

**Agreement for Services
City of South Daytona and Atlantic Pipe Services LLC**

THIS Standard Agreement for Services (hereinafter this "Agreement") is made and entered into this 11th day of April 2023, by and between the **CITY OF SOUTH DAYTONA**, a Florida municipality, whose principal address is 1672 S. Ridgewood Avenue, South Daytona, Florida 32119 (hereinafter the "CITY") and **Atlantic Pipe Services, LLC**, a Florida Profit corporation, whose principal address 1420 Martin Luther King Jr. Blvd, Sanford, Florida 32771 hereinafter "CONTRACTOR"). The CITY and CONTRACTOR are collectively referred to herein as the "PARTIES."

WITNESSETH

WHEREAS, the CITY is a political subdivision of the State of Florida, having a responsibility to provide certain services to benefit the citizens of the City of South Daytona; and

WHEREAS, the CITY has the full power and authority to enter into the transactions contemplated by this Agreement; and

WHEREAS, CONTRACTOR is in the business of providing the equipment, materials, labor and other such service as identified in Exhibit "A" in the City of South Daytona and elsewhere in the State of Florida; and

WHEREAS, CONTRACTOR is competent and has sufficient manpower, training, and technical expertise to perform the services contemplated by this Agreement in a timely and professional manner consistent with the standards of the industry in which CONTRACTOR operates; and

WHEREAS, Section 448.095, Fla. Stat., imposes certain obligations on public agencies with regard to the use of the E-Verify system by their contractors and subcontractors.

WHEREAS, CONTRACTOR was the successful bidder of a project competitively bid and identified as Invitation to Bid (Exhibit "A") for City of South Daytona which satisfies the CITY's Procurement Policy; and

WHEREAS, CONTRACTOR agrees to provide such goods and services as more particularly described in this Agreement, as well as in any bid or quotation documents issued in connection with this project.

NOW THEREFORE in consideration of the premises, and in consideration of the mutual conditions, covenants, and obligations hereafter expressed, the parties agree as follows:

1. **Recitals.** The foregoing recitals are true and correct, constitute a material inducement to the parties to enter into this Agreement, and are hereby ratified and made a part of this Agreement.
2. **Description of Work.**

- a. The CITY hereby retains CONTRACTOR to furnish goods and services as described in the Scope of Services, which is attached hereto as Exhibit "A" and incorporated herein by reference. Any conflict between the terms and conditions in the body of this Agreement and the terms and conditions set forth in Exhibit "A" will be resolved in favor of the body of this Agreement.
- b. CONTRACTOR must provide all permits, labor, materials, equipment, and supervision necessary for the completion of the Scope of Services, unless specifically excluded.
- c. CONTRACTOR must also comply with, and abide by, all requirements as contained in any invitation to bid (ITB), request for proposals (RFP), request for qualifications (RFQ), bid specifications, engineering plans, shop drawings, material lists, or other similar documents issued for this project by the CITY, together with any addenda, hereinafter the "Bid Documents, as applicable." The Bid Documents, if applicable, are hereby incorporated into this Agreement by reference and are declared to be material part of this Agreement.

3. Provision of Services

- a. **Scope:** The CONTRACTOR hereby agrees to provide the proposed scope as identified in Exhibit "A."
- b. **Manner and Place:** The work shall be performed as outlined in Exhibit "A," in accordance with Standard Construction Details as required and in a manner as required by all current federal, state, county, fire, building, and land development codes, laws, ordinances and regulations, and with applicable permits and licenses per the City Code of Ordinance. Contractors shall not deliver goods or services without a written Purchase Order(s) or Notice to Proceed(s), signed by an authorized agent of the CITY.
- c. **Time and Essence:** CONTRACTOR acknowledges that time is of the essence for this Agreement.
- d. **Authorization for Services:** This Agreement standing alone does not authorize the purchase of any work or services or require the CITY to place any orders for work or service. Authorization for performance of services by the CONTRACTOR under this agreement shall be in the form of a written Notice to Proceed issued and executed by the CITY. The CITY reserves the right to contract with other parties for work and services contemplated by this Agreement, as determined in the CITY's sole and absolute discretion.

4. Term.

- a. This Agreement shall be for an initial Term of t The term of the contract shall be three (3) years, with the option for an additional two (2) two-year renewal periods, thereafter unless either party notifies the other party of intent not to renew, with such notice being given not less than sixty (60) days prior to the end of any annual term, or unless otherwise terminated as provided herein.

5. Payment.

- a. The CITY agrees to compensate CONTRACTOR, for work actually performed under this Agreement, at the rate or basis described in Exhibit "A", which is attached hereto and incorporated herein by reference. CONTRACTOR must perform all work required by the Scope of Services, but in no event will CONTRACTOR be paid more than the negotiated amount set forth in Exhibit "A".
 - b. Progress payments, if any, will be made as set forth in Exhibit "A".
 - c. The CITY reserves the right to ratably withhold amounts in the event of the nonperformance of all or part of CONTRACTOR's obligations. CONTRACTOR must, without additional compensation, correct and revise any errors, omissions, or other deficiencies in its work product, services, or materials arising from the error or omission or negligent act of CONTRACTOR.
- 6. Acceptance of work product, payment, and warranty.**
- a. Upon receipt of a periodic work product, or notice that work has progressed to a point of payment in accordance with Exhibit "A" attached or the Bid Documents, if any, together with an invoice sufficiently itemized to permit audit, the CITY will diligently review those documents. When it finds the work acceptable under this Agreement the installment payment, found to be due to CONTRACTOR, will be paid to CONTRACTOR within thirty (30) days after the date of receipt of the invoice, unless another payment schedule is provided in Exhibit "A". CONTRACTOR warrants that the data utilized by CONTRACTOR (other than as provided by the CITY) is from a source, and collected using methodologies, which are generally recognized in CONTRACTOR's industry or profession to be a reliable basis and foundation for CONTRACTOR's work product. CONTRACTOR must notify the CITY in writing if it appears, in CONTRACTOR's professional judgement that the data or information provided by the CITY for use in CONTRACTOR's work product is incomplete, defective, or unreliable. CONTRACTOR guarantees to amend, revise, or correct to the satisfaction of the CITY any error appearing in the work as a result of CONTRACTOR's failure to comply with the warranties and representations contained herein. Neither inspection nor payment, including final payment, by the CITY will relieve CONTRACTOR from its obligations to do and complete the work product in accordance with this Agreement.
- 7. Termination.**
- a. Termination at Will: This Agreement may be terminated by the CITY in whole or in part at any time without cause by the CITY giving written notice to CONTRACTOR not less than 30 days prior to the date of termination; provided, however, that in such event, neither party will be relieved from its rights or obligations of this Agreement through the date of the actual termination. Notice must be delivered by certified mail, return receipt requested, or in person with proof of delivery.
 - b. Termination for Cause: This Agreement may be terminated by either party for cause by the CITY or CONTRACTOR giving written notice to the other party not less than 10 days prior to the date of termination; provided, however, that in such event, neither party will be relieved from its rights or obligations of this Agreement

through the date of the actual termination. Notice must be delivered by certified mail, return receipt requested, or in person with proof of delivery.

8. Project management.

- a. The Project Managers for this project are as follows. Any subsequent changes to the Project Manager for either party may be provided by notice as described in paragraph 8 below and does not require an amendment to this Agreement.
- b. CITY's Project Manager is: Steve Danskine, Public Works Director, 1770 Segrave Street, South Daytona, Florida 32119, sdanskine@southdaytona.org, 386-322-3080.
- c. CONTRACTOR's Project Manager is: Matt Blais, Business Development Manager, 1420 Martin Luther King Jr Blvd, Sanford, Florida 32771, bduncan@atlanticpipe.us, 407-792-1360.

9. Notices. All notices to the parties under this Agreement must be in writing and sent certified mail to:

- a. To CITY: The City of South Daytona, Attention: City Manager, 1672 Ridgewood Avenue, South Daytona, Florida 32119;
- b. To CONTRACTOR: Atlantic Pipe Services, LLC, Attention: Allan Cagle, 1420 Martin Luther King Jr Blvd, Sanford, Florida 32771

10. Insurance.

- a. CONTRACTOR must maintain such insurance as will fully protect both CONTRACTOR and the CITY from any and all claims under any Workers Compensation Act or Employers Liability Laws, and from any and all other claims of whatsoever kind or nature to the damage or property, or for personal injury, including death, made by anyone whomsoever, that may arise from operations carried on under this Agreement, either by CONTRACTOR, any subcontractor, or by anyone directly or indirectly engaged or employed by either of them.
- b. The insurance coverage required by this Agreement must not be less than the amounts described in the Bid Documents. If the Bid Documents do not state an insurance requirement or the amount of insurance, then the amount of insurance required by this Agreement must not be less than:
 - i. Workers' Compensation (unless exempt) with Employers' Liability with a limit of \$500,000.00 each accident, \$500,000.00 each employee, \$500,000.00 policy limit for disease;
 - ii. Commercial General Liability (CGL) insurance with a limit of not less than \$300,000.00 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project in the amount of \$600,000.00. CGL insurance shall be written on an occurrence form and include bodily injury and property damage liability for premises,

operations, independent contractors, products and completed operations, contractual liability, broad form property damage and property damage resulting from explosion, collapse or underground (x, c, u) exposures, personal injury, and advertising injury. Damage to rented premises shall be included at \$100,000.00;

- iii. Commercial Automobile Liability Insurance with a limit of not less than \$300,000.00 each accident for bodily injury and property damage liability. Such insurance shall cover liability arising out of any auto (including owned, hired and non-owned autos) and such policy shall be endorsed to provide contractual liability coverage; and
 - iv. Fire damage liability shall be included at \$300,000.00.
- c. CONTRACTOR must furnish the CITY with Certificates of Insurance, which are to be signed by a person authorized by that insurer to bind coverage on its behalf. The CITY is to be specifically included as an additional insured and loss payee on all policies except Workers' Compensation. In the event the insurance coverage expires prior to the completion of the project, a renewal certificate must be issued 30 days prior to the expiration date. The policy must provide a 30 day notification clause in the event of cancellation or modification to the policy. All certificates of insurance must be on file with and approved by the CITY before commencement of any work activities.
- d. The insurance coverages procured by CONTRACTOR as required herein will be considered as primary insurance over and above any other insurance, or self-insurance, available to CONTRACTOR, and any other insurance, or self-insurance available to CONTRACTOR will be considered secondary to, or in excess of, the insurance coverage(s) procured by CONTRACTOR as required herein.

11. General Provisions. CONTRACTOR must comply with the following general provisions:

- a. **Bond.** If a surety bond has been required by the Bid Documents for CONTRACTOR's faithful performance and payment, and if at any time the surety is no longer acceptable to the CITY, CONTRACTOR must, at its expense, within five (5) days after the receipt of notice from the CITY to do so, furnish an additional bond or bonds in such form and with such Surety or Sureties as are satisfactory to the CITY. The CITY will not make any further payment to CONTRACTOR, nor will any further payment be deemed to be due to CONTRACTOR, until such new or additional security for the faithful performance of the work is furnished in a manner and form satisfactory to the CITY.
- b. **Compliance with Laws.** In providing the Scope of Services, CONTRACTOR must comply with all federal, state, and local laws, statutes, ordinances, rules, and regulations pertaining to or regulating the provision of such services, including those now in effect and hereafter adopted.

c. Personal nature of Agreement; Assignment.

- i. The parties acknowledge that the CITY places great reliance and emphasis upon the knowledge, expertise, training, and personal abilities of CONTRACTOR. Accordingly, this Agreement is personal and CONTRACTOR is prohibited from assigning or delegating any rights or duties hereunder without the specific written consent of the CITY.
- ii. If CONTRACTOR requires the services of any subcontractor or professional associate in connection with the work to be performed under this Agreement, CONTRACTOR must obtain the written approval of the CITY Project Manager prior to engaging such subcontractor or professional associate. CONTRACTOR will remain fully responsible for the services of any subcontractors or professional associates.

d. Discrimination.

- i. CONTRACTOR shall not discriminate against any employee employed in the performance of this Agreement, or against any applicant for employment because of age, ethnicity, race, religious belief, disability, national origin, or sex. CONTRACTOR shall not exclude any person, on the grounds of age, ethnicity, race, religious belief, disability, national origin, or sex, from participation in, denied the benefits of, or be otherwise subjected to discrimination in any activity under, this Agreement.
- ii. CONTRACTOR shall provide a harassment-free workplace, with any allegation of harassment given priority attention and action by management.

e. Independent contractor.

- i. CONTRACTOR is, and will be deemed to be, an independent contractor and not a servant, employee, joint adventurer, or partner of the CITY. None of CONTRACTOR's agents, employees, or servants are, or will be deemed to be, the agent, employee, or servant of the CITY. None of the benefits, if any, provided by the CITY to its employees, including but not limited to, compensation insurance and unemployment insurance, are available from the CITY to the employees, agents, or servants of CONTRACTOR. CONTRACTOR will be solely and entirely responsible for its acts and for the acts of its agents, employees, servants, and subcontractors during the performance of this Agreement. Although CONTRACTOR is an independent contractor, the work contemplated herein must meet the approval of the CITY and is subject to the CITY's general right of inspection to secure the satisfactory completion thereof. CONTRACTOR must comply with all Federal, State and municipal laws, rules and regulations that are now or may in the future become applicable to CONTRACTOR, or to CONTRACTOR's business, equipment, or personnel engaged in operations covered by this Agreement or accruing out of the performance of such

- operations. The CITY will not be held responsible for the collection of or the payment of taxes or contributions of any nature on behalf of CONTRACTOR.
- ii. CONTRACTOR will bear all losses resulting to it on account of the amount or character of the work, or because of bad weather, or because of errors or omissions in its contract price.
 - iii. CONTRACTOR must utilize, and must expressly require all subcontractors to utilize, the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by CONTRACTOR and any subcontractors during the Term of this Agreement.

f. Indemnification.

- i. CONTRACTOR must indemnify and hold the CITY harmless against and from any and all claims, losses, penalties, interest, demands, judgments, costs, damages, or expenses, including attorney's fees and court costs, incurred by the CITY, or its agents, officers, or employees, arising directly or indirectly from CONTRACTOR's performance under this Agreement or by any person on CONTRACTOR's behalf, including but not limited to those claims, losses, penalties, interest, demands, judgments, costs, damages, or expenses arising out of any accident, casualty, or other occurrence causing injury to any person or property. This includes persons employed or utilized by CONTRACTOR (including CONTRACTOR's agents, employees, and subcontractors). CONTRACTOR must further indemnify the CITY against any claim that any product purchased or licensed by the CITY from CONTRACTOR under this Agreement infringes a United States patent, trademark, or copyright. CONTRACTOR acknowledges that CONTRACTOR has received consideration for this indemnification, and any other indemnification of the CITY by CONTRACTOR provided for within the Bid Documents, the sufficiency of such consideration being acknowledged by CONTRACTOR, by CONTRACTOR's execution of this Agreement. CONTRACTOR's obligation will not be limited by, or in any way to, any insurance coverage or by any provision in or exclusion or omission from any policy of insurance, whether such insurance is in connection with this Agreement or otherwise. Such indemnification is in addition to any and all other legal remedies available to the CITY and not considered to be the CITY's exclusive remedy.
- ii. In the event that any claim in writing is asserted by a third party which may entitle the CITY to indemnification, the CITY must give notice thereof to CONTRACTOR, which notice must be accompanied by a copy of statement of the claim. Following the notice, CONTRACTOR has the right, but not the obligation, to participate at its sole expense, in the defense, compromise or settlement of such claim with counsel of its choice. If CONTRACTOR does not timely defend, contest, or otherwise protect against any suit, action or other proceeding arising from such claim, or in the event the CITY decides to participate in the proceeding or defense, the CITY will have the right to defend, contest, or otherwise protect itself against same and be reimbursed for expenses and reasonable attorney's fees and, upon not less than ten (10)

days notice to CONTRACTOR, to make any reasonable compromise or settlement thereof. In connection with any claim as aforesaid, the parties hereto must cooperate fully with each other and make available all pertinent information necessary or advisable for the defense, compromise or settlement of such claim.

iii. The indemnification provisions of this paragraph will survive the termination of this Agreement.

g. **Sovereign Immunity.** Nothing in this Agreement extends, or will be construed to extend, the CITY's liability beyond that provided in section 768.28, Florida Statutes. Nothing in this Agreement is a consent, or will be construed as consent, by the CITY to be sued by third parties in any matter arising out of this Agreement.

h. **Public records.**

i. CONTRACTOR is a "Contractor" as defined by Section 119.0701(1)(a), Florida Statutes, and must comply with the public records provisions of Chapter 119, Florida Statutes, including the following:

1. Keep and maintain public records required by the CITY to perform the service.

2. Upon request from the CITY's custodian of public records, provide the CITY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of this Agreement term and following completion of the Agreement if CONTRACTOR does not transfer the records to the CITY.

4. Upon completion of this Agreement, transfer, at no cost, to the CITY all public records in possession of CONTRACTOR or keep and maintain public records required by the CITY to perform the service. If CONTRACTOR transfers all public records to the CITY upon completion of this Agreement, CONTRACTOR must destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If CONTRACTOR keeps and maintains public records upon completion of this Agreement, CONTRACTOR must meet all applicable requirements for retaining public records. All records stored electronically must be provided to the CITY, upon request from the CITY's custodian of public records, in a format that is compatible with the information technology systems of the CITY.

ii. "Public records" is defined in Section 119.011(12), Florida Statutes, as may, from time to time, be amended.

- iii. If CONTRACTOR asserts any exemptions to the requirements of Chapter 119 and related law, CONTRACTOR will have the burden of establishing such exemption, by way of injunctive or other relief as provided by law.
 - iv. CONTRACTOR consents to the CITY's enforcement of CONTRACTOR's Chapter 119 requirements, by all legal means, including, but not limited to, a mandatory injunction, whereupon CONTRACTOR must pay all court costs and reasonable attorney's fees incurred by CITY.
 - v. CONTRACTOR's failure to provide public records within a reasonable time may be subject to penalties under Section 119.10, Florida Statutes. Further, such failure by CONTRACTOR will be grounds for immediate unilateral cancellation of this Agreement by the CITY.
 - vi. **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS, DEPUTY CITY CLERK BECKY WITTE, AT 386-322-3011; BWITTE@SOUTHDAYTONA.ORG; MAILING ADDRESS: 1672 RIDGEWOOD AVE., SOUTH DAYTONA, FL 32119.**
- i. **Federal or State Funding.** If any portion of the funding for this Agreement is derived from the State of Florida, or any department of the State of Florida, or from federal funding through the State of Florida, the provisions of this sub-paragraph shall apply, provisions elsewhere in this Agreement to the contrary notwithstanding. CONTRACTOR shall make inquiry from the CITY's Project Manager to determine whether Federal or State funding is applicable to this Agreement.
- i. **E-Verify.** CONTRACTOR must utilize, and must expressly require all subcontractors to utilize, the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by CONTRACTOR during the Term of this Agreement.
 - ii. **Agency.** CONTRACTOR agrees and acknowledges that it, its employees, and its subcontractors are not agents or employees of the Federal Government, of the State of Florida, or of any department of the Federal Government or the State of Florida.
 - iii. **Indemnification.** To the fullest extent permitted by law, CONTRACTOR shall indemnify and hold harmless the CITY, the Federal Government, the State of Florida, any department of the Federal Government or the State of Florida, and all officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness or intentional wrongful misconduct of CONTRACTOR and persons employed or utilized by CONTRACTOR in the performance of this Agreement. This indemnification shall survive the termination of this Agreement. Nothing contained in this paragraph is

intended to nor shall it constitute a waiver of the State of Florida and the CITY's sovereign immunity.

