

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

Plumbing Board Request for Action

PRINT IN INK or TYPE

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

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

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

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

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

Primary reason for change: (check only one)

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

Anticipated benefits: (check all that apply)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Information regarding submitting this form:

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

Information for presentation to the Committee and/or Board:

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

Information regarding Committee and/or Board function:

- The Plumbing Board or designated Committee.

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

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

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

DEFINITIONS

Registered Design Professional. *For purposes of this code, "registered design professional," "engineer," or "registered professional engineer" means a person practicing professional engineering as described in Minnesota Statutes, section 326.02, subdivision 3, and who is licensed in the state of Minnesota as a professional engineer by the Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience, and Interior Design under Minnesota Statutes, section 326.10.*

Regulating Equipment. Includes valves and controls used in a plumbing system that is required to be accessible or readily accessible.

Relief Vent. A vent, the primary function of which is to provide circulation of air between drainage and vent systems or to act as an auxiliary vent on a specially designed system.

Remote Outlet. Where used for sizing water piping, it is the furthest outlet dimension, measuring from the meter, either the developed length of the cold-water piping or through the water heater to the furthest outlet on the hot-water piping.

Rim. See Flood-Level Rim.

Riser. A water supply pipe that extends vertically one full story or more to convey water to branches or fixtures.

Roof Drain. A drain installed to receive water collecting on the surface of a roof and to discharge it into a leader, downspout, or conductor.

Roof Washer. A device or method for removal of sediment and debris from a collection surface by diverting initial rainfall from entry into the cistern(s). Also known as a first flush device.

Roughing-In. The installation of all parts of the plumbing system that can be completed prior to the installation of fixtures. This includes drainage, water supply, gas piping, vent piping, and the necessary fixture supports.

221.0 – S –

Sand Interceptor. See Interceptor (Clarifier).

Scavenging. Evacuation of exhaled mixtures of oxygen and nitrous oxide. [NFPA 99:3.3.147]

Standard Cubic Feet per Minute (SCFM). Volumetric flow rate of gas in units of standard cubic feet per minute. [NFPA 99:3.3.156]

SDR. An abbreviation for "standard dimensional ratio," which is the specific ratio of the average specified outside diameter to the minimum wall thickness for outside controlled diameter plastic pipe.

Seam, Welded. See Joint, Welded.

Seepage Pit. A lined excavation in the ground which receives the discharge of a septic tank so designed as to permit the effluent from the septic tank to seep through its bottom and sides.

Septic Tank. A watertight receptacle that receives the discharge of a drainage system or part thereof, designed and constructed so as to retain solids, digest organic matter through a period of detention, and allow the liquids to discharge into

the soil outside of the tank through a system of open joint piping or a seepage pit meeting the requirements of this code.

Service Piping. The piping and equipment between the street gas main and the gas piping system inlet that is installed by, and is under the control and maintenance of, the serving gas supplier.

Sewage. Liquid waste containing animal or vegetable matter in suspension or solution and that may include liquids containing chemicals in solution.

Sewage Ejector. A device for lifting sewage by entraining it on a high-velocity jet stream, air, or water.

Sewage Pump. A permanently installed mechanical device, other than an ejector, for removing sewage or liquid waste from a sump.

Shall. Indicates a mandatory requirement.

Shielded Coupling. An approved elastomeric sealing gasket with an approved outer shield and a tightening mechanism.

Shock Arrester. See Water Hammer Arrester.

Should. Indicates a recommendation or that which is advised but not required.

Single-Family Dwelling. *Has the meaning of dwelling, single-family, in Minnesota Rules, part 1309.0202, subpart 1.*

Size and Type of Tubing. See Diameter.

Site Storm Sewer. Storm sewer pipe that conveys storm water runoff (no sanitary sewage) that is located in areas defined by 1107.2.3 Exceptions, (A), (3).

Slip Joint. An adjustable tubing connection, consisting of a compression nut, a friction ring, and a compression washer, designed to fit a threaded adapter fitting or a standard taper pipe thread.

Slope. See Grade.

Soil Pipe. A pipe that conveys the discharge of water closets, urinals, clinical sinks, or fixtures having similar functions of collection and removal of domestic sewage, with or without the discharge from other fixtures to the building drain or building sewer.

Special Wastes. Wastes that require some special method of handling, such as the use of indirect waste piping and receptors, corrosion-resistant piping, sand, oil or grease interceptors, condensers, or other pretreatment facilities.

Stack. The vertical main of a system of soil, waste, or vent piping extending through one or more stories.

Stack Vent. The extension of soil or waste stacks above the highest horizontal drain connected to the stack.

Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix, footnote, or fine print note and are not to be considered a part of the requirements of a standard.

Station Inlet. An inlet point in a piped medical/surgical vacuum distribution system at which the user makes connections and disconnections. [NFPA 99:3.3.157]

Station Outlet. An outlet point in a piped medical gas distribution system at which the user makes connections and disconnections. [NFPA 99:3.3.158]

CHAPTER 11

STORM DRAINAGE

1101.0 General.

1101.1 Applicability. This chapter shall govern the materials, design, and installation of storm water drainage systems.

1101.2 Where Required. *Roofs, paved areas, yards, courts, courtyards, vent shafts, light wells, or similar areas having rainwater, shall be drained into a separate storm sewer system or into a combined sewer system where a separate storm sewer system is not available, or to some other place of disposal satisfactory to the Authority Having Jurisdiction. In no case shall water from roofs or any building roof drainage flow onto the public sidewalk. In the case of one- and two-family dwellings, storm water shall be permitted to be discharged on flat areas, such-as lawns, so long as the storm water shall flow away from the building and away from adjoining property and shall not create a nuisance.*

1101.3 Storm Water Drainage to Sanitary Sewer Prohibited. *Storm water shall not be drained into sewers intended for sanitary drainage unless approved by the municipal sewer authority or stated elsewhere in this code.*

1101.4 Material Uses. *Rainwater piping placed within the interior of a building or run within a vent or shaft shall be of cast-iron, galvanized steel, wrought iron, brass, copper, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground], or other approved materials. Changes in direction shall be in accordance with Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1701.1.*

1101.4.1 Copper and Copper Alloys. Joints and connections in copper and copper alloy pipe and tube shall be installed in accordance with Section 705.3.

