



APPEAL

BBA17-002

City of Ann Arbor

PLANNING & DEVELOPMENT SERVICES — CONSTRUCTION SERVICES

Mailing: 301 E. Huron St. P.O. Box 8647 Ann Arbor, Michigan 48107-8647

734.794.6263 734.994.8460 building@a2gov.org

4-13-17

APPLICATION FOR EXCEPTION - BUILDING BOARD OF APPEALS

Section 1: Applicant Information

Name of Applicant: Rooter MD Plumbing Pete Wood
Address of Applicant: 31675 W. EIGHT Mile Rd. LIVONIA, MI 48152
Daytime Phone: 248-888-7777 ^{cell} 248-207-1120 Fax: 248-888-7780
Email: pete@ROOTERMD.COM
Applicant's Relationship to Property: Contractor WORK FOR HOME owner

Section 2: Property Information

Address of Property: 3186 OAKWOOD ANN ARBOR, MI 48104
Zoning Classification: RESIDENTIAL LOT 9234
Tax ID# (if known): 09-12-02-314-002 DARLINGTON SUB.
*Name of Property Owner: Nicholas Paschaka
**If different than applicant, a letter of authorization from the property owner must be provided.*

Section 3: Request Information

☒ Exception

Chapter(s) and Section(s) from
which a exception is requested:

REQUIRED dimension:

PROPOSED dimension:

SEE ATTACHMENT

N/A

N/A

Example: 2003 Building Code,
Section 5:26

Example: 7' Ceiling Clearance

Example: 6'5" under landing

Give a detailed description of the work you would need this exception for (attach additional sheets if necessary)

SEE ATTACHMENT

Section 4: Exception Request

The City of Ann Arbor Building Board of Appeals has the powers granted by State law and Building Codes. A exception may be granted by the Building Board of Appeals only in cases involving practical difficulties or unnecessary hardships when **ALL** of the following is found **TRUE**.

Please provide a complete response to each item below. These responses, together with the required materials in Section 5 of this application, will form the basis for evaluation of the request by staff and the Building Board of Appeals.

1. The true intent of the Code or the rules governing construction have been incorrectly interpreted. _____

SEE ATTACHMENT

2. The provisions of the Code do not apply.) _____

SEE ATTACHMENT

3. An equal or better form of construction is proposed. _____

SEE ATTACHMENT

Section 5: Required Materials

N/A

The following materials are required for all EXCEPTION requests. Failure to provide these materials will result in an **incomplete application** and will delay staff review and Building Board of Appeals consideration of the request. The materials listed below must accompany the application and constitute an inseparable part of the application. All materials must be provided on **8 1/2" by 11" sheets**. ***If incomplete, you will be scheduled for the NEXT MEETING DATE ON THE FOLLOWING MONTH.***

- ☐ State proposed use of property, size of lot and size and type of proposed changes.
- ☐ Building floor plans showing interior rooms, including dimensions. (continued....)
- ☐ Photographs of the property and any existing buildings involved in the request.
- ☐ Any other graphic or written materials that support the request.
- ☐ Letter of Authority if being represented by someone other than the property owner.

Section 6: Acknowledgement**SIGNATURES MUST BE SIGNED IN PRESENCE OF NOTARY PUBLIC**

I, the applicant, request An exception from the above named Chapter(s) and Section(s) of the Applicable City Code and/or 2009 Michigan Residential Code and/or 2012 Michigan Building Code for the stated reasons, in accordance with the materials attached hereto.

248-207-1720
Phone Number
pete@ROOTERMD.COM
Email Address

Peter J. Wood
Signature
PETER J. WOOD
Print Name

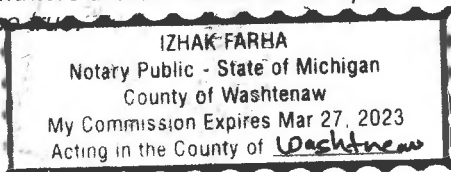
I, the applicant, hereby depose and say that all of the aforementioned statements, and the statements contained in the materials submitted herewith are true and correct and have received all coversheets with dates, deadlines and instructions. Applicant acknowledges that they are aware of these meeting dates and will not receive further notification of meeting dates and times. All applicants are expected to know when and where the meeting is and to appear to present their appeal in a timely fashion:

Peter J. Wood
Signature

Further, I hereby give City of Ann Arbor Planning and Development Services unit staff and members of the Building Board of Appeals permission to access the subject property for the purpose of reviewing my exception request. As a condition of granting any exception, the property owner is also responsible for reinstating, paying fees for or acquiring new permits to inspect and final out any outstanding work at this property:

Peter J. Wood
Signature

On this 13th day of APRIL, 2017, before me personally appeared the above named applicant and made oath that he/she has read the foregoing application by him/her subscribed and knows the contents thereof, and that the same is true as to his/her own knowledge except as to those matters therein stated to be upon his information and belief as to those matters, he/she believes them to be true.



Izhak Farha
Notary Public Signature
Izhak Farha
Print Name

Notary Commission Expiration Date

STAFF USE ONLY

Date Submitted: 4-13-17 Fee Paid: _____
File No.: BBA17-002
Pre-Filing Review Person & Date: A. HOWARD 4-13-17
Secondary Staff Review Person & Date: _____
Date of Public Hearing: MAY 18, 2017
BBA Action: _____
OUTSTANDING PERMITS: _____



CITY OF ANN ARBOR

100 N. FIFTH AVE • ANN ARBOR, MI 48104
(734) 794-6267

Receipt Number: 2017-00051204

Project Number	BBA17-002
Receipt Print Date:	04/13/2017
Address	3186 OAKWOOD ST
Applicant	Rooter MD Plbg LLC
Owner	PASCHKA NICHOLAS T
Project Description	work without permits

FEES PAID

0026-033-3370-0000-4361

P&D - APPEAL FEES 15/16

BBA 1 & 2 FAMILY

0026-033-3370-0000-4361

250.00

Total Fees for Account 0026-033-3370-0000-4361:

250.00

TOTAL FEES PAID

250.00

DATE PAID: Thursday, April 13, 2017

PAID BY: LOGOS

PAYMENT METHOD: CHECK 14563

ROOTERMD PLUMBING

Plumbing Headaches Cured Today!

31675 Eight Mile Road, Livonia, Michigan 48152

April 13th, 2017

Page: One of Three

City of Ann Arbor Planning & Development Services-Construction Services
Ann Arbor Building Board of Appeals
301 E. Huron St., P.O. Box 8647,
Ann Arbor, Michigan 48107-8647

Re: Application for Appeal, Section 109.1 Means of Appeal

Dear Members of the Building Board of Appeals,

Rooter MD Plumbing LLC, per Michigan Plumbing Code 2012 **Section 109.1 Means of Appeal**., is formally requesting appeal to Ann Arbor Board of Appeals based on the merit of the following facts.

1.) LMK Technologies, LLC Performance Liner Lateral Lining System is an approved process based on the current adopted Michigan Plumbing Code 2012, **Section 102 .8, Referenced codes and standards.** and **CHAPTER 14 REFERENCED STANDARDS**

2.) This LMK Technologies lateral lining system is exempt from a plumbing permit, based on Michigan Residential Code 2009, MPC 2012, and **Section 105.2(d) Work Exempt from Permits** Michigan Rehabilitation Code for Existing Buildings 2015. R 408.30560

R 408.30715 of the Michigan Plumbing Code states: 106.4. By whom application is made. (1) Application for a permit shall be made by a plumbing contractor licensed in accordance with 2002 PA 733, MCL 338.3511 to 338.3569. Exceptions: 2 1. Water service permits. 2. Building sewer and private sewer permits. 3. Minor repair.

R 408.30560 of the Michigan Rehabilitation Code for Existing Buildings states: (d) Plumbing permits shall not be required for either of the following: (i) The stopping of leaks in drains, water, soil, waste, or vent pipe. However, if any concealed trap, drainpipe, water, soil, waste, or vent pipe becomes defective and it becomes necessary to remove and replace the drain or pipe with new material, then the work is considered new work and a permit shall be obtained and inspection made as provided in the code. (ii) The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures, and the removal and reinstallation of water closets, if the repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

Rooter MD Plumbing believes that CIPP, and the cleaning process prior to its installation, is designed for (and only designed for) the "clearing of stoppages" and the "stopping" and "repairing of leaks" in "drains", and "soil and waste pipes" in existing buildings and is intended to economically rehabilitate aging drain infrastructure prevalent in this State, without demolition of private or municipal infrastructure, while preserving neighborhood aesthetics. As such, and under the sections referenced above, Rooter MD Plumbing believes this technology is exempt from permitting under the Michigan Rehabilitation Code for Existing Buildings.

ROOTERMD PLUMBING

Plumbing Headaches Cured Today!

31675 Eight Mile Road, Livonia, Michigan 48152

April 13, 2017

Page: Two of Three

3.) Assuming that a permit is required Rooter MD Plumbing should not be forced to perform an impractical pressure test based on the following:

Michigan Plumbing codes states 102.2 Existing installations. Plumbing systems lawfully in existence at the time of the adoption of this code shall be permitted to have their use and maintenance continued if the use, maintenance or repair is in accordance with the original design and no hazard to life, health or property is created by such plumbing system.

Section 107.4 Testing, 107.4.1 New, Altered, extended or Repaired Systems. 107.3.1 New, altered, extended or repaired systems. New plumbing systems and parts of existing systems that have been altered, extended or repaired shall be tested as prescribed herein to disclose leaks and defects, except that testing is not required in the following cases: 1. In any case that does not include addition to, replacement, alteration or relocation of any water supply, drainage or vent piping. 2. In any case where plumbing equipment is set up temporarily for exhibition purposes.

