



Gaining Knowledge  
Sharing Experiences



**infraStruct**  
PRODUCTS AND SERVICES



# Who is **infraStruct** Products and Services?

infraStruct Products is a leading Canada-wide distributor of municipal underground infrastructure accessory products for water, wastewater, storm pipelines and more. We specialize in sourcing globe technologies that innovate and provide cost-effective solutions to help municipalities maintain and improve their existing infrastructure.

infraStruct Services specializes in trenchless technologies that reduce the environmental footprint left by traditional dig and replace. “Inspect, Reline and Inject” can renovate municipal water, sewer or storm assets in a fraction of the time and cost.

infraStruct is headquartered in Edmonton, Alberta and Metro Vancouver, British Columbia.

## **infraStruct Products**

30 years experience representing civil manufacturers throughout the world.

## **infraStruct Services**

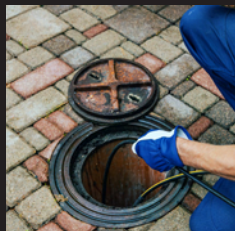
20 years of trenchless contracting, inspecting, relining and injecting.

*Our unique company structure, consisting of a technical sales team and an installation team, allows us to elevate the market by sharing knowledge of both theory and in-field experience.*

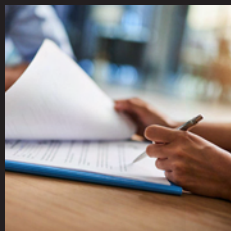
## **Book Us today:**



Lunch  
and Learns



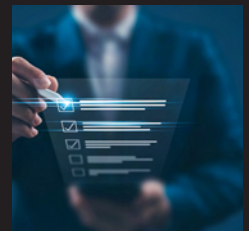
Field  
Demonstrations



Project Budgets,  
Reviews & Proposals



Seminars



Problem  
Solving



# The future is bright

## Integrated Products and Services Model

- Leverages our “Combined Skills and Talents” – Our Team, Manufacturing, Engineering Firms/Owners
- Leverages our “Knowledge” of both technical and application
- Leverages our “Insight” to obstacles and barriers
- Leverages our “Experiences” shared in stories

## Our Mission and Values

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**ENERGY**, bring it! Come experience it!

**DISRUPTIVE**, we recognize the potential in every action drawing insightful conclusions positioning our partners to win.

**KNOWLEDGE** beyond products and application, sharing and elevating the industry.

**SAFETY**, we live it, breathe it, and implement it. Returning home to our family is our number one priority.

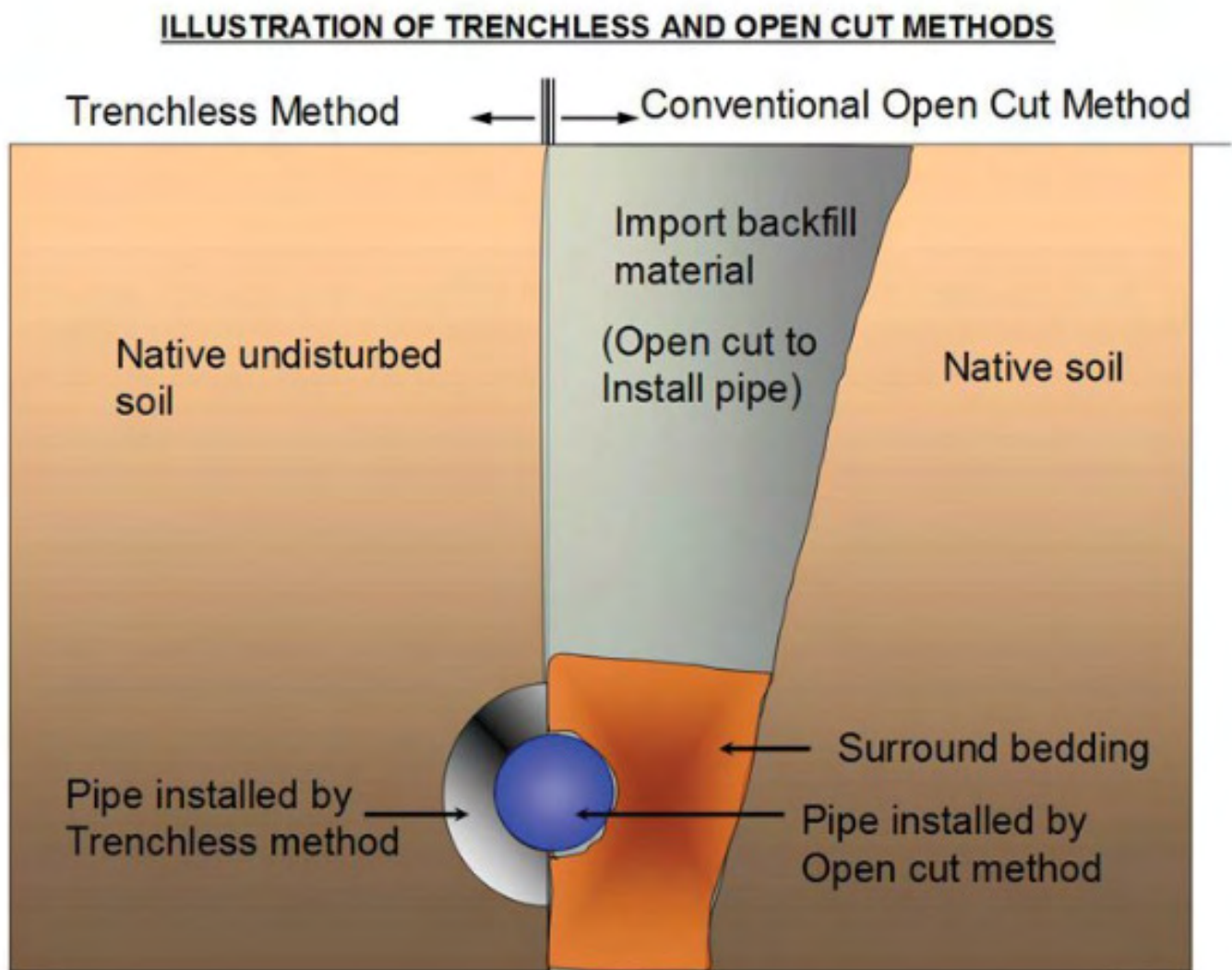
We have it, we share it and nothing can substitute it; **EXPERIENCE.**