1101.4.2 Conductors. Conductors installed aboveground in buildings shall comply with the applicable standards referenced in Table 701.2 for aboveground drain, waste, and vent pipe. Conductors installed aboveground level shall be of seamless copper water tube, Type K, L, or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe; Type DWV copper drainage tube; service weight cast-iron soil pipe or hubless cast-iron soil pipe; standard weight galvanized steel pipe; stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground], or Schedule 40 ABS or Schedule 40 PVC plastic pipe.

1101.4.3 Leaders. Leaders installed outside shall comply with the applicable standards referenced in Table 701.2 for aboveground drain, waste, and vent pipe; aluminum sheet metal; galvanized steel sheet metal; or copper sheet metal.

1101.4.4 Underground Building Storm Drains. Underground building storm drains shall comply with

the applicable standards referenced in Table 701.2 for underground drain, waste, and vent pipe.

1101.4.5 Building Storm Sewers. Building storm sewers shall comply with the applicable standards referenced in Table 701.2 for building sewer pipe.

1101.4.6 Subsoil Drains. Subsoil drains shall be open jointed, perforated, or both and constructed of materials in conformance with Table 1101.4.6.

**TABLE 1101.4.6
MATERIALS FOR SUBSOIL DRAIN PIPE AND FITTINGS**

MATERIAL	REFERENCED STANDARD(S)
PE	ASTM F667
PVC	ASTM D2729
Vitrified Clay (Extra strength)	ASTM C4, ASTM C700

1101.4.7 Site Storm Sewers as defined in Chapter 2.221, shall comply with applicable standards referenced in Table 11.01.4.7.

**TABLE 1101.4.7
MATERIALS FOR SITE STORM SEWERS**

MATERIAL	REFERENCED STANDARD(S)
Dual Wall Polyethylene	ASTM F2306
Dual Wall Polypropylene	ASTM F2881

1101.5 Expansion Joints Required. Expansion joints or sleeves shall be provided where warranted by temperature variations or physical conditions.

1101.6 Subsoil Drains. Subsoil drains shall be provided around the perimeter of buildings having basements, cellars, crawl spaces, or floors below grade. Such subsoil drains shall be permitted to be positioned inside or outside of the footing, shall be of perforated or open-jointed approved drain tile or pipe, not less than 3 inches (80 mm) in diameter, and shall be laid in gravel, slag, crushed rock, approved ¾ of an inch (19.1 mm) crushed, recycled glass aggregate, or other approved porous material with not less than 4 inches (102 mm) surrounding the pipe. Filter media shall be provided for exterior subsoil piping.

1101.6.1 Discharge. Subsoil drains shall be piped to a storm drain, to an approved water course, to the front street curb or gutter, to an alley, or the discharge from the subsoil drains shall be conveyed to the alley by a concrete gutter. Where a continuously flowing spring or groundwater is encountered, subsoil drains shall be piped to a storm drain or an approved water course.

1101.6.2 Sump. Where it is not possible to convey the drainage by gravity, subsoil drains shall discharge to an accessible sump provided with an approved automatic electric pump. The sump shall be not less than 15 inches (381 mm) in diameter, 18 inches (457 mm) in depth, and

administrative authority. The design, sizing, and venting of the transition location shall be in accordance with ASPE Standard 45. The gravity portion of the building storm sewer system receiving the siphonic roof drainage system shall be sized for the design rate but not less than a rainfall rate of 4 inches per hour and in accordance with Section 1103.0.

1106.2.10 Required Submissions. All plans, specifications, and calculations shall be signed and sealed by the registered professional engineer and submitted to the administrative authority. The submitted calculations shall 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 shall be reported as the extreme maximum and minimum calculations and shall not be presented as averaged data.

1106.3 Proof of Suitability. Upon completion of the project: proper tests, inspections, and certification of the siphonic roof drainage system shall be performed according to items 1106.3.1 and 1106.3.2.

1106.3.1 Testing. Testing shall be performed according to ASPE Standard 45.

1106.3.2 Written Certification. Prior to the final plumbing inspection, the registered professional engineer shall provide written certification to the administrative authority that the system has been visually inspected by the registered professional engineer or the registered professional engineer's designee and the installation has been properly implemented according to the certified design, plans, calculations, and specifications. The submitted written certification shall include any field modification from the initial design involving dimensions, location, or routing of the siphonic roof drainage system that shall be reapproved and recertified by the registered professional 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.

1107.0 Testing.

1107.1 Testing Required. Building storm drainage systems that are new and parts of existing systems that have been altered, extended, or repaired shall be tested in accordance with Section 712 to disclose leaks and defects, except as provided in Section 1107.2.3. Any section of the building storm sewer that passes through contaminated soils or contaminated water must be air tested in accordance with Section 712.3.

1107.2 Methods of Testing Storm Drainage Systems.

Except for outside leaders and perforated or open-jointed drain tile, the piping of storm drain systems shall be tested upon completion of the rough piping installation by water or air, except that plastic pipe shall not be tested with air, and proved tight. The Authority Having Jurisdiction shall be per-

mitted to require the removal of cleanout plugs to ascertain whether the pressure has reached parts of the system. One of the following test methods shall be used in accordance with Section 1107.2.1 through Section 1107.2.3.