The Michigan Plumbing Code Section 408.30 791 incorporates section 125.1504 (4)(3) of the The Stille-DeRossett-Hale Single State Construction Code Act (Public Act 230 of 1972, as amended) states that the Code shall be designed to (c) To permit to the fullest extent feasible the use of modern technical methods, devices, and improvements, including pre-manufactured units, consistent with reasonable requirements for the health, safety, and welfare of the occupants and users of buildings and structures. (d) To eliminate restrictive, obsolete, conflicting, or unnecessary construction regulations that tend to increase construction costs unnecessarily or restrict the use of new materials, products, or methods of construction, or provide preferential treatment to types or classes of materials or products or methods of construction.

4.) In the event the installation of CIPP in existing sanitary and storm sewers connected to an existing building encroaches upon the public right-of-way, is Rooter MD Plumbing allowed to apply for and be granted an annual right-of-way permit covering its annual projects within the City?

R 408.30560 of the Michigan Rehabilitation Code for Existing Building's states: Annual permit. Rule 560. Sections 105.1.1, 105.1.2, and 105.2 of the code are amended as follows: 105.1.1. Annual permit. In place of an individual permit for each alteration to an already approved electrical, gas, mechanical, or plumbing installation, the enforcing agency is authorized to issue an annual permit upon application to any person, firm, or corporation. The applicant shall be licensed in accordance with the requirements of the electrical administrative act, 1956 PA 217, MCL 338.881 to 338.892,; Forbes mechanical contractors act, 1984 PA 192, MCL 338.971 to 338.988,; or state plumbing act, 2002 PA 733, MCL 338.3511 to 338.3569. 105.1.2. Annual permit records. The person to whom an annual permit is issued shall keep a detailed record of alterations made under an annual permit. Access to the records shall be provided at all times and the records shall be filed with the enforcing agency.

ROOTERMD PLUMBING

Plumbing Headaches Cured Today!

31675 Eight Mile Road, Livonia, Michigan 48152

April 13, 2017

Page: Three of Three

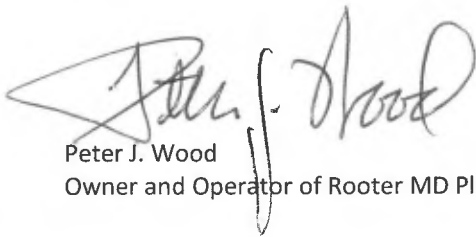
The Michigan Municipal code, 1:8 Definitions states: *Street, highway, alley*. The entire width subject to an easement for public right-of-way, or owned in fee by the city, county, or state, of every way or place, of whatever nature, whenever any part thereof is open to the use of the public, as a matter of right for purposes of public travel. The word, "alley," shall mean any such way or place providing a secondary means of ingress and egress from a property. *Sidewalk*. That portion of a street between the curb lines or lateral lines and the right-of-way lines which is intended for the use of pedestrians.

The Michigan Municipal code, 4.81 states: (2) *Sidewalk Builder's License Required*. No person shall build, rebuild or repair sidewalks, driveway approaches, retaining walls, curbs, curbs and gutters or areaways in the street right-of-way without first obtaining a Sidewalk Builder's License. (b) *Payment of Annual License Fee Required*. Each applicant shall remit payment of the annual license fee.

Rooter MD Plumbing believes that the language of Rule 560 of the Michigan Rehabilitation Code for Existing Buildings authorizes, and that the interests of economy would be expedited by the issuance of an annual right-of-way permit in those instances when CIPP lining may encroach in whole or part upon the public right-of-way. Rooter MD Plumbing also notes, by analogy, that the Michigan Municipal Code authorizes this procedure for a more invasive (sidewalk replacement) form of construction in the public right-of-way. Accordingly, Rooter MD

Plumbing would be agreeable to provide the following records to the City of Ann Arbor, ***in digital form***, on a specified schedule: 1) address of project 2) alterations performed, and 3) an interior camera video of the completed project.

Sincerely My Regard,



Peter J. Wood
Owner and Operator of Rooter MD Plumbing



PLUMBING PERMIT CITY OF ANN ARBOR

BUILDING DEPARTMENT
301 E Huron St, P.O. Box 8647
Ann Arbor, MI 48104
Phone: (734) 794-6267
Fax: (734) 994-8460

PLEASE VISIT THE CITY WEB SITE TO SCHEDULE YOUR INSPECTION - WWW.A2GOV.ORG/permits

Permit Number: **PLUM17-0047**

Construction Type:

Use Group:

Work Type: **PLUMBING**

Install liner will cover 4" cast iron to within 1ft of city

Stipulations: main

LOCATION	OWNER
3186 OAKWOOD ST 09-12-02-314-002	PASCHKA NICHOLAS T 3186 OAKWOOD STREET Ann Arbor, MI 48104
Approved plans must be retained on job and this card kept posted until final inspection has been made. Permits and inspection notices must be posted at a single location on site (electrical panel, etc.). Where a Certificate of Occupancy is required, such building shall not be occupied until final inspection has been approved. Minimum 24 hour notice required for inspection. You must request inspection.	CONTRACTOR
	Rooter MD Plbg LLC 31675 W Eight Mile Road Livonia, MI 48152 (248) 888-7777

Permit Item	Account Number	Fee Basis	Amount
SEWERS-UP TO 4 INCHES	0026-033-3330-0000-431	1	50.00
BASE FEE -INCLUDING 1 INSPECTION	0026-033-3330-0000-431	1	50.00

Glen Dempsey

Date Issued: **01/10/2017**

Date Expires: **07/09/2017**

Fee Total: \$100.00

Amount Paid: \$100.00

Building Official

BALANCE DUE: \$0.00

I agree this permit is only for the work described and does not grant permission for additional work which requires separate permits. I understand that this permit will become invalid, and null and void if work is not started within 180 days, or if work is suspended or abandoned for a period of 180 days any time after work has commenced, and that I am responsible for assuring all required inspections are requested in conformance with the applicable code.

I hereby certify that the proposed work is authorized by the owner, and that I am authorized by the owner to make this application as authorized agent. I agree to conform to all applicable laws of the State of Michigan and local jurisdiction. All information on the permit application is accurate.

Payment of permit fee constitutes acceptance of above terms.

On hold - ROW needed



City of Ann Arbor

PLANNING & DEVELOPMENT SERVICES — CONSTRUCTION SERVICES

Mailing: 301 E. Huron Street P.O. Box 8647 Ann Arbor, Michigan 48107-8647

Location: Larcom City Hall First Floor 301 E. Huron St. Ann Arbor, MI 48104-6120

734.794.6263 734.994.8460 building@a2gov.org

PERMIT # PLUM17-0047 **TRADE PERMIT APPLICATION**

Date Submitted 1/9/17

Please provide payment information to process the application using the payment cover sheet.
Any application received without payment information included cannot be processed.

I. JOB LOCATION			
Name of Owner/Agent <u>Nicholas Paschka</u>			
Street Address & Job Location (Street No. & Name) <u>3186 Oakwood St</u>		Suite/Apt No.	City <u>Ann Arbor</u> Zip Code <u>48104</u>
Has a building permit been obtained for this project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required			
II. CONTRACTOR/HOMEOWNER INFORMATION			
<input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Homeowner			
Name <u>Roster Md</u>		State License No. <u>MA276398</u>	Exp. Date <u>8/10/350</u>
Address (Street No. and Name) <u>31675 W 8 mile Rd</u>		Telephone Number <u>248 886-7777</u>	
City <u>Livonia</u>	State <u>MI</u>	Zip Code <u>48152</u>	Email <u>Brian@RosterMd.com</u>
III. TYPE OF JOB			
Maximum 1 permit per application <input type="checkbox"/> MECHANICAL <input checked="" type="checkbox"/> PLUMBING <input type="checkbox"/> ELECTRICAL			
<input checked="" type="checkbox"/> Single Family <input type="checkbox"/> New <input type="checkbox"/> Tenant Finish		<input type="checkbox"/> Addition <input type="checkbox"/> Rental Property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<input type="checkbox"/> Other <input type="checkbox"/> Existing <input type="checkbox"/> Special Inspection		<input type="checkbox"/> Alteration # of Units _____	
DESCRIPTION OF WORK <u>Install liner will cover 4"</u> <u>Cast Iron To within 1 Ft of City main</u>			
IV. APPLICANT SIGNATURE			
Section 23a of the State Construction Code Act of 1972, 1972 PA 230, MCL 125.1523A, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential building or a residential structure. Violators of section 23a are subject to civil fines.			
Signature of Licensee or Homeowner <u>Peter Wood</u>		Date <u>1/6/17</u>	
Print Name <u>Peter Wood</u> (Homeowner signature indicates compliance with Section VI, Homeowner Affidavit)			
V. HOMEOWNER AFFIDAVIT			
I hereby certify the work described on this permit application shall be installed <u>by myself in my own home</u> in which I am living or about to occupy. All work shall be installed in accordance with the State Code and shall not be enclosed, covered up, or put into operation until it has been inspected and approved by the City Inspector. I will cooperate with the City Inspector and assume the responsibility to arrange for necessary inspections.			
INITIAL HERE (homeowner only) _____			
VI. PERMIT REQUIREMENTS			
GENERAL: Work shall not be started until the application for permit has been filed with Planning & Development Services. All installations shall be in conformance with the applicable State Code. No work shall be concealed until it has been inspected. The telephone number for inspections will be provided on the permit form. When ready for inspection, visit www.a2gov.org/permits or automated phone at (734) 994-2674 providing as much advance notice as possible. The contractor will need the job location and permit number to schedule an inspection.			
Expiration of Permit: A permit remains valid as long as work is progressing and inspections are requested & conducted. A permit will be closed when no inspections are requested and conducted within 180 days of the date of issuance or the date of a previous inspection. Closed permits cannot be refunded. The charge to re-open a closed permit is \$35.00.			