- iv. **Workers' Compensation Insurance.** CONTRACTOR must provide Workers' Compensation Insurance in accordance with Florida's Workers' Compensation law for all employees. If subletting any of the work, CONTRACTOR must ensure that the subcontractor(s) have Workers' Compensation Insurance for their employees in accordance with Florida's Workers' Compensation law. If using "leased employees" or employees obtained through professional employer organizations ("PEO's"), CONTRACTOR must ensure that such employees are covered by Workers' Compensation insurance through the PEO's or other leasing entities. CONTRACTOR must ensure that any equipment rental agreements that include operators or other personnel who are employees of independent Contractors, sole proprietorships or partners are covered by insurance required under Florida's Workers' Compensation law.
- v. **Liability Insurance.** Contractor shall carry Commercial General Liability insurance providing continuous coverage for all work or operations performed under the Agreement. Such insurance shall be no more restrictive than that provided by the latest occurrence form edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01) as filed for use in the State of Florida. CONTRACTOR shall cause the State of Florida to be made an Additional Insured as to such insurance. Such coverage shall be on an "occurrence" basis and shall include Products/Completed Operations coverage. The coverage afforded to the State of Florida as an Additional Insured shall be primary as to any other available insurance and shall not be more restrictive than the coverage afforded to the Named Insured. The limits of coverage shall not be less than \$1,000,000 for each occurrence and not less than a \$5,000,000 annual general aggregate, inclusive of amounts provided by an umbrella or excess policy. The limits of coverage described herein shall apply fully to the work or operations performed under the Contract, and may not be shared with or diminished by claims unrelated to this Agreement. The policy/ies and coverage described herein may be subject to a deductible. CONTRACTOR shall pay all deductibles as required by the policy. No policy/ies or coverage described herein may contain or be subject to a Retention or a Self-Insured Retention. At all renewal periods which occur prior to final acceptance of the work, the CITY and the State of Florida shall be provided with an ACORD Certificate of Liability Insurance reflecting the coverage described herein. The CITY and the State of Florida shall be notified in writing within ten days of any cancellation, notice of cancellation, lapse, renewal, or proposed change to any policy or coverage described herein. The CITY's or the State of Florida's approval or failure to disapprove any policy/ies, coverage, or ACORD Certificates shall not relieve or excuse any obligation to procure and maintain the insurance required herein, nor serve as a waiver of any rights or defenses the CITY or the State of Florida may have.

- vi. **Inspections.** CONTRACTOR shall permit, and require its subcontractors to permit, the CITY's and the State of Florida's authorized representatives to inspect all work, materials, payrolls, and records, to audit the books, records, and accounts pertaining to the financing and development of the Services described in the Contract Documents.
 - vii. **Auditor General Cooperation.** CONTRACTOR shall comply with §20.055 (5), Florida Statutes, and shall incorporate in all subcontracts the obligation to comply with §20.055 (5), Florida Statutes.

 - j. **E-Verify Compliance.** Contractor affirmatively states, under penalty of perjury, that in accordance with Section 448.095, Fla. Stat., Contractor is registered with and uses the E-Verify system to verify the work authorization status of all newly hired employees, that in accordance with such statute, Contractor requires from each of its subcontractors an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and that Contractor is otherwise in compliance with Sections 448.09 and 448.095, Fla. Stat.

 - k. **Federal-Aid Construction Contract.** If this is a federal-aid construction project, it shall be subject to the provisions in Exhibit "A", which is attached hereto and incorporated herein by reference.
12. **Miscellaneous Provisions.** The following miscellaneous provisions apply to this Agreement:
- a. **Binding Nature of Agreement.** This Agreement is binding upon the successors and assigns of the parties hereto.

 - b. **Entire Agreement.** This Agreement states the entire understanding between the parties and supersedes any written or oral representations, statements, negotiations, or agreements to the contrary. CONTRACTOR recognizes that any representations, statements, or negotiations made by the City staff do not suffice to legally bind the CITY in a contractual relationship unless they have been reduced to writing, authorized, and signed by the authorized CITY representatives.

 - c. **Amendment.** No modification, amendment, or alteration in the terms or conditions of this Agreement will be effective unless contained in a written document executed with the same formality as this Agreement.

 - d. **Severability.** If any term or provision of this Agreement is held, to any extent, invalid or unenforceable, as against any person, entity, or circumstance during the Term hereof, by force of any statute, law, or ruling of any forum of competent jurisdiction, such invalidity will not affect any other term or provision of this Agreement, to the extent that the Agreement will remain operable, enforceable, and in full force and effect to the extent permitted by law.

- e. **Construction.** If any provision of this Agreement becomes subject to judicial interpretation, the court interpreting or considering such provision should not apply the presumption or rule of construction that the terms of this Agreement be more strictly construed against the party which itself or through its counsel or other agent prepared it. All parties hereto have participated in the preparation of the final form of this Agreement through review by their respective counsel, if any, or the negotiation of specific language, or both, and, therefore, the application of such presumption or rule of construction would be inappropriate and contrary to the intent of the parties.
- f. **Headings.** All headings in this Agreement are for convenience only and are not to be used in any judicial construction or interpretation of this Agreement or any paragraph.
- g. **Waiver.** The indulgence of either party with regard to any breach or failure to perform any provision of this Agreement does not constitute a waiver of the provision or any portion of this Agreement, either at the time the breach or failure occurs or at any time throughout the term of this Agreement. The review of, approval of, or payment for any of CONTRACTOR's work product, services, or materials does not operate as a waiver, and should not be construed as a waiver, of any of the CITY's rights under this Agreement, or of any cause of action the CITY may have arising out of the performance of this Agreement.
- h. **Force Majeure.** Notwithstanding any provisions of this Agreement to the contrary, the parties will not be held liable if failure or delay in the performance of this Agreement arises from fires, floods, strikes, embargos, acts of the public enemy, unusually severe weather, out break of war, restraint of government, riots, civil commotion, force majeure, act of God, or for any other cause of the same character which is unavoidable through the exercise of due care and beyond the control of the parties. This provision does not apply if the "Scope of Services" of this Agreement specifies that performance by CONTRACTOR is specifically required during the occurrence of any of the events herein mentioned.
- i. **Compliance/Consistency with Scrutinized Companies Provisions of Florida Statutes.** Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria. CONTRACTOR

hereby certifies that Contractor is not listed on any of the following: (i) the Scrutinized Companies that Boycott Israel List, (ii) Scrutinized Companies with Activities in Sudan List, or (iii) the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. CONTRACTOR further hereby certifies that CONTRACTOR is not engaged in a boycott of Israel or engaged in business operations in Cuba or Syria. CONTRACTOR understands that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject CONTRACTOR to civil penalties, attorney's fees, and/or costs. CONTRACTOR further understands that any contract with CITY for goods or services of any amount may be terminated at the option of CITY if CONTRACTOR (i) is found to have submitted a false certification, (ii) has been placed on the Scrutinized Companies that Boycott Israel List, or (iii) is engaged in a boycott of Israel. And, in addition to the foregoing, if the amount of the contract is one million dollars (\$1,000,000) or more, the contract may be terminated at the option of CITY if the CONTRACTOR is found to have submitted a false certification, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria.

- j. **Law; Venue.** This Agreement is being executed in Volusia County, Florida and is governed in accordance with the laws of the State of Florida. Venue of any action hereunder will be in Volusia County, Florida.

13. **Special Provisions.**

- a. This Agreement is a non-exclusive contract; the CITY is not prohibited, or deemed to be prohibited, from bidding similar services either as an independent job or a component of a larger project.

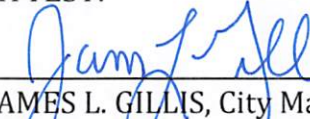
IN WITNESS WHEREOF, the parties hereto have signed and sealed this Agreement effective the date first written above.

CITY OF SOUTH DAYTONA,
A Florida Municipality



WILLIAM C. HALL, Mayor

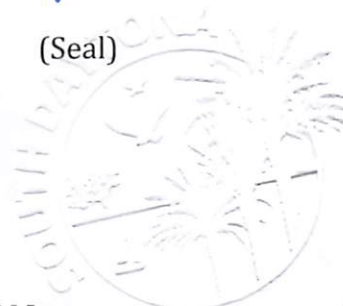
ATTEST:



JAMES L. GILLIS, City Manager

Date signed by CITY: 4.11.23

(Seal)



Faint, illegible text, possibly a letter or report header.

Dear Sir, I have the pleasure to acknowledge...

I am pleased to hear that you are...

I have the honor to be, Sir, your obedient servant.



Handwritten signature and initials.

Atlantic Pipe Services, LLC

by Allan Cogle
Allan Cogle, as its President and authorized agent
Cogle

(CORPORATE SEAL)

ATTEST:



Brandon Duncan, Business Development Manager

STATE OF Florida
COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of physical presence or
 online notarization, this 1st day of April, 2023, by Allan Cogle of APPS, a
Florida corporation, on behalf of the corporation, and he/she is personally known to me or
has produced _____ as identification.



Signature of Notary Public - State of Florida

Tracy Wagner
Printed/Typed/Stamped Name of Notary
My commission expires: 1/29/24





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

3/31/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Insurance Consultants of Central Florida
1331 Palmetto Avenue, Suite 100
Winter Park FL 32789

CONTACT NAME: John O'Donnell
PHONE (A/C No., Ext): 407-740-5337 **FAX (A/C, No):**
E-MAIL ADDRESS: john.odonnell@myiccf.com

License#: L068328
ATLAPIP-01

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Starr Surplus Lines Insurance	13604
INSURER B: FCCI Insurance Company	10178
INSURER C: Starr Indemnity & Liability Co	38318
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
Atlantic Pipe Services, LLC
1420 Martin Luther King Jr Bvd
Sanford FL 32771

COVERAGES

CERTIFICATE NUMBER: 789821541

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	Y	1000067815221	6/21/2022	6/21/2023	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
C	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			1000685974221	6/21/2022	6/21/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			1000337951221	6/21/2022	6/21/2023	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y	N/A	WC0100070910-01	6/21/2022	6/21/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.I. EACH ACCIDENT \$ 1,000,000 E.I. DISEASE - EA EMPLOYEE \$ 1,000,000 E.I. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
City of South Daytona is an additional insured on a primary, non-contributory basis, with respects to General Liability and Auto Liability, per written contract. A 30-day notice of cancellation will be provided to the certificate holder with respects to the General Liability and Auto Liability, per written contract.

CERTIFICATE HOLDER

City of South Daytona
1672 South Ridgewood Avenue
South Daytona FL 32119

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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SECTION 8: BID FORMS

BID FORM 8A: BID SUBMITTAL CHECKLIST

- Form 8B: Acknowledgement and Pricing Proposal
- Form 8C: Drug Free/Tie Preference Statement
- Form 8D: Public Entity Crimes Statement
- Form 8E: Anti-Collusion Statement
- Form 8F: Statement of Vendor Qualifications
- Form 8G: Professional References for Previous Experience
- Form 8H: Listing of Subcontractors
- Form 8I: Cured in Place Pipe Specs
- Form 8J: Cured-in-Place Pipe Specs
- Independent Contractors Agreement
- Attachment: Bid Proposal
- Copy of License(s)
- Insurance Certificate
- Submission of one (1) original marked "ORIGINAL" and one (1) digital (flash drive) copy.

BY: Atlantic Pipe Services, LLC

Name of Business

Allan Cagle

Authorized Signature

Allan Cagle - President

Printed Name and Title

03/28/2023

Date

THIS DOCUMENT MUST BE COMPLETED AND RETURNED WITH YOUR BID.



AIA Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

**Atlantic Pipe Services, LLC
1420 Martin Luther King Jr. Blvd
Sanford, FL 32771
(407) 792-1360**

SURETY:

(Name, legal status and principal place of business)

**Swiss Re Corporate Solutions
America Insurance Corporation
1200 Main St. Suite 800
Kansas City, MO 64105
(816) 235-3700**

OWNER:

(Name, legal status and address)

**City of South Daytona
1672 South Ridgewood Ave.
South Daytona, FL 32119
(386) 322-3011**

BOND AMOUNT: \$ 5% Five Percent of Amount Bid

PROJECT:

(Name, location or address, and Project number, if any)

**Sewer Rehabilitation Services - Bid No. 23-B-005
Install cured-in-place epoxy lamination system, Stephens Technologies Inc.
NCL-115-18 Epoxy or approved equal epoxy system, to aging and cracked
sewer pipes.**

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Signed and sealed this 27th day of March, 2023



(Witness)



(Witness) **Anita Waters, Account Manager**

Atlantic Pipe Services, LLC

(Contractor as Principal) (Seal)



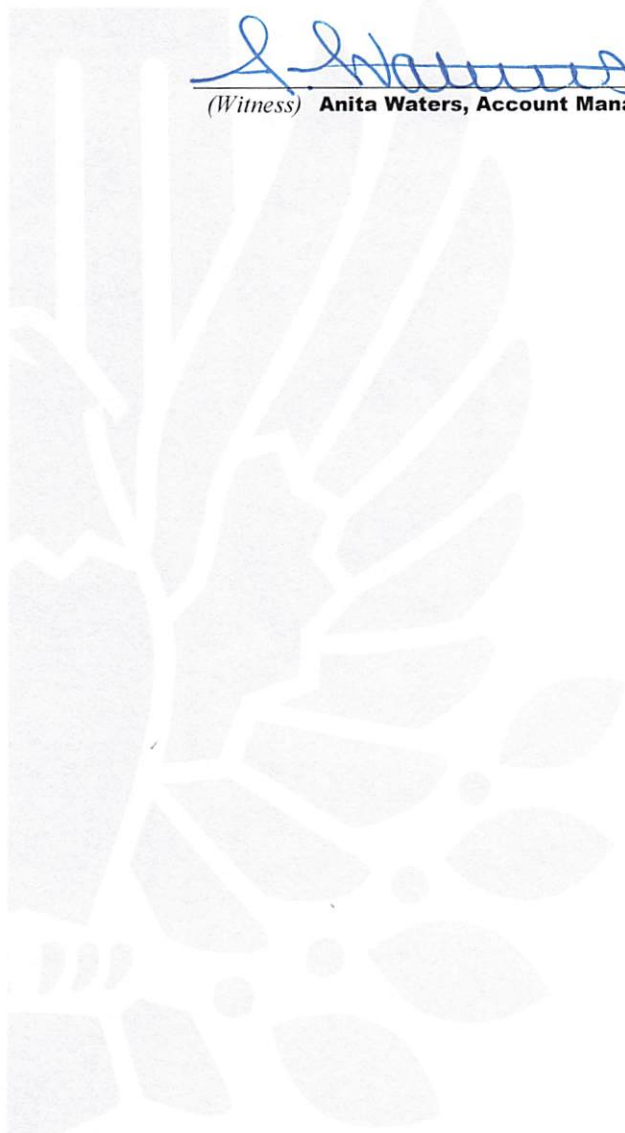
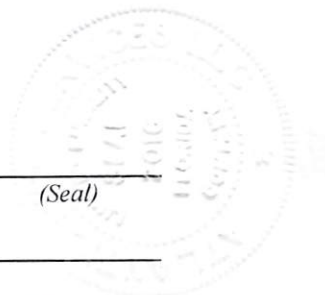
(Title) **Allan Gyle, president**

Swiss Re Corporate Solutions America Insurance Corporation

(Surety) (Seal)



(Title) **William J. Palmer, Attorney-In-Fact, Florida Resident Agent**

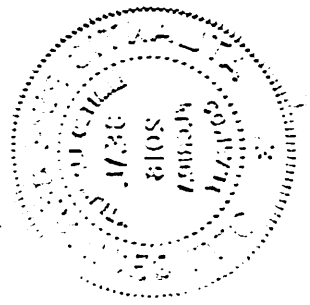
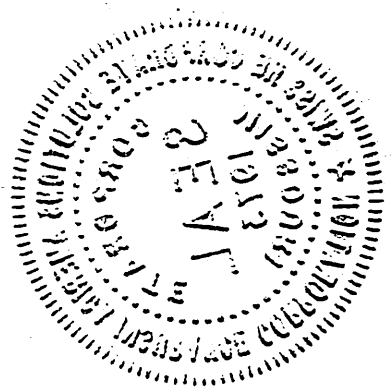


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SWISS RE CORPORATE SOLUTIONS

SWISS RE CORPORATE SOLUTIONS AMERICA INSURANCE CORPORATION ("SRCSAIC")
SWISS RE CORPORATE SOLUTIONS PREMIER INSURANCE CORPORATION ("SRCSPIC")
WESTPORT INSURANCE CORPORATION ("WIC")

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT SRCSAIC, a corporation duly organized and existing under laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri, and SRCSPIC, a corporation organized and existing under the laws of the State of Missouri and having its principal office in the City of Kansas City, Missouri, and WIC, organized under the laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri, each does hereby make, constitute and appoint:

WILLIAM J. PALMER, BRYAN T. ROBERTSON, MARION F. HATCHER III, and SANDRA MOORE

JOINTLY OR SEVERALLY

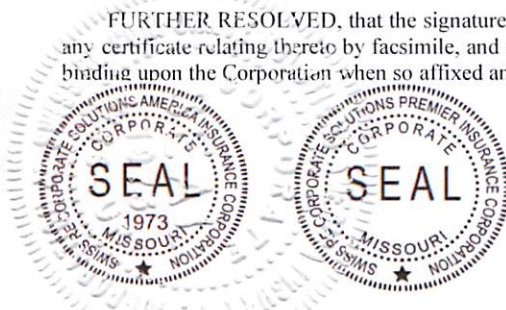
Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

TWO HUNDRED MILLION (\$200,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both SRCSAIC and SRCSPIC at meetings duly called and held on the 18th of November 2021 and WIC by written consent of its Executive Committee dated July 18, 2011.

"RESOLVED, that any two of the President, any Managing Director, any Senior Vice President, any Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is, authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Corporation bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Corporation; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Corporation may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By Erik Janssens, Senior Vice President of SRCSAIC & Senior Vice President of SRCSPIC & Senior Vice President of WIC

[Signature of Erik Janssens]



By Gerald Jagrowski, Vice President of SRCSAIC & Vice President of SRCSPIC & Vice President of WIC

[Signature of Gerald Jagrowski]

IN WITNESS WHEREOF, SRCSAIC, SRCSPIC, and WIC have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers

this 10 day of NOVEMBER, 20 22

State of Illinois
County of Cook

SS

Swiss Re Corporate Solutions America Insurance Corporation
Swiss Re Corporate Solutions Premier Insurance Corporation
Westport Insurance Corporation

On this 10 day of NOVEMBER, 20 22, before me, a Notary Public personally appeared Erik Janssens, Senior Vice President of SRCSAIC and Senior Vice President of SRCSPIC and Senior Vice President of WIC and Gerald Jagrowski, Vice President of SRCSAIC and Vice President of SRCSPIC and Vice President of WIC, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

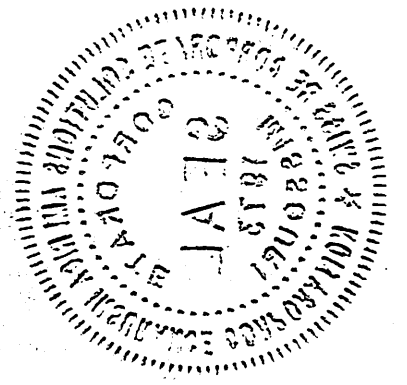


[Signature of Christina Manisco]

I, Jeffrey Goldberg, the duly elected Senior Vice President and Assistant Secretary of SRCSAIC and SRCSPIC and WIC, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said SRCSAIC and SRCSPIC and WIC, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 27th day of March, 20 23.

