

- I. Tom Bowman
NuFlow Technologies
1270 W. Mission Ave.
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APPEAL NO. 01-27
UPC ITEM #156

- II. Item #156, Comment#2 of the 2025 Plumbing Technical Committee Meeting

- III. I am writing to respectfully request that the committee reconsider its decision to reject Item #156, Comment #2.

The rationale provided for the rejection was that ASTM Standards F1743 and F1216 are intended for sewer installations, not for use within building sanitary waste and vent systems. However, both ASTM F1743 and F1216 explicitly state that they apply to piping systems ranging in size from 2 inches to 96 inches in diameter. It is highly uncommon to see building sewers as small as 2 or even 3 inches in diameter connecting to a municipal main. Therefore, the scope of these standards appears broader than originally interpreted.

It is important to note that the ASTM standards in question do not clearly distinguish between the terms “building sewer” and “sanitary waste.” This lack of differentiation should not, in itself, disqualify their applicability to systems within building envelopes.

Another reason cited for the rejection was that these standards should not apply to piping within the building envelope. With over 18 years of experience in plumbing installation, I can confidently say that I have never observed a material transition occurring precisely at the building envelope boundary. This argument lacks technical merit and should not have been used to dismiss the extensive work completed by the Cured-in-Place Piping (CIPP) Task Group. This team invested significant time and effort in developing these proposed additions to Chapter 7 of the Uniform Plumbing Code through a thoughtful, consensus-driven process.

We urge the committee to reconsider this rejection to address the unregulated installation of CIPP systems within buildings across the United States. In UPC states, we estimate that more than 80 miles annually of cured-in-place piping (with diameters ranging from only 2”-6”) is being installed inside building envelopes, using the alternate materials and methods provision under Section 301.3. Clear, codified guidance is essential for Authorities Having Jurisdiction to ensure proper permitting, safe installation, and inspection practices are taking place.

Without clear guidance, contractors and inspectors may overlook the importance of using properly approved materials, specifically resin and fabric systems that have been tested and certified by third-party agencies to meet UPC standards. This can result in the mixing of incompatible components and the use of materials from non-system-approved manufacturers or distributors, installed without proper oversight. Using non-certified products, especially when managing different types of effluent such as wastewater or chemical discharge, poses significant risks to consumers.

Ensuring that only approved, system-tested materials are installed is essential for long-term performance, public safety, and compliance with health and environmental regulations.

We believe that incorporating this language into the code is essential to promote consistency, ensure safety, and support the responsible advancement of plumbing technology in service of public health. The UPC needs this update.

Thank you for your time and consideration of this important matter.

- IV. I am writing to ask that the committee reconsiders and approves Item#156, Comment#2 so we can get these important additions into the 2027 Uniform Plumbing Code.

Sincerely,

A handwritten signature in black ink that reads 'Tom Bowman'.

Tom Bowman

President

NuFlow Technologies

tbowman@nuflow.com

619-454-5299

Item #:

156

Code Number:

2024 UPC

Section Number:

715.3.1, Table 1701.1

SUBMITTER:

Sidney Cavanaugh

Organization Name:

Cavanaugh Consulting

Organization Representation:

Cavanaugh Consulting

RECOMMENDATION:

Revise text

APPEAL NO. 01-27 UPC

ITEM #156

Proposed Text :

715.0 Building Sewer Materials.

715.3 Existing Sewers. (remaining text unchanged)

715.3.1 Sewer Pipe Lining. For trenchless installations of resin-impregnated flexible tubing to line existing building sewers and building storm sewers installation shall be in accordance with ASTM F1216, ASTM F2561, ASTM F2599, or ASTM F3541 used in combination with gaskets/o-rings complying with ASTM F3240.