**CONNECTING**, cultivating and merging personal and business relationships to propel us to shared goals.



# Trenchless Technology

**Developed in the 1970's**, trenchless (no-dig) technology involves innovative methods, materials, and equipment used for the installation of new and the rehabilitation or replacement of existing underground infrastructure with minimal or no need for open cut excavation.





# ***Trenchless technology offers many advantages over traditional methods:***

## **Cost-Savings**

Traditional “dig and replace” methods include costs for labor, the displacement of earth, and many hours spent restoring or replacing the structure. No-dig technology is a more cost-effective method of replacing deteriorating structures without digging, which provides significant cost-savings to municipalities and ratepayers alike.

## **Time-Savings**

Because no-dig makes use of the existing structure, extensive excavation is no longer needed, which drastically shortens the length of the process. Obviously, decreasing project time and materials make a rehabilitation cheaper than replacing with a new one. It's also possible to eliminate the costs and risk of possibly contaminated soil and debris removal and disposal caused by digging up an old manhole structure. One final benefit of no-dig is that by avoiding the need for excavation, streets can be kept open and functioning while work progresses, which is a win-win for everyone. So overall, no-dig eliminates paving, reduces traffic interruptions, minimizes community disruption, and provides a quick return to service.

## **Risk Mitigation**

This proven technology is an environmentally-sound alternative for infrastructure rehabilitation as it will not require heavy or loud equipment and the risk for potential air and water pollution is mitigated. For the same reason, there is a reduced carbon footprint. It is said that dig-and-replace projects consume up to 50 times more energy than no-dig methods, so with fewer CO2 emissions, there are less greenhouse gases. In addition, one often overlooked but very important benefit of no-dig technology is the reduction of health and safety risks for workers.

*infraStruct specializes in performing trenchless repairs of aging infrastructure wherever possible.*



# Our Methodology and Approach to Trenchless Technologies

## Diagnose, Advise & Treat (D.A.T)

D.A.T is a program Infrastruct developed from exploring manhole renewal technologies, researching studies and design practices across the world. The D.A.T. program takes an exploratory understanding of the source of the problem, defines the needs, and seeks the proper treatment. Some rehabilitation techniques are also applied outside the context of rehabilitation, particularly, in maintenance activities or for preventive purposes (e.g. material protection in order to avoid the posterior degradation), usually repair or renovation techniques.

### Step 1

A **diagnosis** of the problem needs to be defined. Understanding the behavior we are trying to resolve.

