

**Plumbing Board**  
**SPECIAL Meeting Minutes**  
**June 14, 2016 at 9:30 a.m.**

Minnesota Room – Department of Labor and Industry  
443 Lafayette Road North, St. Paul, MN 55155

**Members**

Joe Beckel  
Scott Eggen  
John Flagg  
Henry Gretsfield  
Mike Herman  
Larry Justin  
Jim Kittelson  
Jim Lungstrom  
Pete Moulton  
John Parizek (Chair)  
Phillip Sterner (Secretary)  
Ron Thompson

**Members Absent**

Jeff Brown  
Grant Edwards (Vice Chair)

**DLI Staff & Visitors**

Wendy Legge (Chief Gen. Counsel, DLI)  
Suzanne Todnem (DLI)  
Jim Peterson (DLI)  
Cathy Tran (DLI)  
Lyndy Lutz (DLI)  
Gary Thaden (MMCA)  
Sophie Thaden (MMCA)  
Matt Marciniak (IAPMO)  
Craig Johnson (ASPE)  
Scott Thompson (MN Plumbing Training)  
Gary Ford (Metro Testing)  
Brian Stensland (HD Supply WW)  
Grant Brekke (Brekke Sales)  
Todd Pennington (Brekke Sales)  
Vince Ismert (Striem)  
David Henrich (Bergerson Caswell/MMWA)  
Rich Davidson (Soderholm)  
Gordon Granse (Polyethylene)  
Richard Hauffe (ICC)  
Rich Pawlicki (A.Y. McDonald Mfg. Co.)  
Mark Hines (HD Supply Waterworks)  
Stephanie Menning (MUCA)  
Paul Sallwold (PHCC)  
David Ybarra (MN Pipe Trades)  
Jim Meyer (City of Apple Valley)  
Tom McCarthy (Plumbers Local 34)

**I. Call to Order**

The meeting was called to order by Chair Parizek at 9:34 a.m. Roll call was taken by Secretary Sterner and a quorum was declared. Introductions and housekeeping announcements were made.

**II. Approval of Meeting agenda**

A motion was made by Justin, seconded by Flagg, to approve the agenda with the deletion of item C under Special Business. The vote was unanimous; the motion carried (10 voting members present).

### III. Special Business

#### A) RFI – Grant Brekke – 1017.0

- **Brekke, Brekke Sales/Striem Products**
- **Vince Ismert/Striem Products**
- **Todd Pennington/Brekke Sales**

Brekke referred to his Request for Interpretation and email communications between himself and Cathy Tran regarding 1017.0, oil and flammable waste interceptors (**Attachment A**). Brekke asked the Board for an interpretation of current language to determine if high density polyethylene is approved, and if not, why? Is steel approved? He is under the impression that steel is. It should be equitable; therefore, if steel isn't listed then it shouldn't be approved either. He asked the Board for clarification so engineers can use materials that will be approved.

Tran said there are no standards for flammable waste interceptors under the new code; therefore, department staff is directed to review **all** materials submitted as an alternate. HDPE products are fairly new to the State of Minnesota. The material was previously listed under kitchen grease interceptors and there is no documentation that lists them as acceptable for flammable interceptors. Tran said additional documentation was requested but no products/materials were actually rejected. She said the department only rejected the plan review by asking for additional information and she added that HDPE submittals with sufficient documentation have been approved.

(Scott Eggen arrived at 9:51 a.m. totaling 11 voting members present)

Parizek said it appeared the department approved materials when questions were answered. He then asked if Striem's product met a standard and Brekke replied no, the code itself doesn't list any standards. Tran said Striem's product is fairly new so the department is being cautious in their review.

Striem said their tank is unrated and Justin said their product would then need to meet the specifications for *unrated*. Tran said that in the past month the department received revised manufacturer literature indicating that it is a flammable oil interceptor and appeared to be acceptable. She noted the only issue – the code states that an overflow tank is needed if there is an overflow provision.

Parizek said it appeared all of the interceptors were being approved by the Authority Having Jurisdiction and Striem's product was no different.

Tran said the department does not have any issues with HDPE whatsoever. The product is new; therefore, the department performs a run test but moving forward products/materials are likely to be approved.

**A motion was made by Flagg, seconded by Eggen, to close Brekke's Request for Interpretation. The vote was 8 for/2 against [Justin, Sterner] and one abstention [Herman]; the motion carried [11 voting members present].**

Parizek said the Board would open rulemaking regarding this chapter and recommended Striem submit a code change with definitive language to address issues. Parizek then suggested Brekke submit their product for approval as a standard through IAPMO.

**B) RFI – David Henrich – Table 604.1, IS 7 (2.6.1) (see Attachment B)**

Henrich requested the code to be interpreted to allow polyethylene pipe to be used for the building supply up to the water meter or pressure tank provided there is no more than two feet of polyethylene pipe exposed within the building.

The Board discussed possible issues and solutions and then the below motion was made.