TABLE 1701.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
<u>ASTM F3541-2022</u>	<u>Wastewater Standard Practice for Sectional Repair of Existing Gravity Flow, Non-Pressure Pipelines and Conduits by Pushed or Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)</u>	<u>Piping</u>	<u>715.3.1</u>

(portions of table not shown remain unchanged)

Note: ASTM F3541 meets the requirements for a mandatory referenced standard in accordance with Section 3-3.7.1 of IAPMO's Regulations Governing Committee Projects.

SUBSTANTIATION:

ASTM F3541 is used for sectional repair and rehabilitation using CIPP (cured-in-place-pipe). ASTM F3240 is referenced in ASTM F2561 and ASTM F2599 as it provides a superior sealing mechanism and should be used in all applications of CIPP to avoid water infiltration and exfiltration and to ensure water tightness at the ends of the lining material.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

31

AFFIRMATIVE:

19

NEGATIVE:

8

ABSTAIN:

2

NOT RETURNED:

2

EXPLANATION OF NEGATIVE:

BALLANCO: This change should have been rejected and referred to the Task Group. This change appears to be adding proprietary requirements to the code.

FENTY: This should be rejected until further review by the Task Group. These products have inherent issues that need to be addressed with more comprehensive technical study.

GORSUCH: I agree with others, this issue should be addressed by the task group as a part of a comprehensive technical review and recommendations.

RODIO: This should be rejected until the Ad-Hoc committee has done its work. These products have issues that need to be addressed in a more comprehensive technical way.

SENECAUT: This issue should be addressed by the task group as part of a comprehensive technical review and recommendations.

SMITH: The proponent states this is a "superior method and should be used" but provides no technical justification for that statement. This should have been rejected. This should have been rejected and referred to the Task Group. This change appears to be adding proprietary requirements to the code.

THOMPSON: The proposal should have been rejected, ASTM F3541 covers a proprietary method of installing CIPP.

WHITE: The proponent states this is a "superior method and should be used" but provides no technical justification for that statement. This should have been rejected.

EXPLANATION OF ABSTAIN:

LANDO: This should be addressed by a TC.

SOSKIN: I was unable to hear the arguments on both sides but if the task group has not completed its work, then it should be allowed to complete it.

VOTES NOT RETURNED:

Campbell, Young

Comment 1**Item #:**

156

Code Number:

2024 UPC

Sections(s):

708.2, 715.3 - 715.4.3, Table 1701.1,
Table 1701.2

Submitter Name:

Matt Stockwell

Organization Name:

City of Des Moines

Organization Representation:

Chair, UPC Cured in Place (CIPP)
Task Group

Recommendation:

Accept the Proposal as Modified

Proposed Text:

Request to accept the code change proposal **as modified** by this public comment.

715.0 Building Sewer Materials.

715.3 Existing Sewers. Where permitted by the Authority Having Jurisdiction, trenchless methods of rehabilitation of existing building sewer and building storm sewers shall be permitted to be rehabilitated installed in accordance with Section 715.3.1 ~~or Section 715.3.2.~~ Pipe bursting method shall be in accordance with Section 715.4.

715.3.1 Sewer Pipe Lining. ~~For trenchless installation of resin impregnated flexible tubing to line existing building sewers and building storm sewers installation shall be in accordance with ASTM F1216, ASTM F2561, ASTM F2599, ASTM F3541 and ASTM F3240. Inspection shall include a pre-installation video camera survey, a test in accordance with Section 712.0, and a post installation recorded video camera survey.~~ Existing building sewer or storm sewer pipe shall be permitted to be rehabilitated by a cured-in-place pipe method. The cured-in-place pipe shall be in accordance with Section 715.3.1.1 through Section 715.3.4. The rehabilitation process shall be inspected by an individual certified to ASSE/IAPMO/ANSI 28020 when required by the Authority Having Jurisdiction.

715.3.1.1 Process Acceptance. The manufacturer's material and process shall comply with Section 301.2 based on the applicable standards specified in Section 715.3.1.1.1 through Section 715.3.1.1.4.

