



789 N. Dixboro Rd. Ann Arbor, MI 48105, USA  
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# TEST REPORT

**Send To: 0D470**

Mr. Chris Ras  
Perma-Liner Industries, LLC  
13000 Automobile Boulevard  
Suite 300  
Clearwater, FL 33762

**Facility: 0D471**


Perma-Liner Industries, LLC  
13000 Automobile Boulevard  
Suite 300  
Clearwater FL 33762  
United States

Result	PASS	Report Date	11-FEB-2025
Customer Name	Perma-Liner Industries, LLC		
Tested To	ASTM F3541-2022 - per NSF/ANSI 14		
Description	LightRay Pull In Place System   4" Gravity Sewer Pipe		
Trade Designation	LightRay Pull In Place System		
Test Type	Annual Collection		
Job Number	A-00473616		
Project Number	W0870048		
Project Manager	Maitlin Rifleman		

**Thank you for having your product tested by NSF.**

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization



Date

11-FEB-2025

Brian Gruber - Senior Manager, Engineering Laboratory



## Summary of Test Results

<b>Family Code</b>	02
<b>Material Type (e.g., PEXa, PVC, PE, PE</b>	PVC
<b>Physical Description of Sample</b>	4" Gravity Sewer Pipe
<b>Primary DCC Number</b>	PM24927
<b>Print Strip</b>	WESTLAKE PIPE & FITTINGS D3034 4" PSA SDR 35 PVC 12454 GRAVITY SEWER PIPE LE 19 AUG 04:05 L8 MADE IN USA
<b>Test Description</b>	ANNUAL PERFORMANCE TESTING
<b>Trade Designation/Model Number</b>	LightRay Pull In Place System

Test Description	Result
Flex Modulus Test	Pass
Flexural Strength Test	Pass

### Job Notes:

This report replaces previously issued report with serial# FI20250129101023. This report is being re-issued due to updated trade designation. This does not change the overall status of the report.



**P3122 - Flex Modulus**

Specimens conditioned for	>40	hours
Specimens conditioned at	73	degrees F
Relative humidity	50	%
Test temperature Required	73	degrees F
Test temperature Actual	73	degrees F
Actual Average Modulus	651000	psi
Flex Modulus Test	Pass	
Test Location – NSF HQ, Ann Arbor	Ann Arbor	

Test Results	Flex Modulus (psi)
Required	250000
Specimen 1	626000
Specimen 2	667000
Specimen 3	503000
Specimen 4	589000
Specimen 5	867000

**P3123 - Flexural Strength Test**

Specimens conditioned for	>40	hours
Specimens conditioned at	73	degrees F
Relative Humidity	50	percent
Required Test Temperature	73	degrees F
Actual Test Temperature	73	degrees F
Average Flexural Strength	12700	psi
Flexural Strength Test	Pass	
Test Location – NSF HQ, Ann Arbor	Ann Arbor	

Test Results	Flexural Strength (psi)
Required	4500
Specimen 1	12200
Specimen 2	12900
Specimen 3	11900
Specimen 4	11300
Specimen 5	15400

**P3172 - Specimen Fabrication**

Test Location – NSF HQ, Ann Arbor	Ann Arbor
Specimen Fabrication	COMPLETE
Time	2 hours



**Testing Laboratories:**

	Flag	Id	Address
All work performed at: (Unless otherwise specified)		NSF_AA	NSF 789 N. Dixboro Road Ann Arbor MI 48105

**References to Testing Procedures:**

NSF Reference	Parameter / Test Description
P3122	Flex Modulus
P3123	Flexural Strength Test
P3172	Specimen Fabrication

Test descriptions preceded by an asterisk “\*” indicate that testing has been performed per NSF requirements but is not within its scope of accreditation.

Unless otherwise indicated, method uncertainties are not applied in any determinations of conformity. Testing utilizes the requested sections of any referenced standards, which may not be the entire standard.

**Dates of Laboratory Activity: 09-DEC-2024 to 29-JAN-2025**