**A motion was made by Justin, seconded by Kittelson, that the Board Chair be directed to issue a Final Interpretation with the following question and answer that includes as background a description of the conflicting provisions in the plumbing code that led to this question.**

**Question: Based on the Plumbing Board’s May 11, 2016, Final Interpretation, can polyethylene piping, when used for building supply, be installed inside and under buildings?**

**Answer: Yes.**

**The majority vote ruled with 8 for/3 against (Moulton, Herman, Beckel); the motion carried.**

**IX. Board Discussion**

No discussion.

**X. Announcements**

Next regularly scheduled meetings in 2016 – all meetings will be held at 9:30 a.m. in the Minnesota Room. The Executive Committee meetings occur at 8:00 a.m. prior to each **regular** meeting in the Minnesota Room.

- a. July 19, 2016 (annual election of officers)
- b. October 18, 2016

**XI. Adjournment**

A motion was made by Sterner, seconded by Eggen, to adjourn the meeting at 12:15 p.m. The majority vote ruled; the motion passed.

Respectfully submitted,

*Phil Sterner*

Phil Sterner

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

## Plumbing Board Request for Interpretation

PRINT IN INK or TYPE

NAME OF SUBMITTER Grant Brekke	Rule(s) to be interpreted (e.g., 4715.0330) 1017.0
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The Minnesota Plumbing Code (MN Rules, Chapter 4715) is available at [www.dli.mn.gov/CCLD/PlumbingCode.asp](http://www.dli.mn.gov/CCLD/PlumbingCode.asp).

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

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

Code/Rule to be interpreted: 1017.0	Name of DLI employee gave interpretation: Cathy Tran	Date interpretation originally requested: 2-3-16 and many times since
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Provide a copy of the DLI interpretation with this request (a copy must be provided as reference).

Is there a local dispute with an Inspector of other official?

Yes  No

If Yes, state the name or type of official

All of them

State the circumstances of the initial dispute:

The 2012 UPC language for oil and flammable waste interceptors does not list any standards or material of construction. Specifically, the Striem products flammable waste interceptors are being rejected on every job. If this unit is being rejected, then every manufacturer must be rejected. Cathy Tran is also making the determination that an oil interceptor is not the same as a flammable waste interceptor.

Explain what you believe the Code to read and why you disagree with the interpretation given to you by DLI staff.

The language in 1017.0 is pretty clear in regards to oil and flammable liquid interceptors in as far as they are one in the same. In the Body of the language, there are no standards listed. In chapter 14, there is reference to an IAPMO PS-80 standard for clarifiers. But, the referenced section is 301, Alternate methods of construction. Cathy Tran has mentioned that every oil or flammable waste trap must be approved by the AHJ for every job. The PS-80 is a standard for concrete and Fiberglass Clarifiers. It would not apply to HDPE oil interceptors. The Striem unit meets the intent of the code for a non-rated oil interceptor

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

Engineers through-out Minnesota want to specify and use the Striem Oil interceptors. It seems like the Plan reviewers are defaulting to requesting and approving the old style 35 Cu Foot steel flammable waste traps, which technically do not meet the code, and, are not approved or listed to any standard. There continues to be a bias on allowing HDPE as a material for the use in an oil interceptor.

### Information regarding submitting this form:

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

### Information for presentation to the Committee:

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

### Information regarding Committee and/or Board function:

- The Code Interpretation Committee serves on behalf of the Plumbing Board to issue final interpretation.

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

- If you would like to appeal the Code Interpretation Committee's determination, please notify us within thirty (30) days and it will be forwarded to the Administrative Law Judge for final interpretation.

### Office Use Only

RFI File No.	Date Received by DLI	Dated Received by Committee	Date of Committee Meeting
Title of RFI	By:		

This material can be made available in different forms, such as large print, Braille or on a tape. To request, call 1-800-342-5354 (DIAL-DLI) Voice or TDD (651) 297-4198.

I understand that the Code Interpretation Committee has the authority to issue final interpretation on behalf of the Plumbing Board.

**Submitted by:**

NAME		FIRM NAME	
Grant Brekke		Brekke Sales	
ADDRESS		CITY	STATE ZIP CODE
5909 Baker Road, Suite 580		Minnetonka	mn 55345
PHONE	SIGNATURE (original or electronic)	DATE	
952-936-9551	grant brekke	5-18-2016	

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

Mailing address:

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

\*\*\* Please remember to attach all necessary explanations and supporting documentation\*\*\*

**Grant Brekke**

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**From:** Grant Brekke  
**Sent:** Wednesday, February 03, 2016 4:44 PM  
**To:** 'Tran, Cathy (DLI)'  
**Cc:** Peterson, Jim (DLI)  
**Subject:** RE: new plbg code

Cathy,

They are un-rated, and, they do not meet any standard. But, there are no standards listed in the body of the language, so, not sure we even need one. The PS-80 only applies to concrete clarifiers, so, we could not get that approval. Plus, PS-80 is referenced to section 301 anyways, as an alternate. Again, this really sucks because there is no guidance on this in the current Mn code. Like I mentioned, even the Midwest Tank unit that has been approved forever isn't even now approved by the language. This is going to be a mess if we don't get some direction on this.