1107.2.1 Water Test. After piping has been installed, the water test shall be applied to the drainage system, either to the entire system or sections. Where the test is applied to the entire system, all openings in the piping shall be tightly closed except for the highest opening, and the system shall be filled with water to the point of overflow. Where the system is tested in sections, each opening shall be tightly plugged except for the highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10 foot (3048 mm) head of water. In testing successive sections, not less than the upper 10 feet (3048 mm) of the next preceding section shall be tested so that no joint of pipe in the building except the uppermost 10 feet (3048 mm) of a roof drainage system, which shall be filled with water to the flood level of the uppermost roof drain, shall have been submitted to a test of less than 10 foot (3048 mm) head of water. The water shall be kept in the system or the portion of the test for not less than 15 minutes before inspection starts; the system shall then be tight.

1107.2.2 Air Test. The air test shall be made by attaching an air compressor testing apparatus to a suitable opening after closing other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 5 pounds-force per square inch (psi) (34 kPa) or sufficient pressure to balance a column of mercury 10 inches (34 kPa) in height. This pressure shall be held without the introduction of additional air for not less than 15 minutes.

1107.2.3 Exceptions.

(A) Testing is not required for:

- (1) outside leaders **and Site Storm Sewer**
- (2) perforated or open drain tile; or
- (3) portions of storm drainage system and sewers that are located more than ten feet from buildings, more than ten feet from buried water lines, and more than 50 feet from water wells, and that do not pass through soil or water identified as being contaminated.

(B) Building storm sewers shall be tested in accordance with Section 712 or the Hydrostatic Test Method from the City Engineers Association of Minnesota. The Hydrostatic Test Method, provisions E2 and E3, as specified in Standard Utilities Specifications for Watermain and Service Line Installation and Sanitary Sewer and Storm Sewer Installation, written and published by the City Engineers Association of Minnesota, 2018 edition, is incorporated by reference, is not subject to frequent change, and is available in the office of the commissioner of labor and industry.

Attachment 1: Signatory Letters of Support

Attached are letters of support for the Request for Action (RFA) submitted to the MN Plumbing Board proposing amendments to MN Plumbing Code Chapter 11 for including High-Density Polyethylene (HDPE) and Polypropylene (PP) as accepted site storm sewer pipe materials. This RFA is submitted by the Plastics Pipe Institute and respective industry representatives, Advanced Drainage Systems (ADS) and Prinsco.

Signatory Statement to support Request for Action (RFA) to the Minnesota (MN) Plumbing Board and MN Plumbing Code (Minnesota Rules, Chapter 4714)

X 

Signature

X 

Signature

Pete Moreau, P.E. – Engineered Products Manager, MN

Jake Brunoehler, P.E. – Regional Engineer, MN & WI

Printed Name

Advanced Drainage Systems, Inc. (ADS)

Organization, Company, Profession Information

4640 Trueman Boulevard

Hilliard, OH 43026

Address Line 1

I hereby support the RFA by the Plastics Pipe Institute and respective industry representatives, dated April 3, 2024. I support the proposed amendments to MN Plumbing Code and related MN Rules, Chapter 4714. I would support action by the Plumbing Board and Department of Labor and Industry to amend the MN Plumbing Codes as recommended in this submitted RFA.



April 4, 2024

Re: Statement to Support Request for Action (RFA) to the Minnesota Plumbing Board and MN Plumbing Code.

We hereby support the RFA by the Plastics Pipe Institute and respective industry representatives. We support the proposed amendments to MN Plumbing Code and related MN Rules, Chapter 4714. I would support action by the Plumbing Board and Department of Labor and Industry to amend the MN Plumbing Codes as recommended in this submitted RFA.

Prinsco, Inc.

A handwritten signature in black ink that reads 'Mark A. Scholle'.

Mark A. Scholle, P.E.
Regional Engineer - Minnesota

A handwritten signature in blue ink that reads 'Mark Coleman'.

Mark Coleman, P.E.
Regional Engineer Manager



September 28, 2023

Mike Sheehan
Civil Site Group
5000 Glenwood Avenue
Robbinsdale, MN 55422

Gentlemen/Ladies:

Subject: **REQUEST FOR ADDITIONAL INFORMATION** regarding plumbing at Roseville Apartments - Site Utilities, 1415 County B Road W, Roseville, Ramsey County, Minnesota, Plan No. PB-R2307-0028

We are NOT able to grant approval at this time of the plans and specifications submitted for the above-designated project. The following comments outline the changes and/or additional information that must be submitted so that we can further evaluate the plans and specifications for compliance with the standards of this department:

1. The fire hydrant is shown connecting to the 6-inch domestic water service rather than the 6-inch fire service on the Utility Plan, Sheet No. C4.0. If the service locations are switched, it appears that the domestic water service may be installed within 10 feet of the sanitary sewer and the quality standard of the 8-inch PVC SDR 40 sanitary sewer is not specified on the drawing.

A minimum horizontal separation of 10 feet must be maintained between the water service and any sewer, whenever possible (see Section 721.1 and Table 721.1). Common trench installation must be approved by the administrative authority and comply with Sections 609.2, 720.1, and Table 701.2. When the sewer material is not approved for use 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 at least 12 inches horizontally from the sewer.

Note that PVC ASTM D3034 is not an approved pipe material for use inside the building. Examples of PVC quality standards approved for use within a building are ASTM D1785, D2665, F891, or F1488.

Please review the water services and revise Sheet No. C4.0 to include the quality standard of the sanitary sewer.