715.3.1.1.1 Pushed or Pulled in Place Method. Pushed or pulled in place installation of cured-in-place thermosetting resin pipe shall comply with ASTM F1743 or ASTM F3541.

715.3.1.1.2 Inversion Method. Inversion installation of cured-in-place thermosetting resin pipe shall comply with ASTM F1216 or ASTM F2599.

715.3.1.1.3 Connection between the Building Sewer and Public Sewer. Cured-in-place method to repair and seal the connection between the building sewer and the public sewer shall comply with ASTM F2561.

715.3.1.1.4 Seamless Molded Hydrophilic Gasket Installation in Cured-in-Place Pipe. Installation of seamless molded hydrophilic gaskets in a cured-in-place liner shall comply with the requirements of ASTM F3240.

715.3.2 Preinstallation and Permit Requirements. The interior of the pipe shall be recorded with a video camera. The video recording shall be made available to the Authority Having Jurisdiction to determine if the piping is qualified to be rehabilitated in accordance with the proposed lining system manufacturer's installation requirements and the applicable referenced standards. Permits shall be in accordance with Section 104.1. Prior to rehabilitation of the drainage piping, the interior wall of the pipe shall be cleaned in accordance with the manufacturer's installation instructions. Cured-in-place pipe shall not be used for restoring non-compliant grade. Existing flow obstructions shall be cleaned prior to installation. Grade deviations from piping misalignments shall be repaired or replaced prior to installation of the cured-in-place pipe.

715.3.3 Installation and Testing. The Authority Having Jurisdiction shall require evidence of competency of the cured-in-place pipe installers. The cured-in-place pipe shall be in accordance with the manufacturer's installation instructions and applicable referenced standards. The branch connections shall comply with Section 315.2. The pipeline rehabilitated with cured-in-place pipe shall be watertight and tested in accordance with Section 723.0.

715.3.4 Final Inspection. The final inspection of the rehabilitated piping system shall be a recording with a video camera. The video recording shall be submitted to the Authority Having Jurisdiction for final approval.

715.4 ~~715.3.2~~ Sewer Pipe Replacement. For trenchless installation of polyethylene (PE) pipe using the pipe bursting method to replace existing building sewers and building storm sewers materials shall be in accordance with ASTM F714.

708.0 Grade of Horizontal Drainage Piping.

708.2 Pipe Replacement. When pipe replacement is required, cured in-place pipe (CIPP) shall not be used for restoring non-compliant grade. Existing flow obstructions, such as grease, scale, tuberculation, debris, sediment,

etc., shall be cleaned prior to CIPP lining to ensure compliance with the grade requirements of Section 708.1 and with the sizing requirements of Section 703.0. Any obstructive grade deviations from piping misalignments shall be reviewed after pipe cleaning, and repaired or replaced as required by the Authority Having Jurisdiction prior to installing the CIPP.

715.4 Inspection for CIPP Relining. Inspections of CIPP relining shall comply with Section 715.4.1 through Section 715.4.3.

715.4.1 Preinstallation Requirements. Prior to commencement of the relining installation, the existing piping sections to be relined shall be descaled and cleaned. After the cleaning process has occurred and water has been flushed through the piping, the piping shall be inspected internally by a recorded video camera survey. The video camera survey shall include verification of the project address, notations of cleanout and fitting locations, and approximate depth of the existing piping. No permit shall be issued until the Authority Having Jurisdiction has evaluated the preinstallation video camera survey to determine if the piping is able to be relined in accordance with the proposed lining system manufacturer's installation requirements and the applicable referenced standards.

715.4.2 Installation and Testing. The installation of the relining material shall be installed in accordance with the manufacturer's installation instructions, applicable referenced standards, this code and tested in accordance with Section 712.0.

715.4.3 Post-Installation Requirements. The completed, relined piping shall be inspected internally by a recorded video camera survey. The video shall be submitted to the Authority Having Jurisdiction prior to finalization of the permit. A certification shall be provided in writing to the Authority Having Jurisdiction, from the permit holder, that the relining materials have been installed in accordance with the manufacturers installation instructions, the applicable standards and this code.