I don't think I should be the one telling them to default to the old flammable waste trap as outlined in the previous code because it does not meet today's code. Plus, there are very few engineers who want to use a steel oil separator. Should I submit another RFI to talk about this???? gb

Grant Brekke  
 Office 952-936-9551  
 Cell 612-210-6353  
[www.Brekkesales.com](http://www.Brekkesales.com)

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**From:** Tran, Cathy (DLI) [mailto:Cathy.Tran@state.mn.us]  
**Sent:** Wednesday, February 03, 2016 4:34 PM  
**To:** Grant Brekke  
**Cc:** Peterson, Jim (DLI)  
**Subject:** RE: new plbg code

Grant,

I apologized but I am not totally familiar with schier flammable waste interceptors. Are they rated or unrated interceptors and do they meet a standard or not?

In general, since the code does not call out for any approved construction material (ex. PE, steel, concrete, fiberglass, or any other materials) of flammable/oily waste interceptors nor any standard, the design are subject to the AHJ as alternates to ensure for the proper application and must meet section 1017 of Chapter 4714. The design engineers can always default to the engineered interceptor section similar to the previous code.

Thanks Cathy

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**From:** Grant Brekke [mailto:grantb@brekkesales.com]  
**Sent:** Wednesday, February 03, 2016 3:15 PM  
**To:** Tran, Cathy (DLI); Peterson, Jim (DLI)  
**Subject:** FW: new plbg code

Cathy and Jim,

Since last Thursday, I have had three calls from engineers asking me if our Schier oil/flammable waste interceptors are okay to be used. What should I tell them? I did tell them that technically and theoretically, no manufacturer is approved as of right now, not even the Midwest Tank unit. So, here we are, the 2012 UPC/Minnesota code oil interceptor language is vague and does not give anyone any guidance on what to use. please advise. thanks...gb

Grant Brekke  
Office 952-936-9551  
Cell 612-210-6353  
[www.Brekkesales.com](http://www.Brekkesales.com)

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**From:** Grant Brekke  
**Sent:** Thursday, January 28, 2016 4:51 PM  
**To:** 'Tran, Cathy (DLI)'  
**Cc:** Peterson, Jim (DLI)  
**Subject:** RE: new plbg code

Cathy and Jim,

I just want to be clear on what we talked about last fall. See below for review. In the new Mn Plbg code, under 1017.0, oil and flammable liquid interceptors, since there are no standards listed in the body of the language, and, since no material of construction is listed, technically no manufacturer of oil/flammable waste interceptors are approved. They ALL would have to be approved by the AHJ, correct? The Midwest Tank unit, that has been installed forever in Mn, is also technically not approved, right? So, in theory, when I am talking about my Schier oil interceptor/flammable waste trap, it would need to be considered as an alternate product/method, according to the new code. No manufacturer of flammable waste traps will have a carte blanche approval because of the current language in the code. Right? So, when we get down to it, all manufacturers will need to get approvals from AHJ's. As I travel around the state and call on engineers, they really want to know about this and they want clarity in the code. Give me a call if you want to discuss..thanks...gb

Grant Brekke  
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Cell 612-210-6353  
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**From:** Tran, Cathy (DLI) [<mailto:Cathy.Tran@state.mn.us>]  
**Sent:** Monday, September 28, 2015 1:28 PM  
**To:** Grant Brekke  
**Cc:** Peterson, Jim (DLI)  
**Subject:** RE: new plbg code

In general, all plumbing design and installation at this time must meet the current plumbing code, Chapter 4715 . We can only administer and enforce what is in the current law. On 1/23/16, all design and installation must meet the new plumbing code, Chapter 4714. In between, if there is a fixture/material/method in the new code, chapter 4714, that a designer/owner is interested in, they may make a request for its as an alternate under current code, rule part 4715.0330. And yes, this approval is subject to the approval of the administrative authority.

Under the current code the Schier interceptor proposed as "engineered flammable waste interceptor" is under 4715.1100. Under the new Minnesota Plumbing Code, Chapter 4714 (2012 UPC with MN amendments) , which will go into effect 1/23/16, it will still be considered as "engineered flammable waste interceptor" or under "alternate material" UPC 301.2, as amended. **Nowhere does section UPC section 1017, Oil and Flammable Liquid Interceptor, indicate that HDPE or any other construction type of material is an approved material for flammable waste interceptor in the UPC, and therefore, leaves the Administrative Authority (AHJ) to make determination for every project.**

Thanks, Cathy

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**From:** Grant Brekke [<mailto:grantb@brekkesales.com>]  
**Sent:** Friday, September 25, 2015 3:32 PM  
**To:** Tran, Cathy (DLI); Peterson, Jim (DLI)  
**Subject:** re: new plbg code

Cathy and Jim,

From what I understand, the new Mn Code (UPC 2012 with Mn amendments) will get into effect on January 24<sup>th</sup>. We have already been telling all our mechanical engineers to start thinking about the new code when they are designing their jobs. I have been told that if they specify something right now, that meets our current code, and the product is installed after January 24<sup>th</sup>, and it does not meet the new code, that there could be some problems with the local AHJ. Is that accurate? Also, if they are designing around a product that will meet the new code, but does not meet the current code, that your plan reviewers could flag it and say it does not meet code?