Jeffrey Goldberg, Senior Vice President & Assistant Secretary of SRCSAIC and SRCSPIC and WIC

[Signature of Jeffrey Goldberg]



**BID FORM 8J:
Bid Fees**

Item	Description	Unit	Unit Price	
	Day Rate: Multiple Locations	EA	\$ 4,250.00	
Traffic Control/ MOT, Equipment Set-up and Monitoring				
	Mobilization Per Vehicle	EA	\$ 1,850.00	
Sanitary Sewer Manhole & Pipe Preparation/ Plug, Preclean and Video				
	Vac Truck, Pre Clean Sanitary Sewer	LF	\$ 5.00	
	CCTV/Video, Pre Video Sanitary Sewer	LF	\$ 3.00	
Sanitary Sewer CIPP Installation				
	CIPP Liner Equipment Site SET-up Per Run	EA	\$ 450.00	
Sanitary Sewer CIPP 4.5 mm Liner Thickness (used in 2 -14 ft manhole depths)				
				Minimum Footage
	6" Diameter	LF	\$ 88.05	150
	8" Diameter	LF	\$ 77.73	150
	10" Diameter	LF	\$ 97.38	150
	12" Diameter	LF	\$ 106.35	150
	16" Diameter	LF	\$ 139.42	150
	18" Diameter	LF	\$ 148.82	150
	24" Diameter	LF	\$ 188.73	150
Sanitary Sewer CIPP 6 mm Liner Thickness (used in 14-25 ft manhole depths or where more structural integrity is needed)				
				Minimum Footage
	6" Diameter	LF	\$ 99.22	150
	8" Diameter	LF	\$ 86.55	150
	10" Diameter	LF	\$ 108.30	150
	12" Diameter	LF	\$ 121.00	150
	16" Diameter	LF	\$ 162.58	150
	18" Diameter	LF	\$ 170.21	150
	24" Diameter	LF	\$ 188.73	150
Sanitary Sewer CIPP Reinstatement				
	Mainline Lateral Reinstatement	EA	\$ 365.00	
	Mainline Invert Reinstatement	EA	\$ 865.00	
Sanitary Sewer CIPP Installation Post Video				
	CCTV/Video, Post Video	LF	\$ 2.25	
Additional Services				
	Plugging Mainline 6"-10"	Day	\$ 475.00	
	Plugging Mainline 12"-16"	Day	\$ 895.00	
	Plugging Mainline 18"-24"	Day	\$ 1,295.00	
	Manhole Bypass Pumping 6"-10" Flow	Day	\$ 700.00	
	Manhole Bypass Pumping 12"-16" Flow	Day	\$ 2,400.00	
	Manhole Bypass Pumping 18"-24" Flow	Day	\$ 3,900.00	
	Mainline Hammer Tap/ Extended Lateral Removal	EA	\$ 2,500.00	
	Root Intrusion Removal	HRLY	\$ 275.00	
	Chemical Grout Repairs 6"-10"	EA	\$ 650.00	
	Chemical Grout Repairs 12"-16"	EA	\$ 850.00	
	Chemical Grout Repairs 18"-24"	EA	\$ 1,050.00	
	Additional Video and Reports	EA	\$ 75.00	

Tyfo®-PWR Part A

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Print Date 02/15/2017

SECTION 1. IDENTIFICATION

Product name : Tyfo®-PWR Part A

Manufacturer or supplier's details

Company : ELANTAS PDG, INC.
5200 North 2nd Street
St. Louis MO 63147

Telephone : (314) 621-5700

Visit our web site : www.elantas.com

E-mail address : Todd.Thomas@altana.com

Emergency telephone number : INFOTRAC - 1-800-535-5053

Recommended use of the chemical and restrictions on use

Recommended use : Casting Resin

Restrictions on use : Refer to Section 15 for any restrictions that may apply

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitisation : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of

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the workplace.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Epoxy Resin Solution

Hazardous components

Component	CAS-No.	Concentration (%)
Epoxy Resin	25068-38-6	>= 80 - < 81
Epoxy Resin	28064-14-4	>= 9 - < 10
Epoxy diluent	17557-23-2	>= 9 - < 10

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.

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- If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURES

- Unsuitable extinguishing media : High volume water jet
- Further information : Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.
Absorbent paper or other organic material used for cleaning up resin is a fire hazard, as heat and spontaneous combustion can occur, particularly if the resin was catalyzed. Catalyzed resin can generate hazardous exothermic heat if allowed to polymerize in a mass. All soiled or waste materials must be water soaked, and kept in a closed bin until disposed of.

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SECTION 7. HANDLING AND STORAGE

- Advice on safe handling** : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
The chemical reaction that cures mixed epoxy is exothermic (heat generating). If left to cure in a contained mass, such as in a mixing vessel, it can generate enough heat to melt plastic, burn skin or ignite surrounding combustible materials. The larger or thicker the epoxy mass, the more heat generated.
- Conditions for safe storage** : Store under conditions specified on the product Technical Data Sheet to maintain product quality.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : Use with adequate ventilation.
All application areas should be ventilated in accordance with applicable OSHA regulations. (29 CFR 1910.94)

Personal protective equipment

- Respiratory protection** : In the case of vapour formation use a respirator with an approved filter.

Hand protection

- Remarks** : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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- Eye protection** : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
- Skin and body protection** : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures** : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : liquid
- Odour Threshold** : No data available
- pH** : No data available
- Melting point/freezing point** : No data available
- Initial boiling point and boiling range** : No data available
- Vapour pressure** : No data available
- Flash point** : Greater than 201 °F (94 °C)
Method: No information available.
Information taken from reference works and the literature.
- Upper explosion limit** : No data available
- Lower explosion limit** : No data available
- Evaporation rate** : No data available
- Flammability (solid, gas)** : No data available
- Relative vapour density** : No data available
- Relative Density/Specific Gravity** : No data available
- Density** : 1.1563 g/cm³ (77 °F (25 °C))
- Solubility(ies)**
Water solubility : No data available

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Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: Greater than 22 mm ² /s (104 °F (40 °C))

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available
Hazardous decomposition products	: The by-products expected in incomplete pyrolysis or combustion of epoxy resins are mainly phenolics, CO and water.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Eyes

Acute toxicity

Product:

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute dermal toxicity	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method

Components:

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25068-38-6 Epoxy Resin:

Acute oral toxicity : LD50 (Rat): 11,400 mg/kg

LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
GLP: yes

Acute inhalation toxicity : LC50 : Remarks: No data available

Acute dermal toxicity : LD50 (Rabbit): 23,400 mg/kg

LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

17557-23-2 Epoxy diluent:

Acute oral toxicity : LD50 (Rat): 4,500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 2,150 mg/kg

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation and/or dermatitis.

Components:

25068-38-6 Epoxy Resin:

Species: Rabbit
Result: Moderate skin irritation

Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: Skin irritation
GLP: yes

17557-23-2 Epoxy diluent:

Result: Moderate skin irritation

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Components:

25068-38-6 Epoxy Resin:

Species: Rabbit
Result: Eye irritation

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Print Date 02/15/2017

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****25068-38-6 Epoxy Resin:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 1.7 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.3 mg/l
 Exposure time: 21 d
 Test Type: semi-static test
 Method: OECD Test Guideline 211
 GLP: yes

Persistence and degradability**Components:****25068-38-6 Epoxy Resin:**

Biodegradability : Result: Not readily biodegradable.
 Method: OECD Test Guideline 301F
 GLP: yes

Bioaccumulative potential**Components:****25068-38-6 Epoxy Resin:**

Partition coefficient: n-octanol/water : log Pow: 3.242 (25 °C)
 pH: 7.1
 Method: OECD Test Guideline 117
 GLP: yes

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological

: No data available

SAFETY DATA SHEET



Tyfo®-PWR Part A

Version 6

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information

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

EPA Hazardous Waste Code(s) : none

Waste from residues : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Catalyzed resin can generate hazardous exothermic heat if allowed to polymerize in a mass. All soiled or waste materials must be water soaked, and kept in a closed bin until disposed of. Dispose of the solid mass only if cure is complete and the mass has cooled. Follow federal, state or local disposal regulations.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

US. EPA CERCLA Hazardous Substances (40 CFR 302)

This material does not contain any components with a CERCLA RQ.

Tyfo®-PWR Part A

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Print Date 02/15/2017

SARA 304 - Emergency Release Notification

This material does not contain any components with a section 304 EHS RQ.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

This material does not contain any components with a SARA 302 RQ.

SARA 311/312 Hazards : Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to Section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Non-volatile (Wt) : Refer to the product technical data sheet for VOC information.

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Epoxy Resin	25068-38-6
Epoxy Resin	28064-14-4
Epoxy diluent	17557-23-2

New Jersey Right To Know

Epoxy Resin	25068-38-6
Epoxy Resin	28064-14-4
Epoxy diluent	17557-23-2

SAFETY DATA SHEET



Tyfo®-PWR Part A

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New Jersey Trade Secret Registry Number for the product (NJ TSRN) : NOT APPLICABLE

California Prop 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.
Phenyl glycidyl ether 122-60-1

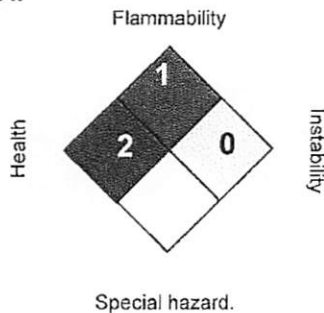
The components of this product are reported in the following inventories:

- TSCA : We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).
- Section 4 / 12(b) : Not applicable
- Section 5 : Not applicable
- DSL : We certify that all of the components of this product are listed on the DSL.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 10/18/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Tyfo®-PWR Part B - 12 lbs

Version 4

Revision Date 02/27/2018

Print Date 04/13/2018

SECTION 1. IDENTIFICATION

Product name : Tyfo®-PWR Part B - 12 lbs

Manufacturer or supplier's details

Company : ELANTAS PDG, INC.
5200 North 2nd Street
St. Louis MO 63147

Telephone : (314) 621-5700

Visit our web site : www.elantas.com

E-mail address : Todd.Thomas@altana.com

Emergency telephone number : INFOTRAC - 1-800-535-5053

Recommended use of the chemical and restrictions on use

Recommended use : Casting Resin

Restrictions on use : Refer to Section 15 for any restrictions that may apply

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin irritation : Category 2

Eye irritation : Category 2A

Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.
H361d Suspected of damaging the unborn child.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

Tyfo®-PWR Part B - 12 lbs

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P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P332 + P313 If skin irritation occurs: Get medical advice/attention.
 P337 + P313 If eye irritation persists: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reuse.
Storage:
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Modified Aromatic Polyamine

Hazardous components

Component	CAS-No.	Concentration (%)
2-ethylhexanoic acid, compound with 2,4,6-tris[(dimethylamino)methyl]phenol	51365-70-9	>= 90 - < 91
2-Ethylhexanoic acid	149-57-5	>= 9 - < 10

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

In case of eye contact : Flush eyes with water as a precaution.
 Remove contact lenses.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.

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If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

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Conditions for safe storage : Store under conditions specified on the product Technical Data Sheet to maintain product quality.
 Keep container tightly closed in a dry and well-ventilated place.
 Observe label precautions.
 Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-Ethylhexanoic acid	149-57-5	TWA (Inhalable fraction and vapor)	5 mg/m ³	ACGIH

Engineering measures : Use with adequate ventilation.
 All application areas should be ventilated in accordance with applicable OSHA regulations. (29 CFR 1910.94)

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
 Tightly fitting safety goggles

Skin and body protection : Impervious clothing
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
 When using do not smoke.
 Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

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Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Vapour pressure	: No data available
Flash point	: Greater than 201 °F (94 °C) Method: No information available. Information taken from reference works and the literature.
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Relative vapour density	: No data available
Relative Density/Specific Gravity	: No data available
Density	: 0.9634 g/cm ³ (77 °F (25 °C))
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: Greater than 22 mm ² /s (104 °F (40 °C))

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available
Hazardous decomposition products	: The by-products expected in incomplete pyrolysis or combustion of epoxy resins are mainly phenolics, CO and water.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation
Skin contact
Eyes

Acute toxicity**Product:**

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:**149-57-5 2-Ethylhexanoic acid:**

Acute oral toxicity : LD50 (Rat): 3,000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 1.260 mg/kg

LD50 (Rat, male and female): 2,001 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation**Components:****149-57-5 2-Ethylhexanoic acid:**

Species: Rabbit
Result: Mild skin irritation

Species: Rabbit

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Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation**Components:****149-57-5 2-Ethylhexanoic acid:**

Species: Rabbit

Result: Severe eye irritation

Method: Draize Test

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

GLP: yes

Respiratory or skin sensitisation**Components:****149-57-5 2-Ethylhexanoic acid:**

Test Type: Maximisation Test

Exposure routes: Dermal

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

GLP: yes

Carcinogenicity**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Further information**Product:**

Remarks: No data available

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information

: No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

EPA Hazardous Waste Code(s) : none

Waste from residues : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

Not regulated as a dangerous good

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Revision Date 02/27/2018

Print Date 04/13/2018

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****US. EPA CERCLA Hazardous Substances (40 CFR 302)**

This material does not contain any components with a CERCLA RQ.

SARA 304 - Emergency Release Notification

This material does not contain any components with a section 304 EHS RQ.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

This material does not contain any components with a SARA 302 RQ.

SARA 311/312 Hazards : Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to Section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

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Non-volatile (Wt) : Refer to the product technical data sheet for VOC information.

US State Regulations**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

2-ethylhexanoic acid, compound with 2,4,6- 51365-70-9
 tris[(dimethylamino)methyl]phenol
 2-Ethylhexanoic acid 149-57-5

New Jersey Right To Know

2-ethylhexanoic acid, compound with 2,4,6- 51365-70-9
 tris[(dimethylamino)methyl]phenol
 2-Ethylhexanoic acid 149-57-5

New Jersey Trade Secret Registry Number for the product (NJ TSRN) : NOT APPLICABLE

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).

Section 4 / 12(b) : Not applicable

Section 5 : Not applicable

DSL : We certify that all of the components of this product are listed on the DSL.

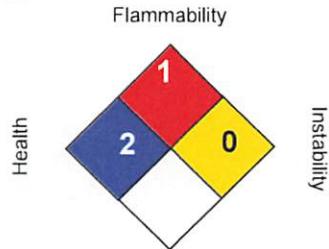
: Complex of 2,4,6-Tris-(dimethylamino)-methylphenol and ethylhexanoic acid

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SECTION 16. OTHER INFORMATION
Further information
NFPA:

HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 02/27/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Technical Data Sheet

Engineering Materials

Tyfo[®]-PWR

Two-Component Epoxy CIPP Compound

Tyfo[®]-PWR

Product Description

Tyfo[®]-PWR is a two-component, heat-curing, 100%-solids epoxy system.

Areas of Application

Impregnation of fiber and felt liners for cured-in-place pipe (CIPP)

Features and Benefits

- Designed for on-site application and trenchless repair of pipes
- Good workable pot life
- Compatible with moist surfaces
- NSF approved for potable water applications

Transportation / Storage

Store below 25°C / 77°F in a dry controlled environment out of direct sunlight. This material should be suitable for use stored under these conditions in the original sealed containers for twelve (12) months from the date of shipment.

Failure to store this product as recommended above may lead to deterioration in product performance.

Mix individual components thoroughly before use.

Health / Safety

Refer to the Safety Data Sheet.

See ELANTAS PDG Technical Bulletins *TI-100 - Handling Precautions for Epoxy Resins* and *TI-4005 - Epoxy Reaction Potential Hazards* for additional information.

Typical Properties of Material as Supplied

Property	Conditions	Value		Units
		Tyfo [®] -PWR Part A	Tyfo [®] -PWR Part B	
Viscosity	25°C / 77°F	2,400 – 3,600	500 - 800	cP
Weight per Gallon	25°C / 77°F	9.50 – 9.80	8.00 – 8.10	pounds
Flash Point	ASTM D93	> 94 > 201	> 94 > 201	°C °F
Mix Ratio	Parts by weight	100	4	

Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Gel Time (200 mL)	25°C / 77°F	50 - 60	hours
Volatile Organic Content	ASTM D6053	< 0.1 ^[1]	pounds / gallon

^[1] VOC test methods and limits vary widely by regulatory jurisdiction and product application. The value above was obtained by curing a thin film under specific laboratory conditions (2 grams - 1 hour - 150°C). Contact your ELANTAS PDG representative regarding alternate methods.

Tyfo[®]-PWR

Processing / Curing Schedule

Tyfo[®]-PWR Part A and Tyfo[®]-PWR Part B should be conditioned before use by cooling to 15 – 20°C / 59 – 68°C. Add Part B to Part A in the ratio specified above using meter mix equipment or a mixing tank equipped with a mechanical mixer. Mix until homogenous (typically 4 - 6 minutes).

Keep mixture below 25°C / 77°F to maximize available pot life for application.

Saturate the pipe liner with the mixture, using vacuum if desired for improved penetration. Calendar, if necessary, to remove excess liquid.

Insert liner into pipe, maintaining air or water pressure to assure contact with the pipe surface. The system will cure at room temperature in 48 - 72 hours but a heat cure, with either hot water or steam, is recommended for best performance:

Cure: 4 hours at 90°C / 194°F

Pressure should be maintained during cool down to avoid collapse of the liner. This may require 8 – 10 hours depending on ambient temperature and the thickness of the liner.

The cure schedule above is based on time after the unit reaches the specified temperature and is a recommendation only. The user is responsible for determining the optimum cure conditions for his application.

Typical Mechanical Properties – Specimens cured 4 hours at 90°C / 194°F

Property	Test Method	Conditions	Value	Units
Shore Hardness	ASTM D2240	25°C / 77°F	D 83	
Linear Shrinkage	ASTM D2566		< 1	%
Tensile Strength	ASTM D638	25°C / 77°F	9,600	psi
Elongation	ASTM D638	25°C / 77°F	8	%
Glass Transition Temp. (T _g)	ASTM E831	TMA	77	°C
Coefficient of Thermal Expansion	ASTM E831	below T _g above T _g	70 240	ppm / °C ppm / °C

The above properties are typical values and are not intended for specification use.

ELANTAS PDG, Inc. warrants the chemical composition of its products within stated tolerances, but does not guarantee that a product will be appropriate for any particular application. Any recommendation, performance of tests or suggestion is offered merely as a guide and is not a substitute for a thorough evaluation by the user. No representative of ELANTAS PDG, Inc. has the authority to offer a warranty that a product will perform satisfactorily in manufacturing a product and no such representation should be relied upon.

The user may forward, distribute, and/or photocopy this document only if unaltered and complete, and should refrain from any unauthorized use. This document may not be copied to a website without specific authorization from ELANTAS PDG, Inc.

ALTERNATE PRODUCT BID

Polyester Resin Bid Form

BID FORM 8J: Bid Fees				
Item	Description	Unit	Unit Price	
	Day Rate: Multiple Locations	EA	\$ 4,250.00	
Traffic Control/ MOT, Equipment Set-up and Monitoring				
	Mobilization Per Vehicle	EA	\$ 1,850.00	
Sanitary Sewer Manhole & Pipe Preparation/ Plug, Preclean and Video				
	Vac Truck, Pre Clean Sanitary Sewer	LF	\$ 5.00	
	CCTV/Video, Pre Video Sanitary Sewer	LF	\$ 3.00	
Sanitary Sewer CIPP Installation				
	CIPP Liner Equipment Site SET-up Per Run	EA	\$ 450.00	
Sanitary Sewer CIPP 4.5 mm Liner Thickness (used in 2 -14 ft manhole depths)				
				Minimum Footage
	6" Diameter	LF	\$ 72.87	150
	8" Diameter	LF	\$ 59.97	150
	10" Diameter	LF	\$ 64.62	150
	12" Diameter	LF	\$ 68.32	150
	16" Diameter	LF	\$ 80.66	150
	18" Diameter	LF	\$ 91.97	150
	24" Diameter	LF	\$ 115.69	150
Sanitary Sewer CIPP 6 mm Liner Thickness (used in 14-25 ft manhole depths or where more structural integrity is needed)				
				Minimum Footage
	6" Diameter	LF	\$ 79.84	150
	8" Diameter	LF	\$ 62.04	150
	10" Diameter	LF	\$ 67.38	150
	12" Diameter	LF	\$ 72.49	150
	16" Diameter	LF	\$ 92.09	150
	18" Diameter	LF	\$ 97.76	150
	24" Diameter	LF	\$ 125.57	150
Sanitary Sewer CIPP Reinstatement				
	Mainline Lateral Reinstatement	EA	\$ 365.00	
	Mainline Invert Reinstatement	EA	\$ 865.00	
Sanitary Sewer CIPP Installation Post Video				
	CCTV/Video, Post Video	LF	\$ 2.25	
Additional Services				
	Plugging Mainline 6"-10"	Day	\$ 475.00	
	Plugging Mainline 12"-16"	Day	\$ 895.00	
	Plugging Mainline 18"-24"	Day	\$ 1,295.00	
	Manhole Bypass Pumping 6"-10" Flow	Day	\$ 700.00	
	Manhole Bypass Pumping 12"-16" Flow	Day	\$ 2,400.00	
	Manhole Bypass Pumping 18"-24" Flow	Day	\$ 3,900.00	
	Mainline Hammer Tap/ Extended Lateral Removal	EA	\$ 2,500.00	
	Root Intrusion Removal	HRLY	\$ 275.00	
	Chemical Grout Repairs 6"-10"	EA	\$ 650.00	
	Chemical Grout Repairs 12"-16"	EA	\$ 850.00	
	Chemical Grout Repairs 18"-24"	EA	\$ 1,050.00	
	Additional Video and Reports	EA	\$ 75.00	



Insituform[®]

An Aeglon Company

Worldwide Pipeline

17999 Edison Ave.

Tel: (636) 530-8000

Rehabilitation

Chesterfield, MO 63005

Fax: (636) 530-8744

102T Series

Polyester Resin

Aug 2020

Polyester Resin for Gravity CIPP Applications

Insituform's 102T Series is a family of polyester resins for gravity sanitary and storm sewer applications. Resins currently approved for the 102T Series include:

AOC L758

Interplastic COR78-AT-559/5XX

AOC L721

Insituform 102T

Typical Resin/Felt Properties

Flexural Strength, psi/MPa	4,500/31.5	ASTM D 790
Flexural Modulus, psi/MPa	400,000/2,760	ASTM D 790

Description

Insituform's 102T Series resins are comprised of filled, thixotropic polyester resins and are excellent applications for sanitary and storm sewers. These resins can also be used in some industrial applications. Polyester resins provide the corrosion resistance required for sanitary sewer applications and also provide the durability needed for long-term applications.