ROW17-0013

VII. FEES

(R)) Residential, (C) = Commercial

Trades Plan Examination Fee is 25% of Building Plan Examination Fee

Expired Permit Reactivation Fee \$35 ----- Industrial & Commercial Inspections, Annual Inspection Fee \$500

ELECTRICAL				MECHANICAL			
Qty	Item	Fee	Am't	Qty	Item	Fee	Am't
1	Base fee – includes one inspection	\$50	\$50	1	Base fee – includes one	\$50	\$50
	Each additional inspection	\$35			Each additional inspection	\$35	
	Onsite Consultation with Inspector	\$35			Onsite Consultation with	\$35	
	Special or Overtime Inspection \$65/hr	\$130			Special or Overtime Inspection	\$130	
	Branch Circuits, less than 220 volts	\$7			Air handlers	\$40	
	Circuit Branch, over 200 volts	\$20			Chimney Liner	\$20	
	Emergency Generator	\$40			Dryer, Bathroom, or Kitchen	\$15	
	Interruptible Air Conditioning Panel	\$35			Emergency Generator	\$40	
	Low Voltage HVAC Wiring	\$25			Factory-built Fireplace	\$50	
	Outdoor Meter Service	\$20			Fan or Exhaust Hood (C)	\$40	
	Power Feeders - 220 Volts	\$10			Fire and/or Smoke Damper	\$30	
	Service Panels Up to 400 am per panel	\$45			Distribution System – Duct (R)	\$40	
	Service Panels Over 400 amp per panel	\$65			Distribution System – Duct (C)	\$50	
	Service Panels/Sub-service panels (each)	\$45			Gas Distribution lines – includes pressure test (R)	\$50	
	Solar Panel, per set of three panels	\$20			Gas Distribution lines – includes pressure test (C)	\$70	
	Temporary Service	\$45			Gas Pressure Test Only (R)	\$45	
	Other miscellaneous wiring or code repairs	\$25			Gas Pressure Test Only (C)	\$65	
	TOTAL						
PLUMBING							
1	Base fee – Includes one inspection	\$50	\$50				
	Each additional inspection	\$35					
	Chimney Liner	\$20					
	Back Flow Preventers				Heat Recovery Unit, Variable Air Volume (VAV) Unit, Perimeter Terminal Air Conditioner (PTAC)	\$10	
	Laundry Standpipe	\$15					
	Dental Chair	\$15					
	Lavatory/Sink	\$15					
	Sump pumps	\$15					
	Tub/Shower	\$15			Heating Units up to 200,000 BTU/hr	\$50	
	Urinal	\$15			Humidifiers with furnace installation	\$10	
	Water Closet	\$15			Refrigeration or AC: 2 HP or less	\$40	
	Water Heater	\$15			Refrigeration or AC: 2 ¼ – 5 HP	\$55	
	Drain Waste –Vent Replacement (R) Sin FI	\$35			Refrigeration or AC: 5 ¼ – 50 HP	\$75	
	Drain Waste –Vent Replacement (R) Two St	\$45			Refrigeration or AC: Over 50 HP	\$120	
	Drain Waste –Vent Replacement (R) Tri-Quad Level	\$55			Heating-Rooftop Unit including A/C	\$135	
	Drain Waste –Vent Replacement (C)/ room or fix	\$25			Solar Panel per set of three panels	\$20	
	Drain Waste – Vent Replacement (C) Per Story	\$15			Water Heater	\$15	
✓	Sewers – Up to 4 inches	\$50	50		Variable Air Volume (VAV) Bxs	\$10	
	Sewers – Over 4 inches	\$65			Other Miscellaneous items/code repairs determined by Code Official	\$25	
	Water Distribution Replacement (R) Single F	\$25			TOTAL		
	Water Distribution Replacement (R) Two St	\$35					
	Water Distribution Replacement (R) T-Q Lev	\$50					
	Water Distribution Replacement (C) / room or fix	\$25					
	Water Distribution Replacement (C) Per Lev	\$15					
	Water Service – up to 2" copper	\$15					
	Water Service – over 2" copper	\$25					
	Water Service – ductile iron	\$100					
	Other plumbing items or code repairs, as	\$25					
	TOTAL						

Revised 12/7/2011

100



CITY OF ANN ARBOR

Printed: January 09, 2017

100 N. FIFTH AVE • ANN ARBOR, MI 48104
(734) 794-6267

Receipt Number: 2017-00038572

Permit Number: PLUM17-0047

Permit Type: PLUMBING

Site Address: 3186 OAKWOOD ST

Applicant: Rooter MD Plbg LLC

Owner: PASCHKA NICHOLAS T

Contractor: Rooter MD Plbg LLC

Job Description: Install liner will cover 4" cast iron to within 1ft of city

FEES PAID

0026-033-3330-0000-4312

PLUMBING PERMIT FEES

1	SEWERS-UP TO 4 INCHES	0026-033-3330-0000-4312	\$50.00
1	BASE FEE -INCLUDING 1 INSPECTION	0026-033-3330-0000-4312	\$50.00

Total Fees for Account 0026-033-3330-0000-4312:	\$100.00
--	-----------------

Total Fees Paid:

\$100.00

Date Paid: Monday, January 9, 2017

Paid By: LOGOS

Address: , ,

Pay Method: CREDIT CARD TYPE NOT

Profile Search

Search By: Contractor Name Contains Route ID

[Click here for search examples](#)

Inspection - PLM UNDERGROUND

Search Results

PLUM*5-1877
PLUM*5-1778
PLUM*5-1958
PLUM*5-1887
PLUM*5-1935
PLUM*5-1980
PLUM*5-2038
PLUM*5-2072
PLUM*5-2179
PLUM*6-0182
PLUM*6-1216
PLUM*6-1352
PLUM*6-1630
PLUM*6-1995
PLUM*7-0041

PLUM*7-0257
RCW*10-142
RCW*11-0542
RCW*11-0816

p>
Inspection Type: PLM UNDERGROUND
Order#: 0
Result: FAILED
Scheduled Date: 1/18/2017
Scheduled Time: 7:30 AM
Completed Date: 1/18/2017
Completed Time: 9:30 AM
Inspector: MILLER RYAN
Remarks: no charge inspection
Notes: (1/18/2017 7:30 AM RML)
- Video submitted
- CIPP Product approval No.1496pa requires system to be tested (approval in attachments).
- Test building sewer in accordance with 2015 MRC P2503.4
P2503.4 Building sewer testing. The building sewer shall be tested by insertion of a test plug at the point of connection with the public sewer, filling the building sewer

CLOSE

Permit Search

Search By: Contractor Name Contains: [Click here for search examples](#)

Inspection - PLM UNDERGROUND

Search Results


PLUM15-1817
PLUM15-1778
PLUM15-1888
PLUM15-1587
PLUM15-1935
PLUM15-1990
PLUM15-2008
PLUM15-2072
PLUM15-2178
PLUM16-1182
PLUM16-1315
PLUM16-1352
PLUM16-1830
PLUM16-1995
PLUM17-0041
PLUM17-0287
ROW10-1248
ROW11-0542
ROW11-0616

Inspection Type: **PLM UNDERGROUND**Order#: **0**Result: **FAILED**Scheduled Date: **1/18/2017**Scheduled Time: **7:30 AM**Completed Date: **1/18/2017**Completed Time: **9:30 AM**Inspector: **MILLER RYAN**Remarks: **no charge inspection**

Notes: P2503.4 Building sewer testing. The building sewer shall be tested by insertion of a test plug at the point of connection with the public sewer, filling the building sewer with water and pressurizing the sewer to not less than 10-foot (3048 mm) head of water. The test pressure shall not decrease during a period of not less than 15 minutes. The building sewer shall

CLOSE

PERMIT NO: ROW17-0013 ON-LINE PERMIT

ANN ARBOR 301 E. Huron St., MI 48104	PERMIT TYPE RIGHT OF WAY	APPLIED DATE 1/10/2017	
INSPECTION REQUEST LINE (408) 555-1216 OR SCHEDULE EXISTING INSPECTION ON-LINE www.crw.com	PERMIT SUB-TYPE OVER THE COUNTER	APPROVED DATE 1/10/2017	
	JOB VALUE 0	ISSUED DATE 1/10/2017	
	APN 09-12-02-314-002		
	DESCRIPTION Install liner will cover 4" cast iron to within 1ft of city		

PERMIT INFORMATION		FEE SUMMARY	
SITE	3186 OAKWOOD ST Ann Arbor, MI 48104	PM - RIGHT-OF-WAY FEES	\$45.00
APPLICANT	Rooter MD Plbg LLC 31675 W Eight Mile Road Livonia MI 48152	Total Fees Collected:	\$45.00
OWNER	PASCHKA NICHOLAS T 3186 OAKWOOD STREET Ann Arbor MI 48104		
CONTRACTOR	Rooter MD Plbg LLC 31675 W Eight Mile Road Livonia MI 48152		

NOTE: This job copy of this permit shall be kept on the job site to make the required entries thereon. The permit will expire if work is not started in 180 days, is abandoned, or does not receive an inspection for more than 180 days. Additional fees will be collected to renew expired permits. This is a Building Permit when properly filled out, signed and validated, and is not transferable. Construction Hour: Construction is limited to the hours of 7:00am to 7:00pm each day. No work shall be performed on certain holidays (MMC V-213-3(b)).