2. General Utility Note No. 8. Sheet No. C0.1, specifies the quality standard of the HDPE to be ASTM F714 and F2306. ASTM F714 is an approved quality standard, **but ASTM F2306 requires the completion of an alternate material request form.**

Polyethylene sanitary or storm sewers must meet ASTM F714 or ASTM F894 (see Section 1101.4.5 and Table 701.2). Joints must be heat fused per Section 705.5.1. Connection to a different material must use an approved application-specific transition coupling meeting ASTM C1173 or ASTM C1461 (see Section 705.10). Polyethylene sewers may not cross above water service lines (see Section 720.1).

AASHTO M252 HDPE pipes 4-inch to 10-inch or ASTM F2306 HDPE pipes 12-inch to 60-inch may be used for storm sewers only if approved by the administrative authority as alternate materials prior to installation (see Section 301.3):

- a. Pipes must be listed and labeled. Fittings are not permitted.
- b. Pipes must be installed with a minimum 10-foot separation from water piping and may not cross above or less than 12 inches below water service lines (see Section 720.1).
- c. HDPE pipes must not be installed within 10 feet of a building.
- d. HDPE connection to a different material must use an approved listed application-specific transition coupling meeting ASTM C1173 or ASTM C1461 (see Section 705.10).
- e. Water-tight resilient joints must be used at all connections, including structures.
- f. Installation must be open-trench per Section 314.4.1 and manufacturer's installation instructions. Otherwise, the storm sewer pipe material must meet Table 701.2.

Please sign, and submit the alternate material application found here:

<http://www.dli.mn.gov/sites/default/files/pdf/alt-request.pdf>

Additional information alternate material requests can be found at:

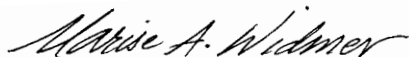
https://www.dli.mn.gov/sites/default/files/pdf/pe_alternate.pdf

Verify that documentation from the building official for the city of Roseville approving the alternate pipe material is included as required in Box 8 of the alternate request form.

Upload the completed application into the Document Folder of ePlans.

Please submit the requested information promptly so we may complete our plan review. No plumbing installation related to the above-referenced plans shall begin until approval is provided by our office. When submitting additional information, please refer to Plan No. PB-R2307-0028.

Sincerely,



Marise A. Widmer
Public Health Engineer
Plumbing Plan Review and Inspections Unit
651/284-5887, Marise.Widmer@state.mn.us
www.dli.mn.gov/business/get-licenses-and-permits/plumbing-plan-review

cc: David Englund, Building Official
Vishal Dutt
File

REQUEST FOR ALTERNATE REVIEW OF MATERIALS OR METHODS UNDER M.R. CHAPTER 4714

Choose only one:

- Section 301.2 Alternative Materials and Methods
- Section 301.4 Alternative Engineered Design (Subject to additional data request)

Instructions: Complete all sections. Include standards, scaled drawings, product listings, engineering calculations, or any manufacturers information to support your request. Reviews can take 2 to 4 weeks to process after receiving complete submittal. Approval is not guaranteed.

PROJECT INFORMATION			
1.PROJECT NAME Roseville Apartments		DATE 10/4/2023	
PHYSICAL ADDRESS (number and street name) 1415 County Road B West		DLI PROJECT # PB-R2307-0028	
PROJECT CITY or PROJECT TOWNSHIP (Enter only the city or the township, not both) Roseville		COUNTY Ramsey	
2.APPLICANT NAME Mike Sheehan		COMPANY Civil Site Group	
MAILING ADDRESS 5000 Glenwood Avenue		PHONE (612) 812-0049	
CITY Golden Valley	STATE MN	ZIP CODE 55422	E-MAIL msheehan@civilsitegroup.com
3.PROJECT OWNER NAME Vishal Dutt		COMPANY Apartments Roseville, LLC	
MAILING ADDRESS 900 American Blvd. East, Suite 300		PHONE (651) 206-4087	
CITY Bloomington	STATE MN	ZIP CODE 55420	E-MAIL
4.STATE THE CODE CITATION YOU ARE SEEKING AN ALTERNATE TO 4714.1101.4.5			
5.INCLUDE EXPLANATION OF ISSUES, REASONS, AND DESCRIPTION OF IMPACTS ASSOCIATED WITH THE ALTERNATE REQUEST The purpose of the alternate request is to specify a more common, available and industry-accepted product for storm sewer. The positive impact is to provide more consistency and assurance to the owner and their contractor-partner for product availability of qualified larger diameter storm sewer materials used outside the building. This minimizes cost and scheduling impacts to project completion.			
6.EXPLAIN PROPOSED ALTERNATE AND EQUIVALENT ALTERNATIVE MEASURES (HEALTH, STRENGTH, SAFETY, QUALITY, DURABILITY, ETC.) FOR THE PROPOSED ALTERNATE TO MAINTAIN SAME LEVEL OF COMPLIANCE Proposed alternate is a corrugated high-density polyethylene pipe manufactured in accordance with ASTM F2306 and AASHTO M294. Measures to provide equivalence includes installation requirements in accordance with ASTM D2321, joint requirements in accordance with ASTM D3212, as well as installation requirements per the latest revision of CEAM Standard Specifications. Products are third party tested per AASHTO NTPEP thermoplastic pipe program to assure conformance. All change in directions will be performed at structures. Testing will be performed as required per 4714.1109.			
7.SUBMIT REQUIRED RELEVANT DOCUMENTS/STANDARDS TO SUPPORT ALTERNATE REQUEST			
<ul style="list-style-type: none"> a) Attach applicable nationally recognized Standard (ASSE, ASTM, etc.) for material and/or installation b) Attach available 3rd party testing or listing documents of products c) Attach manufacturer’s recommendation of materials and/or installation instructions 			

8.LOCAL ADMINISTRATIVE AUTHORITY APPROVAL

- a) Attach email/letter of approval from the local administrative authority having jurisdiction on this project for the specific code alternate

9.SUPPLEMENTAL INFORMATION

- a) Attach any additional documentation, reports, plans and/or illustrations to support your request.
- b) Attach engineering analysis when necessary and helpful for review.