Features

Good physical properties, corrosion resistant, durable, good long-term properties, excellent catalyzed pot life, high heat distortion temperature and high molecular weight.

Safety

Safety guidelines are available in the appropriate Material Safety Data Sheet.

Detailed Information

Detailed information for any of the approved resins in the 102T Series can be provided upon request.



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Rehabilitation Chesterfield, MO 63005

Fax: (636) 530-8744

**102T Series
Polyester Resin
Aug 2020**

Corrosion Testing for Gravity CIPP Applications

Insituform's 102T Series is a family of polyester resins for gravity sanitary and storm sewer applications. Resins currently approved for the 102T Series include:

AOC L758
Interplastic COR78-AT-559/5XX
AOC L721
Insituform 102T

Typical Resin/Felt Properties

Flexural Strength, psi/MPa	4,500/31.5	ASTM D 790
Flexural Modulus, psi/MPa	400,000/2,760	ASTM D 790

Chemical Resistance Testing

CIPP laminates made from each of Insituform's 102T Series resins are tested for chemical resistance in accordance with ASTM F1216 for one month exposure and ASTM D5813 for one year exposure.

Test Results

The results of the ASTM F 1216 and D 5813 chemical corrosion testing are shown in the attached data sheets ASTM F 1216 CORROSION TESTING RESULTS and ASTM D 5813 CORROSION TESTING RESULTS, respectively.

Detailed Information

Detailed information for any of the approved resins in the 102T Series can be provided upon request.

**INSITUFORM TECHNOLOGIES
102T SERIES POLYESTER RESIN
ASTM D 5813 CORROSION TESTING RESULTS**

	AOC L721-LTA		AOC L758-LTI		COR 78-AT-559/5XX		INSITUFORM 102T	
	RETENTION VALUE	REQUIREMENT 80%	VALUE	REQUIREMENT 80%	RETENTION VALUE	REQUIREMENT 80%	RETENTION VALUE	REQUIREMENT 80%
CONTROL SAMPLE								
Flexural Modulus, psi	619,000		668,000		666,000		742,000	
1% NITRIC ACID								
Flexural Modulus, psi	533,000		561,000		620,000		700,000	
% Retention	86%	PASSED	84%	PASSED	93%	PASSED	94%	PASSED
5% SULFURIC ACID								
Flexural Modulus, psi	562,000		572,000		637,000		728,000	
% Retention	91%	PASSED	86%	PASSED	96%	PASSED	98%	PASSED
100% ASTM FUEL C								
FLEXURAL MODULUS, psi	587,000		666,000		595,000		744,000	
% Retention	95%	PASSED	100%	PASSED	89%	PASSED	100%	PASSED
100% VEGETABLE OIL								
FLEXURAL MODULUS, psi	634,000		665,000		674,000		753,000	
% Retention	102%	PASSED	100%	PASSED	101%	PASSED	101%	PASSED
0.10% DETERGENT								
Flexural Modulus, psi	550,000		591,000		638,000		633,000	
% Retention	89%	PASSED	89%	PASSED	96%	PASSED	85%	PASSED
0.10% SOAP								
Flexural Modulus, psi	553,000		651,000		645,000		654,000	
% Retention	89%	PASSED	98%	PASSED	97%	PASSED	88%	PASSED

August 2020

**INSITUFORM TECHNOLOGIES
102T SERIES PLOYESTER RESIN
ASTM F 1216 CORROSION TESTING RESULTS**

	AOC L721-LTA		AOC L758-LTI		COR 78-AT-559/5XX		INSITUFORM 102T	
	RETENTION VALUE	REQUIREMENT 80%	RETENTION VALUE	REQUIREMENT 80%	RETENTION VALUE	REQUIREMENT 80%	RETENTION VALUE	REQUIREMENT 80%
CONTROL SAMPLE								
FLEXURAL STRENGTH, psi	6,650		6,048		8180		6,896	
FLEXURAL MODULUS, psi	590,000		722,710		665887		750,666	
TAP WATER								
FLEXURAL STRENGTH, psi	7,602		6,353		7896		6,703	
% RETENTION	114%	PASSED	100%	PASSED	97%	PASSED	97%	PASSED
FLEXURAL MODULUS, psi	551,706		632,142		648714		730,936	
% RETENTION	94%	PASSED	88%	PASSED	97%	PASSED	97%	PASSED
5% NITRIC ACID								
FLEXURAL STRENGTH, psi	7,464		5,924		7858		6,281	
% RETENTION	112%	PASSED	98%	PASSED	96%	PASSED	91%	PASSED
FLEXURAL MODULUS, psi	568,565		616,116		640045		755,552	
% RETENTION	96%	PASSED	85%	PASSED	96%	PASSED	101%	PASSED
10% PHOSPHORIC ACID								
FLEXURAL STRENGTH, psi	7,623		6,291		7709		7,177	
% RETENTION	115%	PASSED	100%	PASSED	94%	PASSED	104%	PASSED
FLEXURAL MODULUS, psi	544,623		678,126		663334		757,194	
% RETENTION	92%	PASSED	94%	PASSED	100%	PASSED	101%	PASSED
10% SULFURIC ACID								
FLEXURAL STRENGTH, psi	7,557		6,236		7774		6,989	
% RETENTION	114%	PASSED	100%	PASSED	95%	PASSED	101%	PASSED
FLEXURAL MODULUS, psi	575,028		646,307		667650		745,008	
% RETENTION	97%	PASSED	90%	PASSED	100%	PASSED	99%	PASSED
100% GASOLINE								
FLEXURAL STRENGTH, psi	8,397		6,576		8527		7,639	
% RETENTION	126%	PASSED	100%	PASSED	104%	PASSED	111%	PASSED
FLEXURAL MODULUS, psi	599,527		695,498		656421		765,138	
% RETENTION	102%	PASSED	96%	PASSED	99%	PASSED	102%	PASSED
100% VEGETABLE OIL								
FLEXURAL STRENGTH, psi	7,852		6,460		8039		6,772	
% RETENTION	118%	PASSED	100%	PASSED	98%	PASSED	98%	PASSED
FLEXURAL MODULUS, psi	624,613		685,065		675249		759,969	
% RETENTION	106%	PASSED	95%	PASSED	101%	PASSED	101%	PASSED
0.1% DETERGENT								
FLEXURAL STRENGTH, psi	7,125		6,396		7697		6,712	
% RETENTION	107%	PASSED	100%	PASSED	94%	PASSED	97%	PASSED
FLEXURAL MODULUS, psi	548,941		682,070		638719		737,963	
% RETENTION	93%	PASSED	94%	PASSED	96%	PASSED	98%	PASSED
0.1% SOAP								
FLEXURAL STRENGTH, psi	6,771		5,906		7778		7,164	
% RETENTION	101%	PASSED	98%	PASSED	95%	PASSED	104%	PASSED
FLEXURAL MODULUS, psi	562,800		649,337		644970		767,237	
% RETENTION	95%	PASSED	90%	PASSED	97%	PASSED	102%	PASSED

NOTE: Testing was completed in accordance with ASTM D543

August 2020



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**102T Series
Polyester Resin
Aug 2020**

**Flexural Creep Testing for Gravity
CIPP Applications**

Insituform's 102T Series is a family of polyester resins for gravity sanitary and storm sewer applications. Resins currently approved for the 102T Series include:

AOC L758
Interplastic COR78-AT-559/5XX
AOC L721
Insituform 102T

Typical Resin/Felt Properties

Flexural Strength, psi/MPa	4,500/31.5	ASTM D 790
Flexural Modulus, psi/MPa	400,000/2,760	ASTM D 790

Flexural Creep Testing

CIPP laminates made from each of Insituform's 102T Series resins were tested for flexural creep in accordance with ASTM D2990 for 10,000 hours.

Test Results

The results of tests for each group of laminates were plotted from 100 hours to 10,000 hours on a log/log graph, and a linear trend line was created. The 50 year flexural creep modulus was estimated by extending the linear regression to 50 years.

Safety

Safety guidelines are available in the appropriate Material Safety Data Sheet.

Detailed Information

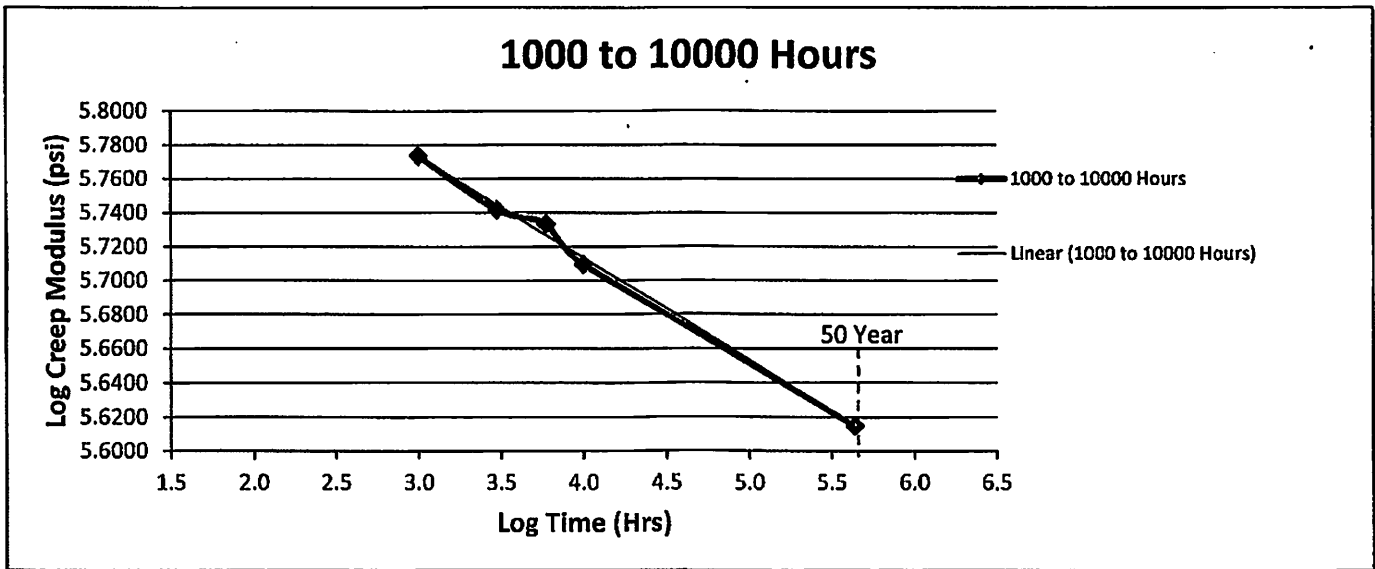
Detailed information for any of the approved resins in the 102T Series can be provided upon request.

ASTM D 2990 Creep Modulus Data
Insituform 102 T/TA Polyester Resin
Insituform-102 Series Resin
CENTRE for ADVANCEMENT of TRENCHLESS TECHNOLOGIES
 Test Reporting Date May 1, 2005

Elapsed Time (hours)	Flex Displ Avg (in)	Flex Creep Mod Avg (psi)	Log Values	
			Time	Modulus
1000	0.7240	593614	3.0000	5.7735
3000	0.7767	552208	3.4771	5.7421
6000	0.7920	541394	3.7782	5.7335
10000	0.8350	512511	4.0000	5.7097
438000		412000	5.6415	5.6149

50-year projected creep modulus = 412,000 psi

Note: Data available in full report

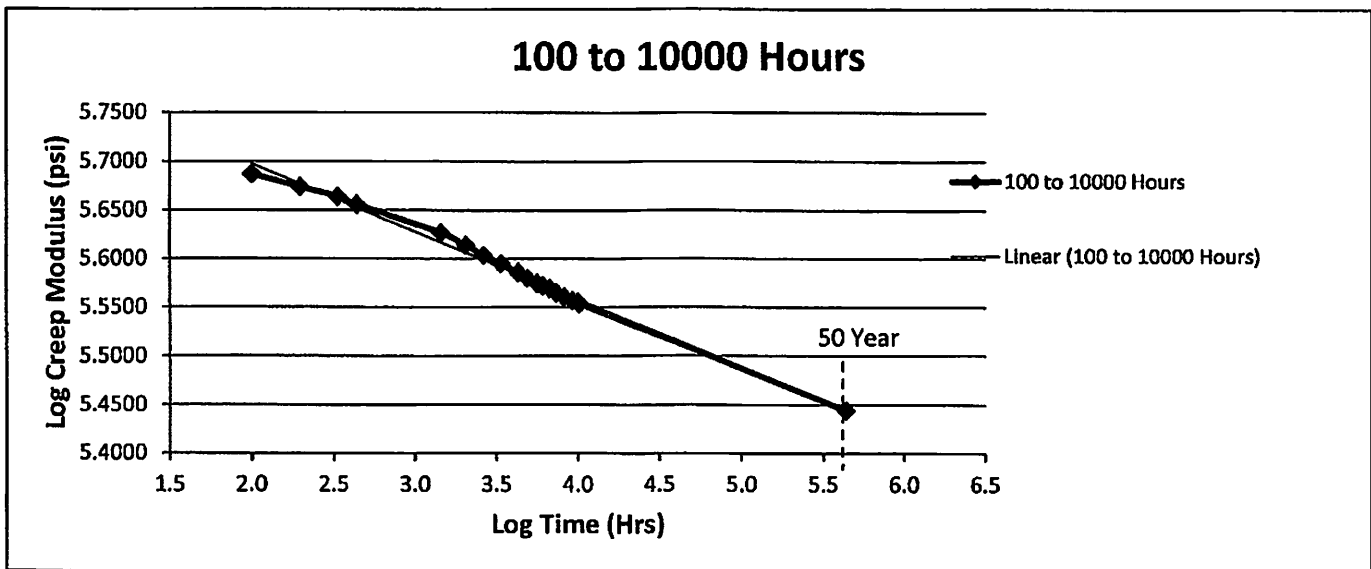


**ASTM D 2990 Creep Modulus Data
AOC L721-LT Polyester Resin
Insituform 102 Series Resin
Microbac**

Test Reporting Date December 13, 2011

Elapsed Time (hours)	Flex Displ Avg (in)	Flex Creep Mod Avg (psi)	Log Values	
			Time	Modulus
100	0.4277	486685	2.0004	5.6872
196	0.4268	472531	2.2911	5.6744
335	0.4260	461658	2.5244	5.6643
437	0.4254	453185	2.6404	5.6563
1441	0.4231	423727	3.1586	5.6271
2043	0.4220	411252	3.3102	5.6141
2620	0.4211	401484	3.4183	5.6037
3362	0.4203	393836	3.5266	5.5953
4293	0.4195	385482	3.6328	5.5860
4892	0.4190	380492	3.6895	5.5803
5640	0.4185	375809	3.7513	5.5750
6122	0.4182	373235	3.7869	5.5720
6718	0.4180	371235	3.8272	5.5696
7415	0.4175	367127	3.8701	5.5648
8230	0.4171	363806	3.9154	5.5609
9270	0.4168	360535	3.9671	5.5569
9913	0.4166	359357	3.9962	5.5555
10179	0.4165	358178	4.0077	5.5541
438000		278,100	5.6415	5.4442

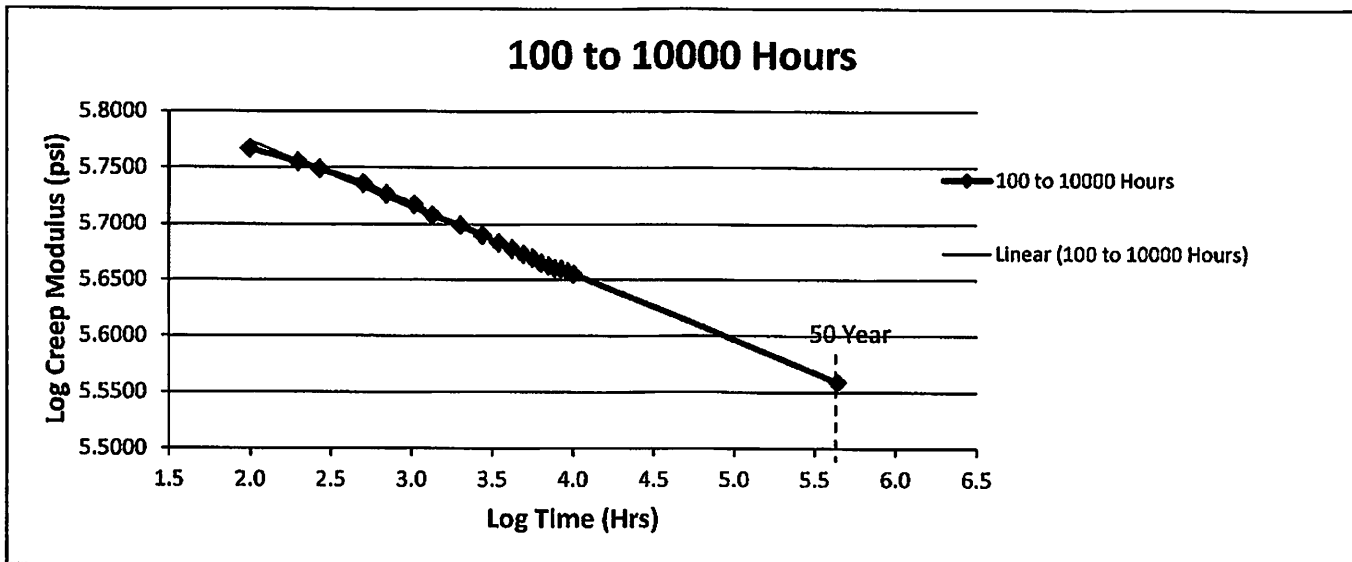
50-year projected creep modulus = 278,100 psi



ASTM D 2990 Creep Modulus Data
AOC L758-LTI Polyester Resin
Insituform 102 Series Resin
Hauser Laboratories Boulder, CO
Test Reporting Date August 17, 2005

Elapsed Time (hours)	Displacement Avg (in)	Creep Modulus Avg (psi)	Log Values	
			Time	Modulus
99	0.0290	584660	1.9948	5.7669
197	0.0298	569260	2.2953	5.7553
268	0.0303	560940	2.4285	5.7489
500	0.0312	544620	2.6993	5.7361
698	0.0318	533000	2.8440	5.7267
1037	0.0325	522140	3.0157	5.7178
1343	0.0932	510740	3.1281	5.7082
2014	0.0339	500180	3.3040	5.6991
2758	0.0346	489720	3.4406	5.6899
3458	0.0352	482240	3.5388	5.6833
4200	0.0356	476220	3.6233	5.6778
4925	0.0360	471140	3.6924	5.6731
5637	0.0363	467240	3.7510	5.6695
6381	0.0367	462120	3.8049	5.6648
7102	0.0369	459640	3.8514	5.6624
7751	0.0371	457380	3.8894	5.6603
8493	0.0372	456440	3.9291	5.6594
9262	0.0373	454440	3.9667	5.6575
10011	0.0375	452500	4.0005	5.6556
438000		362300	5.6415	5.5591