*Three behaviors:*

1. Structural behavior (requiring an increase of structural capacity).
2. Hydraulic behavior (requiring flow enhancement or infiltration abatement).
3. Environmental behavior (reduction of exfiltration of sewage to adjacent ground).

### Step 2

Selection of the appropriate behavior leads to **advise**; do we repair, renovate or replace? In the following sections, each family of techniques is briefly described including an overview of the main characteristics, conditions of application, advantages and disadvantages, and relevant standards.

1. Repair consists in the rectification of local anomalies (point repair).
2. Renovate consists of in situ manhole repair (placing a pipe within a pipe).
3. Replace involves the construction of a new manhole (excavation).

### Step 3

**Treat** means to select the right technology, the right trade or applicator (private or public) with the history and skills required to complete the project safely, on time and on budget.



# Our Design Methodology and Installation

Many things go into a lining or casting process, such as multiple size heads, varying head speed, speed of the pull, maximum depth per pass, off ratio, off pressure, off temperature, blockage, etc. At the end of the day what counts are the properties of the material after they are placed in the pipe, not what is reported on the data sheet or from sample cast in the lab. In order to ensure success, we follow the Concept of Integrated Structures and Material Design.

**STEP 1 = Structural Mechanics** Everything to do with the structure in the ground. Understanding the loading that will be placed on the structure.

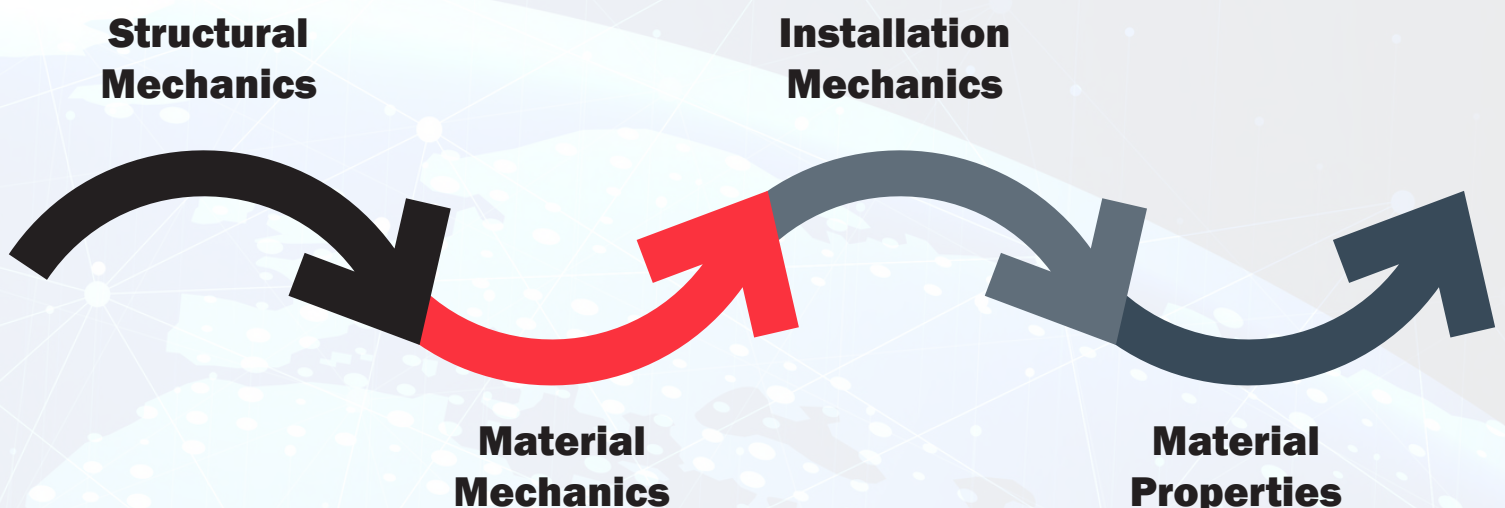
## **STEP 2 = Material Mechanics**

Everything to do with the product performance – extensive testing of known properties reported on the data sheet.

## **STEP 3 = Installation Mechanics**

Everything to do with the installation of the materials. Ensuring the trades knowledge, equipment and expertise is certified to complete the scope of work.