TABLE 1701.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE/IAPMO/ANSI 28020-2025	Professional Qualifications Standard for Inspectors of CIPP (Cured-in-Place-Pipe) Rehabilitation of Plumbing Drainage Systems	Professional Qualifications	715.3.1
ASTM F1743-2024	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)	Piping	715.3.1.1.1

(portions of table not shown remain unchanged)

TABLE 1701.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASTM F1743-2022	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)	Piping, Plastic

(portions of table not shown remain unchanged)

Note: ASSE/IAPMO/ANSI 28020, ASTM F1216, ASTM F1743, ASTM F2561, ASTM F2599, ASTM F3240, and ASTM F3541 meet the requirements for mandatory referenced standards in accordance with Section 3-3.7.1 of IAPMO's Regulations Governing Committee Projects.

(below section are shown for informational purposes only)

315.0 Joints and Connections.

315.2 Prohibited Joints and Connections. A fitting or connection that has an enlargement, chamber, or recess with a ledge, shoulder, or reduction of pipe area that offers an obstruction to flow through the drain shall be prohibited.

723.0 Building Sewer Test.

723.1 General. Building sewers shall be tested by plugging the end of the building sewer at its points of connection to the public sewer or private sewage disposal system and completely filling the building sewer with water from the lowest to the highest point thereof, or by approved equivalent low-pressure air test. Plastic DWV piping systems shall not be tested by the air test method. The building sewer shall be watertight.

Substantiation:

The Task Group reviewed all proposal items (approved and rejected) related to cured-in-place pipe in the ROP and used the ROP Preprint text which included Sections 708.2, 715.3, and 715.4 as updated so far as the base text to work with. The ROP preprint, Section 715.3.1 (Sewer Pipe Lining) contains a "list" of standards referenced in one paragraph for trenchless installation of resin-impregnated flexible tubing to line existing building sewers and building storm sewers installation. As written, no guidance is provided to the end users regarding what each standard is for, if one should be used with another, or under what conditions a standard must be used. The Task Group took on the task of reviewing all the standard scopes and contents for applicability and application and found that the standards can be categorized to add clarity to the end users and the AHJ. Below are the standards and scopes that the task group reviewed.

ASTM F1743-2024 (Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe)

Scope. This practice describes the procedures for the reconstruction of pipelines and conduits (2 in. to 96 in. (5 cm to 244 cm) diameter) by the pulled-in-place installation of a resin- impregnated, flexible fabric tube into an existing conduit and secondarily inflated through the inversion of a calibration hose by the use of a hydrostatic head or air pressure. The resin is cured by circulating hot water, by the introduction of controlled steam into the tube, or by photoinitiated reaction. When cured, the finished cured-in-place pipe will be continuous and tight fitting. This reconstruction process is suitable for use in a variety of gravity and pressure applications such as sanitary sewers, storm sewers, building piping, process piping, electrical conduits, and ventilation systems.

ASTM F3541-2022 (Sectional Repair of Existing Gravity Flow, Non-Pressure Pipelines and Conduits by Pushed or Pulled-In-Place Installation of Cured-In-Place Thermosetting Resin pipe)

Scope. This practice describes the procedures for the sectional repair of gravity flow, non-pressure pipelines and conduits 3 in. to 60 in. (75 mm to 1500 mm) diameter by the installation of a resin-saturated liner which is placed onto or wrapped around a carrier device, pushed or pulled into an existing pipeline or conduit and expanded against the interior of the host pipe or conduit with air pressure. The resin is cured under ambient conditions, by photoinitiated reaction or with the application of heat. When cured, the finished sectional repair will be tightfitting across its installed length. This repair process is used in a variety of gravity flow, non-pressure applications such as sanitary sewers, storm sewers, drains, electrical conduits and ventilation systems.