LICENSED CONTRACTORS DECLARATION	INSPECTION SUMMARY
<p>I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.</p> <p>License No: _____ Expiration Date: _____ Contractor: _____</p> <p>OWNER-BUILDER DECLARATION</p> <p>I hereby affirm under penalty of perjury that I am exempt from the contractors license Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by an applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500).):</p> <p>_____, I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner or property who builds or improves thereon, and who does such work himself or herself or through his or her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he or she did not build or improve for the purpose of sale.)</p> <p>_____, I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner or Property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law.)</p> <p>I am exempt under Sec. _____ B.P.C. for this reason _____</p> <p>DATE _____ OWNER _____</p> <p>WORKERS COMPENSATION DECLARATION</p> <p>hereby affirm under penalty of perjury one of the following declarations:</p> <p>I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the permit is issued.</p> <p>I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:</p> <p>Carrier/Policy No: _____</p> <p>(This section need not be completed if the permit is for one hundred dollars (\$100) or less).</p> <p>I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any number so as to become subject to the workers' compensation laws or California, and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.</p> <p>DATE _____ APPLICANT: _____</p> <p>CONSTRUCTION LENDING AGENCY</p> <p>I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).</p> <p>DATE _____ APPLICANT: _____</p> <p>I certify that I have read this application and state that the above information is correct. I agree to comply with all city ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection purposes.</p> <p>SIGNATURE OF APPLICANT OR AGENT _____ DATE _____</p>	

Permit Finaled Date: _____ **Inspector Name:** _____ **Signature:** _____



31675 W Eight Mile Road ~ Livonia, MI 48152
(248) 888-7777 (248) 888-7786 fax

TEN YEAR WARRANTY

The undersigned Rooter MD Pipe Lining Contractor ("the contractor" herein) provides a 10-year warranty from the date of Substantial Completion for the Work that such piping systems restored by Contractor will be free of failure as a result of defects in material or workmanship with the following provisions:

- a) Under normal use, the epoxy lining shall not de-bond, break down or otherwise flake off. Contractor does not warrant against failure caused by, contributed in whole or in part by, or resulting from any of the following: abuse, such as, without limitation, vandalism; the introduction into the piping system of any chemical that would not be permitted in potable water, or chemicals approved for potable water at concentrations higher than approved for potable water; operating the water system at temperatures greater than the domestic hot standard; natural disasters or causes, such as, without limitation, flooding, windstorm, lightning, tornado, or earthquake; attachments to or modifications of the piping system not authorized by Contractor; external causes, where external, physical or chemical qualities produce damage to the epoxy lining such as, without limitation, an unsuitable or hostile environment including the use of a flame or torch on the epoxy lining; or another cause beyond the Contractor's control including other stresses placed on the pipe or its contents that are not considered normal to the original intended use or function of the piping system.
- b) Should the restored piping system be subjected to abuse, such as, without limitation, vandalism; the introduction into the piping system of any chemical that would not be permitted in potable water, or chemicals approved for potable water at concentrations higher than approved for potable water; operation of the water system at temperatures greater than the domestic hot standard; attachments to or modifications of the piping system not completed by methods authorized by Contractor; or other external causes including corrosion to the external surface of the piping that should result in leaks, or where external, physical or chemical qualities produce damage to the epoxy lining such as, without limitation, an unsuitable or hostile environment including the use of a flame or torch on the epoxy lining; or any other cause beyond the Contractor's control including other stresses placed on the pipe or its contents that are not considered normal to the original intended use or function of the piping system, this warranty will become immediately null and void with respect to such affected piping.
- c) The Contractor shall not be liable under any circumstances for any other direct or any indirect, general, special, incidental or consequential damages of any kind from whatever cause except to repair or replace the affected piping as provided herein.

As long as such failure occurs during the warranty period and the Owner notifies Contractor in writing within five (5) business days of Owner's discovery of the failure of the treated piping system through the notice provisions provided in the Contract Documents, and Contractor is permitted the opportunity to inspect the defect, Contractor will correct the failure by repairing or replacing the affected piping within a reasonable time, without charge to the Owner. This warranty is limited to the cost of repairing or replacing the affected piping, including installation or additional treatments, and specially excluded any costs of repair associated with ancillary damage. Failure to provide Contractor such notice and opportunity to inspect such affected piping will terminate this warranty. Should Contractor be called to the property for problems unrelated to matters for which this warranty applies, Owner will be charged a minimum four (4) hour call out fee at rates predominant in the local market.

It is expressly understood and agreed that Contractor shall in no way be deemed or held to be obligated, liable or accountable upon or under any guarantees or warranties, expressed or implied beyond this express warranty. This warranty is the only warrant for the pipe restoration provided by the Contractor, and is and shall be in lieu of any and all other warranties, express or implied, including but not limited to an implied warranty of merchantability, or fitness for a particular use and of all other obligations or liabilities on the part of the Contractor. None of the Contractor's employees, and no other person or business, is authorized to make any other warranty on the Contractor's behalf covering the Work.

This warranty is transferable to a new owner of the property for a \$200.00 administrative fee payable to Contractor at the closing of the property transaction, and is otherwise non-transferable. This warranty gives Owner specific legal rights, and Owner may also have other rights that may vary from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, and as a result may not apply to Owner.

All new valves and accessories installed as part of the work shall be covered by the manufacturers warranty(s) only for the period of such warranty(s). The Contractor shall turn over all manufacturers equipment warranties to the Owner upon completion and final sign-off of the work. Owner shall contact those manufacturers specifically regarding any claims thereto. The Contractor shall warrant the installation of such valves and accessories installed as part of the work for one year after final sign-off the work.

Date of Substantial Completion

Authorized Signature



Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube¹²

This standard is issued under the fixed designation F 1216; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice describes the procedures for the reconstruction of pipelines and conduits (4 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 or introducing controlled steam within the tube. When cured, the finished pipe will be continuous and tight-fitting. This reconstruction process can be used in a variety of gravity and pressure applications such as sanitary sewers, storm sewers, process piping, electrical conduits, and ventilation systems.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific precautionary statements, see 7.4.2.

2. Referenced Documents

2.1 ASTM Standards:

D 543 Test Method for Resistance of Plastics to Chemical Reagents³

D 638 Test Method for Tensile Properties of Plastics³

D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials³

¹ This practice is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.67 on Trenchless Plastic Pipeline Technology.

Current edition approved April 10, 2003. Published May 2003. Originally approved 1989. Last previous edition approved 1998 as F 1216 – 98.

² The following report has been published on one of the processes: Driver, F. T., and Olson, M. R., "Demonstration of Sewer Relining by the Insituform Process, Northbrook, Illinois," EPA-600/2-83-064, Environmental Protection Agency, 1983. Interested parties can obtain copies from the Environmental Protection Agency or from a local technical library.

³ *Annual Book of ASTM Standards*, Vol 08.01.

D 903 Test Method for Peel or Stripping Strength of Adhesive Bonds⁴

D 1600 Terminology for Abbreviated Terms Relating to Plastics³

D 3839 Practice for Underground Installation of Fiberglass (Glass-Fiber-Reinforced Thermosetting Resin) Pipe⁵

F 412 Terminology Relating to Plastic Piping Systems⁵

2.2 AWWA Standard:

Manual on Cleaning and Lining Water Mains, M 28⁶

2.3 NASSCO Standard:

Recommended Specifications for Sewer Collection System Rehabilitation⁷

NOTE 1—An ASTM specification for cured-in-place pipe materials appropriate for use in this standard is under preparation and will be referenced in this practice when published.

3. Terminology

3.1 Definitions are in accordance with Terminology F 412 and abbreviations are in accordance with Terminology D 1600, unless otherwise specified.

3.2 *Definitions of Terms Specific to This Standard:* Descriptions of Terms Specific to This Standard:

3.2.1 *cured-in-place pipe (CIPP)*—a hollow cylinder containing a nonwoven or a woven material, or a combination of nonwoven and woven material surrounded by a cured thermosetting resin. Plastic coatings may be included. This pipe is formed within an existing pipe. Therefore, it takes the shape of and fits tightly to the existing pipe.

3.2.2 *inversion*—the process of turning the resin-impregnated tube inside out by the use of water pressure or air pressure.

3.2.3 *lift*—a portion of the CIPP that has cured in a position such that it has pulled away from the existing pipe wall.

⁴ *Annual Book of ASTM Standards*, Vol 15.06.

⁵ *Annual Book of ASTM Standards*, Vol 08.04.

⁶ Available from the American Water Works Association, 6666 W. Quincey Ave, Denver, CO 80235.

⁷ Available from the National Association of Sewer Service Companies, 101 Wymore Rd., Suite 501, Altamonte, FL 32714.

4. Significance and Use

4.1 This practice is for use by designers and specifiers, regulatory agencies, owners, and inspection organizations who are involved in the rehabilitation of conduits through the use of a resin-impregnated tube inverted through the existing conduit. As for any practice, modifications may be required for specific job conditions.

5. Materials

5.1 *Tube*—The tube should consist of one or more layers of flexible needled felt or an equivalent nonwoven or woven material, or a combination of nonwoven and woven materials, capable of carrying resin, withstanding installation pressures and curing temperatures. The tube should be compatible with the resin system used. The material should be able to stretch to fit irregular pipe sections and negotiate bends. The outside layer of the tube should be plastic coated with a material that is compatible with the resin system used. The tube should be fabricated to a size that, when installed, will tightly fit the internal circumference and the length of the original conduit. Allowance should be made for circumferential stretching during inversion.

5.2 *Resin*—A general purpose, unsaturated, styrene-based, thermoset resin and catalyst system or an epoxy resin and hardener that is compatible with the inversion process should be used. The resin must be able to cure in the presence of water and the initiation temperature for cure should be less than 180°F (82.2°C). The CIPP system can be expected to have as a minimum the initial structural properties given in Table 1. These physical strength properties should be determined in accordance with Section 8.

6. Design Considerations

6.1 *General Guidelines*—The design thickness of the CIPP is largely a function of the condition of the existing pipe. Design equations and details are given in Appendix X1.

7. Installation

7.1 *Cleaning and Inspection:*

7.1.1 Prior to entering access areas such as manholes, and performing inspection or cleaning operations, an evaluation of the atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen must be undertaken in accordance with local, state, or federal safety regulations.

7.1.2 *Cleaning of Pipeline*—All internal debris should be removed from the original pipeline. Gravity pipes should be cleaned with hydraulically powered equipment, high-velocity

jet cleaners, or mechanically powered equipment (see NASSCO Recommended Specifications for Sewer Collection System Rehabilitation). Pressure pipelines should be cleaned with cable-attached devices or fluid-propelled devices as shown in AWWA Manual on Cleaning and Lining Water Mains, M 28.

7.1.3 *Inspection of Pipelines*—Inspection of pipelines should be performed by experienced personnel trained in locating breaks, obstacles, and service connections by closed-circuit television or man entry. The interior of the pipeline should be carefully inspected to determine the location of any conditions that may prevent proper installation of the impregnated tube, such as protruding service taps, collapsed or crushed pipe, and reductions in the cross-sectional area of more than 40 %. These conditions should be noted so that they can be corrected.