10.ACKNOWLEDGEMENT

- a) I understand the proposed alternate is not code a code approved material or method and I am requesting its use for this project only and not for any future project(s).
- b) I declare that the information provided in this application is accurate to the bet of my knowledge.

MIKE SHEEHAN

SIGNATURE OF APPLICANT or PRINTED NAME if submitting online

10/9/2023

DATE

VISHAL DUTT

SIGNATURE OF OWNER or PRINTED NAME if submitting online

10/9/2023

DATE

3/5//2020

This material can be made available in different forms. To request, call 1-800-342-5354.

Mike Sheehan

From: David Englund <David.Englund@cityofroseville.com>
Sent: Tuesday, October 3, 2023 1:15 PM
To: Widmer, Marise (DLI); Mike Sheehan
Cc: Matt Pavek; Amy Bahe
Subject: RE: Roseville Apartments - Site Utilities, Plumbing Plan Review No. PB-R2307-0028

Mike,
The City of Roseville allows for the use of HDPE for this type of installation.

Thank you,
Dave

Dave Englund
Building Official
Community Development Department
Phone: 651-792-7087
david.englund@cityofroseville.com
<http://www.cityofroseville.com>

2660 Civic Center Drive | Roseville, MN 55113
[Facebook](#) | [Twitter](#) | [YouTube](#)

From: Widmer, Marise (DLI) <marise.widmer@state.mn.us>
Sent: Monday, October 2, 2023 9:53 AM
To: Mike Sheehan <msheehan@civilsitegroup.com>
Cc: David Englund <David.Englund@cityofroseville.com>; Matt Pavek <Mpavek@civilsitegroup.com>
Subject: RE: Roseville Apartments - Site Utilities, Plumbing Plan Review No. PB-R2307-0028

Caution: This email originated outside our organization; please use caution.

Hi Mike,

In response to your email, see my comments in italics below:

1.

If we move both water lines over 10' from the sanitary line, will that satisfy point #1?

If you move the domestic water service to provide 10 feet isolation from the sanitary sewer, then PVC sanitary sewer pipe can be an approved quality standard other than Schedule 40. PVC sanitary and/or storm sewers must meet ASTM D1785, D2665, D2729, D3034, F794, F891, F1488, or F1760 with approved fittings (see Table 701.2). Only ASTM D1785, D2665, F891, F1488, or F1760 PVC may cross above or less than 12 inches below potable water lines (see Section 720.1).

We will also be updating the sanitary to SDR 40 (as SCH 40 was a typo). Would we need to include "SDR 40 meeting ASTM quality standard D1785, D2665, F891, or F1488?"

Scope

This specification designates the requirements for 4- through 60-inch (100 to 1500 mm) I.D. Prinsco GOLDFLO WT® pipe for use in gravity-flow drainage applications.

Pipe Requirements

Prinsco GOLDFLO WT pipe shall have annular exterior corrugations with a smooth interior allowing for a Manning’s “n” design value of 0.012 and shall meet the following standards:

- 4- though 10-inch (100 to 250 mm) shall meet AASHTO M252, Type S
- 12- through 60-inch (300 to 1500 mm) shall meet ASTM F2306 or AASHTO M294, Type S

Materials

GOLDFLO WT pipe and fabricated fittings shall be manufactured using High Density Polyethylene (HDPE) meeting the minimum requirements of cell classification of 424420C for 4- through 10-inch (100 to 250 mm) diameters and 435400C for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in ASTM D3350 except the carbon black content shall be 2 – 4%.

The HDPE pipe material for 12- through 60-inch (300 to 1500 mm) diameters shall be tested for slow crack growth resistance using the notched constant ligament-stress (NCLS) test as specified in sections 9.4 and 5.1 of AASHTO M294 and ASTM F2306, respectively. Average failure time of the five test specimens shall not be less than 24 hours.

Joint Performance

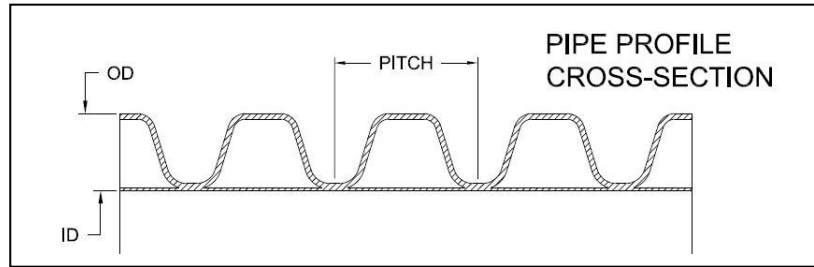
GOLDFLO WT pipe shall be joined using watertight bell and spigot type joints meeting AASHTO M252, M294, or ASTM F2306. The integral joints using watertight gaskets shall be watertight according to ASTM D3212. Gaskets shall meet the requirements of ASTM F477 and shall be installed by the manufacturer. An approved joint lubricant, available from the manufacturer, shall be applied to the bell and gasket during installation. GOLDFLO WT joints shall be assembled in accordance with the manufacturer’s requirements to ensure installed watertight performance.

Fittings

Fittings shall meet the requirements of AASHTO M252, M294, or ASTM F2306. Standard fittings are available as listed on Prinsco’s website www.prinsco.com and custom fittings may be fabricated to customer specific requirements.