ASTM F1216-2024 (Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube)

Scope. This practice describes the procedures for the reconstruction of pipelines and conduits (2 in. to 108 in. diameter) by the installation of a resin-impregnated, flexible tube which is inverted into the existing conduit by use of a hydrostatic head or air pressure. The resin is cured by circulating hot water, introducing controlled steam within the tube, or by photoinitiated reaction. When cured, the finished pipe will be continuous and tight-fitting. This reconstruction process is used in a variety of gravity and pressure applications such as sanitary sewers, storm sewers, process piping, electrical conduits, and ventilation systems.

ASTM F2599-2022 (Standard Practice for Sectional Repair of Damaged Pipe By Means of an Inverted Cured-In-Place Liner)

Scope. This practice covers requirements and test methods for the sectional cured-in-place lining (SCIPL) repair of a pipe line (4 in. through 60 in. (10.2 cm through 152 cm)) by the installation of a continuous resin-impregnated-textile tube into an existing host pipe by means of air or water inversion and inflation. The tube is pressed against the host pipe by air or water pressure and held in place until the thermoset resins have cured. When cured, the sectional liner shall extend over a predetermined length of the host pipe as a continuous, one piece, tight fitting, corrosion resistant, and verifiable nonleaking cured-in-place pipe.

ASTM F2561-2020 (Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One Piece Main and Lateral Cured-in Place Liner)

Scope. This practice covers requirements and test methods for the reconstruction of a sewer service lateral pipe having an inner diameter of 3 to 12 in. (7.6 to 30.5 cm) and its connection to the main pipe having an inner diameter of 6 to 24 in. (15.2 to 61.0 cm) and up the lateral a maximum of 150 ft (46 m) without excavation. The lateral pipe is accessed remotely from the main pipe and from a lateral access point. This will be accomplished by the installation of a resin impregnated one-piece main and lateral cured-in-place lining (MLCIPL) by means of air inflation and inversion. The MLCIPL is pressed against the host pipe by pressurizing a bladder and is held in place until the thermoset resins have cured. When cured, the MLCIPL shall be a continuous, one piece, tight fitting, corrosion resistant lining extending over a predetermined length of the lateral pipe and the adjacent section of the main pipe, providing a verifiable non-leaking structural connection and seal.

ASTM F3240-2019(R2023) (Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long-Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines)

Scope. This practice covers the requirements for the installation of seamless molded hydrophilic gaskets (SMHG) in cured-in-place pipe (CIPP) rehabilitation of main and lateral pipelines.

ASSE 28020 (Professional Qualifications Standard for Inspectors of CIPP (Cured-in-Place Pipe) Rehabilitation of Building Sewer and Drain, Waste and Vent Piping Systems)

Scope. This standard applies to an individual who is qualified as defined in Section 20-3.2.1 of ASSE 28020 with expanded knowledge relating to all aspects of Cured-In-Place Pipe (hereinafter referred to as CIPP) including pipe rehabilitation of plumbing drainage systems.

Purpose. The purpose of this standard is to provide performance criteria for the minimally competent individual for the inspection of CIPP rehabilitation of plumbing drainage systems, and to assure, interpret and verify compliance with the standards in Section 20-1.4

After reviewing the scopes of all the standards, the group determined the standards were able to be sorted into four major categories and methods used in CIPP installations. The categories added were:

- Pushed or Pulled in Place Method
- Inversion Method
- Connection between the Building Sewer and Public Sewer
- Seamless Molded Hydrophilic Gasket Installation in Cured-in-Place Pipe

This is important as the users and AHJ's can now see which standards are applicable to the installation method being proposed. The group reviewed and updated the sections on preinstallation, permit requirements, installation

and testing. Thus, Section 715.4 (Inspection for CIPP Relining) and the sub-sections are rewritten into the body of the new proposed text. Also, Section 708.2 (Pipe Replacement) is being stricken as the contents of the provisions were written into the updated Section 715.3.2 (Preinstallation and Permit Requirements) for ease and complete intent in one place.