7.1.4 *Line Obstructions*—The original pipeline should be clear of obstructions such as solids, dropped joints, protruding service connections, crushed or collapsed pipe, and reductions in the cross-sectional area of more than 40 % that will prevent the insertion of the resin-impregnated tube. If inspection reveals an obstruction that cannot be removed by conventional sewer cleaning equipment, then a point repair excavation should be made to uncover and remove or repair the obstruction.

7.2 *Resin Impregnation*—The tube should be vacuum-impregnated with resin (wet-out) under controlled conditions. The volume of resin used should be sufficient to fill all voids in the tube material at nominal thickness and diameter. The volume should be adjusted by adding 5 to 10 % excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints in the original pipe.

7.3 *Bypassing*—If bypassing of the flow is required around the sections of pipe designated for reconstruction, the bypass should be made by plugging the line at a point upstream of the pipe to be reconstructed and pumping the flow to a downstream point or adjacent system. The pump and bypass lines should be of adequate capacity and size to handle the flow. Services within this reach will be temporarily out of service.

7.3.1 Public advisory services will be required to notify all parties whose service laterals will be out of commission and to advise against water usage until the mainline is back in service.

7.4 *Inversion:*

7.4.1 *Using Hydrostatic Head*—The wet-out tube should be inserted through an existing manhole or other approved access by means of an inversion process and the application of a hydrostatic head sufficient to fully extend it to the next designated manhole or termination point. The tube should be inserted into the vertical inversion standpipe with the impermeable plastic membrane side out. At the lower end of the inversion standpipe, the tube should be turned inside out and attached to the standpipe so that a leakproof seal is created. The inversion head should be adjusted to be of sufficient height to cause the impregnated tube to invert from point of inversion to point of termination and hold the tube tight to the pipe wall, producing dimples at side connections. Care should be taken during the inversion so as not to over-stress the felt fiber.

TABLE 1 CIPP Initial Structural Properties^A

Property	Test Method	Minimum Value	
		psi	(MPa)
Flexural strength	D 790	4 500	(31)
Flexural modulus	D 790	250 000	(1 724)
Tensile strength (for pressure pipes only)	D 638	3 000	(21)

^AThe values in Table 1 are for field inspection. The purchaser should consult the manufacturer for the long-term structural properties.

7.4.1.1 An alternative method of installation is a top inversion. In this case, the tube is attached to a top ring and is inverted to form a standpipe from the tube itself or another method accepted by the engineer.

NOTE 2—The tube manufacturer should provide information on the maximum allowable tensile stress for the tube.

7.4.2 *Using Air Pressure*—The wet-out tube should be inserted through an existing manhole or other approved access by means of an inversion process and the application of air pressure sufficient to fully extend it to the next designated manhole or termination point. The tube should be connected by an attachment at the upper end of the guide chute so that a leakproof seal is created and with the impermeable plastic membranes side out. As the tube enters the guide chute, the tube should be turned inside out. The inversion air pressure should be adjusted to be of sufficient pressure to cause the impregnated tube to invert from point of inversion to point of termination and hold the tube tight to the pipe wall, producing dimples at side connections. Care should be taken during the inversion so as not to overstress the woven and nonwoven materials.

NOTE 3—**Warning:** Suitable precautions should be taken to eliminate hazards to personnel in the proximity of the construction when pressurized air is being use.

7.4.3 *Required Pressures*—Before the inversion begins, the tube manufacturer shall provide the minimum pressure required to hold the tube tight against the existing conduit, and the maximum allowable pressure so as not to damage the tube. Once the inversion has started, the pressure shall be maintained between the minimum and maximum pressures until the inversion has been completed. Should the pressure deviate from within the range of the minimum and maximum pressures, the installed tube shall be removed from the existing conduit.

7.5 *Lubricant*—The use of a lubricant during inversion is recommended to reduce friction during inversion. This lubricant should be poured into the inversion water in the downtube or applied directly to the tube. The lubricant used should be a nontoxic, oil-based product that has no detrimental effects on the tube or boiler and pump system, will not support the growth of bacteria, and will not adversely affect the fluid to be transported.

7.6 *Curing:*

7.6.1 *Using Circulating Heated Water*—After inversion is completed, a suitable heat source and water recirculation equipment are required to circulate heated water throughout the pipe. The equipment should be capable of delivering hot water throughout the section to uniformly raise the water temperature above the temperature required to effect a cure of the resin. Water temperature in the line during the cure period should be as recommended by the resin manufacturer.

7.6.1.1 The heat source should be fitted with suitable monitors to gage the temperature of the incoming and outgoing water supply. Another such gage should be placed between the impregnated tube and the pipe invert at the termination to determine the temperatures during cure.

7.6.1.2 Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe

appear to be hard and sound and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. The post-cure temperature should be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the boiler to maintain the temperature continues. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of soil).

7.6.2 *Using Steam*—After inversion is completed, suitable steam-generating equipment is required to distribute steam throughout the pipe. The equipment should be capable of delivering steam throughout the section to uniformly raise the temperature within the pipe above the temperature required to effect a cure of the resin. The temperature in the line during the cure period should be as recommended by the resin manufacturer.

7.6.2.1 The steam-generating equipment should be fitted with a suitable monitor to gage the temperature of the outgoing steam. The temperature of the resin being cured should be monitored by placing gages between the impregnated tube and the existing pipe at both ends to determine the temperature during cure.

7.6.2.2 Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to post-cure temperatures recommended by the resin manufacturer. The post-cure temperature should be held for a period as recommended by the resin manufacturer, during which time the distribution and control of steam to maintain the temperature continues. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of soil).

7.6.3 *Required Pressures*—Before the curing begins, the pressure required to hold the flexible tube tight against the existing conduit shall be provided by the tube manufacturer. Once the cure has started and dimpling for laterals is completed, the required pressure shall be maintained until the cure has been completed. Should the pressure deviate more than 2.3 ft of water (1 psi) from the required pressure, the installed tube shall be removed from the existing conduit. If required by the owner, a continuous log of pressure during cure shall be maintained.

7.7 *Cool-Down:*

7.7.1 *Using Cool Water After Heated Water Cure*—The new pipe should be cooled to a temperature below 100°F (38°C) before relieving the static head in the inversion standpipe. Cool-down may be accomplished by the introduction of cool water into the inversion standpipe to replace water being drained from a small hole made in the downstream end. Care should be taken in the release of the static head so that a vacuum will not be developed that could damage the newly installed pipe.

7.7.2 Using Cool Water After Steam Cure—The new pipe should be cooled to a temperature below 113°F (45°C) before relieving the internal pressure within the section. Cool-down may be accomplished by the introduction of cool water into the section to replace the mixture of air and steam being drained from a small hole made in the downstream end. Care should be taken in the release of the air pressure so that a vacuum will not be developed that could damage the newly installed pipe.

7.8 Workmanship—The finished pipe should be continuous over the entire length of an inversion run and be free of dry spots, lifts, and delaminations. If these conditions are present, remove and replace the CIPP in these areas.

7.8.1 If the CIPP does not fit tightly against the original pipe at its termination point(s), the space between the pipes should be sealed by filling with a resin mixture compatible with the CIPP.

7.9 Service Connections—After the new pipe has been cured in place, the existing active service connections should be reconnected. This should generally be done without excavation, and in the case of non-man entry pipes, from the interior of the pipeline by means of a television camera and a remote-control cutting device.

8. Inspection Practices

8.1 For each inversion length designated by the owner in the contract documents or purchase order, the preparation of two CIPP samples is required, one from each of the following two methods:

8.1.1 The sample should be cut from a section of cured CIPP at an intermediate manhole or at the termination point that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags.

8.1.2 The sample should be fabricated from material taken from the tube and the resin/catalyst system used and cured in a clamped mold placed in the downtube when circulating heated water is used and in the silencer when steam is used.

8.1.3 The samples for each of these cases should be large enough to provide a minimum of three specimens and a recommended five specimens for flexural testing and also for tensile testing, if applicable. The following test procedures should be followed after the sample is cured and removed.

8.1.3.1 Short-Term Flexural (Bending) Properties—The initial tangent flexural modulus of elasticity and flexural stress should be measured for gravity and pressure pipe applications in accordance with Test Methods D 790 and should meet the requirements of Table 1.

8.1.3.2 Tensile Properties—The tensile strength should be measured for pressure pipe applications in accordance with Test Method D 638 and must meet the requirements of Table 1.

8.2 Gravity Pipe Leakage Testing—If required by the owner in the contract documents or purchase order, gravity pipes should be tested using an exfiltration test method where the CIPP is plugged at both ends and filled with water. This test should take place after the CIPP has cooled down to ambient temperature. This test is limited to pipe lengths with no service laterals and diameters of 36 in. or less. The allowable water exfiltration for any length of pipe between termination points should not exceed 50 U.S. gallons per inch of internal pipe

diameter per mile per day, providing that all air has been bled from the line. During exfiltration testing, the maximum internal pipe pressure at the lowest end should not exceed 10 ft (3.0 m) of water or 4.3 psi (29.7 kPa) and the water level inside of the inversion standpipe should be 2 ft (0.6 m) higher than the top of the pipe or 2 ft higher than the groundwater level, whichever is greater. The leakage quantity should be gaged by the water level in a temporary standpipe placed in the upstream plug. The test should be conducted for a minimum of one hour.

NOTE 4—It is impractical to test pipes above 36-in. diameter for leakage due to the technology available in the pipe rehabilitation industry. Post inspection of larger pipes will detect major leaks or blockages.

8.3 Pressure Pipe Testing—If required by the owner in the contract documents or purchase order, pressure pipes should be subjected to a hydrostatic pressure test. A recommended pressure and leakage test would be at twice the known working pressure or at the working pressure plus 50 psi, whichever is less. Hold this pressure for a period of two to three hours to allow for stabilization of the CIPP. After this period, the pressure test will begin for a minimum of one hour. The allowable leakage during the pressure test should be 20 U.S. gallons per inch of internal pipe diameter per mile per day, providing that all air has been evacuated from the line prior to testing and the CIPP has cooled down to ambient temperature.