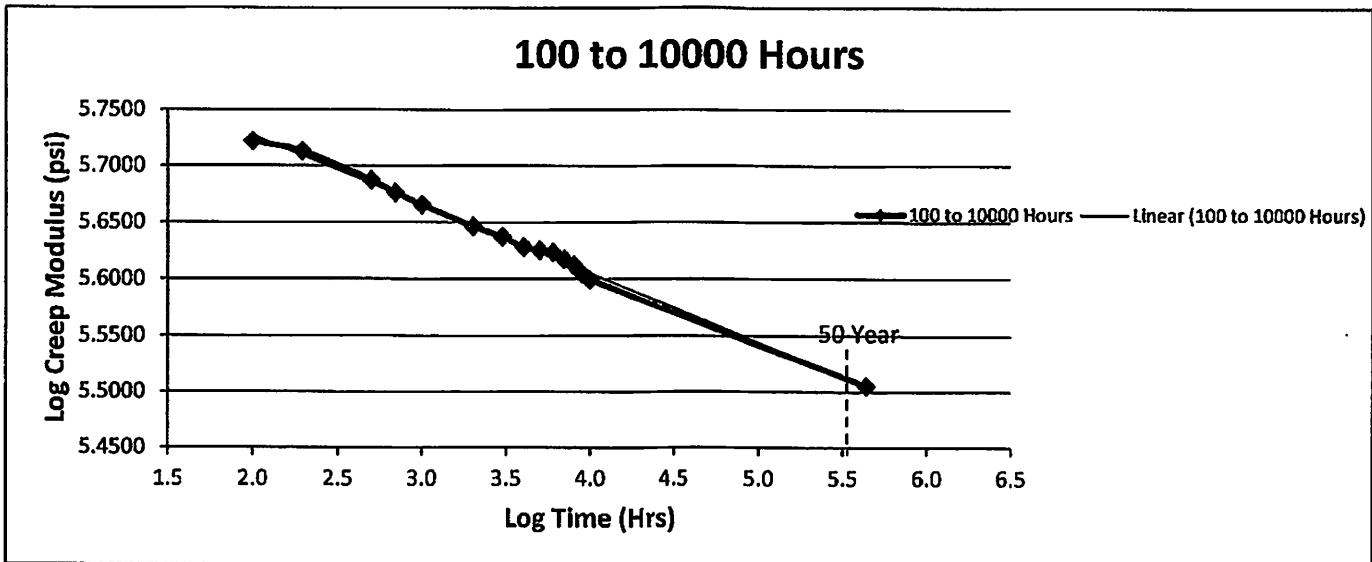
50-year projected creep modulus = 362,300 psi



ASTM D 2990 Creep Modulus Data
Interplastic COR 78-AT-559/5XX Polyester Resin
Insituform-102 Series Resin
Interplastic Corporation Thermoset Resins Division
Test Reporting Date September 18, 2012

Elapsed Time (hours)	Displacement Avg (in)	Creep Modulus Avg (psi)	Log Values	
			Time	Modulus
100	no data	527400	2.0000	5.7221
196	available	516500	2.2923	5.7131
500		486900	2.6990	5.6874
700		474600	2.8451	5.6763
1004		463100	3.0017	5.6657
2012		443300	3.3036	5.6467
3019		433900	3.4799	5.6374
4028		424900	3.6051	5.6283
5036		422000	3.7021	5.6253
6044		420400	3.7813	5.6237
7052		414400	3.8483	5.6174
8059		409400	3.9063	5.6121
9000		402700	3.9542	5.6050
10003		397800	4.0001	5.5997
438000		320200	5.6415	5.5054

50-year projected creep modulus = 320,200



Product Information

**Isophthalic Based Resin
for Underground Sewer
Pipe Liners**

TYPICAL LIQUID RESIN PROPERTIES

	Nominal	Test Method
Flexural Strength, psi/MPa	4,500/31.5	ASTM D 790
Flexural Modulus, psi/GPa	400,000/2.7	ASTM D 790

*Typical properties are not to be construed as specifications.

DESCRIPTION

AOC's 102 T Filled is a high molecular weight isophthalic unsaturated polyester resin that was developed for Insituform Technologies, Inc. and their licensees. 102 T Filled provides the corrosion resistance, durability and toughness that is required in this demanding application. Using recommended catalyst systems and temperatures, up to 50 hours of catalyzed pot life may be obtained. 102 T Filled thixotropic properties reduce resin pooling while providing superior PET felt wet-out.

FEATURES

- Excellent catalyzed pot life
- Superior mechanical properties
- High molecular weight
- High heat distortion temperature

APPLICATION

- Sewer pipe liners



PERFORMANCE GUIDELINES

Consistent shop conditions contribute to consistent gel times.

STORAGE STABILITY

Resins are stable for three months from date of production when stored in the original containers away from sunlight at no more than 70°F/21°C. After extended storage, some drift may occur in gel time. During the hot summer months, no more than two months stability at 86°F/30°C should be anticipated.

SAFETY

See appropriate Material Safety Data Sheet for guidelines.

ISO 9001:2000 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2000 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

Global Contacts

Institutform® CIPP (CURED)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Firefighting measures

5.1. Extinguishing media

No additional information available

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not considered flammable, but may burn at high temperatures.
- Explosion hazard : Product is not explosive.
- Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Do not breathe fumes from fires or vapors from decomposition. Avoid prolonged contact with eyes, skin and clothing.

6.1.1. For non-emergency personnel

- Protective equipment : Use appropriate personal protection equipment (PPE). Evacuate unnecessary personnel.
- Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

None known.

6.3. Methods and material for containment and cleaning up

- For containment : Contain and collect as any solid.
- Methods for cleaning up : Clean up spills immediately and dispose of waste safely.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : When heated to decomposition, emits toxic fumes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a dry, cool and well-ventilated place.
- Incompatible products : Strong acids. Strong bases. Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Titanium Dioxide (13463-67-7)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (Titanium dioxide; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	LRT irr; A3
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³

8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.

Insitutuform® CIPP (CURED)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment : Gloves, Safety glasses.



Hand protection : Protective gloves.

Eye protection : Safety glasses.

Respiratory protection : None required under normal product handling conditions. If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: White polyester fiber tube containing cured resin.
Color	: Blue; White
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: Not applicable
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

Institutuform® CIPP (CURED)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Titanium Dioxide (13463-67-7)	
LD50 oral rat	> 10000 mg/kg (Rat; OECD 425: Acute Oral Toxicity; Up-and-Down Procedure; Experimental value; > 5000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 10000 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	> 6.8 mg/l/4h (Rat; Experimental value)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

Titanium Dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after inhalation : Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Symptoms/injuries after skin contact : Product is not irritating for the skin.
Symptoms/injuries after eye contact : Eye contact is not considered a potential route of exposure.
Chronic symptoms : None known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Titanium Dioxide (13463-67-7)	
EC50 Daphnia 1	> 100 mg/l (LC50; Equivalent or similar to OECD 202; 48 h; Daphnia magna; Static system; Fresh water; Weight of evidence)
Threshold limit algae 1	61 mg/l (EC50; Other; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)

12.2. Persistence and degradability

Titanium Dioxide (13463-67-7)	
Persistence and degradability	Biodegradability: not applicable. Low potential for mobility in soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

Titanium Dioxide (13463-67-7)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

No additional information available

Insitutuform® CIPP (CURED)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with local, state, and federal regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

TDG

TDG Primary Hazard Classes : Not regulated for transport

Transport by sea

Class (IMDG) : Not regulated for transport

Air transport

Class (IATA) : Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations

Titanium Dioxide (13463-67-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Propylene ethylene copolymer (9010-79-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

Titanium Dioxide (13463-67-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

Titanium Dioxide (13463-67-7)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SECTION 1: IDENTIFICATION
1.1. Product Identifier

Product Form: Mixture

Product Name: Insituform® CIPP (Uncured)

Product Code: Impregnated Insitutube Product (Polyester Filled)

1.2. Intended Use of the Product

Use of the substance/mixture: Sewer rehabilitation. For professional use only.

1.3. Name, Address, and Telephone of the Responsible Party
Company

Insituform Technologies, LLC

17988 Edison Ave.

Chesterfield, MO 63005

T: 636.530.8000

www.insituform.com
1.4. Emergency Telephone Number

Emergency Number : 877.576.2653

SECTION 2: HAZARDS IDENTIFICATION
2.1. Classification of the Substance or Mixture
Classification (GHS-US)

Flam. Liq. 3 H226

Skin Irrit. 2 H315

Eye Irrit. 2A H319

Skin Sens. 1 H317

Carc. 2 H351

STOT SE 3 H335

STOT RE 1 H372

Asp. Tox. 1 H304

Full text of H-phrases: see section 16

2.2. Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US)

Signal Word (GHS-US)
Hazard Statements (GHS-US)
Precautionary Statements (GHS-US)

: Danger

: H226 - Flammable liquid and vapor.

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

H351 - Suspected of causing cancer.

H372 - Causes damage to organs through prolonged or repeated exposure.

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.

P233 - Keep container tightly closed.

P240 - Ground/bond container and receiving equipment.

P241 - Use explosion-proof electrical, ventilating, and lighting equipment.

P242 - Use only non-sparking tools.

P243 - Take precautionary measures against static discharge.

P260 - Do not breathe vapors, mist, or spray.

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

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P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P301+P310 - IF SWALLOWED: Immediately call a poison center or doctor.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P331 - Do NOT induce vomiting.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO₂), extinguishing powder to extinguish.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

This material contains organic peroxides. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement. Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Styrene	(CAS No) 100-42-5	< 45	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation: vapor), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335 STOT RE 1, H372 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 3, H412
Talc	Proprietary	<= 30	Not classified
Proprietary 1 – Organic Peroxide	Proprietary	<= 3	Org. Perox. C, H242 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Proprietary 2 – Organic Peroxide	Proprietary	<= 3	Org. Perox. D, H242 Skin Sens. 1, H317

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Proprietary 3 – Organic Peroxide	Proprietary	<= 3	Org. Perox. C, H242 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Proprietary 4 – Organic Peroxide	Proprietary	<= 3	Org. Perox. C, H242 Skin Sens. 1, H317 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Proprietary 5 – Organic Peroxide	Proprietary	<= 3	Org. Perox. B, H241
Proprietary 6 – Organic Peroxide	Proprietary	<= 3	Org. Perox. D, H242 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Butylcyclohexanol	Proprietary	<= 1.5	Eye Irrit. 2A, H319 Aquatic Acute 3, H402
Quartz	Proprietary	<= 1	Carc. 1A, H350* STOT SE 3, H335 STOT RE 1, H372
Alkanes	Proprietary	<= 1	Asp. Tox. 1, H304 Aquatic Chronic 4, H413
Isododecane	Proprietary	<= 1	Asp. Tox. 1, H304
Titanium dioxide	Proprietary	<= 0.5	Carc. 2, H351**

*Evidence indicates that quartz dust causes cancer and lung disease when inhaled over an extended period of time. Since this product is in a liquid form, the quartz dust is not able to become airborne and cannot be inhaled. Thus, the hazards usually associated with quartz dust are not applicable to this product.

**Titanium dioxide is suspected of causing cancer through inhalation. Since this product is in a liquid form, titanium dioxide is not able to become airborne and cannot be inhaled. Thus, the hazards usually associated with titanium dioxide dust are not applicable to this product.

The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water or soap and water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure. May cause respiratory irritation. May be fatal if swallowed and enters airways.

Symptoms/Injuries After Inhalation: Sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Symptoms/Injuries After Eye Contact: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

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Symptoms/Injuries After Ingestion: The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Chronic Symptoms: Repeated or prolonged inhalation of fumes or vapors may result in hearing loss. Suspected of causing cancer. Chronic exposure may cause defatting of the skin.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use halons. Do not use a heavy water stream. Use of heavy stream of water may spread fire. Application of water stream to hot product may cause frothing and increase fire intensity.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Flammable liquid and vapor. Vapors may travel to source of ignition and flash back.

Explosion Hazard: May form flammable/explosive vapor-air mixture.

Reactivity: This material contains organic peroxides. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement. May react violently with incompatible materials.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (dust, vapor, mist, spray. Keep away from heat, sparks, open flames, hot surfaces. – No smoking.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: If specialize clothing is required to deal with spillage, take note of any information in Section 8 on suitable and unsuitable materials. Use appropriate personal protection equipment (PPE).

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Avoid dispersal of spilled material.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and/or absorb spill with inert material, then place in suitable container. Do not take up in combustible material such as saw dust or cellulosic material.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to Section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Flammable vapors can accumulate in head space of closed systems. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. Proper grounding procedures to avoid static electricity should be followed.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical, ventilating, and lighting equipment.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible Products: Strong acids. Strong bases. Strong oxidizers. Accelerators. Heavy metals. Heavy metal salts. Reducing agents. Rust. Amines. Sulfur compounds.

7.3. Specific End Use(s)

Sewer rehabilitation. For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

Styrene (100-42-5)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA ACGIH	ACGIH STEL (ppm)	40 ppm
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	215 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	50 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	425 mg/m ³
USA NIOSH	NIOSH REL (STEL) (ppm)	100 ppm
USA IDLH	US IDLH (ppm)	700 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm
Quartz		
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
USA ACGIH	ACGIH chemical category	A2 - Suspected Human Carcinogen
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
Titanium dioxide		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA IDLH	US IDLH (mg/m ³)	5000 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust)
Talc		
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen containing no asbestos fibers
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	2 mg/m ³ (containing no Asbestos and <1% Quartz-respirable dust)
USA IDLH	US IDLH (mg/m ³)	1000 mg/m ³ (containing no asbestos and <1% quartz)

8.2. Exposure Controls

Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Gas detectors should be used when flammable gases or vapors may be released. Use explosion-proof equipment. Ensure all national/local regulations are observed.

Personal Protective Equipment

: Gloves. Insufficient ventilation: wear respiratory protection. Safety glasses.



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Materials for Protective Clothing	: When a risk assessment indicates protective clothing is necessary, chemically resistant materials and fabrics should be used.
Hand Protection	: Wear chemically resistant protective gloves.
Eye Protection	: Chemical safety glasses.
Skin and Body Protection	: Personal protective equipment for the skin and body should be selected based on the task being performed and when a risk assessment indicates this is necessary.
Respiratory Protection	: If exposure limits are exceeded or if a risk assessment indicates it is necessary, approved respiratory protection should be worn.
Environmental Exposure Controls	: Do not allow the product to be released into the environment.
Consumer Exposure Controls	: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Transparent, white, blue coated felt impregnated with putty-like, semi-solid liquid
Odor	: Aromatic
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: 31 °C (87.8 °F) (TCC)
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Solubility	: No data available
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

9.2. Other Information No additional information available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: This material contains organic peroxides. Heating may cause hazardous decomposition. Hazardous decomposition products from peroxides are flammable and can be explosive under confinement. May react violently with incompatible materials.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization may occur.

10.4. Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Sparks, heat, open flame and other sources of ignition. Incompatible materials.

10.5. Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Accelerators. Heavy metals. Heavy metal salts. Reducing agents. Rust. Amines. Sulfur compounds.

10.6. Hazardous Decomposition Products: Benzoic acid. Tert-butanol. Acetone. Benzene. Methane. 3,3,5-trimethylcyclohexane. Thermal decomposition generates: Carbon oxides (CO, CO₂). Nitrogen oxides. Hydrocarbons. Alcohols. Metal oxides. Methylene Diphenyl Diisocyanate (MDI). Organic compounds. Irritating or toxic vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Styrene (100-42-5)	
LD50 Oral Rat	1000 mg/kg
LC50 Inhalation Rat	11.7 mg/l/4h

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Quartz	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
Proprietary 3 – Organic Peroxide	
ATE (Dust/Mist)	1.50 mg/l/4h
Butylcyclohexanol	
LD50 Oral Rat	4200 mg/kg
LD50 Dermal Rabbit	> 5 g/kg
Titanium dioxide	
LD50 Oral Rat	> 10000 mg/kg

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Suspected of causing cancer.

This product contains styrene, which results in the category 2 carcinogen classification. Classifications of styrene from IARC, NTP, and the OSHA Hazard Communication Carcinogen List are shown below. The 13th Report on Carcinogens by the National Toxicology Program classified styrene as “reasonably anticipated to be a human carcinogen based on limited evidence of carcinogenicity from studies in humans, sufficient evidence of carcinogenicity from studies in experimental animals, and supporting data on mechanisms of carcinogenesis” (NTP. 2014. *Report on Carcinogens, Thirteenth Edition*). Additional studies have been conducted with mixed results regarding the carcinogenicity hazard associated with Styrene.

1) A published study suggested that “S-induced mouse lung tumors are unlikely to be relevant to human risk” (*Regulatory Toxicology and Pharmacology*. 2013 June; 66 (1)).

2) A recent update to an extensive study of reinforced plastic workers found “no coherent evidence that styrene exposure increases risk from cancers of the lymphatic and hematopoietic tissue, pancreas, or lung” (*Epidemiology*. 2013 March; 24 (2)).

Based on the weight of evidence and supplier information, styrene was classified as a category 2 carcinogen.

Styrene (100-42-5)	
IARC group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Quartz	
IARC group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Titanium dioxide	
IARC group	2B
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Talc	
IARC group	3
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity, Twelfth Report - Items under consideration.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (ears) through prolonged or repeated exposure (Inhalation).

Aspiration Hazard: May be fatal if swallowed and enters airways.

Symptoms/Injuries After Inhalation: Sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Symptoms/Injuries After Eye Contact: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Symptoms/Injuries After Ingestion: The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Chronic Symptoms: Repeated or prolonged inhalation of fumes or vapors may result in hearing loss. Suspected of causing cancer. Chronic exposure may cause defatting of the skin.

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SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Ecology - Water : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Styrene (100-42-5)	
LC50 Fish 1	3.24 - 4.99 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	3.3 - 7.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	19.03 - 33.53 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
NOEC (acute)	44 mg/kg (Exposure time: 14 Days - Species: Eisenia foetida [soil dry weight])

Proprietary 2 – Organic Peroxide	
EC50 Daphnia 1	> 100 g/l
ErC50 (algae)	> 100 mg/l (Exposure Time: 72 h - Species: Raphidocelis subcapitata)
NOEC chronic algae	100 mg/l (Species: Pseudokirchnerella subcapitata)

Butylcyclohexanol	
EC50 Daphnia 1	46 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Talc	
LC50 Fish 1	> 100 g/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static])

12.2. Persistence and Degradability No additional information available.

12.3. Bioaccumulative Potential

Styrene (100-42-5)	
BCF fish 1	13.5
Log Pow	2.95

Butylcyclohexanol	
Log Pow	3.23
Talc	
BCF fish 1	(no known bioaccumulation)

12.4. Mobility in Soil No additional information available.

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT

Proper Shipping Name : RESIN SOLUTION flammable
Hazard Class : 3
Identification Number : UN1866
Label Codes : 3
Packing Group : III
ERG Number : 127



14.2. In Accordance with IMDG

Proper Shipping Name : RESIN SOLUTION
Hazard Class : 3
Identification Number : UN1866
Packing Group : III
Label Codes : 3
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E



14.3. In Accordance with IATA

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Proper Shipping Name : RESIN SOLUTION
Packing Group : III
Identification Number : UN1866
Hazard Class : 3
Label Codes : 3
ERG Code (IATA) : 3L



SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Insituform® CIPP (Uncured)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Fire hazard Reactive hazard
Styrene (100-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 %
Quartz	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Proprietary 2 – Organic Peroxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Proprietary 1 – Organic Peroxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Proprietary 3 – Organic Peroxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Proprietary 5 – Organic Peroxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Alkanes	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Isododecane	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Proprietary 4 – Organic Peroxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Butylcyclohexanol	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Titanium dioxide	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
Talc (14807-96-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Proprietary 6 – Organic Peroxide (686-31-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2 US State Regulations

Quartz	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Titanium dioxide	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Styrene (100-42-5)	
U.S. - Massachusetts - Right To Know List	

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U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
 U.S. - Pennsylvania - RTK (Right to Know) List

Quartz

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Proprietary 3 – Organic Peroxide

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Titanium dioxide

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Talc

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 08/10/2015
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200. This document has been prepared in accordance with standards for workplace safety. The precautionary statements and warnings included might not apply in all cases. Your needs may vary depending on the potential for exposure in your workplace.

GHS Full Text Phrases:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Inhalation:vapor)	Acute toxicity (inhalation:vapor) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 3	Flammable liquids Category 3
Org. Perox. B	Organic Peroxide Category B
Org. Perox. C	Organic Peroxide Category C
Org. Perox. D	Organic Peroxide Category D
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H241	Heating may cause a fire or explosion

Insituform® CIPP (Uncured)

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

H242	Heating may cause a fire
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)

**BID FORM 8B: Bid Form
Acknowledgement and Pricing Proposal**

PROJECT IDENTIFICATION: Sewer Rehabilitation Services

BID IDENTIFICATION AND NUMBER: BID NO. 23-B-005

THIS BID IS SUBMITTED TO: CITY OF SOUTH DAYTONA
OFFICE OF THE CITY MANAGER
1672 S. RIDGEWOOD AVENUE
SOUTH DAYTONA, FLORIDA 32119

Name of Bidder: Atlantic Pipe Services, LLC

Mailing Address: 1420 Martin Luther King Jr Blvd

Street Address: 1420 Martin Luther King Jr Blvd

City/State/Zip: Sanford, FL 32771

Phone Number: (407) 792.1360 FAX Number: () info@atlanticpipe.us

I have carefully examined the Invitation to Bid (ITB), Instructions to Vendors, General and/or Special Conditions, Specifications, and any other documents accompanying or made a part of this invitation.