**END RESULT = All three steps need to be mastered to deliver the installed Material Properties after installation.**



# Imagine a **WORLD . . .**



**Where** manholes are rehabilitated in hours.



**Where** large storm and sewer pipelines are restored to structural integrity without disruption.



**Where** confined space entry is no longer required for Air Valve maintenance.



**Where** lightweight foams can abandon pipes, fill voids and stabilize soils with net zero load increase.



**Where** 1,300 ft of pipe can be lined in a single workday.

# **WE CAN!**



# Trenchless Technology Applications

The 3 main categories include:

- 1. Inspection and evaluation** is the process of checking for leaks, cracks, or blockages and is an important step in the condition assessment process.
- 2. Lining** is a growing methodology used to restore aged and deteriorated underground infrastructure without digging.
- 3. Injection** is the art and science of injecting a substrate into soils, fissures, and concrete cracks for stabilizing soil, sealing leaks, and repairing structures.

Ultrasonic

Inertial  
Material  
Unit

Magnetic  
Field  
Wave

Hydrophone

## Inspection

### Pressure Pipeline Condition Assessment: **Acquarius**

The **Acquarius** is a diverse in-line inspection tool designed for use in different types of pipes and materials to predict and repair damage before it occurs. Acquarius' sensors record the condition of many miles of transmission, pressure or sewer pipelines in a single run with minimal shut down, recording and sending inspection data to the cloud platform.

#### **What does Acquarius measure?**

*Degradation of healthy wall thickness:*

- Corrosion in metals (remaining wall thickness)
- Leaching in AC (remaining structural density)
- H<sub>2</sub>S deterioration

*Condition of joint:*

- Angular joint displacement (vertical and horizontal)
- Joint gap width
- And much more



# Robotic Video Pipe Inspection: **EDGE AI**

**Edge AI** offers the most portable and affordable pipeline inspection video solutions on the market, with unmatched reliability and simplicity to meet the demands of today's pipeline infrastructure.

- No truck required; 100% man portable.
- Zero maintenance, no downtime.
- Affordable, subscription model vs. costly ownership.
- All cloud – no USBs. Real-time visibility, real time upload for reporting.
- Up to 4K clear imaging.



## Pipe Condition Assessment: **ECHOLOGICS®**

a **MUELLER** brand

Take the guesswork out of your pipeline rehabilitation and replacement programs with **Echologics'** non-invasive acoustic technology for small and large diameter pipes. Assess a pipe's condition by placement of sensors from hydrant to hydrant.

- Identify the integrity of your pipes with no service disruption.
- Prioritize pipe replacement by knowing which pipe segments are in good, moderate, or poor condition.
- Reduce water main breaks, and get actionable data on pipe replacement timing.

## Pipeline Leak Detection: **LeakFinder-ST**

Echologics' flagship **LeakFinder-ST** correlator is a result of extensive research as well as the input from global leak detection experts on the user interface and design of equipment to meet the needs of end user.

- Simple, easy-to-use user interface design (GUI)
- Automatically estimates the speed of sound in water pipes, producing accurate location of leaks
- State-of-the-art electronics provides superior performance for 'quiet' leaks
- Accurately pinpoints leaks avoiding dry holes
- Rapid correlation time
- Windows based software, municipal operator user-friendly interface
- Rugged, compact, easy to transport system
- Supports multiple pipe materials/mixed pipe sections
- Built-in noise reduction



# Air Valve Assessment/Maintenance and Installation of Self-Contained Valves: A.R.I. Air Valves

A.R.I. air valves are the most compact, lightweight air valves in the market, outperforming the competition by simply working, while others fail. Fifteen years ago, infraStruct introduced the A.R.I. self-contained air valves to compliment trenchless pipeline installations by eliminating the need for costly concrete manhole structures and confined-space entry maintenance procedures. Ideal for new construction and retrofitting of existing, self-contained air valves have a proven track record of effective air management in pipelines for decades.

## infraStruct Services:

- Inspect and assess the current inventory of the utilities' air valve assets
- Perform analysis to determine sizing and location of air valves, and why it's crucial for engineers, contractors, and end users to understand design parameters such as burst ratio, pressure, pipe material, diameter, and flow rates when selecting air valves
- Complete upgrade of old, worn-out technology with new
- Continued maintenance service to ensure optimum performance
- Full-service warranty, with all parts and valve service covered by infraStruct

*Allow us to assist your team in avoiding pitfalls when it comes to the design, selection, placement, and installation of air valves.*



D-090 SB



D-090 SB



D-060 HF NS SB



D-020 SB



D-025 SB



D-023 SB

***All Models come with Freeze Jacket Insulation***

# Lining

## POLYMER LINING TECHNOLOGIES: *OBIC*

specializes in providing an alternative, no-dig approach to repairing a wide variety of structures including holding systems, manholes, treatment facilities, vaults, secondary containment structures and much more with damage caused by infiltration or corrosive chemical exposure. OBIC products are spray applied and cure in minutes, which allow your systems and business/community to be back up and running with minimal downtime.

