench drains are provided. The interceptor shall be located inside the building.

Exception: Private garages serving one- and two-family dwellings.

1017.2 Design of Interceptors. Each interceptor shall be of watertight construction and of not less than 35 cubic feet holding capacity, be provided with a water seal of not less than three inches on the inlet and not less than 18 inches on the outlet. The minimum depth below the invert of the discharge drain shall be three feet. The minimum size of the discharge drain shall be four inches. The interceptor may be constructed either: (i) of monolithic poured reinforced concrete with a minimum floor and wall thickness of six inches with protected treatment approved by the manufacturer for the intended use (ii) of iron or steel of a minimum thickness of 3/16 inch, protected with an approved corrosion resistant coating on both the inside and the outside, or (iii) of fiberglass resins that comply with ASTM C-581 and meets IAPMO Material and Property Standard, PS 80-2003b, for clarifiers.

The interceptor must be provided with a nonperforated iron or steel cover and ring of not less than 24 inches in diameter, and the air space in the top of the tank must have a three-inch vent pipe, constructed of approved metallic material, extending separately to a point at least 12 inches above the roof of the building. Drains and piping from motor vehicle areas must be a minimum of three inches in size. Drains discharging to an interceptor must not be trapped and must be constructed so as not to retain liquids. In motor vehicle wash facilities, a sand interceptor which meets the requirements of section 1016.0, except that no water seal is permitted, may be installed to receive wastes before discharging into a flammable waste interceptor.

No cleanout, mechanical joint, or backwater valve shall be installed inside the interceptor which could provide a bypass of the trap seal. Only wastes that require separation shall discharge into the interceptor, except that a water supplied and trapped sink may be connected to the vent of the interceptor. Whenever the outlet branch drain serving a interceptor is more than 25 feet from a vented drain, such branch drain shall be provided with a two inch vent pipe. A backwater valve shall be installed in the outlet branch drain whenever in the judgment of the administrative authority backflow from the building drain could occur.

Sonar: 1017.1 and 1017.2 Recommend deleting the languages in 1017.1 and 1017.2 entirely and replace with language consistent with MN part 4715.1120. The language in 1017.1 & 1017.2 would not provide consistent administration through out the state. The proposed new language is consistent with past requirements specific to Minnesota. Allowance for other types of interceptors which are engineered and manufactured may be entertained in proposed changes in section 1009.2. The following are reasons why 1017.1 and 1017.2 should not be adopted:

1. The language in UPC 1017.1 does not include drains in vehicle wash bays, or vehicle storage facilities/parking garages which also receive oily and flammable wastes.
2. UPC 1017.1 and 1017.2 does not clearly spelled out do not address minimum interceptor size required, would allow any size of floor drains or drainage piping upstream of the interceptor, no dry-pan design required.

Motion to deny recommended language and keep UPC language, with the following friendly amendment: **1017.2 Design of Interceptors.** Oil separators are to be designed to the standards as listed in chapter 14. Each manufactured interceptor that is rated shall be stamped or labeled by the manufacturer with an indication of its full discharge rate in gpm (L/s). The full discharge rate to such an interceptor shall be determined at full flow. Each interceptor shall be rated equal to or greater than the incoming flow, and shall be provided with an overflow line to an underground tank.

3. The language in 1017.1 does not specifically reference types of construction for the interceptor nor waste oil tank but allow both which leads to maintenance of two tanks instead of one, and higher chance of leakage. Material construction and compatibility with wastes being stored needs to be addressed under the UPC
4. Minimum size and leak proof requirements of waste oil tank are not specify in 1017.1.
5. There are pumping provisions as an option for compliance without requiring fire explosion proof pumps.
6. 1017.2 for design of interceptors allows for minimum sizing of 6 gallons interceptor and mandates underground oily/flammable storage tank for overflow from the interceptor which is an added cost for owners and building pumping connection to the outside.
7. The language suggests a minimum interceptor size of 6 gallons in vehicle service garage which is substantially small and would require more frequent pump schedule even with the waste oil tank.
8. Allow traps upstream of the interceptor which is a possible fire/safety hazard.
9. Language does not provide exception for residential/single family garages.
10. Concerns of sufficient vapor vent sizes of 2-inches and allowance of venting to the side wall of the building.

