



251 Airport Industrial Drive, Ypsilanti, MI 48198, USA
1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

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 | 29-AUG-2023 |
|-------------------|---------------------------------------------------------|-------------|-------------|
| Customer Name | Perma-Liner Industries, LLC | | |
| Tested To | ASTM F3541-2022 - per NSF/ANSI 14 | | |
| Description | LightRay Pull In Place System 4" Pipe with CIPP Liner | | |
| Trade Designation | LightRay Pull In Place System | | |
| Test Type | Qualification | | |
| Job Number | J-00469154 | | |
| Project Number | W0857702 | | |
| Project Manager | Liza Nero | | |

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 *Tanya Bayyok*

Date 29-AUG-2023

Tanya Bayyok - Manager, Materials Lab



Summary of Test Results

DCC Number PM24927
Physical Description of Sample 4" Pipe with CIPP Liner
Primary DCC Number PM24927
Test Description Qualification Performance Testing - ASTM F3541 - Pull In Place System - PM24927
Trade Designation/Model Number LightRay Pull In Place System

| Test Description | Result |
|------------------------|--------|
| Flex Modulus Test | Pass |
| Flexural Strength Test | Pass |



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 307000 psi
 Flex Modulus Test Pass
 Test Location – NSF HQ, Ann Arbor Ann Arbor

| Test Results | Flex Modulus (psi) |
|--------------|--------------------|
| Required | 250000 |
| Specimen 1 | 302000 |
| Specimen 2 | 289000 |
| Specimen 3 | 341000 |
| Specimen 4 | 356000 |
| Specimen 5 | 249000 |

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 8100 psi
 Flexural Strength Test Pass
 Test Location – NSF HQ, Ann Arbor Ann Arbor

| Test Results | Flexural Strength (psi) |
|--------------|-------------------------|
| Required | 4500 |
| Specimen 1 | 6590 |
| Specimen 2 | 9180 |
| Specimen 3 | 8910 |
| Specimen 4 | 9010 |
| Specimen 5 | 6830 |



P3172 - Specimen Fabrication

Test Location – NSF HQ, Ann Arbor
Specimen Fabrication
Time

Ann Arbor
COMPLETE
1 hours

Test Notes:

Samples cut from pipe liner.



Testing Laboratories:

| | Flag | Id | Address |
|--------------------------------------------------------|--------|--------|-----------------------------------------------------------------------|
| | ----- | ----- | ----- |
| All work performed at: (Unless otherwise specified) | -----> | NSF_WR | NSF Willow Run 251 Airport Industrial Drive Ypsilanti, MI 48198 |

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: 08-AUG-2023 to 29-AUG-2023