For example, Schier/Striem Products, who makes oil and flammable liquid separators, that do not meet the current code, are being specified for jobs that will be installed, for sure, next year. Is there any way to avoid getting letters of rejection from the plan reviewers, since they will be allowed after January 24<sup>th</sup>? Or, will the engineers just have to live with the rejection letters, not do anything about it, since they will be approved after January 24<sup>th</sup>? I know there is no easy way, but, I want to give my engineers an idea what will happen in the meantime. Thanks....gb

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Rec'd 5-16-16

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

**Plumbing Board Attachment B**  
**Request for Interpretation**

PRINT IN INK or TYPE

NAME OF SUBMITTER David Henrich	Rule(s) to be interpreted (e.g., 4715.0330) Table 604.1, IS 7 (2.6.1)
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The Minnesota Plumbing Code (MN Rules, Chapter 4715) is available at [www.dli.mn.gov/CCLD/PlumbingCode.asp](http://www.dli.mn.gov/CCLD/PlumbingCode.asp).

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

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Code/Rule to be interpreted: Minnesota Plumbing Code	Name of DLI employee gave interpretation: DLI pdf titled "Utility service connections" at <a href="http://www.dli.mn.gov/CCLD/Plumbing.asp">http://www.dli.mn.gov/CCLD/Plumbing.asp</a>	Date interpretation originally requested:  5/13/16
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Provide a copy of the DLI interpretation with this request (a copy must be provided as reference).

Is there a local dispute with an Inspector of other official? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, state the name or type of official
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State the circumstances of the initial dispute:

There is an internal ambiguity in the 2015 Minnesota Plumbing Code between the footnote to Table 604.1 and Installation Standard 7 (2.6.1). The footnote in Table 604.1 allows for use of polyethylene (PE) pipe for building supply. One reading of the location section (2.6.1) of Installation Standard 7 is that the building supply for PE pipe must not be in the building and the Board's most recent Final Interpretation says that the "pipe supplying water to a water meter or pressure tank inside the building" is considered to be part of the building supply.

Explain what you believe the Code to read and why you disagree with the interpretation given to you by DLI staff.

The Minnesota Plumbing Code, for at least 45 years, allowed the use of PE as an acceptable material for use in building supply, including inside a building. Requiring a transition fitting as an alternative, especially one outside the building, increases the potential for introducing a leak and potentially can result in introducing contaminants into the plumbing system. I am requesting that the code be interpreted to allow polyethylene pipe to be used for the building supply up to the water meter or pressure tank provided there is no more than two feet of polyethylene pipe exposed within the building. IAPMO has removed Installation Standard 7 from their version of the 2015 UPC.

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

Attached are copies of DLI pdf titled "Utility service connections" (<http://www.dli.mn.gov/CCLD/Plumbing.asp>); 2015 Minnesota Plumbing Code Table 604.1 and Installation Standard 7 (2.6.1); Minnesota Plumbing Board Final Interpretation dated May 11, 2016; IAPMO letter on Building Water Supply dated April 28, 2016; copy of the previous Minnesota Plumbing Code Section 4715.510 G which permits the use of PE pipe for building supply.

**Information regarding submitting this form:**

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

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**Information regarding Committee and/or Board function:**

- The Code Interpretation Committee serves on behalf of the Plumbing Board to issue final interpretation.

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

- If you would like to appeal the Code Interpretation Committee's determination, please notify us within thirty (30) days and it will be forwarded to the Administrative Law Judge for final interpretation.

Office Use Only			
RFI File No.	Date Received by DLI	Dated Received by Committee	Date of Committee Meeting

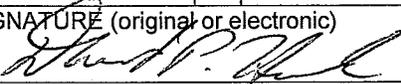
Title of RFI

By:

This material can be made available in different forms, such as large print, Braille or on a tape. To request, call 1-800-342-5354 (DIAL-DLI) Voice or TDD (651) 297-4198.

I understand that the Code Interpretation Committee has the authority to issue final interpretation on behalf of the Plumbing Board.

**Submitted by:**

NAME		FIRM NAME	
David Henrich		Bergerson Caswell, Inc / Minnesota Water Well Association	
ADDRESS		CITY	STATE ZIP CODE
5115 Industrial Street		Maple Plain	MN 55359
PHONE	SIGNATURE (original or electronic)	DATE	
612-369-1931		5/13/16	

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

Mailing address:

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

\*\*\* Please remember to attach all necessary explanations and supporting documentation\*\*\*



## What you need to know about utility service connections in the 2015 Minnesota Plumbing Code

### Building Sewer Installation

1. A building sewer starts at 2 feet outside a building.
2. Sanitary building sewer must connect to a public sewer when available (see section 713.4).
3. Cleanouts must be provided at intervals not to exceed 100 feet for sanitary and storm sewers (see sections 719.0 and 1101.12). Where permitted by the administrative authority, manholes may be used in lieu of cleanouts at intervals not exceeding 300 feet (see section 719.6).
4. When possible, sanitary building sewers must be sloped uniformly at least 1/4 inch foot (2%). A minimum slope of 1/8 inch per foot (1%) is permitted for sizes of 4-inch and 6-inch (see 718.1) when they meet at least one of the following conditions:
  - a) Due to the depth of street sewer or private sewage system connection.
  - b) Arrangements of the building structures restrictions.
  - c) A minimum of 2 feet per second self cleansing velocity is maintained at all times to prevent settling or forming of wastewater and sewage. Low flow fixtures in the drainage system must be considered in determining the minimum velocity of 2 feet per second.
5. Material installed within 2 feet of a building must be of materials approved for use inside of or within a building.