I hereby propose to furnish the goods or services specified in the Invitation to Bid at the prices or rates as finally negotiated. I agree that my bid will remain firm for a period of up to ninety (90) days in order to allow the City of South Daytona adequate time to evaluate the proposed bid. Furthermore, I agree to abide by all conditions of the Invitation to Bid.

I certify that all information contained in this Bid is truthful to the best of my knowledge and belief. I further certify that I am a duly authorized to submit this Bid on behalf of the Vendor / Contractor as its act and deed and that the Vendor / Contractor is ready, willing and able to perform if awarded the contract.

I propose and agree, if this Bid is accepted, to enter into an Agreement with the City in the form included in the Contract Documents to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation and labor and to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

I will accept as full compensation for completion of the project in full compliance with the Contract Documents, the lump sum price for the work items submitted herein with this Bid.

I further certify that this Bid is made without prior understanding, Contract, connection, discussion, or collusion with any person, firm or corporation submitting a Bid for the same product or service; no officer, employee or agent of the City of South Daytona City Council or of any other Vendor interested in said ITB; and that the undersigned executed this Vendor's Acknowledgement with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

I further certify that having read and examined the specifications and documents for the designated services and understanding the general conditions for contract under which services will be performed, does hereby propose to furnish all labor, equipment, and material to provide the services set forth in the ITB.

I hereby declare that the following listing states any clarifications, any and all variations from and exceptions to the requirements of the specifications and documents. The undersigned further declares that the "work" will be performed in strict accordance with such requirements and understands that any exceptions to the requirements of the specifications and documents may render the Bid non-responsive.

ADDENDUM ACKNOWLEDGEMENT

I have carefully examined the Invitation to Bid (ITB), Instructions to Vendors, General and/or Special Conditions, Specifications, and any other documents accompanying or made a part of this Invitation to Bid.

I acknowledge receipt and incorporation of the following addenda, and the cost, if any, of such revisions has been included in the price of the bid proposal.

Addendum Number: 1 Date: 03/20/23 Addendum Number: _____ Date: _____
Addendum Number: _____ Date: _____ Addendum Number: _____ Date: _____

Please note that the City may award contracts to multiple contractors.

BID

The undersigned offers to furnish all materials, equipment and labor for construction of the "BID NO. 23-B-005, Sewer Rehabilitation Services," for the City of South Daytona, Florida, complete in every respect in strict accordance with the drawings, specifications, exhibits, figures and any future changes therein.

The bid price as outlined in Bid Form 8J is attached.

IN WITNESS WHEREOF, Bidder has hereunto executed this form this 28th day of March, 2023.

Atlantic Pipe Services, LLC

(Name of Bidding Firm)

Allan Cagle

(Signature of person signing form)

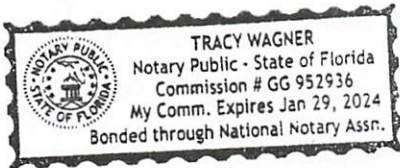
Allan Cagle - President

(Printed name and Title of person signing form)

STATE OF Florida
COUNTY OF Seminole

This document was sworn to (or affirmed) and subscribed before me by means of physical presence or online notarization, this 28 day of March, 2023

he/she is personally known to me or has presented _____ as identification.



[Signature]
Notary Public
My Commission Expires: 1/29/24

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID.

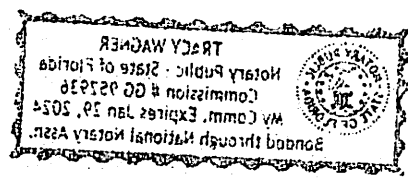
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Third block of faint, illegible text, continuing the document's narrative or list.

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**BID FORM 8C:
Drug-Free Preference Statement**

IDENTICAL TIE BIDS - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids, proposals, statements, or replies that are equal with respect to price, quality, and service are received by the city for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program.

In order to have a drug-free workplace program, a business shall:

- (1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- (2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
- (4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
- (5) Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
- (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

As an authorized representative of the firm, I certify that this firm complies fully with the above requirements.

Atlantic Pipe Services, LLC

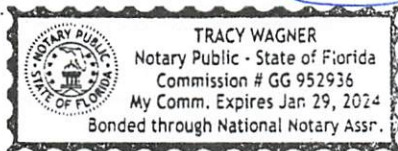
(Name of Bidding Firm)

Allan Cagle
(Signature of person signing form)

Allan Cagle - President
(Printed name and Title of person signing form)

STATE OF Florida
COUNTY OF Seminole

This document was sworn to (or affirmed) and subscribed before me by means of physical presence or online notarization, this 23 day of March, 2023 he/she is personally known to me or has presented _____ as identification.



[Signature]
Notary Public
My Commission Expires: 1/29/24

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID.

**BID FORM 8D:
Public Entity Crimes Statement**

(To be signed in the presence of notary public or other officer authorized to administer oaths.)

Before me, the undersigned Authority, personally appeared affiant who, being by me first duly sworn, made the following statement:

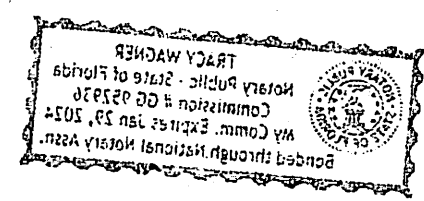
This sworn statement is submitted with Bid, Proposal or Contract No. 23-B-005 for Sewer Rehabilitation Services. This sworn statement is submitted by Atlantic Pipe Services, LLC whose business address is 1420 MARTIN LUTHER KING JR. BLVD, SANFORD, FL 32771 and (if applicable) its Federal Employer Identification Number (FEIN) is 81-4515509. (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: _____.)

My name is Allan Cagle and my relationship to the entity named above is President.
(relationship such as sole proprietor, partner, president, vice president)

- (1) I understand that a public entity crime as defined in Section 287.133 of the Florida Statutes includes a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any proposal or contract for goods or services to be provided to any public entity or such an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy or material misrepresentation.
- (2) I understand that "convicted" or "conviction" is defined by the Florida Statutes to mean a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilt or nolo contendere.
- (3) I understand that "affiliate" is defined by the Florida Statutes to mean (1) a predecessor or successor of a person or a corporation convicted of a public entity crime, or (2) an entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime, or (3) those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate, or (4) a person or corporation who knowingly entered into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months.
- (4) I understand that a "person" as defined in Paragraph 287.133(i)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
- (5) Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies).

[Faint, illegible text]

[Faint, illegible text]



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**BID FORM 8E:
Anti-Collusion Statement**

By signing this form, the Proposer agrees that this Bid is made without any other understanding, agreement, or connection with any person, corporation, or firm submitting a bid for the same purpose and that the bid is in all respects fair and without collusion or fraud.

SIGN in ink in the space provided below. Unsigned Bids will be considered incomplete, and will be disqualified, and rejected.

IT IS AGREED BY THE UNDERSIGNED VENDOR THAT THE SIGNING AND DELIVERY OF THE BID REPRESENTS THE VENDORS ACCEPTANCE OF THE TERMS AND CONDITIONS OF THE FOREGOING SPECIFICATIONS, CONTRACT AND PROVISIONS, AND IF AWARDED, THIS CONTRACT WILL REPRESENT THE AGREEMENT BETWEEN THE VENDORS AND THE CITY OF SOUTH DAYTONA.

Allan Cagle
(Signature of person signing form)

Allan Cagle - President
(Printed name and Title of person signing form)

Name of Bidder: Atlantic Pipe Services, LLC

Address: 1420 MARTIN LUTHER KING JR. BLVD

City/State/Zip: SANFORD, FL 32771

Phone Number: (407) 792.1360 FAX Number: () info@atlanticpipe.us

FEIN Number: 81-4515509

NO Bid may be withdrawn for a period of ninety (90) days subsequent to the submittal of the Bids, without the consent of the City of South Daytona.

NO BID (REASON): N/A

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID.

**BID FORM 8F:
Statement of Vendor Qualifications**

The undersigned warrants that he or she is duly authorized to complete this document, and hereby affirms that the information contained in this Form is complete, true, and correct to the best of their knowledge and belief. If necessary, questions may be answered on separate paper and attached, with any additional information that may be pertinent.

- (1) Name of Vendor. **Atlantic Pipe Services, LLC**
- (2) Permanent main office address. **1420 MARTIN LUTHER KING JR. BLVD, SANFORD, FL 32771**
- (3) Date organized. **01/01/2017**
- (4) If a corporation, where incorporated. **Florida**
- (5) How many years have you been engaged in the contracting business under your present firm or trade name? **5.3 yrs**
- (6) Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.) **See attached list**
- (7) General character of work performed by your company. **Storm and Sewer Cleaning, Inspections and Repairs**
- (8) Have you ever failed to complete any work awarded to you? If so, where and why? **No**
- (9) Have you ever defaulted on a contract? If so, where and why? **No**
- (10) List the more important projects recently completed by your company, stating the approximate cost for each and the month and year completed. **See References**
- (11) List your major equipment currently owned or leased. **See attached equipment spreadsheet**
- (12) Experience in work similar to this type of project. **See attached similar work / project flow**
- (13) Background and experience of the principal members of your organization, including the officers. **3 resumes attached**
- (14) The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City in verification of the recitals comprising this Statement of Vendor Qualifications.

Atlantic Pipe Services, LLC

(Name of Bidding Firm)

Allan Cagle
(Signature of person signing form)

Allan Cagle - President

(Printed name and Title of person signing form)

STATE OF Florida
COUNTY OF Seminole

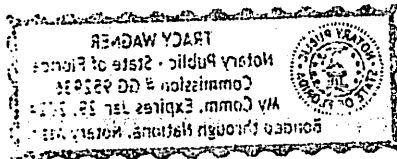
This document was sworn to (or affirmed) and subscribed before me by means of physical presence or ___ online notarization, this 28 day of March, 2023, he/she is personally known to me or has presented _____ as identification.



[Signature]
Notary Public
My Commission Expires: 1/29/24

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(6) CONTRACTS ON HAND

Contract #	Authority	Services	Contract Start	Contract End	Description
IFB-603507-19/BJC	Seminole County	Storm Cleaning and Inspections	August 2022	August 2023	This is a Term Contract for Services on an "as-needed" basis
IFB-604150-21/LNF	Seminole County	Storm CIPP Lining and MH Rehabilitation	October 2021	September 2024	This is a Term Contract for Services on an "as-needed" basis
21-MCC-ATL-13188	St Johns County	Storm/Sewer Cleaning, Inspections, CIPP	February 2023	February 2024	This is a Term Contract for Services on an "as-needed" basis
B-21-32	Brevard County	Storm CIPP	April 2021	April 2024	This is a Term Contract for Services on an "as-needed" basis
IFB22-0161	City of Orlando	Sanitary CIPP and Manhole Rehab	March 2023	March 2024	This is a Term Contract for Services on an "as-needed" basis
ITB-23-2026-KC	FDOT District 2	Storm Cleaning and Inspections	April 2023	April 2026	This is a Term Contract for Services on an "as-needed" basis
22-B-112LS	Volusia County	Sanitary Cleaning, Inspections, and CIPP Lining	August 2022	August 2025	This is a Term Contract for Services on an "as-needed" basis
20-133	Toho Water Authority	Sanitary Sewer Cleaning and Inspections	November 2020	November 2023	This is a Term Contract for Services on an "as-needed" basis

(11) Equipment

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	EQUIPMENT TYPE	FUEL TYPE	Month Took Possession
BT001	2014 ISUZU	BOX TRUCK	Diesel	8/8/2019
CT001	2017 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	5/10/2017
CT002	2018 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	10/30/2017
CT003	2018 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	7/23/2018
CT004	2018 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	11/27/2018
CT005	2019 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	5/30/2019
CT006	2018 FORD CAMERA VAN E450	TV TRUCK	Unleaded	8/13/2019
CT007	2019 FORD CAMERA TRUCK F550 4x4 Lateral Launch	TV TRUCK	Diesel	8/17/2020
CT008	2019 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	8/17/2020
CT009	2019 FORD CAMERA TRUCK F550 4x4 Lateral Launch	TV TRUCK	Diesel	10/7/2020
CT010	2020 Ford F550 4WD CAMERA TRUCK WITH CUTTER	TV & CUTTER TRUCK	Diesel	10/7/2020
CT011	2021 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	11/19/2021
CT012	2021 FORD CAMERA TRUCK F550 4x4	TV TRUCK	Diesel	11/19/2021
CT014	2021 Ford F550 4WD CAMERA	TV TRUCK	Diesel	9/28/2021
CT015	2021 Ford F550 4WD CAMERA	TV TRUCK	Diesel	8/1/2022
CT016	2021 Ford F550 4WD CAMERA	TV TRUCK	Diesel	9/19/2022
CT017	2021 Ford F550 4WD CAMERA	TV TRUCK	Diesel	2/3/2023
CT018	2022 Ford F550 4WD CAMERA TRUCK	TV TRUCK	Diesel	7/7/2022
CT019	2021 Ford F550 4WD Laser CAMERA TRUCK	TV TRUCK	Diesel	7/28/2022
CT020	2022 Ford F550 4WD CAMERA TRUCK	TV TRUCK	Diesel	3/8/2023
GT001	2018 FORD F750 XL	GROUT TRUCK	Diesel	10/23/2018
GT002	2021 FORD F650	GROUT TRUCK	Diesel	6/28/2021
HT001	2020 Kenworth T880	BOILER TRUCK	Diesel	12/30/2019
HT002	2020 Kenworth T880	BOILER TRUCK	DIESEL	11/19/2021
HT003	2020 Kenworth T800	BOILER TRUCK	DIESEL	3/14/2022
SV001	2017 Vactor 114SD Sewer Vacuum Truck	VACTOR	Diesel	12/19/2016
SV002	2018 FREIGHTLINER 114SD	VACALL	Diesel	9/15/2017
SV003	2018 FREIGHTLINER 114SD TRUCK	VACALL	Diesel	12/26/2017
SV004	2018 KENWORTH T880	VACTOR	Diesel	12/19/2018
SV005	2018 Vacall 114SD Sewer Vacuum Truck	VACALL	Diesel	6/5/2019
SV006	2019 Vacall 114SD Sewer Vacuum Truck	VACALL	Diesel	7/8/2020
SV007	2017 Vacall Recycler Sewer Vac Truck	VACALL	Diesel	7/8/2020
SV008	2020 Vactor Standard Sewer Vac Truck	VACTOR	Diesel	3/1/2021
SV009	2017 T900 Vactor Recycler Sewer Vac Truck	VACTOR	Diesel	6/10/2020
SV011	2020 Vactor Standard Sewer Vac Truck	VACTOR	Diesel	10/15/2020
SV013	2019 VACALL 114SD Recycler Sewer Vacuum Truck	VACALL	Diesel	6/15/2021
SV017	2019 VACALL 114SD Recycler Sewer Vacuum Truck	Vacall Recycler	Diesel	10/13/2021
SV018	2021 Vactor Standard Sewer Vac Truck	VACTOR	Diesel	6/28/2021
SV019	2022 Freightliner 114SD Vacall Standard	Vacall	Diesel	8/11/2021
SV020	2021 Freightliner 114SD Vacall Standard	Vacall	Diesel	6/21/2022
SV021	2021 Freightliner 114SD Vacall Standard	Vacall	Diesel	6/21/2022
SV022	2021 Kenworth T880- Vactor	VACTOR	Diesel	7/7/2022
SV023	2022 PETERBILT 567	VACTOR	Diesel	9/19/2022
SV024	Kenworth T880- Vactor	VACTOR	Diesel	10/20/2022
SV025	Freightliner 114SD	VACALL	Diesel	10/20/2022
SV026	2021 Kenworth T880- Vactor	VACTOR	Diesel	12/19/2022
SV027	2021 Freightliner 114SD Vacall Recycler	VACALL	Diesel	9/27/2022
SV028	2022 PETERBILT 567	VACTOR	Diesel	2/21/2023
SV029	Kenworth T880- Vactor	VACTOR	Diesel	2/21/2023
ST001	2019 FORD F550	MECHANIC TRUCK	Diesel	9/13/2019
ST002	2019 FORD F350	MECHANIC TRUCK	Diesel	11/22/2019
ST003	2021 FORD F550 XL	DIVE TRUCK	Diesel	8/24/2021

ST004	2022 FORD F550	MECHANIC TRUCK	Diesel	2/1/2023
T002	2016 FORD F150	TRUCK	Unleaded	11/14/2018
T003	2016 FORD F150	TRUCK	Unleaded	11/14/2018
T007	2019 Ford F250	TRUCK	Diesel	7/8/2019
T009	2019 FORD F-150	TRUCK	Unleaded	6/30/2019
T011	2019 FORD F-150	TRUCK	Unleaded	6/30/2019
T012	2018 FORD F-150	TRUCK	Unleaded	9/13/2019
T014	2019 FORD F-150	TRUCK	Unleaded	1/24/2020
T015	2020 FORD F-150	TRUCK	Unleaded	7/13/2020
T016	2020 FORD F-150	TRUCK	Unleaded	8/1/2020
T017	2020 FORD F-150	TRUCK	Unleaded	8/14/2020
T018	2020 FORD F-150	TRUCK	Unleaded	8/14/2020
T019	2020 FORD F-150	TRUCK	Unleaded	8/14/2020
T020	2020 FORD F-250	TRUCK	Unleaded	1/13/2021
T021	2021 FORD F-150	TRUCK	Unleaded	5/19/2021
T022	2021 FORD F-150	TRUCK	Unleaded	6/21/2021
T023	2021 FORD F-350	TRUCK	Diesel	7/12/2021
T025	2021 Ford F-150 XL	TRUCK	Unleaded	11/12/2021
T027	2021 Ford F150 XLT	TRUCK	Unleaded	1/22/2022
T028	2022 Ford F150 XLT	TRUCK	Unleaded	1/22/2022
T029	2021 Ford F250 Crew Cab	TRUCK	Unleaded	1/22/2022
T030	2021 Ford Supercrew F150XL	TRUCK	Unleaded	2/14/2022
T031	2021 Ford supercrew F150XL	TRUCK	Unleaded	2/14/2022
T032	2021 Ford F350 Flat Bed	TRUCK	Diesel	2/22/2022
T033	2022 Ford F250	TRUCK	Unleaded	4/14/2022
T034	2021 Ford F150 XL Supercrew	TRUCK	Unleaded	4/4/2022
T035	2020 Ford F150 4dr Sport	TRUCK	Unleaded	4/14/2022
T036	2022 FORD F-150	TRUCK	Unleaded	5/2/2022
T037	2022 Ford F350	TRUCK	Diesel	5/25/2022
T038	2020 FORD F-150	TRUCK	Unleaded	6/1/2022
T039	2022 FORD F-150	TRUCK	Unleaded	6/22/2022
T040	2022 FORD F-250	TRUCK	Unleaded	6/22/2022
T041	2022 FORD F-150	TRUCK	Unleaded	6/22/2022
T042	2022 FORD EXPLORER	SUV	Unleaded	7/1/2022
T043	2022 FORD F-150 HYB	TRUCK	Unleaded	8/22/2022
T044	2022 FORD F-550	TRUCK	Diesel	8/1/2022
T045	2022 Ford F-150	TRUCK	Unleaded	8/1/2022
T046	2022 Ford F-150	TRUCK	Unleaded	10/22/2022
T047	2022 Ford F-150	TRUCK	Unleaded	10/1/2022
T048	2023 F-150	TRUCK	Unleaded	2/27/2023
MHT001	2021 Rollin Flatbed Trailer/Cement Spray	Gooseneck Trailer	N/A	3/14/2022
MHT002	2022 Cargo Mate Utility Trailer/Epoxy Spray	Trailer	N/A	3/14/2022
RT002	2020 Arising Industry Trailer	TRAILER	N/A	9/11/2019
RT003	2020 Arising Industry Trailer (grout)	TRAILER	N/A	10/17/2019
RT004	2020 5x10 Utility Trailer	TRAILER	N/A	12/23/2020
RT005	2020 7x20 Utility Trailer	TRAILER/Dive	N/A	1/11/2021
RT006	2021 18x8 Big Tex Trailer	TRAILER	N/A	10/1/2021
RT008	2021 8.5 x 20 x 6'6 Enclosed Trailer	TRAILER	N/A	2/15/2022
RT009	2022 Big Tex 18x8 Trailer	TRAILER	N/A	2/25/2022
RT010	82x16 Tandem Axle Landscape Trailer	TRAILER	N/A	3/23/2022
IT001	2021 8X12 Medium Inversion Trailer	TRAILER	N/A	12/28/2021
LT001	2020 Rausch Trailer w Laser Equipment	TRAILER/LASER	N/A	11/18/2020
LT002	2021 CRMT Trailer w Laser Equipment	TRAILER/LASER	N/A	6/15/2021
LT003	2017 CRMT Trailer w Laser Equipment	TRAILER/LASER	N/A	7/14/2021
LT004	2011 CRMT Trailer w Laser Equipment (For Parts)	TRAILER/LASER		Jul-21

Similar Projects / Project Flow

Atlantic Pipe Services performs sanitary sewer rehabilitation on a routine basis. As submitted previously in this bid package, APS has completed three larger scale projects of similar nature recently; work was performed for Loxahatchee River Environmental District, Sunshine Water, and the City of Winter Park. All projects included pre-inspections for assessment, CIPP lining, and post lining inspection. Project flow is as follows:

Project Plan: Pipeline Cleaning & CCTV Inspection

All effective pipeline rehabilitation projects start with a clear, accurate CCTV inspection. Before a CCTV inspection can be performed, the pipeline must be cleaned. Without proper desilting, the video inspections can be rendered incapable to accomplish or provide incomplete data. Since the goal is to provide a complete assessment of the sewer system, APS believes that it is imperative to give a complete 360 degree view of the pipeline throughout the entire length of each pipe segment in the defined scope of work. Without a proper cleaning, a CCTV operator could be limited in providing an accurate inspection.