Physical Pipe Dimensions

Nominal ID in (mm)	Approximate OD in (mm)	Length ft (m)	Corrugation Pitch in (mm)	Approximate Weight lb / foot (kg / m)	Min. Pipe Stiffness @ 5% Deflection Psi (kpa)
4 (100)	4.8 (120)	20 (6.1)	0.67 (16.75)	0.5 (0.7)	50 (344.7)
6 (150)	7.1 (177.5)	20 (6.1)	0.80 (20)	0.9 (1.3)	50 (344.7)
8 (200)	9.5 (237.5)	20 (6.1)	1.00 (25)	1.7 (2.5)	50 (344.7)
10 (250)	11.9 (297.5)	20 (6.1)	1.30 (32.5)	2.6 (3.9)	50 (344.7)
12 (300)	14.5 (362.5)	10, 20 (3.1, 6.1)	2.00 (50)	3.3 (4.9)	50 (344.7)
15 (375)	17.7 (442.5)	10, 20 (3.1, 6.1)	2.67 (66.75)	4.6 (6.8)	42 (289.6)
18 (450)	21.5 (537.5)	11, 20 (3.4, 6.1)	3.00 (75)	6.3 (9.4)	40 (275.8)
24 (600)	28.2 (705)	11, 20 (3.4, 6.1)	4.00 (100)	10 (14.9)	34 (234.4)
30 (750)	34.7 (867.5)	20 (6.1)	4.00 (100)	15 (22.3)	29 (199.9)
36 (900)	40.6 (1015)	20 (6.1)	4.70 (117.5)	19 (28.3)	22.5 (155.1)
42 (1050)	47.5 (1187.5)	20 (6.1)	5.90 (147.5)	25 (37.2)	21 (144.8)
48 (1200)	54.1 (1352.5)	20 (6.1)	5.90 (147.5)	29 (43.2)	20 (137.9)
60 (1500)	66.8 (1670)	20 (6.1)	5.90 (147.5)	41 (61.0)	15 (103.4)



Installation

Pipe and fittings shall be installed in accordance with ASTM D2321 and Prinsco's published installation guidelines. Minimum cover heights for AASHTO H-25 loads shall be 12" (300 mm) for 4- through 48-inch (100 to 1200 mm) diameter pipe and 18" (450 mm) for 60-inch (1500 mm) pipe. The minimum cover shall be measured from the top of the pipe to the bottom of flexible pavement or to the top of rigid pavement. Contact your local Prinsco representative or visit www.prinsco.com for the latest installation guidelines.

Reference Specifications

This specification references the latest edition and revisions of the following standard specifications:

- AASHTO M252 – *Standard Specification for Corrugated Polyethylene Drainage Pipe*
- AASHTO M294 – *Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter*
- ASTM F2306 – *Standard Specification for 12 to 60-in. (300 to 1500 mm) Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications*
- ASTM D3350 – *Standard Specification for Polyethylene Plastics Pipe and Fittings Materials*
- ASTM D477 – *Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe*
- ASTM D3212 – *Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals*
- ASTM D2321 – *Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications*

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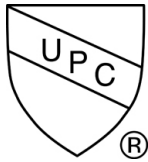
Figure 16: Typical Mandrel 20

IAPMO RESEARCH AND TESTING, INC.

5001 E. Philadelphia Street, Ontario, CA 91761 • Phone (909) 472-4100 • Fax (909) 472-4244 • www.iapmort.org



CERTIFICATE OF LISTING



IAPMO Research and Testing, Inc. is a product certification body in which its product certification system includes inspection and testing of samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and/or warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Issued To:

PRINSCO INC.

1717 16TH ST. NE WILLMAR, MN 56201 , United States

Product:

12 to 60 in Corrugated PE Drainage Pipe

Products are in compliance with the following code(s):

Uniform Plumbing Code (UPC®)

Products are certified to the following standard(s)

ASTM F2306-2021

File Number: 14435

Effective Date: August 2023

Void After: August 2028*


Chairman, Product Certification Committee



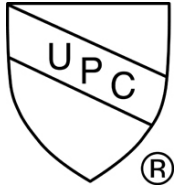

Chief Technical Service Officer

*This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

This listing period is based upon the last date of the month indicated on the Effective Date and Void After Date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Production of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing. This document shall be reproduced in its entirety.

IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING



Issued To: PRINSCO INC.

Effective Date: August 2023

File Number: 14435

Product: 12 to 60 in Corrugated PE Drainage Pipe

Void After: August 2028

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Identification:

Each length of pipe in compliance with this specification shall be clearly marked with the following information: this designation ASTM F2306; the nominal size; the legend PE, the manufacturer's name, trade name or trademark, plant location, and date of manufacturer. The marking shall be applied at the time of manufacture to the pipe in such a manner that it remains legible after installation and inspection. It shall be placed, at least, at each end of each length of pipe or spaced at intervals of not more than 10 ft [3.0 m]. The product shall also bear the UPC® certification mark.

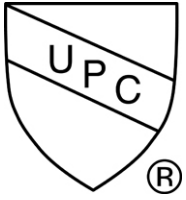
Characteristics:

The pipe and fittings shall be made of virgin PE plastic compound meeting the requirements of cell classification 435400C or 435400E as defined in Specification D3350, except that carbon black content shall not exceed 4%. Compounds that have a higher cell classification in one or more properties shall be permitted provided the density of the base resin shall not exceed 0.955 g/cm³ and all other product requirements are met. For slow crack-growth resistance, resins shall be evaluated using the notched constant ligament stress (NCLS) test according to the procedure described in 7.8. The average failure time of the five test specimens shall exceed 24 h with no single test specimen's failure time less than 17 h.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING



Issued To: PRINSCO INC.

Effective Date: August 2023

File Number: 14435

Product: 12 to 60 in Corrugated PE Drainage Pipe

Void After: August 2028

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Models

Model Number	Description	Dimension
GOLDFLOW WT	Corrugated HDPE Dual Wall Pipe	12"-60"



**For an updated manufacturer compliance status throughout the audit cycle, SCAN the code above with your Android, iOS, or Windows device.