### Disinfection and Testing

1. Water system disinfection and testing requirements of water and sewer piping remain consistent requirements as with the previous plumbing code.
2. See sections 609.4, 712.0, 723.0, and 1109.0 for testing requirements for water and sewer services.
  - a) All sanitary building sewers must be test and be gastight or watertight (section 723.0).
  - b) All portions of the storm sewer system located within 10 feet of the building or building waterline must be tested by the use Hydrostatic Test Method from CEAM (1109.0)
  - c) Water supply system must be tested to prove tight.
2. Concrete manholes and sewer lines shall be tested by negative pressure per ASTM C1412-13, ASTM C1244-11, or hydrostatically.
3. Water system disinfection must meet the requirements of section 609.9.

### Drain Tile Material

The table below lists code approved materials for subsoil drain pipe and fittings. For more information, see Minnesota Rules, Chapter 4714, section 1102.5.

DRAINTILE MATERIAL	REFERENCED STANDARD(S)
Asbestos Cement	ASTM C 444, ASTM C 508 ASTM C 966
PE	ASTM F 405
PVC	ASTM D 2729
Vitrified Clay (Extra strength)	ASTM C 4, ASTM C 700

### Isolation Distances and Crossings (Water and Sewer):

1. *Contamination Source:* The water pipe must be installed at least 10 feet horizontally from any manhole, septic systems, catchbasin, or other source of contamination, measured from the outer edge of the pipe to the outer edge of the contamination source.
2. *Water and Sewer Separation:* A minimum horizontal separation of 10 feet should be maintained between the water pipe and any sewer, whenever possible.

3. **Trench:** No building sewer pipe may be in a common trench with water pipe unless the sewer pipe material is approved for use within a building (see Minnesota Rules, Chapter 4714, Sections 609.2 and 720.1). When water pipe is in a common trench with a sewer of clay or material not approved within a building:
  - a) The bottom of the water pipe must be at least 12 inches above the top of the sewer.
  - b) The water pipe must be on a solid shelf with a clear horizontal distance of 12 inches from the sewer.
4. **Water and Sewer Crossings:** The bottom of water pipe crossing a building sewer of clay, concrete, PVC ASTM D3034, HDPE D2306, or materials not approved for use within a building must have the water pipe installed at least 12 inches above the top of the sewer. If not possible,
  - a) Provide a 10 feet horizontal separation, or
  - b) provide materials approved for use within buildings.

### Material (Sanitary and Storm)

Materials for both sanitary and storm sewers can be found in Table 701.1 of Minnesota Rules, Chapter 4714. Joints, connections, and installation method must also be in accordance the code and manufacturer's installation instructions.

BUILDING SEWER MATERIAL	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
ABS (Schedule 40)	ASTM D 1527, ASTM D 2661, ASTM D 2680, ASTM F 628	ASTM D 2661, ASTM D 2680
Asbestos-Cement	ASTM C 14, ASTM C 428	—
Cast-Iron	ASTM A 74, ASTM A 888, CISPI 301	ASME B16.12, ASTM A 74, ASTM A 888, CISPI 301
Co-Extruded ABS (Schedule 40)	ASTM F 1488	ASTM D 2661, ASTM D 2680
Co-Extruded PVC (Schedule 40)	ASTM F 891, ASTM F 1488	ASTM D 2665, ASTM F 794, ASTM F 1866
Copper (Type DWV)	ASTM B 75, ASTM B 251, ASTM B 302, ASTM B 306	ASME B16.23, ASME B16.29
Polyethylene	ASTM F 714	ASTM D 2683, ASTM D 3261, ASTM F 1055, ASTM F 2206
PVC (Schedule 40)	ASTM D 1785, ASTM D 2665, ASTM F 794	ASTM D 2665, ASTM F 794, ASTM F 1866
Stainless Steel 316L	ASME A112.3.1	ASME A112.3.1
Vitrified Clay (Extra strength)	ASTM C 700	ASTM C 700

### Other Notable Materials and Alternates:

1. Plastic PVC pipe meeting ASTM D3034 is an acceptable alternate material for gravity building sewer. Installation must be on a continuous granular bed that meets ASTM D2321 and separation is provided from water supply service line under section 720.0. The local administrative authority may have additional requirements and must be consulted prior to installation.
2. Reinforced concrete (RCP) storm sewer pipe meeting ASTM C76 is an acceptable alternate material for building storm sewers and yard drainage applications. Installation must meet the requirements of Installation Standard 1, section 3.6, and separation is provided from water supply service line under section 720.0. Water-tight joints shall be provided by gaskets provided by the manufacturer and installed in accordance with the manufacturer's instructions. The local administrative authority may have additional requirements and must be consulted prior to installation.
3. High-density polyethylene (HDPE) sewers:
  - a. HDPE pipe meeting ASTM F714 may be used for pressurized sewers and must be installed per Minnesota Rules, Chapter 4714, Table 701.1, and Installation Standards 1, and separation from water

supply service line meets section 720.0. All changes in directions must be through approved drainage fittings or through manhole connections. Heat fusion joints must be utilized per the manufacturer's installation instructions, and ASTM D2659 or ASTM D3261.