For Existing Sewer Pipeline cleaning (depending on the flow in the pipeline) will start with the operator setting a plug up stream to hold back any sewage debris flowing in during the cleaning and inspection process. If necessary, APS will use bypassing to prevent sewer back ups while working on a system. Once plugged a Vacuum Truck will jet out the debris in the pipeline using various hydraulic nozzles to a manhole where the debris are vacuumed up and put into the debris tank on the vac truck. Typically, APS crews will set up on the down stream manhole and let gravity aid them by running the nozzle up stream and pulling the debris back. Once the debris tank is filled up with debris vacuumed from the sewer system, APS will dispose of the debris at an off-site licensed sewage debris disposal location.

Once APS has preformed the cleaning on the pipelines. Crews will then perform a detailed inspection of the pipelines using NASSCO – MACP, LACP, PACP compliant code. Calling out all defects such a specific Cracks, Infiltration, etc. Along with noted defects, the following pieces of information will be inserted into the inspections software: Date, Project, Project #, Street Names, Structure locations and Structure #'s, Distance of pipe surveyed, coordinate locations to the 7th decimal, counter display, begin/end points, pipe diameter, pipe material, pipe shape, precise footage and clock position of all service connections, etc . Sufficient lighting will be ensured on all videos to allow for maximum clarity of the pipeline and the deficiencies. In all instances, the camera head will be centered in the pipe both vertically and horizontally. All APS camera equipment has tilt and pan capabilities to allow an up-close view of any deficiency or potential deficiency. As deficiencies are encountered, operators will stop and

provide clear and focused view of the deficiency and a narrative stating the location of the deficiency and a NASSCO compliant description stating the type of deficiency encountered. All notes in the video such as pipe diameter, pipe length, begin/end points, etc will also be available on the field inspection report that is submitted alongside the video.

After our CCTV inspection takes place, the videos are then submitted to APS' Quality Control Department. Once received, the data is sorted, and the videos/reports are reviewed for accuracy and added to our cloud service. Once uploaded, South Daytona will receive a link with all the videos and reports. This link will be updated with the latest videos/reports as the project progresses. The end goal is to have an organized an accurate database of our findings to turn over to the City so that determinations can be made about the condition and longevity of the existing infrastructure. APS prides ourselves in an organized approach to everything that we do. Video and data management is where our organized and systematic approach are brought to light.

Once the pipeline is evaluated and ready for installation, the following processes for an installation of a manhole to manhole CIPP liner will take place:

Bypass (if necessary) – Mainline flows that cannot be halted by temporarily backing up the pipeline during liner installation and cure shall be bypassed. Bypass capacity (pumps, bypass lines etc.) shall be sized to handle the expected flow during the liner installation and cure time. Flow from service connections (laterals) shall be halted by temporarily backing up the connections during liner installation and cure when the liner covers the service connection openings. Where service flows cannot be temporarily backed up in this manner (due to excessive flows or incoming heads), provisions shall be made for temporary bypassing of service flow using bypass pumping or other suitable means. Homeowners will be given door knocker notification 24-48 hours prior to liner installation.

Traffic Control – Maintenance of Traffic will be coordinated with the Prime contractor and will be in accordance with both applicable FDOT index and MUTCD.

Installation Method

Inversion- The liner will be installed using the inversion process. The inversion process will use either water column inversion or pressurized inversion (water or air). The heads or pressures used shall be in accordance with the head/pressure limits from the manufacturer of the tube. For water column/pressure inversion the effect of pipeline fall of rise shall be considered when applying head/pressure at the inversion location so that the head/pressure anywhere along the run does not exceed allowances for the manufacturer of the tube. The inversion shall proceed in a uniform controlled method and during inversion the head/pressure shall be maintained within a range that facilitates steady and controlled inversion. Unless special circumstances warrant, the head/pressure shall be always maintained in the liner during the inversion. In installations where a pull-in type liner may be used instead of an inversion type liner, pull forces shall be maintained below the rating of the liner manufacturer.

Hot water- circulated within the liner shall be used to elevate the temperature of the resin to effect a cure. During the cure the water in the liner shall be maintained at a head/pressure in accordance with requirements for the specific the size and thickness of the liner. A boiler of sufficient rating shall be used to add heat to the circulating water. Circulating pump(s) and internal hoses shall be sized to provide sufficient circulation of the hot water to

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uniformly heat the liner. The temperature of the circulating hot water shall be monitored at the supply from and return to the boiler. The temperature of the liner outer surface shall be monitored at each end using thermocouples or other suitable measuring devices. After the CIPP liner has changed to a hard state, the cure heating shall be continued maintaining the liner at an elevated temperature for a period dependent on the size, thickness, and ongoing temperature measurements to ensure the full level of cure has been achieved. On completion of the heat cure, the liner shall be cooled down either naturally or by adding cold water to the circulating water while removing water. During cool down the head/pressure in the liner shall be maintained at the cure head. The rate of cool down shall be commensurate with the liner size and thickness to minimize shrinkage and internal stresses.

Steam- flowed through the interior of the liner shall be used to elevate temperature of the resin to effect a cure. Compressed air shall be mixed with the steam as required to moderate the steam temperature to produce a controlled heating of the liner, avoid hot spotting and prevent blistering of the polyurethane coating. The pressure of the steam/air mixture shall be controlled at the injection and venting manifold locations to maintain the required internal pressure on the liner in accordance with the requirements for the carrier tube internal pressure ratings. The temperature of the steam/air mixture shall be controlled and monitored at the mixing manifold. The

temperature of the liner outer surface shall be monitored at each end using thermocouples or other suitable measuring devices. After the CIPP liner has changed to a hard state, the cure heating shall be continued maintaining the liner at an elevated temperature for a period dependent on the size, thickness, and ongoing temperature measurements to ensure the full level of cure has been achieved. On completion of the heat cure, the liner shall be cooled down either naturally or by gradually reducing the amount of heating steam in the steam/air mixture to all air. During cool down the pressure in the liner shall be maintained at the cure pressure. The rate of cool down shall be commensurate with the liner size and thickness to minimize shrinkage and internal stresses.

Service Reconnection

On completion of the cool-down, the liner shall be cut open at each end releasing the water or air (depending on cure method). The top end shall always be opened or vented first (if not already open) to prevent vacuum being generated when water flows out at the downstream end. Where service connections (laterals) require reinstatement through the cured liner, openings shall be cut in the liner wall with a CCTV monitored robotic cutter. The locations for openings shall be as determined by dimpling of the liner at laterals and, where required, by pre-lining measurements made of the locations of the laterals. Depending on the number of laterals to be reinstated, reinstatement may commence by cutting a sufficient opening at each lateral to relieve any standing flow followed by returning to cut each lateral opening out to the full interior size of the existing lateral connection. Lateral reinstatement openings shall be neat, free of jagged edges or lips and conform to the size of the existing service lateral at the sewer.

All lateral connections will be reinstated unless directed otherwise by owner's representative.

Post CCTV Inspection

On completion of all installation and lateral reinstatements, the complete CIPP liner shall be CCTV inspected in accordance with NASSCO PACP specification. The inspection shall be free of steam or vapor

that obscures the picture and the flow level in the sewer shall be held sufficiently low to provide for a clear view of the lined pipeline. During the inspection, each lateral reinstatement shall be clearly visible on the inspection. A copy of the inspection video and log will be delivered as per contract specification.

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**BID FORM 8G:
Professional References for Previous Experience**

The Vendor proposes that he/she is qualified to perform the referenced work and has successfully done so on recent projects similar in nature and size. The City reserves the right to check references and confirm information provided herein.

Please provide three (3) current and correct references from clients for similar services. (Do not include the City of South Daytona)

Reference 1:

<i>Company Name:</i>	Sunshine Water Services
<i>City, State:</i>	Altamonte Springs, FL
<i>Contact Person:</i>	Bryan Gongre
<i>Telephone Number:</i>	321.972.0360
<i>Email Address:</i>	Bryan.Gongre@sunshinewater.com
<i>Description of Goods or Services provided:</i>	Sanitary Sewer Cleaning, Inspections, and Repairs
<i>Contract Amount:</i>	\$933,816.00
<i>Start/End Date of Contract:</i>	7/22/2020 - 2/16/2021

Reference 2:

<i>Company Name:</i>	City of Winter Park
<i>City, State:</i>	Winter Park, FL
<i>Contact Person:</i>	Tom Best
<i>Telephone Number:</i>	407.691.7845
<i>Email Address:</i>	TBest@cityofwinterpark.org
<i>Description of Goods or Services provided:</i>	Bypass Pumping, Cleaning and Televising, CIPP Lining, Manhole Rehab.
<i>Contract Amount:</i>	\$366,074.00
<i>Start/End Date of Contract:</i>	10/1/21 - 9/31/22

Reference 3:

<i>Company Name:</i>	Loxahatchee River District
<i>City, State:</i>	Jupiter, FL
<i>Contact Person:</i>	Kris Dean
<i>Telephone Number:</i>	561.723.8263
<i>Email Address:</i>	Kris.Dean@lrecd.org
<i>Description of Goods or Services provided:</i>	Sanitary Sewer Assessment and CIPP Lining
<i>Contract Amount:</i>	\$990,821.66
<i>Start/End Date of Contract:</i>	2/15/2022 - 12/31/2022

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID.

**BID FORM 8H:
Listing of Subcontractors**

The Vendor proposes that the following subcontractors are qualified to perform the referenced work and have successfully done so on recent projects similar in nature and size. All subcontractors whose work product accounts for 5% or more of the total contract value shall be listed. Upon approval of subcontractors listed, the successful Vendor shall not substitute subcontractors without approval from the City. Vendor shall attach additional sheets as necessary.

Subcontractor 1:

<i>Name:</i>	None Anticipated. APS will submit to City if Subcontractors become necessary		
<i>City, State:</i>			
<i>Description of Work:</i>			
<i>Percent of Contract Price:</i>		<i>Previous Experience Together:</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

Subcontractor 2:

<i>Name:</i>			
<i>City, State:</i>			
<i>Description of Work:</i>			
<i>Percent of Contract Price:</i>		<i>Previous Experience Together:</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

Subcontractor 3:

<i>Name:</i>			
<i>City, State:</i>			
<i>Description of Work:</i>			
<i>Percent of Contract Price:</i>		<i>Previous Experience Together:</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID.

BID FORM 8I:
Cured-in-Place Pipe Specs

A. REQUIREMENTS

1. The Contractor shall provide necessary warranty and documentation of required experience per the Contract Bid Submittal Requirements and as specified herein.
2. The OWNER requires all Customers to be notified a minimum of 5 calendar days of any anticipated flow interruptions. It is the Contractor's responsibility to make said Customer notifications.
3. The CIPP shall be continuous, jointless and structurally sound liner from manhole to manhole. All existing and confirmed lateral connections shall be internally reinstated/reopened. The Contractor will be responsible for sealing all manhole wall and lateral reinstatement connections.
4. The OWNER will pay for installed materials only per the Contract Bid Tabulation Bid Item Unit Cost.
5. All work shall adhere to Occupational Health and Safety Administration (OSHA) standards, current edition.
6. Maintenance of Traffic shall adhere to FDOT Design Standards, Index 600, current edition.

B. REFERENCE SPECIFICATIONS AND STANDARDS

- 1) This specification references the following American Society for Testing and Materials (ASTM) Standard Specifications, American Water Works Association (AWWA) Specifications and their reference standards, which are made a part hereof by such reference and shall be the latest edition and revision thereof. All work shall comply with the reference standards unless specifically stated otherwise in this Specification.
- a. ASTM D5813 - Standard Specification for Cured-in-Place Thermosetting Resin Sewer Pipe
 - b. ASTM F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
 - c. ASTM F1743 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-In-Place Installation of Cured-In-Place Thermosetting Resin Pipe
 - d. ASTM D543 - Standard and Practice for Evaluating the Resistance of Plastics to Chemical Reagents
 - e. ASTM D638 - Standard Test Method for Tensile Properties of Plastics
 - f. ASTM D790 - Standard Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics and Electrical Insulating Materials
 - g. ASTM D792 - Standard Test Methods for Density and Specific Gravity of Plastics by displacement
 - h. ASTM F2019-03 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-In-Place Thermosetting Resin Pipe (CIPP)
 - i. ASTM D2122-98(2004) - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

- j. ASTM D2990 - Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics

C. PERFORMANCE WORK STATEMENT (PWS)

1) The Contractor shall submit, to the OWNER, a Performance Work Statement (PWS) at the pre-construction meeting, which clearly defines the CIPP product delivery in conformance with the requirements of these contract documents. Unless otherwise directed by the OWNER, the PWS shall at a minimum contain the following:

- a. Clearly indicate that the CIPP will conform to the project requirements as outlined in the Description of Work and as delineated in these specifications.
- b. Where the scope of work is specifically delineated in the contract documents, a detailed installation plan describing all preparation work, cleaning operations, pre-video inspections, by-pass pumping, maintenance of traffic, installation procedure, method of curing, lateral reinstatement, quality control, testing to be performed, final video inspection, warranties furnished and all else necessary and appropriate for a complete CIPP liner installation. A detailed installation schedule shall be prepared, submitted and conform to the requirements of this contract.
- c. Contractor's description of the proposed CIPP lining technology, including a detailed plan for identifying all existing lateral connections and maintaining all Customer sewer service during CIPP installation.
- d. A description of the CIPP materials to be furnished for the project. Materials shall be fully detailed in the submittals and conform to these specifications and/or shall conform to the pre-approved product submission.
- e. The name and experience of each lead individual performing work on this Contract shall be submitted with the PWS.
- f. Engineering design calculations, in accordance with the Appendix of ASTM F1216, for each length of liner to be installed including the thickness of each proposed CIPP. It will be acceptable for the Contractor to submit a design for the most severe line condition and apply that design to all of the line sections. These calculations shall be performed and certified by a qualified Professional Engineer. All calculations shall include data that conforms to the requirements of these specifications or has been pre-approved by the OWNER.
- g. Proposed manufacturers technology data shall be submitted for all CIPP products and all associated technologies to be furnished.
- h. A detailed description of the Contractor's proposed procedures for removal of roots/blockages in the pipe that may be encountered during the cleaning process.
- i. A detailed public notification plan shall be prepared and submitted including detailed staged notification to Customers affected by the CIPP installation.

PART 2 – PRODUCTS

A. MATERIALS

1) The CIPP System must meet the chemical resistance requirements of these contract documents. All materials, shipped to the project site, shall be accompanied by test reports certifying that the material conforms to the ASTM standards listed herein. Materials shall be shipped, stored, and handled in accordance with the CIPP manufacturer's recommendations to avoid damage. Damage includes, but is not limited to, gouging, abrasion, flattening, cutting, puncturing, or ultra-violet (UV) degradation. On site storage locations, shall be approved by the OWNER. All damaged materials shall be promptly removed from the project site at the Contractor's expense and disposed of in accordance with all current applicable agency regulations.

B. FABRIC TUBE

1) The fabric tube shall consist of one or more layers of absorbent non-woven felt fabric, felt/fiberglass or fiberglass and meet the requirements of ASTM F1216, ASTM F1743, ASTM D5813 & ASTM F2019.

2) The fabric tube shall be capable of absorbing and carrying resins, constructed to withstand installation pressures and curing temperatures and have sufficient strength to bridge missing pipe segments, and stretch to fit irregular pipe sections. The Contractor shall submit certified information from the felt manufacturer on the nominal void volume in the felt fabric that will be filled with resin.

3) The wet-out fabric tube shall have a uniform thickness and excess resin distribution that when compressed at installation pressures will meet or exceed the design thickness after cure.

4) The fabric tube shall be manufactured to a size and length that when installed will tightly fit the internal circumference, meeting applicable ASTM standards or better, of the original pipe. Allowance shall be made for circumferential stretching during installation. The tube shall be properly sized to the diameter of the existing pipe and the length to be rehabilitated and be able to stretch to fit irregular pipe sections and negotiate bends. The Contractor shall determine the minimum tube length necessary to effectively span the designated run between manholes. The Contractor shall verify the lengths in the field prior to ordering and prior to impregnation of the tube with resin, to ensure that the tube will have sufficient length to extend the entire length of the run. The Contractor shall also measure the inside diameter of the existing pipe in the field prior to ordering liner so that the liner can be installed in a tight-fitted condition.

5) The outside and/or inside layer of the fabric tube (before inversion/pull-in, as applicable) shall be coated with an impermeable, flexible membrane that will contain the resin and facilitate, if applicable, vacuum impregnation and monitoring of the resin saturation during the resin impregnation (wet-out) procedure.

6) No material shall be included in the fabric tube that may cause de-lamination in the cured CIPP. No dry or unsaturated layers shall be acceptable upon visual inspection as evident by color contrast between the felt fabric and the activated resin containing a colorant.

7) The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made. The hue of the color shall be dark enough to distinguish a contrast between the fully resin saturated felt fabric and dry or resin lean areas.

8) Seams in the fabric tube, if applicable, shall meet the requirements of ASTM D5813.

9) The outside of the fabric tube shall be marked every 5 feet with the name of the CIPP manufacturer, manufacturing lot and production footage.

10) The minimum length of the fabric tube shall be that deemed necessary by the installer to effectively span the distance from the starting manhole to the terminating manhole or access point, plus that amount required to run-in and run-out for the installation process.

11) The nominal fabric tube wall thickness shall be constructed, as a minimum, to the nearest 0.5 mm increment, rounded up from the design thickness for that section of installed CIPP. Wall thickness transitions, in 0.5 mm increments or greater as appropriate, may be fabricated into the fabric tube between installation entrance and exit access points. The quantity of resin used in the impregnation shall be sufficient to fill all of the felt voids for the nominal felt thickness.

C. RESIN

1) The resin shall be a corrosion resistant polyester or vinyl ester resin and catalyst system that when properly cured within the tube composite meets the requirements of ASTM F1216, ASTM F1743 or F2019, the physical properties herein, and those, which are to be utilized in the design of the CIPP for this project. The resin shall produce CIPP which will comply with or exceed the structural and chemical resistance requirements of this specification.

2) It is the desire of the OWNER that the CIPP liner adhere to the walls of the host pipe in as many locations as possible to reduce the likelihood of infiltration through the annular space between the host pipe and liner.

3) Therefore, **the basis of design shall be 100% epoxy resin**, or approved equal. Requests for consideration of equivalent resins other than 100% epoxy shall include a detailed comparison of the benefits & disadvantages (i.e. pros and cons) of the alternate resin system versus the basis of design 100% epoxy resin over the lifecycle of the product.