**OBIC** products applied to new structures will protect and proactively prevent future maintenance problems. Unlike alternative rigid products, OBIC's flexible polymers will not crack under the pressure of freeze/thaw temperature changes or with heavy traffic. They are designed to withstand the demands of the host structure, and durable enough to last for decades. Plus, the professionally installed OBIC ARMOR multi-layer system is backed by a 10-year manufacturer and applicator warranty.

### *The OBIC Advantage*

*When it absolutely, positively must last, you can be assured that OBIC products are:*

- Backed by a team of chemists, chemical engineers and equipment technicians always available to assist with questions, problems, unique applications, and field visits.
- Manufactured to the highest quality in an ISO 9001:2015 facility.
- Tested by third-party laboratories to assure performance results meeting or exceeding industry expectations such as ASTM G210-13 S.W.A.T. (Severe Wastewater Analysis Test).
- Applied with minimal downtime and greater protection than thinner, more rigid materials.
- Created to provide a significantly longer service life, allowing for greater return on investment.
- Customizable to provide solutions for customers with unique needs.





## CEMENTITIOUS LINING TECHNOLOGIES: Permacast CCCP

Permacast® Structural Liners are made of specially-formulated fiber reinforced cements engineered for underground sewer structures. Our patented process allows for bi-directional centrifugal compaction applied uniformly from top to bottom for consistent thickness and easy inspector verification.

Permacast liners are engineered to reinforce, seal and protect existing brick, block or precast concrete manholes. The Engineering Design Guide specifies the material strength and thickness required to double the life of weakened manholes as determined by its depth, ground water pressure, traffic loads, shape and condition.

- High strength and corrosion resistant
- Quick, economical and uniform layer
- Provides waterproofing, sealing, and structural reinforcement of existing manhole



## CRACK INJECTION WATERPROOFING: Alchatek

Leaking concrete structures can be permanently repaired with Alchatek's concrete crack injection & curtain wall procedures using water-activated polyurethane foam. Pressure injection of these liquid polyurethane resins forces the material into leaking cracks or behind leaking walls depending on the application. After the polyurethane injection is complete, the polyurethane resin rapidly reacts with water to form a watertight seal.

Full-system offering of polymer chemical grouts and equipment with perhaps the most experienced technical team in the industry. It specializes in preventing water ingress through concrete infrastructure including parking garages, culverts, basements and foundations, and sewer manholes.

# Alchatek



# PRO-RING Polypropylene Grade Rings: Cretex Specialty Products

**PRO-RING™** is the only manhole grade adjustment system made from Expanded Polypropylene (EPP). The material is renowned for its ability to stand up to the harshest of conditions without damage or deformity for many years. PRO-RING products provide a proven alternative to concrete grade or adjustment rings and is the most advanced concrete-alternative manhole grade adjustment system available anywhere.

- Safe - It usually takes four people to lift a concrete grade ring, each one risking back injury. A 6" PRO-RING weighs only 6 Kg (14 pounds).
- Efficient - One person can easily install the PRO-RING system in just minutes.
- Fast and Cost Effective - PRO-RING products speed manhole installation and repair dramatically, allowing the site to be closed in one day and reducing overall cost from 20% to 30% based on conditions. No water, sand mortar or bricks are needed, just a few simple tools.

# Mechanical Joint Seals and Wraps

Cretex **External Joint Wrap** collars are so versatile that they can be used on manholes, round pipe, elliptical pipe, oval pipe, arched pipe, tongue and groove joints, and bell and spigot joints. Cretex wraps provide a permanent, flexible watertight barrier

The **LSS Manhole Chimney Seal** rubber internal manhole sleeve stops the inflow of water through joints and grade rings. It's available in four widths to cover vertical heights from 0-24 inches. The flexible rubber sleeve is extruded or molded from a high grade rubber that offers a 50-year design life.



**PRO-RING™**  
**SAFER FASTER LIGHTER**





# Pipeline Abandonment with Polymers: InfraFill Foam

Without the bi-product of heat, **InfraFill** is a safe and fast way to fill voids under roads, structures and cavities within pipelines. Unlike cementitious fill technologies, InfraFill can produce load bearing capacity foams without adding significant weight.