- b. HDPE pipe meeting ASTM F2306 is an acceptable material under section 301.2 for installation of gravity building storm sewers and yard drainage. Installation must be on a continuous granular bed that meets ASTM D2321 and separation from water supply service line meets section 720.0. The local administrative authority may have additional requirements and must be consulted prior to installation.

### Material (Building Water Supply Service)

1. Supply piping connected to municipal main must be pressure rated for the application (150 psi). Supply piping connected to private water supply must be pressure rated must be for the application (100 psi).
2. See Minnesota Rules, Chapter 4714, for additional requirements for proper installation, joints, and connections of all materials listed.
  - a) Approved materials for water supply service lines installed **outside** of buildings:

WATER SUPPLY SERVICE MATERIAL*	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Polyethylene (PE)	ASTM D 2239, ASTM D 2737, ASTM D 3035, AWWA C901, CSA B137.1	ASTM D 2609, ASTM D 2683, ASTM D 3261, ASTM F 1055, CSA B137.1
PVC	ASTM D 1785, ASTM D 2241, AWWA C900	ASTM D 2464, ASTM D 2466, ASTM D 2467, ASTM F 1970

\* Pipe must *not* be installed under or within any building, structure, or part thereof (see Minnesota Rules, Chapter 4714, Table 604.1, and Installation Standard 7, 8, and 15).

- b) Approved materials can be used in **both** water supply services to buildings and water distribution system for use within buildings:

WATER MATERIAL	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Brass	ASTM B 43, ASTM B 135	—
Copper	ASTM B 42, ASTM B 75, ASTM B 88, ASTM B 251, ASTM B 302, ASTM B 447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26
CPVC	ASTM D 2846, ASTM F 441, ASTM F 442	ASTM D 2846, ASTM F 437, ASTM F 438, ASTM F 439, ASTM F 1970
Ductile-Iron	AWWA C151	ASME B16.4, AWWA C110, AWWA C153
Galvanized Steel	ASTM A 53	—
Malleable Iron	—	ASME B16.3
PE-AL-PE	ASTM F 1282, CSA B137.9	ASTM F 1282, ASTM F 1974, CSA B137.9
PE-RT	ASTM F 2769	ASTM F 1807, ASTM F 2098, ASTM F 2159; ASTM F 2735, ASTM F 2769
PEX	ASTM F 876, ASTM F 877, CSA B137.5	ASSE 1061, ASTM F 877, ASTM F 1807, ASTM F 1960, ASTM F 1961, ASTM F 2080, ASTM F 2159, ASTM F 2735, CSA B137.5
PEX-AL-PEX	ASTM F 1281, CSA B137.10, ASTM F 2262	ASTM F 1281, ASTM F 1974, ASTM F 2434, CSA B137.10
Polypropylene (PP)	ASTM F 2389, CSA B137.11	ASTM F 2389, CSA B137.11
Stainless Steel	ASTM A 269, ASTM A 312	—

**TABLE 604.1  
MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS**

MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Asbestos-Cement	X*	—	ASTM C 296	—
Brass	X	X	ASTM B 43, ASTM B 135	—
Copper	X	X	ASTM B 42, ASTM B 75, ASTM B 88, ASTM B 251, ASTM B 302, ASTM B 447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26
CPVC	X	X	ASTM D 2846, ASTM F 441, ASTM F 442	ASTM D 2846, ASTM F 437, ASTM F 438, ASTM F 439, ASTM F 1970
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWA C153
Galvanized Steel	X	X	ASTM A 53	—
Malleable Iron	X	X	—	ASME B16.3
PE	X*	—	ASTM D 2239, ASTM D 2737, ASTM D 3035, AWWA C901, CSA B137.1	ASTM D 2609, ASTM D 2683, ASTM D 3261, ASTM F 1055, CSA B137.1
PE-AL-PE	X	X	ASTM F 1282, CSA B137.9	ASTM F 1282, ASTM F 1974, CSA B137.9
PE-RT	X	X	ASTM F 2769	ASTM F 1807, ASTM F 2098, ASTM F 2159, ASTM F 2735, ASTM F 2769
PEX	X	X	ASTM F 876, ASTM F 877, CSA B137.5, AWWA C904*	ASSE 1061, ASTM F 877, ASTM F 1807, ASTM F 1960, ASTM F 1961, ASTM F 2080, ASTM F 2159, ASTM F 2735, CSA B137.5
PEX-AL-PEX	X	X	ASTM F 1281, CSA B137.10, ASTM F 2262	ASTM F 1281, ASTM F 1974, ASTM F 2434, CSA B137.10
PP	X	X	ASTM F 2389, CSA B137.11	ASTM F 2389, CSA B137.11
PVC	X*	—	ASTM D 1785, ASTM D 2241, AWWA C900	ASTM D 2464, ASTM D 2466, ASTM D 2467, ASTM F 1970
Stainless Steel	X	X	ASTM A 269, ASTM A 312	—

\* For building supply or cold-water applications.

used for water piping where piping is aboveground in, or on, a building or underground outside of structures.