NOTE 5—The allowable leakage for gravity and pressure pipe testing is a function of water loss at the end seals and trapped air in the pipe.

8.4 Delamination Test—If required by the owner in the contract documents or purchase order, a delamination test should be performed on each inversion length specified. The CIPP samples should be prepared in accordance with 8.1.2, except that a portion of the tube material in the sample should be dry and isolated from the resin in order to separate tube layers for testing. (Consult the tube manufacturer for further information.) Delamination testing shall be in accordance with Test Method D 903, with the following exceptions:

8.4.1 The rate of travel of the power-actuated grip shall be 1 in. (25 mm)/min.

8.4.2 Five test specimens shall be tested for each inversion specified.

8.4.3 The thickness of the test specimen shall be minimized, but should be sufficient to adequately test delamination of nonhomogeneous CIPP layers.

8.5 The peel or stripping strength between any nonhomogeneous layers of the CIPP laminate should be a minimum of 10 lb/in. (178.60 g/mm) of width for typical CIPP applications.

NOTE 6—The purchaser may designate the dissimilar layers between which the delamination test will be conducted.

NOTE 7—For additional details on conducting the delamination test, contact the CIPP contractor.

8.6 Inspection and Acceptance—The installation may be inspected visually if appropriate, or by closed-circuit television if visual inspection cannot be accomplished. Variations from true line and grade may be inherent because of the conditions of the original piping. No infiltration of groundwater should be observed. All service entrances should be accounted for and be unobstructed.

APPENDICES

(Nonmandatory Information)

X1. DESIGN CONSIDERATIONS

X1.1 Terminology:

X1.1.1 *partially deteriorated pipe*—the original pipe can support the soil and surcharge loads throughout the design life of the rehabilitated pipe. The soil adjacent to the existing pipe must provide adequate side support. The pipe may have longitudinal cracks and up to 10.0% distortion of the diameter. If the distortion of the diameter is greater than 10.0%, alternative design methods are required (see Note 2).

X1.1.2 *fully deteriorated pipe*—the original pipe is not structurally sound and cannot support soil and live loads nor is expected to reach this condition over the design life of the rehabilitated pipe. This condition is evident when sections of the original pipe are missing, the pipe has lost its original shape, or the pipe has corroded due to the effects of the fluid, atmosphere, soil, or applied loads.

X1.2 Gravity Pipe:

X1.2.1 *Partially Deteriorated Gravity Pipe Condition*—The CIPP is designed to support the hydraulic loads due to groundwater, since the soil and surcharge loads can be supported by the original pipe. The groundwater level should be determined by the purchaser and the thickness of the CIPP should be sufficient to withstand this hydrostatic pressure without collapsing. The following equation may be used to determine the thickness required:

$$P = \frac{2KE_L}{(1 - \nu^2)} \cdot \frac{1}{(SDR - 1)^3} \cdot \frac{C}{N} \quad (X1.1)$$

where:

- P = groundwater load, psi (MPa),
- K = enhancement factor of the soil and existing pipe adjacent to the new pipe (a minimum value of 7.0 is recommended where there is full support of the existing pipe),
- E_L = long-term (time corrected) modulus of elasticity for CIPP, psi (MPa) (see Note X1.1),
- ν = Poisson's ratio (0.3 average),
- SDR = standard dimension ratio of CIPP,
- C = ovality reduction factor =

$$\left(\left[1 - \frac{q}{100} \right] \left[1 + \frac{q}{100} \right]^2 \right)^3$$

q = percentage ovality of original pipe =

$$100 \times \frac{(\text{Mean Inside Diameter} - \text{Minimum Inside Diameter})}{\text{Mean Inside Diameter}}$$

or

$$100 \times \frac{(\text{Maximum Inside Diameter} - \text{Mean Inside Diameter})}{\text{Mean Inside Diameter}}$$

and

N = factor of safety.

NOTE X1.1—The choice of value (from manufacturer's literature) of E_L will depend on the estimated duration of the application of the load, P , in relation to the design life of the structure. For example, if the total duration of the load, P , is estimated to be 50 years, either continuously applied, or the sum of intermittent periods of loading, the appropriately conservative choice of value for E_L will be that given for 50 years of continuous loading at the maximum ground or fluid temperature expected to be reached over the life of the structure.

NOTE X1.2—If there is no groundwater above the pipe invert, the CIPP should typically have a maximum SDR of 100, dependent upon design conditions.

X1.2.1.1 If the original pipe is oval, the CIPP design from Eq X1.1 shall have a minimum thickness as calculated by the following formula:

$$1.5 \frac{q}{100} \left(1 + \frac{q}{100} \right) SDR^2 - 0.5 \left(1 + \frac{q}{100} \right) SDR = \frac{\sigma_L}{PN} \quad (X1.2)$$

where:

σ_L = long-term (time corrected) flexural strength for CIPP, psi (MPa) (see Note X1.5).

X1.2.1.2 See Table X1.1 for typical design calculations.

X1.2.2 *Fully Deteriorated Gravity Pipe Condition*—The CIPP is designed to support hydraulic, soil, and live loads. The groundwater level, soil type and depth, and live load should be determined by the purchaser, and the following equation should be used to calculate the CIPP thickness required to withstand these loads without collapsing:

TABLE X1.1 Maximum Groundwater Loads for Partially Deteriorated Gravity Pipe Condition

Diameter, in. (Inside Diameter of Original Pipe)	Nominal CIPP Thickness, mm	CIPP Thickness, t, in.	Maximum Allowable Ground- water Load ^a (above invert)	
			ft	m
8	6	0.236	40.0	12.2
10	6	0.236	20.1	6.1
12	6	0.236	11.5	3.5
15	9	0.354	20.1	6.1
18	9	0.354	11.5	3.5
18	12	0.472	27.8	8.5
24	12	0.472	11.5	3.5
24	15	0.591	22.8	6.9
30	15	0.591	11.5	3.5
30	18	0.709	20.1	6.1

^aAssumes $K = 7.0$, $E = 125\,000$ psi (862 MPa) (50-year strength), $\nu = 0.30$, $C = 0.64$ (5 % ovality), and $N = 2.0$.

$$q_t = \frac{C}{N} [32R_w B' E'_s (E_L/D^3)]^{1/2} \quad (X1.3)$$

where:

q_t = total external pressure on pipe, psi (MPa),
 = $0.433H_w + wHR_w/144 + W_s$, (English Units),
 = $0.00981H_w + wHR_w/1000 + W_s$, (Metric Units)
 R_w = water buoyancy factor (0.67 min) = $1 - 0.33 (H_w/H)$,
 w = soil density, lb./ft.³ (KN/m³),
 W_s = live load, psi (Mpa),
 H_w = height of water above top of pipe, ft (m)
 H = height of soil above top of pipe, ft (m),
 B' = coefficient of elastic support = $1/(1 + 4e^{-0.065H})$
 inch-pound units, $(1/(1 + 4e^{-0.213H}))$ SI units
 I = moment of inertia of CIPP, in.⁴/in. (mm⁴/mm) = $t^3/12$,
 t = thickness of CIPP, in. (mm),
 C = ovality reduction factor (see X1.2.1),
 N = factor of safety,
 E'_s = modulus of soil reaction, psi (MPa) (see Note X1.4),
 E_L = long-term modulus of elasticity for CIPP, psi (MPa), and
 D = mean inside diameter of original pipe, in. (mm)

X1.2.2.1 The CIPP design from Eq X1.3 should have a minimum thickness as calculated by the following formula:

$$\frac{EI}{D^3} = \frac{E}{12(SDR)^3} \geq 0.093 \text{ (inch-pound units)}, \quad (X1.4)$$

or

$$\frac{E}{12(SDR)^3} \geq 0.00064 \text{ (SI units)}$$

where:

E = initial modulus of elasticity, psi (MPa)

NOTE X1.3—Finite element analysis is an alternative design method for noncircular pipes.

NOTE X1.4—For definition of modulus of soil reaction, see Practice D 3839.

X1.2.2.2 The minimum CIPP design thickness for a fully deteriorated condition should also meet the requirements of Eq X1.1 and X1.2.

X1.3 Pressure Pipe:

X1.3.1 Partially Deteriorated Pressure Condition—A CIPP installed in an existing underground pipe is designed to support external hydrostatic loads due to groundwater as well as withstand the internal pressure in spanning across any holes in the original pipe wall. The results of Eq X1.1 are compared to those from Eq X1.6 or Eq X1.7, as directed by Eq X1.5, and the largest of the thicknesses is selected. In an above-ground design condition, the CIPP is designed to withstand the internal pressure only by using Eq X1.5-X1.7 as applicable.

X1.3.1.1 If the ratio of the hole in the original pipe wall to the pipe diameter does not exceed the quantity shown in Eq X1.5, then the CIPP is assumed to be a circular flat plate fixed at the edge and subjected to transverse pressure only. In this case, Eq X1.6 is used for design. For holes larger than the d/D

value in Eq X1.5, the liner cannot be considered in flat plate loading, but rather in ring tension or hoop stress, and Eq X1.7 is used.

$$\frac{d}{D} \leq 1.83 \left(\frac{t}{D} \right)^{1/2} \quad (X1.5)$$

where:

d = diameter of hole or opening in original pipe wall, in. (mm),
 D = mean inside diameter of original pipe, in. (mm), and
 t = thickness of CIPP, in. (mm).

$$P = \frac{5.33}{(SDR - 1)^2} \left(\frac{D}{d} \right)^2 \frac{\sigma_L}{N} \quad (X1.6)$$

where:

SDR = standard dimension ratio of CIPP,
 D = mean inside diameter of original pipe, in. (mm),
 d = diameter of hole or opening in original pipe wall, in. (mm),
 σ_L = long-term (time corrected) flexural strength for CIPP, psi (MPa) (see Note X1.5), and
 N = factor of safety.