Compliance Authentication NTPEP



NATIONAL TRANSPORTATION
PRODUCT EVALUATION PROGRAM

This authenticates:

Prinsco Inc. - Prinsburg, MN

**successfully complies with AASHTO's NTPEP Committee
Thermoplastic Pipe (THP) Work Plan.**

Katheryn L. Malusky
Program Director,
NTPEP

November 2022

Date Administered

December 31, 2023

Date of Expiration



To obtain information concerning AASHTO NTPEP's auditing program, please visit ntpep.transportation.org

REQUEST FOR ALTERNATE REVIEW OF MATERIALS OR METHODS UNDER M.R. CHAPTER 4714

Choose only one:

Section 301.2 Alternative Materials and Methods

Section 301.4 Alternative Engineered Design (Subject to additional data request)

Instructions: Complete all sections. Include standards, scaled drawings, product listings, engineering calculations, or any manufacturers information to support your request. Reviews can take 2 to 4 weeks to process after receiving complete submittal. Approval is not guaranteed.

PROJECT INFORMATION			
1.PROJECT NAME			DATE
PHYSICAL ADDRESS (number and street name)			DLI PROJECT #
PROJECT CITY or PROJECT TOWNSHIP (Enter only the city or the township, not both)			COUNTY
2.APPLICANT NAME			COMPANY
MAILING ADDRESS			PHONE
CITY	STATE	ZIP CODE	E-MAIL
3.PROJECT OWNER NAME			COMPANY
MAILING ADDRESS			PHONE
CITY	STATE	ZIP CODE	E-MAIL
4.STATE THE CODE CITATION YOU ARE SEEKING AN ALTERNATE TO			
5.INCLUDE EXPLANATION OF ISSUES, REASONS, AND DESCRIPTION OF IMPACTS ASSOCIATED WITH THE ALTERNATE REQUEST			
6.EXPLAIN PROPOSED ALTERNATE AND EQUIVALENT ALTERNATIVE MEASURES (HEALTH, STRENGTH, SAFETY, QUALITY, DURABILITY, ETC.) FOR THE PROPOSED ALTERNATE TO MAINTAIN SAME LEVEL OF COMPLIANCE			
7.SUBMIT REQUIRED RELEVANT DOCUMENTS/STANDARDS TO SUPPORT ALTERNATE REQUEST			
<ul style="list-style-type: none"> a) Attach applicable nationally recognized Standard (ASSE, ASTM, etc.) for material and/or installation b) Attach available 3rd party testing or listing documents of products c) Attach manufacturer’s recommendation of materials and/or installation instructions 			

8.LOCAL ADMINISTRATIVE AUTHORITY APPROVAL

- a) Attach email/letter of approval from the local administrative authority having jurisdiction on this project for the specific code alternate

9.SUPPLEMENTAL INFORMATION

- a) Attach any additional documentation, reports, plans and/or illustrations to support your request.
- b) Attach engineering analysis when necessary and helpful for review.

10.ACKNOWLEDGEMENT

- a) I understand the proposed alternate is not code a code approved material or method and I am requesting its use for this project only and not for any future project(s).
- b) I declare that the information provided in this application is accurate to the bet of my knowledge.

SIGNATURE OF APPLICANT or PRINTED NAME if submitting online

DATE

SIGNATURE OF OWNER or PRINTED NAME if submitting online

DATE

3/5//2020

This material can be made available in different forms. To request, call 1-800-342-5354.

ADS HP STORM 12-60", DUAL-GASKETED PIPE (ASTM F2881) FOR STORM SEWER ALTERNATES PER MN RULES CH 4714 SEC. 301.2

Scope

This specification describes 12- through 60-inch (300 to 1500 mm) ADS HP Storm pipe for use in gravity-flow storm sewer drainage applications.

Pipe Requirements

ADS 12"-60" (300 to 750mm) HP Storm shall have a smooth interior and annular exterior corrugations meeting the requirements of ASTM F2881. Manning's "n" value for use in design shall be 0.012.

Joint Performance

Pipe shall be joined using a bell and spigot joint meeting the requirements of ASTM F2881. The joint shall be watertight according to the requirements of ASTM D3212, with the addition of a 15psi pressure requirement. The spigot shall utilize two gaskets meeting the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

Field Joint Testing

To assure water tightness, field performance verification may be accomplished where required by Minnesota Rules Chapter 4714.1109. Testing may be performed in accordance with Section 712 or the Hydrostatic Test Method from the City Engineers Association of Minnesota. Testing is not required for outside leaders, perforate or open drain tile, or portions of the system that are located more than ten feet from buildings, more than ten feet from buried water lines, and more than 50 feet from water wells, and that do not pass through soil or water identified as being contaminated.

Fittings

Standard use of this material as an alternate shall not allow for change in direction, except at storm drain inlets, catch basins and structures. If fittings are required and approved for use, dimensions and configurations shall conform to the requirements of Minnesota Rules Chapter 4714. Approved fittings shall meet the watertight joint performance requirements of ASTM D3212.

Material Properties

Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881.

Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines. Backfill for minimum cover situations shall consist of Class 1 (compacted), Class 2 (minimum 90% SPD), or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation and technical guidelines.