**604.3 Hard-Drawn Copper Tubing.** Hard-drawn copper tubing for water supply and distribution in addition to the required incised marking, shall be marked in accordance with ASTM B 88. The colors shall be: Type K, green; Type L, blue; and Type M, red.

**604.4 Flexible Copper Connectors.** Listed flexible copper water connectors shall be installed in readily accessible locations, unless otherwise listed.

**604.5 Cast-Iron Fittings.** Cast-iron fittings up to and including 2 inches (50 mm) in size, where used in connection with potable water piping, shall be galvanized.

**604.6 Malleable Iron Fittings.** Malleable iron water fittings shall be galvanized.

**604.7 Previously Used Piping and Tubing.** Piping and tubing that has previously been used for a purpose other than for potable water systems shall not be used.

**604.8 Epoxy Coating.** Epoxy coating used on existing building supply or water distribution piping systems shall be in accordance with NSF 61 and AWWA C210.

**604.9 Plastic Materials.** Approved plastic materials shall be permitted to be used in building supply piping, provided that where metal building supply piping is used for electrical grounding purposes, replacement piping therefore shall be of like materials.

- 2.3.2 Thermal Expansion.** The pipe shall be snaked in the trench bottom with enough slack to provide for thermal expansion and contraction. The normal slack created by residual coiling is generally sufficient for this purpose. If, however, the pipe has been allowed to straighten before it is placed in the trench, six (6) inches (152 mm) per one hundred (100) feet (30,480 mm) of length shall be allowed for this purpose. [UPC 312.0]
- 2.3.3 Exposed Piping.** Vertical piping may extend a maximum of twenty-four (24) inches (610 mm) above grade when located on the exterior of the building or structure and protected from mechanical damage to the satisfaction of the Administrative Authority. Where exposed to sunlight, the pipe shall be wrapped with at least 0.040 in. (1.02 mm) of tape.
- 2.4 Trenching and Cover.** Trench bottoms shall be uniformly graded and shall be of either undisturbed soil or shall consist of a layer or layers of compacted backfill so that minimum settlement will take place. [UPC 314.0]
- 2.5 Joints.**
- 2.5.1 General.** Polyethylene pipe joints shall be made as follows (see Section 2.2.1). ASTM D 2239 polyethylene piping shall be joined only through the use of mechanical fittings. ASTM D 2737, D 3035 or F 714 polyethylene pipes shall be joined by butt fusion of pipe to pipe or through the use of butt fusion fittings.
- 2.5.2 Procedure.**
- 2.5.2.1** Mechanical fittings for joining only D 2239 PE pipes shall be made as follows:
- Step 1 Pipe shall be cut square, using a cutter designed for plastic pipe, and chamfer ends to remove sharp edges.
- Step 2 Place two strap-type stainless steel bands over the pipe.
- Step 3 Check that fittings are properly sized for pipe, as tubing fittings are not of proper size.
- Step 4 Force the end of the pipe over the barbed insert fittings, making contact with the fitting shoulder (the end of the pipe may be softened by placing in hot water).
- Step 5 Position the clamps 180° apart and tighten evenly, so as to make a leak-proof joint. [UPC 605.7.2]
- 2.5.2.2** Butt fusion for joining only D 2737, D 3035, or F 714 PE pipes shall be made as follows:
- Step 1 Install the pipe/fitting in the fusion machine.
- Step 2 Face the pipe/fitting ends to mechanical stops.
- Step 3 Align the OD's of the ends to be fused.
- Step 4 Heat the ends using in accordance with ASTM F 2620.
- Step 5 Remove the heater and apply the fusion force specified in ASTM F 2620.
- Step 6 Maintain the fusion force on the joint until it is cool per ASTM F 2620.
- 2.5.3 Other Joints.** Polyethylene pipe shall not be threaded. Joints in polyethylene pipe made with adhesives or "solvent cementing" techniques are prohibited.
- 2.6 Materials.**
- 2.6.1 Location.** Polyethylene piping shall be installed only outside the foundation of any building or structure or parts thereof. It shall be buried in the ground for its entire length except vertical piping may be extended above grade per Section 604.1. It shall not be installed within or under any building or structure or mobile home or commercial coach, or parts thereof. The term "building or structure or parts thereof" shall include structures such as porches and steps, whether covered or uncovered, roofed porte-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances. [UPC 604.1]
- 2.6.2 Harmful Materials.** Polyethylene that has been in contact with gasoline, lubricating oil, or aromatic compounds, shall not be installed.
- 2.7 Installation.**
- 2.7.1 Pipe.** Kinked pipe shall not be used. PE pipe shall not be flared. [UPC 609.0]
- 2.7.2 Fittings.**
- 2.7.2.1** Compression type couplings and fittings shall be used only when installing one and on-half (1½) inch (38 mm) and larger pipe. Stiffeners that extend beyond the clamp or nut shall not be used. [UPC 605.7.2]
- 2.7.2.2** Butt fusion fittings shall comply with ASTM D 3261.
- 2.7.3 Bends.** Changes in direction may be made by bends. The installed radius of pipe curvature shall be not less than thirty (30) pipe diameters, or the coil radius when bending