Additionally, the ASSE/IAPMO/ANSI 28020 standard provides a method of justifying a qualified person who can look at baseline requirements for the installation of CIPP. It is critical that CIPP systems/rehabilitation inspections be performed by qualified people who will know and understand all requirements needed for proper use of appropriate standards and installation of CIPP. This new standard will ensure that.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

31

AFFIRMATIVE:

29

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

2

VOTES NOT RETURNED:

Daniels, Young

Comment 2

Item #:

156

Code Number:

2024 UPC

Sections(s):

702.0 - 702.5, 708.2, Table 1701.1, Table 1701.2

Submitter Name:

Matt Stockwell

Organization Name:

City of Des Moines

Organization Representation:

Chair, UPC Cured in Place (CIPP) Task Group

Recommendation:

Accept the Proposal as Modified

Proposed Text:

Request to accept the code change proposal as modified by this public comment.

702.0 Drain Piping Rehabilitation

702.1 Drainage Pipe Lining. Existing drainage pipe shall be permitted to be rehabilitated by a cured-in-place pipe process. The cured-in-place pipe shall be in accordance with Section 702.2 through Section 702.5. The rehabilitation process shall be inspected by an individual certified to ASSE/IAPMO/ANSI 28020 when required by the Authority Having Jurisdiction.

702.2 Process Acceptance. The manufacturer's material and process shall comply with Section 301.2 based on the applicable standard(s) specified in Section 702.2.1 through Section 702.2.2.

702.2.1 Pushed or Pulled in Place Method. Pushed or pulled in place installation of cured-in-place thermosetting resin pipe shall comply with ASTM F1743 or ASTM F3541.

702.2.2 Inversion Method. Inversion installation of cured-in-place thermosetting resin pipe shall comply with ASTM F1216 or ASTM F2599.

702.2.3 Seamless Molded Hydrophilic Gasket Installation in Cured-in-Place Pipe. Installation of seamless molded hydrophilic gaskets in a cured-in-place liner shall comply with the requirements of ASTM F3240.

702.3 Preinstallation and Permit Requirements. The interior of the pipe shall be recorded with a video camera. The video recording shall be made available to the Authority Having Jurisdiction to determine if the piping is qualified to be rehabilitated in accordance with the proposed lining system manufacturer's installation requirements and the applicable referenced standards. Permits shall be in accordance with Section 104.1. Prior to rehabilitation of the drainage piping, the interior wall of the pipe shall be cleaned in accordance with the manufacturer's installation instructions. Cured-in-place pipe shall not be used for restoring non-compliant grade. Existing flow obstructions shall be cleaned prior to installation. Grade deviations from piping misalignments shall be repaired or replaced prior to installation of the cured-in-place pipe.

702.4 Installation and Testing. The Authority Having Jurisdiction shall require evidence of competency of the cured-in-place pipe installers. The cured-in-place pipe shall be in accordance with the manufacturer's installation instructions and applicable referenced standards. The branch connections shall comply with Section 315.2. The pipeline rehabilitated with cured-in-place pipe shall be watertight and tested in accordance with Section 712.0.

702.5 Final Inspection. The final inspection of the rehabilitated piping system shall be a recording with a video camera. The video recording shall be submitted to the Authority Having Jurisdiction for final approval.

(renumber remaining sections)

708.0 Grade of Horizontal Drainage Piping.

708.2 Pipe Replacement. When pipe replacement is required, cured in place pipe (CIPP) shall not be used for restoring non-compliant grade. Existing flow obstructions, such as grease, scale, tuberculation, debris, sediment, etc., shall be cleaned prior to CIPP lining to ensure compliance with the grade requirements of Section 708.1 and with the sizing requirements of Section 703.0. Any obstructive grade deviations from piping misalignments shall be reviewed after pipe cleaning, and repaired or replaced as required by the Authority Having Jurisdiction prior to installing the CIPP.