NOTE X1.5—The choice of value (from manufacturer's literature) of σ_L will depend on the estimated duration of the application of the load, P , in relation to the design life of the structure. For example, if the total duration of the load, P , is estimated to be 50 years, either continuously applied, or the sum of intermittent periods of loading, the appropriately conservative choice of value of σ_L will be that given for 50 years of continuous loading at the maximum ground or fluid temperature expected to be reached over the life of the structure.

X1.3.2 Fully Deteriorated Pressure Pipe Condition—A CIPP to be installed in an underground condition is designed to withstand all external loads and the full internal pressure. The design thicknesses are calculated from Eq X1.1, Eq X1.3, Eq X1.4, and Eq X1.7, and the largest thickness is selected. If the pipe is above ground, the CIPP is designed to withstand internal pressure only by using Eq X1.7.

$$P = \frac{2\sigma_{TL}}{(SDR - 2)N} \quad (X1.7)$$

where:

P = internal pressure, psi (MPa),
 σ_{TL} = long-term (time corrected) tensile strength for CIPP, psi (MPa) (see Note 12),
 SDR = standard dimension ratio of CIPP, and
 N = factor of safety.

NOTE X1.6—The choice of value (from manufacturer's literature) of σ_{TL} will depend on the estimated duration of the application of the load, P , in relation to the design life of the structure. For example, if the total duration of the load, P , is estimated to be 50 years, either continuously applied, or the sum of intermittent periods of loading, the appropriately conservative choice of value of σ_{TL} will be that given for 50 years of continuous loading at the maximum ground or fluid temperature expected to be reached over the life of the structure.

X1.4 — Negative Pressure—Where the pipe is subject to a vacuum, the CIPP should be designed as a gravity pipe with the external hydrostatic pressure increased by an amount equal to the negative pressure.

NOTE X1.7—Table X1.1 presents maximum groundwater loads for partially deteriorated pipes for selected typical nominal pipe sizes. CIPP is custom made to fit the original pipe and can be fabricated to a variety of sizes from 4 to 96-in. diameter which would be impractical to list here.

X2. CHEMICAL-RESISTANCE TESTS

X2.1 Scope:

X2.1.1 This appendix covers the test procedures for chemical-resistance properties of CIPP. Minimum standards are presented for standard domestic sewer applications.

X2.2 Procedure for Chemical-Resistance Testing:

X2.2.1 Chemical resistance tests should be completed in accordance with Test Method D 543. Exposure should be for a minimum of one month at 73.4°F (23°C). During this period, the CIPP test specimens should lose no more than 20 % of their

initial flexural strength and flexural modulus when tested in accordance with Section 8 of this practice.

X2.2.2 Table X2.1 presents a list of chemical solutions that serve as a recommended minimum requirement for the chemical-resistant properties of CIPP in standard domestic sanitary sewer applications.

X2.2.3 For applications other than standard domestic sewage, it is recommended that chemical-resistance tests be conducted with actual samples of the fluid flowing in the pipe. These tests can also be accomplished by depositing CIPP test specimens in the active pipe.

TABLE X2.1 Minimum Chemical Resistance Requirements for Domestic Sanitary Sewer Applications

Chemical Solution	Concentration, %
Tap water (pH 6–9)	100
Nitric acid	5
Phosphoric acid	10
Sulfuric acid	10
Gasoline	100
Vegetable oil	100
Detergent	0.1
Soap	0.1

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).



Installation Practice

Rehabilitation of a Sewer Service Lateral Pipe

This document is Confidential Information developed and owned by LMK Technologies, LLC. This document is not intended for transmission to, or receipt by, any unauthorized persons. If you have received this document in error, please (i) do not read it, (ii) contact LMK Technologies at 1-815-433-1275 to inform LMK Technologies under what circumstance the message was received, and (iii) erase or destroy the document.



Installation Practice for Rehabilitation of a Sewer Service Lateral Pipe

Using Cured-In-Place Pipe By Means Of Air Inversion

1. Intent

It is the intent of this specification to provide materials and a standard practice for installing a cured-in-place pipe to renew a sewer service lateral that connects to a main pipe or directly to a manhole.

2. General

2.1 The service lateral reconstruction shall be accomplished using a translucent inversion bladder, a non-woven fabric tube of particular length that includes a *compression gasket seal* at each end of the tube, and a thermo-set resin with physical/chemical properties appropriate for the application. The *tube* is positioned inside of a *translucent inversion bladder* forming a *liner/bladder assembly*. The tube shall be resin impregnated under a controlled vacuum within the *translucent bladder*. The liner/bladder assembly is then inserted into a *mobile air-inversion device*. The mobile air-inversion device shall include a *camera port* for inspecting the resin saturated tube inflated in the pipe before the resin is cured, and for visually verifying the liner has been fully deployed and the end is open. Access to an upstream end of the service lateral is accomplished by using an existing clean out or by making a small vacuum excavation.

2.2 The mobile air-inversion device is aligned with the access opening in the service lateral pipe (manhole, excavated pit, inside clean out or outside clean out). When the mobile air-inversion device is properly positioned, the liner/bladder assembly is inverted into the lateral pipe under *controlled air pressure*. The liner/bladder assembly shall include a hold back rope for controlling the speed of inversion and protecting plumbing fixture traps in the building by ensuring a positive pressure is not created in the service lateral pipe. The inversion is complete when the liner is fully extended within the lateral pipe, and the bladder extending beyond the open end of the liner tube, with the compression gasket positioned between the host pipe and the liner.

2.3 A lateral camera shall be inserted into a *camera port* and continuing through the bladder, under pressure providing visual inspection of the inflated liner tube prior to curing the resin. The inspection process shall verify that the liner is properly positioned in the pipe and the tube has been fully deployed with the end open. The resin impregnated tube is cured, the inflation bladder reverted from the cured tube, and the mobile launching device is removed.

3. Material

3.1 Tube - The fabric tube shall consist of flexible needle punched felt, knitted tube or an equivalent non-woven material. The tube may be reinforced by incorporating scrim or fiberglass strands to limit length stretch and improve structural properties. The tube shall be a



butt seam constructed by
thermal tape seal bonding producing a

longitudinal stitching and

uniform wall thickness with no intermediate layers. The tube shall be capable of conforming to bends, offset joints, bells, and disfigured pipe sections. A hydrophilic O-ring shall be positioned at each end of the liner tube providing a leak-free compression gasket seal compatible with all piping materials.

- 3.3 The bladder shall be translucent to enable visual inspection of resin during saturation under a controlled vacuum and inspection of the liner once inflated in the pipe prior to curing of the resin.
- 3.4 Liner/Bladder Assembly - The tube positioned within the translucent bladder shall form a liner/bladder assembly engineered for inserting the liner tube and bladder simultaneously from a single access point maintaining inflation pressure from the initial inversion of the liner tube until the resin is cured.
- 3.5 Resin - The thermo-set resin system shall be polyester, vinyl ester, silicate or epoxy with proper catalysts as designed for the specific application.
- 3.6 Design Considerations - The design of the cured-in-place lateral liner system is largely a function of the condition of the existing pipeline and the loads stipulated by the customer's specification. Structural strength design calculations as per ASTM F1216-09, appendix X1.1.2

Minimum Structural Properties

Flexural Strength (ASTM D790) = 4,500 psi

Flexural Modulus (ASTM D790) = 250,000 psi

Chemical Resistance

The cured tube shall meet minimum tests standards described in ASTM F1216-09, appendix X2.

4. Installation Recommendations

ASTM F1216-09: Standard Practice for the Installation of Cured In-Place Pipe by Inversion Lining

- 4.1 Accessing the Pipe – Should a cleanout not exist; the lateral does not directly connect to a manhole, then the Installer shall excavate an access pit, or install a cleanout providing access to the lateral pipe.
- 4.2 Cleaning and Inspection – All roots and debris shall be removed from the pipe and a CCTV inspection shall be performed documenting length, diameter and pipe defects as per NASSCO Standards.
- 4.3 The tube is cut to the appropriate length and inserted within the translucent bladder.
- 4.4 Resin Impregnated Tube – The tube in good condition shall be resin impregnated under a controlled vacuum with the appropriate thermo-set resin designed for the pipe and its intended use. All resin shall be contained within the translucent bladder during vacuum impregnation. The Installer shall ensure that no public property is exposed to contamination by liquid resin



compounds or components.

- 4.5 Liner Insertion – The resin impregnated tube within the inflation bladder is inserted into the mobile launching device and positioned at the clean out, or pipe opening.
- 4.6 Inversion – The liner/bladder assembly is inverted out of the mobile launching device by controlled air pressure. Once the liner tube begins to invert, the tail of the tube progresses as the tube is pressed against the pipe wall. At no time shall the air pressure be removed causing interruption to inflation and pressing of the tube. The inversion shall be complete when the tube is fully deployed and the bladder is extending beyond the liner tube keeping the end of the liner open. The tube is held tightly in place against the wall of the host pipe under pressure until the cure is complete in accordance with **ASTM F1216-09 Sections 7.4.2 and 7.4.3: Using Air Pressure**. The inversion air pressure should be adjusted to be of sufficient pressure to cause the impregnated tube to invert from point of inversion to point of termination and hold the tube tight to the pipe wall, producing dimples at side connections. Care should be taken during the inversion so as not to overstress the woven and nonwoven materials.
- 4.7 Curing – The liner is chemically cured at ambient temperatures or by a suitable heat source. The heating equipment shall be capable of delivering a mixture of steam and air throughout the liner bladder assembly to uniformly raise the temperature above the temperature required to cure the resin. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions. The heat source temperatures shall be monitored and logged during the cure and cool down cycles. The manufacturer's recommended cure schedule shall be submitted.
- 4.8 CIPP Processing – Curing shall be done without pressure interruption with air or a mixture of air and steam for the proper duration of time per the resin manufacturer's recommendations. The bladder is reverted back into the launching device and removed from the manhole, cleanout or access pit. No barriers, coatings, or any material other than the cured tube/resin composite is to be left in the host pipe. The liner shall be leak-free with each end sealed to the host pipe by means of swelling compression gaskets.
- 4.9 Trimming – Any tube protruding into the main pipe shall be robotically trimmed flush.
- 4.10 Post Inspection – A second CCTV inspection is performed documenting liner placement and condition. The owner shall receive a video recording and a written report certified by NASSCO LACP documenting inspection of the CIPP.
- 4.11 Reinstatement of Service – Any side connections shall be reinstated and returned to service, unless otherwise directed by the owner.