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IAPMO Code Intent  
PE/PVC Building Water Supply  
4/28/2016

Attachment B

Dear Mr Parizek,

At the last quarterly Plumbing Board meeting, it was requested that IAPMO determine the intention of the code regarding the installation of Polyethylene (PE) and Poly Vinyl Chloride (PVC) Plastic Tubing building water supply being terminated inside of a building. Additionally, a question was asked regarding why Installation Standard (IS) IS-7 and IS-8 had not been included in the 2015 Uniform Plumbing Code (UPC).

The building water supply will terminate at the fullway valve on the discharge side of the meter and each unmetered building water supply (Section 606.2). This fullway valve located inside the building will be the end of the building water supply or service and the beginning of the water distribution system. Materials for water supply and distribution are indicated in Table 604.1. Installation Standards IS-7 and IS-8 were removed from the 2015 UPC, because they were outdated and often conflicted with the UPC language.

Please be advised that IAPMO staff is not permitted to provide "official" IAPMO code interpretations and that only the IAPMO Answer/Analysis Committee is authorized to provide "official" interpretations. The thoughts of staff on the subject issue reviewed is not to be considered the "official" or binding position of the Answer/Analysis Committee and that such "official" opinion can only be obtained by submission of a written request.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew B Marciniak". The signature is fluid and cursive.

Matthew B Marciniak

## 4715.0420 PLUMBING CODE

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## VII. FIBERGLASS PIPE AND FITTINGS

7A	Fiberglass pipe (reinforced thermosetting resin pipe) (one- to 16-inch) (18- to 48-inch must be manufactured in accordance with ASTM D2996)	D2996	NSF14 NSF61 AWWA C-950
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**Statutory Authority:** *MS s 16B.59 to 16B.75; 326.37 to 326.45; 326B.101 to 326B.194; 326B.43 to 326B.49; 326B.52*

**History:** *9 SR 1557; 11 SR 1405; 15 SR 76; 19 SR 590; 23 SR 686; 28 SR 146; L 2007 c 140 art 4 s 61; art 6 s 15; art 13 s 4; L 2008 c 337 s 64; 33 SR 2042; 36 SR 1479*

## PIPING SYSTEM MATERIALS

## 4715.0500 WATER SUPPLY SYSTEMS.

When selecting the material and size for water service pipe, tubing, or fittings, due consideration shall be given to the action of the water on the interior of the pipe and of the soil, fill, or other material on the exterior of the pipe.

Pipe and fitting materials for water service and distribution must be of a type specifically permitted by parts 4715.0510 and 4715.0520, and must be verified to contain no more than eight percent lead.

**Statutory Authority:** *MS s 16B.61; 326.37 to 326.45; 326B.106; 326B.43 to 326B.49*

**History:** *15 SR 76; L 2007 c 140 art 4 s 61; art 6 s 15; art 13 s 4*

## 4715.0510 WATER SERVICE PIPE.

The following materials may be used for water service pipe:

A. Cast iron pipe 1C and 1D both with 1E fittings with the provisions that bends, tees, and plugs shall be anchored by rods. Poured in place concrete thrust blocks or anchor rods shall be used behind all changes of direction of 45 degrees or greater so as to maintain a water tight joint.

B. Steel pipe 2A, wrought iron pipe 2B, both with 2D and 2E fittings, with the provision that all exposed threads must be coal tar enamel coated and wrapped.

C. Red brass pipe 3A, and copper 3L, with 3C fittings, with the provision that every joint is supported by durable nonmetallic support and pipe to be laid on a continuous granular bed.

D. Copper tube 3E or 3G and 3D or 3N fittings.

E. Asbestos cement pipe 5A and fittings with the provision that this material be supported continuously and laid in granular soil and only in yard areas. Further that it not be used to convey extremely soft water, and shall pass through the floor within three feet of the outside wall.

F. Concrete pipe 5N.

G. Plastic pipe 6D, 6E, 6F, 6G, and 6I may be used for water service pipe only up to the water meter or pressure tank and provided there is no more than two feet of such piping exposed within the building. These materials shall be installed in accordance with ASTM D 2774, except that plastic pipe meeting AWWA C900 must be installed according to AWWA C605. Particular care shall be taken to avoid sharp edges in contact with the pipe and to provide for expansion and contraction. Plastic pipe must be installed in accordance with the manufacturer's installation instructions.

H. Ductile iron pipe 1L and 1M.