TABLE 1701.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE/IAPMO/ANSI 28020	Professional Qualifications Standard for Inspectors of CIPP (Cured-in-Place-Pipe) Rehabilitation of Plumbing Drainage Systems	Professional Qualifications	702.1
ASTM F1743-2024	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)	Piping	702.2.1

(portions of table not shown remain unchanged)

TABLE 1701.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASTM F1743-2022	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)	Piping, Plastic

(portions of table not shown remain unchanged)

Note: ASSE/IAPMO/ANSI 28020, ASTM F1216, ASTM F1743, ASTM F3240, and ASTM F3541 meet the requirements for mandatory referenced standards in accordance with Section 3-3.7.1 of IAPMO's Regulations Governing Committee Projects.

(shown for information purposes only)

315.0 Joints and Connections.

315.2 Prohibited Joints and Connections. A fitting or connection that has an enlargement, chamber, or recess with a ledge, shoulder, or reduction of pipe area that offers an obstruction to flow through the drain shall be prohibited.

712.0 Testing.

7012.1 Media. The piping of the plumbing, drainage, and venting systems shall be tested with water or air except that plastic pipe shall not be tested with air. The Authority Having Jurisdiction shall be permitted to require the removal of cleanouts, etc., to ascertain whether the pressure has reached all parts of the system. After the plumbing fixtures have been set and their traps filled with water, they shall be submitted to a final test.

712.2 Water Test. The water test shall be applied to the drainage and vent systems either in its entirety or in sections. Where the test is applied to the entire system, openings in the piping shall be tightly closed, except the highest opening, and the system filled with water to the point of overflow. Where the system is tested in sections, each opening shall be tightly plugged, except 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 head of water (30 kPa). 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 or pipe in the building (except the uppermost 10 feet (3048 mm) of the system) shall have been submitted to a test of less than a 10 foot head of water (30 kPa). The water shall be kept in the system, or in the portion under test, for not less than 15 minutes before inspection starts. The system shall then be tight at all points.

712.3 Air Test. The air test shall be made by attaching an air compressor testing apparatus to a suitable opening and, after closing all 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 to balance a column of mercury 10 inches (34 kPa) in height. The pressure shall be held without the introduction of additional air for a period of not less than 15 minutes.

Substantiation:

The Task Group reviewed all proposal items (approved and rejected) related to cured-in-place pipe in the ROP. As part of the scope for CIPP installation, the group generated provision to address drainage pipe lining in addition to building drain and storm sewer applications. The Task Group reviewed all the standard scopes for applicability and application to drainage piping and was able to sort and categorize the standard for clarity to the end users and the AHJ. Below are the standards and scopes that the task group reviewed.

ASTM F1743-2024 (Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe)

Scope. This practice describes the procedures for the reconstruction of pipelines and conduits (2 in. to 96 in. (5 cm to 244 cm) diameter) by the pulled-in-place installation of a resin-impregnated, flexible fabric tube into an existing conduit and secondarily inflated through the inversion of a calibration hose by the use of a hydrostatic head or air pressure. The resin is cured by circulating hot water, by the introduction of controlled steam into the tube, or by photoinitiated reaction. When cured, the finished cured-in-place pipe will be continuous and tight fitting. This reconstruction process is suitable for use in a variety of gravity and pressure applications such as sanitary sewers, storm sewers, building piping, process piping, electrical conduits, and ventilation systems.