D. STRUCTURAL REQUIREMENTS

1) The physical properties and characteristics of the finished liner will vary considerably, depending on the types and mixing proportions of the materials used, and the degree of cure executed. It shall be the responsibility of the Contractor to control these variables and to provide a CIPP system which meets or exceeds the minimum properties specified herein:

- a. The CIPP shall be designed as per ASTM standards. The structural properties of the CIPP design shall assume no benefit related to bonding to the original pipe wall.
- b. The design engineer shall set the long term (50 year extrapolated) Creep Retention Factor at 33% of the initial design flexural modulus as determined by ASTM D790 test method. This value shall be used unless the Contractor submits long term test data (ASTM D2990) to substantiate a higher retention factor.
- c. The CIPP material shall, at a minimum, meet or exceed the structural properties, as listed below:
 - i. Flexural Strength (Short Term) 4,500 psi (ASTM D790)

- ii. Flexural Modulus of Elasticity (Short Term) 250,000 psi (ASTM D790) iii. Method Cured Composite Per ASTM F1216
- 2) The required structural CIPP wall thickness shall be based, as a minimum, on the physical properties of the cured composite and per the design of the Professional Engineer and in accordance with the Design Equations contained in the appendix of the ASTM standards, and the following design parameters:
- a. Design Safety Factor - 2.0 (1.5 for pipes 36" or larger)
 - b. Creep Retention Factor - 33%
 - c. Ovality - 2% or as measured by field inspection
 - d. Constrained Soil Modulus Per AASHTO LRFD Section 12 and AWWA Manual M45
 - e. Groundwater Depth - As specified or indicated on the Plans
 - f. Soil Depth (above the crown) - As specified or indicated on the Plans
 - g. Live Load - Highway, railroad or airport as applicable
 - h. Soil Load (assumed) - 120 lb/cu. Ft.
 - i. Minimum service life - 50 years
- 3) The Contractor shall submit, prior to installation of the lining materials, certification of compliance with these specifications and/or the requirements of the pre-approved CIPP system. Certified material test results shall be included that confirm that all materials conform to these specification and/or the pre-approved system. Materials not complying with these requirements will be rejected.

E. PRODUCT SUBMITTALS

- 1) The Contractor shall submit the following information:
- a. Manufacturer's certification that the materials to be used meet the referenced standards and these specifications.
 - b. License or certificate verifying Manufacturer's/Licenser's approval of the installer.
 - c. Proposed equipment and procedures for accomplishing the work.
 - d. Tube wet-out & cure method including:
 - i. A complete description of the proposed wet-out procedure for the proposed technology.
 - ii. The Manufacturer's recommended cure method for each diameter and thickness of CIPP liner to be installed. The PWS shall contain a detailed curing procedure detailing the curing medium and the method of application.
 - iii. Design calculations for wall thickness designs to be completed by an Engineer proficient in the pipe design.

PART 3 – CONSTRUCTION

A. PREPARATION AND CLEANING

- 1) Contractor shall perform pre-video inspection of the pipe to be lined. The Contractor shall provide the OWNER a copy of the video in digital format for review and approval.
- 2) The pre-video shall be after the pipe is cleaned.

- 3) The Contractor is responsible to clear the pipe of obstructions that will interfere with the installation and long-term performance of the CIPP.
 - 5) If the pre-video inspection reveals an obstruction, misalignment, broken or collapsed section or sag that was not identified as part of the original scope of work and will prohibit proper installation of the CIPP, the Contractor may be directed by the OWNER to correct the problem(s) prior to lining by utilizing open cut repair methods. The Contractor shall be compensated for this work under a Contract Bid Item.
- 6) The Contractor shall be responsible for confirming the locations of all lateral connections prior to installing and curing the CIPP.
- 7) In the event the status of a lateral connection cannot be adequately defined, the OWNER will make the final decision, prior to installation and curing of the liner, as to the status.
- 8) The Contractor may, under the direction of the OWNER, utilize any of the existing manholes in the project area as installation access points. If a road closure or detour is required due to the location of the gravity sanitary sewer, Contractor must obtain permission from the OWNER and maintenance authority of the road (e.g. City of Edgewater, County of Volusia, Florida Department of Transportation).
- 9) The Contractor shall remove all internal debris from the pipe that will interfere with the installation and the final product delivery of the CIPP as required in these specifications. Solid debris and deposits shall be removed from the system and disposed of properly by the Contractor. The Contractor shall dispose of all debris at no additional charge to the OWNER. Moving material from manhole section to manhole section shall not be allowed. As applicable, the Contractor shall either plug or install a by-pass pumping system to properly clean the pipe. Precaution shall be taken by the Contractor in the use of cleaning equipment to avoid damage to the existing pipe. The repair of any damage, caused by the cleaning equipment, shall be the responsibility of the Contractor.
- 10) The liquid portion of the any vacuumed material may be carefully decanted and returned to the OWNER's sanitary collection system at a location designated by the OWNER and only under direct supervision of OWNER's staff. Contractor shall coordinate such decanting operations subject to the availability and convenience of OWNER's staff. Contractor shall retain the solid portion, including any grease, grit, and gross solids, and any liquid in which such solids are entrained for disposal at a properly permitted facility. This allowance for decanting into OWNER's collection system requires continued good faith on the Contractor's part and may be limited or wholly rescinded at any time should OWNER observe or suspect that Contractor is not practicing due care in the adherence to these limitations.
- 11) The Contractor is responsible for construction water. The OWNER can supply the Contractor with a Temporary Construction Water Meter (with proper backflow prevention) provided an account is applied and paid for by the Contractor with the OWNER's Billing Department.

B. BY-PASS PUMPING

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The work covered by this section consists of providing all labor, equipment, material, and supplies and performing all operations required to bypass pump sewage around a manhole or sewer section in which work is to be performed. The Contractor shall be prepared to bypass pump sewage as part of his operations. The Contractor shall provide all pumps, piping and other equipment necessary to accomplish bypass pumping; perform all construction; obtain all permits; pay all costs; and perform complete restoration of all existing facilities to conditions equal or better than existed prior to construction and to the satisfaction of the Engineer. All costs to accomplish bypass pumping, at the required volume, and all associated work including restoration, shall be considered incidental to the work and no additional compensation will be allowed.

1.02 GENERAL

- A. When the depth of flow in the sewer line being televised or repaired is above the maximum allowable for the proposed work, then the Contractor shall reduce the flow to the level shown below by manual operation of pump stations, plugging or blocking of the flow or by pumping and bypassing of the flow as acceptable to the Engineer. For manual operation of pump stations, the Contractor shall coordinate such operations with the appropriate City personnel. Plugging or blocking of the flow shall only be allowed when the Contractor can demonstrate that the upstream gravity collection system can accommodate the surcharging without any adverse impact.
- B. The depth of flow in the sewer line being televised or repaired shall not exceed that shown for the respective pipe sizes and for the operations indicated.
- C. Initial Television Inspection. For the initial television inspection, the sewer line shall be blocked completely. No flow, except infiltration, will be allowed through the sewer line.
- D. Television Inspection Before and After Lining Installation. For the television inspection before and after lining installation the sewer line shall be blocked completely. No flow, except infiltration before lining, will be allowed through the sewer line.
- E. Other Television Inspection, including Warranty.

Pipe Size	Maximum Depth of Flow
6" – 10" Pipe	20 Percent (20%) of Pipe Diameter
12" – 24" Pipe	25 Percent (25%) of Pipe Diameter
Above 24" Pipe	30 Percent (30%) of Pipe Diameter

F. Television Inspection After Joint Testing/Sealing. For the television inspection after joint testing/sealing the sewer line shall be blocked completely. No flow will be allowed through the sewer line.

G. Joint Testing/Sealing

Pipe Size	Maximum Depth of Flow
6" – 10" Pipe	20 Percent (20%) of Pipe Diameter
12" – 24" Pipe	30 Percent (30%) of Pipe Diameter
Above 24" Pipe	35 Percent (35%) of Pipe Diameter

H. Pipe Lining Installation. For the pipe lining installation, the sewer line shall be blocked completely. No flow, except infiltration, will be allowed through the sewer line.

I. Manhole Repairs. For manhole repairs, the flow through the manhole shall be controlled or blocked completely, as required, to properly complete the repairs as specified.

1.03 SUBMITTALS

The Contractor shall submit a written plan describing his means and methods for flow control and bypass pumping to the Engineer for review.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PLUGGING AND BLOCKING

A. A sewer line plug shall be inserted into the line upstream of the section being televised or repaired. The plug shall be so designed that all or any portion of the upstream flow can be released. During the television inspections and repair operations the flow through the line

being worked shall be reduced to within the maximum limits stated above. After the work has been completed, the flow shall be restored to normal.

3.02 PUMPING AND BYPASSING

- A. When pumping and bypass pumping is required, as determined by the Engineer, the Contractor shall supply all necessary pumps, conduits, and other equipment to divert the flow around manhole section in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flow plus additional flow that may occur during rainstorm events. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system. Pumps and equipment shall be continuously monitored by the Contractor during the periods that pumping and bypassing are required. If pumping is required on a 24-hour basis, engine shall be equipped in a manner to keep noise to a minimum.

3.03 FLOW CONTROL PRECAUTIONS

- A. When flow in a sewer line is plugged, blocked or bypassed by the Contractor, he shall take sufficient precautions to protect the public health and to protect the sewer lines from damage that might result from sewer surcharging. Further, the Contractor shall take precautions to insure that sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved and he shall be responsible for any damage resulting from his flow control operations.
- B. When flow in a sewer line is plugged or blocked by the Contractor, he shall monitor the conditions upstream of the plug and shall be prepared to immediately start bypass pumping, if needed. Any liquid or solid matter which is bypass pumped from the sewer collection system shall be discharged to another sewer manhole or appropriate vehicle or container only. No such liquid or solid matter shall be allowed to be discharged, stored, or deposited on the ground, swale, road, stormwater drainage system or open environment. The Contractor shall protect all pumps, conduit and other equipment used for bypass pumping from traffic.
- C. Should the liquid or solid matter from the sewer collection system be spilled, discharged, leaked, or otherwise deposited to the open environment as a result of the Contractor's flow control operations, he shall be responsible for all cleanup and disinfection of the affected

area and all costs associated with same. The Contractor shall also be responsible for notifying the sewer system operating personnel and appropriate regulatory agencies and performing all required cleanup operations at no additional cost to the Owner.

C. INSTALLATION OF LINER

- 1) Neither the CIPP system, nor its installation, shall cause adverse effects to any of the OWNER's processes or facilities. The use of the product shall not result in the formation or production of any detrimental compounds or by-products at the wastewater treatment plant. The Contractor shall notify the OWNER and identify any by-products produced as a result of the installation operations, test and monitor the levels, and comply with any and all local waste discharge requirements.
- 2) The CIPP liner shall be installed and fully cured prior to installation of a Manhole Liner.
- 3) The Contractor shall clean-up, restore existing surface conditions and structures, and repair any of the CIPP system determined to be defective. The Contractor shall conduct installation operations and schedule clean-up in a manner to cause the least possible obstruction and inconvenience to Customers, traffic, pedestrians, businesses, etc.
- 4) The CIPP liner shall be installed and cured in the host pipe in accordance with the CIPP manufacturer's recommendations as described and submitted in the PWS.
- 5) The CIPP liner shall be constructed of materials and methods, that when installed, shall provide a continuous, jointless and structurally sound liner from manhole to manhole able to withstand all imposed static and/or dynamic loads, and free of all defects that will affect the long term life and operation of the pipe.
- 6) CIPP installation shall be in accordance with the applicable ASTM standards with the following modification:
 - a. The wet-out tube shall be positioned in the pipe using the method specified by the manufacturer. Care should be exercised not to damage the tube as a result of installation. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.
- 7) Prior to installation, and in accordance with the CIPP manufacturer's recommendations, remote temperature gauges or sensors shall be placed inside the host pipe to monitor the temperatures during the cure cycle. Liner and/or host pipe interface temperature shall be monitored and logged during curing of the liner.
- 8) Curing shall be accomplished by utilizing the appropriate medium in accordance with the CIPP manufacturer's recommended cure schedule. The curing source or in and output temperatures shall be monitored and logged during the cure cycles. The CIPP manufacturer's recommended cure schedule shall be used for each line segment installed, and the liner wall thickness and the existing ground conditions with regard to temperature, moisture level, and thermal conductivity of soil, per ASTM as applicable, shall be taken into account by the Contractor.
- 9) The CIPP liner shall not be installed through a manhole. Each liner shall begin and end at a manhole.

D. COOL DOWN

- 1) The Contractor shall cool the liner in accordance with the CIPP manufacturer's recommendations as described and outlined in the PWS.
- 2) Temperatures and curing data shall be monitored and recorded, by the Contractor, throughout the installation process to ensure that each phase of the process is achieved as approved in accordance with the CIPP manufacturer's recommendations.

E. FINISH

- 1) The installed CIPP shall be continuous over the entire length of a pipe section and be free from visual defects such as foreign inclusions, dry spots, pinholes, major wrinkles and delamination. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to inside the lined pipe.
- 2) Any defect, which will or could affect the structural integrity or strength of the linings, shall be repaired at the Contractor's expense, in accordance with the procedures submitted under Part 3, G. CIPP Repair/Replacement.
- 3) The beginning and end of the CIPP shall be sealed to the existing host pipe. The sealing material shall be compatible with the pipe end and shall provide a watertight seal.
- 4) The connection at the host pipe interface with all service laterals shall be sealed to provide a water tight seal. The sealing material shall be compatible with the pipe end and shall provide a watertight seal.
 - 3) If the wall of the CIPP leaks, it shall be repaired or removed and replaced with a watertight liner in accordance with the CIPP manufacturer's recommendations.

F. MANHOLE AND LATERAL CONNECTIONS

- 1) A seal, consisting of a resin mixture or hydrophilic seal compatible with the installed CIPP shall be applied at manhole walls and at all lateral connections in accordance with the CIPP manufacturer's recommendations.
- 2) The maximum a lateral can be plugged is 8 hours. Lateral connections may not remain plugged overnight.
- 3) Laterals shall be internally reinstated unless indicated otherwise in the contract documents.
- 4) Lateral reinstatement shall be made after the CIPP has been installed, fully cured, and cooled down. It is the Contractor's responsibility to make sure that all lateral connections are reinstated.
- 5) All existing and confirmed lateral connections shall be internally reinstated/re-opened to their original shape and capacity (minimum 95%) using a CCTV camera and remote cutting tool. Lateral connections shall not be cut more than 100% of the original shape or capacity.
- 6) In the event that lateral reinstatements result in openings that are greater than 100% of the original opening, the Contractor shall install a CIPP type repair, sufficiently in size, to repair the over-cut lateral opening, at no additional charge to the OWNER.

- 7) The edges of the opening shall not have pipe fragments or liner fragments, which may obstruct flow or snag debris. All over-cut lateral connections will be properly repaired to meet the requirements of these specifications.
- 8) Pipe coupons resulting from lateral reinstatements shall be collected at the downstream manhole prior to leaving the site. At no time shall coupons be left in the gravity sanitary sewer system.

G. CIPP REPAIR/REPLACEMENT

- 1) Occasionally installation will result in the need to repair or replace a defective CIPP. The Contractor shall outline specific repair or replacement procedures for potential defects that may occur in the installed CIPP. Repair/replacement procedures shall be accordance with the CIPP manufacturer's recommendations and shall be submitted as part of the PWS.
- 2) Defects in the installed CIPP that will not affect the operation and long term life of the product shall be identified and defined.
- 3) Repairable defects that may occur in the installed CIPP shall be specifically defined by the Contractor based on manufacturer's recommendations, including a detailed step-by-step repair procedure, resulting in a finished product meeting the requirements of these contract specifications.
- 4) Un-repairable defects that may occur to the CIPP shall be clearly defined by the Contractor based on the manufacturer's recommendations, including a recommended procedure for the removal and replacement of the CIPP.

PART 4 – FINAL COMPLETION

A. TESTING

- 1) The Contractor shall have an independent testing lab analyze finished liner regarding the ASTM standards for Tensile Properties, Flexural Modulus, Chemical Resistance and wall thickness (or as specified by the OWNER). Samples shall be taken from manhole cutoffs and lateral coupons.
- 2) A minimum of 1 sample shall be taken of the first segment installed at each location specified in the Contract Bid Documents.
- 3) A minimum of 2 samples shall be taken for each 2,500 linear feet of liner installed or for each manufacturing lot.
- 4) The laboratory results shall identify the test sample location as referenced to the nearest manhole and station.
- 5) If properties tested do not meet minimum requirements, the liner shall be repaired or replaced by the Contractor, at no cost to the OWNER.
- 6) The installed liner thickness shall be measured for each line section installed. If the liner thickness does not meet these specifications then the liner shall be repaired or removed by the Contractor at no cost to the OWNER. The liner thickness shall have tolerance of minus 5% plus 50%. The Contractor may use industry proven, non-destructive methods for confirming the thickness of the installed liner.

- 7) The Contractor shall furnish removable sizing sleeves, when possible, to collect liner samples, which accurately replicate the hose pipe diameter.
- 8) All liner testing and repairs to the installed CIPP shall be completed before Final Completion and Final Payment to the Contractor.

B. INSPECTIONS

- 1) Contractor shall perform a post-video inspection of the lined pipe. The Contractor shall provide the OWNER a copy of the video in digital format for review and approval.
- 2) Immediately prior to conducting the post-video, the Contractor shall thoroughly clean the newly installed liner removing all debris and buildup that may have accumulated.
- 3) The post-video shall be after the installation of the CIPP and all laterals are reinstated.
- 4) The post-video will visual inspect the finished liner as follows:
 - a. Shall be continuous over the entire length of the installation and shall be free of significant visual defects, damage, deflection, holes, leaks and other defects.
 - a. Shall maintain the overall hydraulic capacity of the original pipe diameter. In those cases where full capacity cannot be achieved after liner installation, the Contractor shall submit a request to waive this requirement, together with the reasons for the waiver request. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.
- 2) The post-video shall be submitted to the OWNER within ten (10) working days of the liner installation. The data shall note the inspection date, location of all reconnected side sewers, debris, as well as any other defects in the liner, including, but not limited to, gouges, cracks, bumps, or bulges.
- 3) If post installation inspection documentation is not submitted within Ten (10) working days of the liner installation, the OWNER may at its discretion suspend any further installation of CIPP until the post-installation documentation is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost.
- 4) Bypass pumping or plugging from the upstream manhole shall be utilized to minimize sewer from entering the pipe during the post-video inspection. In the case of bellies in the line, the pipe shall be cleared of any standing water to provide continuous visibility during the inspection.
- 5) Where leakage is observed through the wall of the pipe, the Contractor shall institute additional testing including but not limited to air testing, localized testing and any other testing that will verify the leak-proof integrity of the installed liner to the satisfaction of the OWNER.

C. AS-BUILTS

- 1) As-Built drawings/reports and pre & post inspection videos shall be submitted to the OWNER for review and approval for Final Completion contract date. As-Built

drawings will include the identification of the work completed by the Contractor and shall be prepared on one set of Contract Drawings provide to the Contractor at the onset of the project.

- 2) As-Built drawings shall be kept on the project site at all times, shall include all necessary information as outlined in the PWS or as agreed to by the OWNER and the Contractor at the start of the Contract and shall be updated as the work is being completed, and shall be clearly legible.

D. WARRANTY

- 1) The Contractor shall provide necessary warranty and documentation of required experience per the Contract Bid Submittal Requirements and as specified herein.
- 2) The CIPP manufacturer shall warrant the liner to be free from defects in raw materials for a minimum of one (1) year, or as specified in the Contract Bid Submittal Requirements, from the date of installation and Final Completion by the OWNER.
- 3) The Contractor shall warrant the CIPP installation for a minimum of one (1) year, or as specified in the Contract Bid Submittal Requirements, from the date of installation and Final Completion by the OWNER.
- 4) During the CIPP manufacturer and Contractor warranty period, any defect found that may materially affect the integrity, strength, function and/or operation of the pipe shall be repaired at the Contractor's expense in accordance with procedures included in Part 3, G. CIPP Repair/Replacement at no cost to the OWNER.
- 5) The OWNER may inspect all or portions of the lined pipe during the warranty period and if found that any of the liners have developed abnormalities since the time of Final Completion, the abnormalities shall be repaired and/or replaced as defined in Part 3, G.
CIPP Repair/Replacement at no cost to the OWNER.

END OF SECTION