Pipe Dimensions

Nominal Diameter in (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Average Pipe I.D. in (mm)	12.2 (310)	15.1 (384)	18.2 (462)	24.1 (612)	30.2 (767)	36.0 (914)	42.0 (1067)	47.9 (1217)	59.9 (1521)
Average Pipe O.D. in (mm)	14.5 (368)	17.7 (450)	21.4 (544)	28.0 (711)	35.5 (902)	41.5 (1054)	47.4 (1204)	54.1 (1374)	67.1 (1704)
Minimum Pipe Stiffness at 5% Deflection* #/in/in (kN/m ²)	75 (517)	60 (414)	56 (386)	50 (345)	46 (317)	40 (276)	35 (241)	35 (241)	30 (207)

* Minimum pipe stiffness values listed; contact a representative for maximum values.

HP Storm Pipe



///ADS™

HP Storm Pipe 12”–60” for Storm Applications

Overview

HP Storm is a high-performance polypropylene (PP) pipe for gravity-flow storm drainage applications. HP Storm is the perfect choice when premium joint performance and/or greater pipe stiffness is required. HP Storm couples advanced polypropylene resin technology with a proven, dual-wall profile design for superior performance and durability.

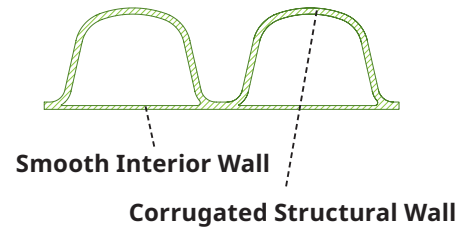
Specify HP Storm with confidence based on national standards and approvals. This innovative product meets or exceeds ASTM F2881 and AASHTO M330. From a federal perspective, polypropylene pipe is approved for use by the Army Corps of Engineers for storm drainage applications under Section 33 40 00 (Unified Facilities Guide Specifications). The Federal Aviation Authority (FAA) permits polypropylene pipe under airfield pavements per Item D-701, Pipe for Storm Drains and Culverts in AC 150/5370-10G (Standards for Specifying Construction of Airports). Additionally, the American Railway Engineering and Maintenance-of-Way Association (AREMA) approves polypropylene pipe in storm drainage applications under railroads.

Advanced Dual Wall Profile Construction

HP Storm pipe utilizes a dual wall construction, providing increased pipe stiffness. The additional stiffness and beam strength enhances jobsite performance in stringent line and grade requirements. The pipe profile is completed with a smooth interior which provides additional strength and excellent flow characteristics.

Superior Polypropylene Material

Made from an engineered impact modified co-polymer compound, the superior strength and material properties of polypropylene offer robust pipe stiffness, excellent handling characteristics, and long service life when compared to traditional storm sewer products. It is highly resistant to chemical attack and is unaffected by soils or effluents with PH ranges 1.5 to 14. The unique light grey resin color provides immediate jobsite recognition as well as improving the pipe's interior visibility during post-installation inspection.



Smooth Interior Wall



Polypropylene Resin

Superior Joint Performance

HP Storm pipe has an extended bell that adds an additional factor of safety within each joint. The joint performance meets or exceeds the 10.8 psi laboratory performance standards per ASTM D3212 requirements. Third party certification of joint performance is available upon request.

In the field, each section of HP Storm may be tested by a low pressure air test, according to ASTM F1417, which is a commonly used standard and specifies that 3.5 psi air pressure be held for a specified length of time based upon pipe diameter and length of run.

Where an infiltration/exfiltration test is preferred, ASTM F2487 specifies a simplistic method of verifying proper joint performance.

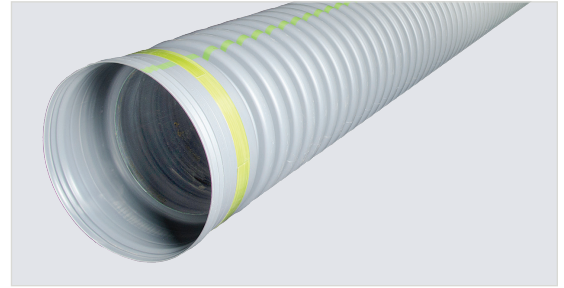
Fittings

Both standard and custom fittings are available for the HP Storm product line. A complete line of standard Nyloplast PVC molded fittings are available in the 12"–30" (300-750 mm) mainline sizes.

Standard branch laterals are designed to accept SDR-35 or SDR-26 pipe.

Diameter Range

HP Storm is currently manufactured in the 12"–60" (300-1500mm) size range and in 20-foot (6m) lengths. The 20-foot (6m) lengths aid in speed of installation and reduce the total number of joints.



Extended Bell



Fabricated Wye Fitting

Nominal Diameter in (mm)	Profile Type	Length ft (m)	Inside Diameter in (mm)	Outside Diameter in (mm)	Truckload Footage ft (m)
12 (300)	Dual Wall	20 (6)	12.2 (310)	14.5 (368)	2,400 (731.5)
15 (375)	Dual Wall	20 (6)	15.1 (384)	17.7 (450)	1,600 (487.7)
18 (450)	Dual Wall	20 (6)	18.2 (462)	21.4 (544)	1,120 (341.4)
24 (600)	Dual Wall	20 (6)	24.1 (612)	28.0 (711)	600 (182.9)
30 (750)	Dual Wall	20 (6)	30.2 (767)	35.5 (902)	360 (109.7)
36 (900)	Dual Wall	20 (6)	36.0 (914)	41.5 (1054)	240 (73.2)
42 (1050)	Dual Wall	20 (6)	42.0 (1067)	47.4 (1204)	160 (48.8)
48 (1200)	Dual Wall	20 (6)	47.9 (1217)	54.1 (1374)	120 (36.6)
60 (1500)	Dual Wall	20 (6)	59.9 (1521)	67.1 (1704)	80 (24.4)



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Thermoplastic Pipe (THP)

Work Plan

October 2023

Date of Administration

December 31, 2024

Date of Expiration


Jim Tymon
AASHTO Executive Director

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successfully complies with the AASHTO Product Evaluation & Audit Solutions

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