ASTM F3541-2022 (Sectional Repair of Existing Gravity Flow, Non-Pressure Pipelines and Conduits by Pushed or Pulled-In-Place Installation of Cured-In-Place Thermosetting Resin pipe)

Scope. This practice describes the procedures for the sectional repair of gravity flow, non-pressure pipelines and conduits 3 in. to 60 in. (75 mm to 1500 mm) diameter by the installation of a resin-saturated liner which is placed onto or wrapped around a carrier device, pushed or pulled into an existing pipeline or conduit and expanded against the interior of the host pipe or conduit with air pressure. The resin is cured under ambient conditions, by photoinitiated reaction or with the application of heat. When cured, the finished sectional repair will be tightfitting across its installed length. This repair process is used in a variety of gravity flow, non-pressure applications such as sanitary sewers, storm sewers, drains, electrical conduits and ventilation systems.

ASTM F1216-2024 (Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube)

Scope. This practice describes the procedures for the reconstruction of pipelines and conduits (2 in. to 108 in. diameter) by the installation of a resin-impregnated, flexible tube which is inverted into the existing conduit by use of a hydrostatic head or air pressure. The resin is cured by circulating hot water, introducing controlled steam within the tube, or by photoinitiated reaction. When cured, the finished pipe will be continuous and tight-fitting. This reconstruction process is used in a variety of gravity and pressure applications such as sanitary sewers, storm sewers, process piping, electrical conduits, and ventilation systems.

ASTM F2599-2022 (Standard Practice for Sectional Repair of Damaged Pipe By Means of an Inverted Cured-In-Place Liner)

Scope. This practice covers requirements and test methods for the sectional cured-in-place lining (SCIPL) repair of a pipe line (4 in. through 60 in. (10.2 cm through 152 cm)) by the installation of a continuous resin-impregnated-textile tube into an existing host pipe by means of air or water inversion and inflation. The tube is pressed against the host pipe by air or water pressure and held in place until the thermoset resins have cured. When cured, the sectional liner shall extend over a predetermined length of the host pipe as a continuous, one piece, tight fitting, corrosion resistant, and verifiable nonleaking cured-in-place pipe.

ASTM F3240-2019(R2023) (Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long-Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines)

Scope. This practice covers the requirements for the installation of seamless molded hydrophilic gaskets (SMHG) in cured-in-place pipe (CIPP) rehabilitation of main and lateral pipelines.

ASSE/IAPMO/ANSI 28020 (Professional Qualifications Standard for Inspectors of CIPP (Cured-in-Place-Pipe) Rehabilitation of Plumbing Drainage Systems)

Scope. This standard applies to an individual who is qualified as defined in Section 20-3.2.1 of ASSE 28020 with expanded knowledge relating to all aspects of Cured-In-Place Pipe (hereinafter referred to as CIPP) including pipe rehabilitation of plumbing drainage systems.

After reviewing the scopes of all the standards, the group was able to sort the standards into the appropriate categories installation methods used in CIPP installations. The categories added were:

- Pushed or Pulled in Place Method
- Inversion Method
- Seamless Molded Hydrophilic Gasket Installation in Cured-in-Place Pipe

This is important as the users and AHJ's can now see which standards are applicable to the installation method being proposed. The group reviewed and updated the sections on preinstallation, permit requirements, installation and testing. The contents of Section 715.4 (Inspection for CIPP Relining) as shown in the UPC ROP and the sub-sections are written into the body of the new proposed text. Also, Section 708.2 (Pipe Replacement) is being stricken as the contents of the provisions were written into the updated Section 702.3 (Preinstallation and Permit Requirements) for ease and complete intent in one place.

Additionally, the ASSE 28020 standard provides a method of justifying a qualified person who can look at baseline requirements for the installation of CIPP. It is critical that CIPP systems/rehabilitation inspections be performed by qualified people who will know and understand all requirements needed for proper use of appropriate standards and installation of CIPP. This new standard will ensure that.

Committee Action:

Reject

Committee Statement:

There is a concern that the pipe sizing covered by the standards are for large size which are more applicable to building sewer piping and not practical for building drainage piping.

TOTAL ELIGIBLE TO VOTE:

31

AFFIRMATIVE:

29

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

2

VOTES NOT RETURNED:

Daniels, Young