1101.11.3 – Accept with amendments:

- 1101.11.3.1 "...in part 1101.11.3.1", replace with 1101.11
- Add language to D. Minnesota Rules, chapter 1305.

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NATIONAL CODE COMMITTEE COMMENT FORM
FOR PROPOSED AMENDMENTS TO THE UPC
(This form must be submitted electronically)

Author/requestor: Lawrence G. Justin PE

Email address: ljustin@wentzassoc.com

Telephone number: 952-843-6203

Firm/Association affiliation, if any: Plumbing Board/Professional Engineer

Proposed Code Change - Language

Please provide your proposed UPC amendment in strikeout/underline format. Provide the *specific* language you would like to see changed, with new words underlined and words to be deleted should be ~~stricken~~. Also, state whether the language contained in your proposal is from a code book or from an amendment currently found in Minnesota Rule. (You may provide the language (electronically) on a separate, attached sheet).

1101.11.3 SIPHONIC ROOF DRAINAGE SYSTEM.

1101.11.3.1 General requirements. In lieu of sizing the storm drainage system from conventional methods as required in part 1101.11.3.1, the roof drainage may be designed as an engineered siphonic roof drainage system when allowed by the administrative authority. The engineered siphonic roof drainage system must meet the requirements of 1101.11.3.2 and 1101.11.3.3.

1101.11.3.2 Design criteria. The siphonic roof drainage system must be designed and certified by a professional engineer licensed in the state of Minnesota.

A. The system must be sized on the basis of the rainfall rate listed Table D 1.1 (in Appendix D) for 100 year, 60 minute storms at various locations in Minnesota, unless ASPE 45 Standard indicates a greater rate, in which case, the design should be in accordance with rainfall rates listed in the ASPE 45 standard.

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

C. Roof drains must meet ASME A112.6.9, Siphonic Roof Drains.

D. When designed for water accumulation, the roof must be designed for the maximum possible water accumulation according to chapter 1305.

E. Minimum pipe size must be 1-1/2 inches. All pipe sizes and cleanouts in the drainage system must be designed and installed according to ASPE Standard 45.

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

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

H. The transition locations from the siphonic roof drainage system to a gravity system must be determined by the design engineer at a location acceptable to the administrative authority. The design, sizing, and venting of the transition location must be in accordance with ASPE Standard 45. The velocity at the transition location to gravity shall be reduced to less than three feet per second. The gravity portion of the building storm sewer system receiving the siphonic roof drainage system must be sized for the design rate but no less than a rainfall rate listed Table D .1.1 (in Appendix D) for 100 year, 60 minute storms at various locations in Minnesota, unless ASPE 45 Standard indicates a greater rate, in which case, the design should be in accordance with rainfall rates listed in the ASPE 45.

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

1101.11.3.3 Proof of suitability. Upon completion of the project, proper tests, inspections, and certification of the siphonic roof drainage system must be performed according to items A and B.

A. Testing must be performed according to ASPE Standard 45.

B. Prior to the final plumbing observation, the design engineer must provide written certification to the administrative authority that the system has been visually observed and the installation has been properly implemented according to the certified design, plans, calculations, and specifications. The submitted written certification must include any field modification from the initial design involving dimensions, location, or routing of the siphonic drainage system that must be reapproved and recertified by the design engineer and be accompanied by a final as-built design of the altered system and supported by calculated data to show that the overall system remains in accordance with ASPE Standard 45.

Proposed Code Change – Need and Reason

Please provide a thorough explanation of the need for this amendment and why this proposed amendment is a reasonable change. During the rulemaking process, the Agency must defend the need and reasonableness of all its proposed changes. The Agency must submit evidence that it has considered all aspects of the proposal. (You may provide the need and reason (electronically) on a separate attached sheet).

The State of Minnesota Plumbing code has recently allowed Siphonic Roof Drainage System as an Engineered System. The 2012 UPC allows the installation of the Siphonic Roof Drainage system under Part 301.2 and Chapter 14, but since Minnesota has already spent the effort vetting this section, it is advantageous to place the specific requirements as an amendment.