DS2015-106 – STAFF ANALYSIS

ISSUE: DS2015-106: Petitioner, Pipelining Technologies, Inc., Represented by Michael Wilson, President-Qualifier, 1616 North Florida Mango Road, C-11, West Palm Beach, Florida 33409

Petitioner seeks clarification of the following question(s):

Question: Is a building/plumbing permit mandatory **as per 105.2 Permits**, for installing Cured In Place Pipe (CIPP) in drainage systems within the walls and under the slabs of existing buildings for the purpose of rehabilitation? (SEE THE ATTACHED - DBPR complaint and Case Summary Sheet for Case # -2014018148). And if so, is the material to be installed and inspected **according to the manufacturer's published Installation Instructions**, as per Florida Building Code – Existing Building **509.1 Materials** and Florida Building Code – Plumbing **303.2 Installation of Materials**?

Background:

Pipeline Technologies, Inc., (PTI), Petitioner, is a fully insured legally Licensed Plumbing Contractor, CFC 1428578, in the business of structurally rehabilitating aged and defective **horizontal** drainage pipes under slabs, and **vertical** drainage pipes behind walls, with Cured in Place Pipe (CIPP) tools and technology. PTI is currently being adversely affected in the market place by unlicensed CIPP installers who are not properly documented and insured and who do not obtain permits, (See attached DBPR complaint and Case Summary Sheet for Case #2014018148) and also by licensed contractors who install CIPP material and **do not obtain permits**. Specifically, we are currently providing lining proposals to at least 25 condominiums and also at least 12 residential homeowners, who typically request pricing quotes from one or two other pipe lining “contractors”.

Job 1: Condominium – General Scope of Work for installing CIPP:

First, remove and replace all appropriate drainage fittings to allow for proper video inspection, cleaning, and CIPP material installation. Open any necessary drywall access points, open any necessary concrete slab openings, remove and replace all necessary drainage fittings and remove and replace all necessary plumbing fixtures to facilitate video inspection, the cleaning process, and material installation.

Next, perform video inspection, cleaning, and lining installation. After CIPP has cured, perform all necessary robotic reinstatements to open the branch lines.

Last, perform post video inspection.

Job 2: Residential – General Scope of Work for installing CIPP:

First, remove and replace all appropriate drainage fittings to allow for proper video inspection, cleaning, and CIPP material installation. Open any necessary drywall access points, open any necessary concrete slab openings, remove and replace all necessary drainage fittings and remove and replace all necessary plumbing fixtures to facilitate video inspection, the cleaning process, and material installation.

Next, perform video inspection, cleaning, and lining material installation. After CIPP has cured, perform all necessary robotic reinstatements to open the branch lines.

Last, perform post video inspection.

5th Edition (2014) Florida Building Code, Building

SECTION 105 PERMITS

[A] 105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any impact-resistant coverings, electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

[A] 105.2 Work exempt from permit. Exemptions from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code. *Permits* shall not be required for the following:

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

5th Edition (2014) Florida Building Code, Existing Building

SECTION 502 REPAIRS

502.1 Scope. *Repairs*, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, *equipment or fixtures* for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

502.2 Application. *Repairs* shall comply with the provisions of Chapter 6.

502.3 Related work. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.

602.2 New and replacement materials. Except as otherwise required or permitted by this code, **materials permitted by the applicable code for new construction shall be used.** Like materials shall be permitted for *repairs* and *alterations*, provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

SECTION 609 PLUMBING

609.1 Materials. Plumbing materials and supplies shall not be used for repairs that are prohibited in the *Florida Building Code, Plumbing*.

609.2 Water closet replacement. The maximum water consumption flow rates and quantities for all replaced water closets shall be 1.6 gallons (6 L) per flushing cycle.

Exception: Blowout-design water closets [3.5 gallons (13

L) per flushing cycle].

5th Edition (2014) Florida Building Code, Plumbing

303.2 Installation of materials. All materials used shall be installed in strict accordance with the standards under which the materials are accepted and *approved*. In the absence of such installation procedures, the manufacturer's instructions shall be followed. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to minimum provisions of this code, the provisions of this code shall apply.

Analysis:

Option #1: Petitioner

Question: Is a building/plumbing permit mandatory **as per 105.2 Permits**, for installing Cured In Place Pipe (CIPP) in drainage systems within the walls and under the slabs of existing buildings for the purpose of rehabilitation? (SEE THE ATTACHED - DBPR complaint and Case Summary Sheet for Case # -2014018148). And if so, is the material to be installed and inspected **according to the manufacturer's published Installation Instructions**, as per Florida Building Code – Existing Building ~~509.1~~ **609.1 Materials** and Florida Building Code – Plumbing **303.2 Installation of Materials**?

Answer:

Answer: Petitioner respectfully believes the answer to the all of the above questions are “YES”, and a declaratory statement should be issued to address the clarification statewide. If the answer is “No”, then by default, the installation process for CIPP to rehabilitate drainage systems in the walls and under the slabs of existing buildings should be specifically designated to comply with 2014 Florida Building Code 105.2 “Work exempt from permit”, and no permits should be required to install CIPP material anywhere in the state of Florida.

Option #2: Staff analysis

Question: Is a building/plumbing permit mandatory **as per 105.2 Permits**, for installing Cured In Place Pipe (CIPP) in drainage systems within the walls and under the slabs of existing buildings for the purpose of rehabilitation?

Answer: No, as per Section 105.2 (Work exempt from permit/plumbing), the Jobs in question are exempt from permit. This is with the understanding that the level of work for the two jobs in question is limited to rehabilitating aged and defective drainage pipes and that such level of work does not include new work (i.e. replacement of exiting pipes, fittings or fixtures with new materials).

And if so, is the material to be installed and inspected **according to the manufacturer's published Installation Instructions**, as per Florida Building Code – Existing Building ~~509.1~~ **609.1 Materials** and Florida Building Code – Plumbing **303.2 Installation of Materials**?

Answer: Answer is not possible. See also answer to the 1st part of the question.

NSF International

789 N. Dixboro Road, Ann Arbor, MI 48105 USA

RECOGNIZES

LMK Technologies, LLC

Facility: Ottawa, IL

AS COMPLYING WITH NSF/ANSI 14 AND ALL APPLICABLE REQUIREMENTS.
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE
AUTHORIZED TO BEAR THE NSF MARK.




ANSI Accredited Program
PRODUCT CERTIFICATION
R216
Certification Program
Accredited by the
American National
Standards Institute



Certification Program
Accredited by the
Standards Council
of Canada

This certificate is the property of NSF International and must be returned upon request. This certificate remains valid as long as this client has products in Listing for the referenced standards. For the most current and complete Listing information, please access NSF's website (www.nsf.org).

September 11, 2015
Certificate# C0079378 - 01


David Purkiss
General Manager, Water Systems

NSF/ANSI Standard 14 - Plastics Piping System Components and Related Materials
Authorized Registered Formulation

This product may require additional evaluation or testing prior to authorization for Listing. Only products included in NSF's Official Listing are NSF Certified and authorized to bear an NSF Certification Mark.

Customer Name: LMK Technologies, LLC

Facility Location: Ottawa, IL

Customer Number: C0079377

Facility At: Ottawa, IL

Facility Number: C0079378

Function: Sewer

Size: 3 - 8 in

Trade Name(s)

Performance Liner® Lateral Lining System

Category: NPWM, NON POTABLE WATER MATERIALS**Material Type:****Temperature:****Miscellaneous Note**

This file represents an ASTM F1216 CIPP system.



DCC:PM15779

Wetted Parts List

Date: 09/08/2015

Customer Name: LMK Technologies, LLC

Facility Location: Ottawa, IL

Customer Number: C0079377

Facility At: Ottawa, IL

Facility Number: C0079378

Part Description	Part Number	Part Trade Name	Supplier	Formulator	Qty	Wetted Area	Footnotes	DCC	Date of Acceptance
PERFORMANCE LINER LATERAL LINING SYSTEM		PERFORMANCE LINER LATERAL LINING SYSTEM	LMK TECHNOLOGIES, LLC					PL06171	09/08/2015

Notes

Definitions of Terminology used in this Document:

Trade name: The name given to the ingredient, material or assembly by the company that makes the product.

Supplier: The name of the company that provides an ingredient, material or assembly directly to the company that makes the product covered by this registration. The supplier could be a formulator, distributor, fabricator, molder, extruder, mixer, manufacturer or assembler.

Formulator: The name of the company that prepares a material according to a formula. The formulator and the supplier could be the same company. This field may be blank as this information is only reported when the information is not confidential.

In plant assemblies, compounding and mixing: Components of assemblies, materials (formulated or compounded) or ingredients which are manufactured at this facility are included on subsequent pages of this document.

DCC: PM15779

Date: 09/08/2015

In-Plant Mixer [Compounder] Formulation

Customer Name: LMK Technologies, LLC

Facility Location: Ottawa, IL

Customer Number: C0079377

Facility At: Ottawa, IL

Facility Number: C0079378

Supporting DCC: PL06171

Trade Name: PERFORMANCE LINER LATERAL LINING SYSTEM

Formulation Description: FORMULATION

Chemical Description	Trade Name	Supplier	% or PPW	DCC	Acceptance Date
POLYESTER THERMOSET RESIN	LMK656EN	INTERPLASTIC			
PROMOTOR	DIMETHYLANILINE (DMA)	PURITAN PRODUCTS			
CATALYST/HARDENER	PERKADOX BTW-50	AKZO NOBEL			
LINER TUBE	LMK SUPERKNIT	DARTEX			

THIS IS THE LAST PAGE OF THIS DOCUMENT