The above proposal does have some revisions to the 2012 Minnesota Plumbing Code language:

1. Revised design to meet rainfall rate listed in 2012 UPC Table D 1.1 (in Appendix D) for 100 year, 60 minute storms instead of 4" per hour; this matches the typical 2012 UPC language.

2. Removed the requirement of design Engineer to visually inspect the installation. Typically the design Engineer or their representative will "observe" the installation, not inspect.

Proposed Code Change – Cost/Benefit Analysis

Please consider whether this proposed amendment will increase/decrease costs or indicate that it will not have any cost implications and explain how it will not. If there is an increased cost, will this cost be offset somehow by a life safety or other benefit? If so, please explain. Are there any cost increases/decreases to enforce or comply with this proposed code change? If so, please explain. (You may provide the cost/benefit analysis (electronically) on a separate, attached sheet).

Proposed Code Change addition will provide additional options to the owner/design Engineer and could reduce cost of project.

Motion to Deny proposed language in Chapter 9, but do not eliminate Appendix C – Keep as an Appendix

DLI Proposed changes from previous National Code Committee meetings

907.0 Stack Vent, Vent Stacks and Relief Vents.

907.1 Drainage stack. Each soil or waste stack that receives the discharge of fixtures located on two or more floors, and the uppermost fixtures is located three or more floors above the building drain, such stack and stack vent shall continue undiminished in size through the roof.

907.2 Vent stack required. Sizing of the vent system for a drainage stack that extends five branch intervals or more must be in accordance with section C6 of Appendix C. For drainage stack of 10 stories or more, part 907.3 & part 907.4 shall apply.

SONAR 907.1 and 907.2 : The proposed language is to address the necessary venting requirements of multi-story building. This is necessary as follows:

- *The likelihood of simultaneous discharges into a drainage stack from many stories of a multi-story are high and are needed, especially, most hi-rise are apartments and office buildings with common drainage stacks and peak usage, and therefore venting of drainage stack and additional vent stacks for more than 5 stories. These requirements are necessary to handle the fluctuation of pressures in the system.*
- If this is not adopted, the code would NOT have any venting language or no requirements to address multi-story building less than 10 stories. This would leave a designer (plumber/engineer) and AHJ to determine when a vent stack is required for each drainage stack for a multi-story building, meaning a designer regardless of (engineer or plumber) must provide calculation on every project to determine pressure fluctuations for each drainage and vent stack so that the pressure differential to protect the trap seal within 1 inch water column.
- Also implies that an engineer must design all multi-story building.
- Needed for consistent requirements.

907.4 3 Drainage Stack of 10 stories or more. Each drainage stack that extends 10 or more stories above the building drain or other horizontal drain, shall be served by a parallel vent stack, which shall extend undiminished in size from its upper terminal and connect to the drainage stack at or immediately below the lowest fixture drain. Each such vent stack shall also be connected to the drainage stack at each fifth floor, counting down from the uppermost fixture drain, by means of a yoke vent, the size of which shall be not less in diameter than either the drainage or the vent stack, whichever is smaller.

SONAR: The proposed language is to clarify this section will apply to drainage stacks with 10 stories or more as well as renumbering of the part accordingly. Part 907.3 addresses requirements for additional vent stack and to ensure this vent stack is full size. Both are necessary for the proper functioning of the plumbing system in this type of building..

907.2 4 Yoke Vent. The yoke vent connection to the vent stack shall be placed not less than 42 inches (1067 mm) above the floor level, and the yoke vent connection to the drainage stack shall be by means of a wye-branch fitting placed below the lowest drainage branch connection serving that floor.

SONAR: The proposed change is not substantial. It is necessary to renumber this part due to other changes in the this section..

~~**1014.3.7 Abandoned Gravity Grease Interceptors.** Abandoned grease interceptors shall be pumped and filled as required for abandoned sewers and sewage disposal facilities in Section 722.0.~~

SONAR: This part refers to Section 722.0. Section 722.0 has been proposed to be deleted and therefore no longer would exist in this code. Consistent with Section 722.0, this part is proposed for deletion. Abandonment of sewers and related fixtures have not been historically addressed by Plumbing Code, but rather by local ordinances for proper disposal and abandonment. If this part is not deleted, it will create conflict of requirements with local ordinances, and will many municipalities will need to revise ordinances to reflect the new requirements of the MN Plumbing Code.