## Benefits:

- No heat is created during installation, safe to install at any rate or quantity
- Immune to seasonal changes
- Hydro-Insensitive / UV-Insensitive will expel water
- Variable densities can achieve up to 25 MPA. (Modulus Resilience)
- Can flow long distances, hundreds of feet to many kilometers
- Lightweight, loading bearing capacities

# Pressure Pipeline Lining (FFRP)



CPM Pipelines' **BulletLiner System**® Flexible Fabric Reinforced Pipe (FFRP) is flexible, foldable and light with the material strength of a steel pipeline. Due to the extreme flexibility, it opens up a variety of rehab applications eliminating trenching, pipeline removal and disposal, and disruption of the surrounding environment.

The ideal flow characteristics caused by an extremely smooth inner lining and surge pressure rating up to two times operating pressure make BulletLiner System® FFRP an economical solution for the rehabilitation of aging pipelines.

- Installation speeds of up to 1,312-feet per hour and 8,200-feet pull
- Custom design and manufacture for higher pressures and up to 48-inch diameter
- Resists temperatures -40° F to 167° F, with H Series liner resisting temperatures up to 230° F
- Installation through multiple bends of up to 45°
- Fully flexible seamlessly woven Aramid fabric
- 5-year material warranty; 50-year service life duration

# Culvert Sewer Pipe Lining (CCCP): CentriPipe

The **CentriPipe** system has been designed for corrosion protection and complete structural renewal of storm and sanitary sewer pipe between 30" to 120" in diameter. The unique centrifugally cast concrete pipe system provides waterproofing, sealing, structural reinforcement and corrosion protection for sanitary and storm culverts—without trenching, at significant savings.



- Can be applied to concrete, clay, metal and brick culverts, and cures in place within hours for a quick return to service
- Can accommodate bends and changes in geometry
- Applied with minimal downtime and greater protection than thinner, more rigid materials.
- Created to provide a significantly longer service life, allowing for greater return on investment.
- Customizable to provide solutions for customers with unique needs.





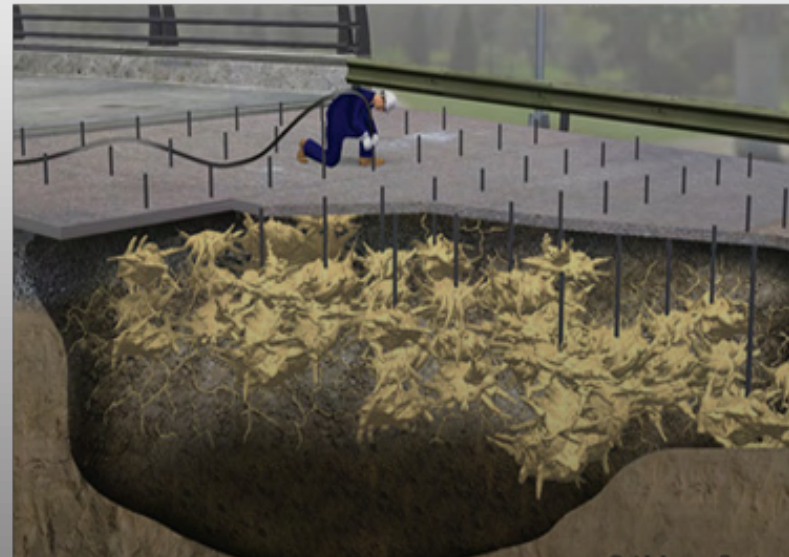
# Injection

## POLYMER INJECTION SOIL STABILIZATION: Alchatek

Unstable, eroded, or loose soil around infrastructure can result in settlement and damage to the structure. Voids can be filled, soil consolidated, and water migration halted by permeating the soil with **Alchatek's**

# Alchatek

ultra-low viscosity polyurethane resins. Once the bearing capacity of the soil has been increased with this process, then the structure can be lifted if necessary.





# Bridge and Road Soil Stabilization: Bridge Abutment

**Alchatek** offers a unique combination of high-quality structural lifting foams along with the equipment and training needed to address deep soil issues. Now you can achieve soil stabilization and compaction on large projects with the smallest footprint and least amount of heavy equipment required. The Deep Lock® process is powerful, painless, and rapid. Deep Lock® gets to the root of the problems in the soil, it stabilizes the soil at all levels and accomplishes this with minimal imposition or downtime to the property owner.

- Utilizes 1/2"- 5/8" steel tubing driven into the ground to desired injection depth
- Polymer is not injected directly under the slab into a void, but deeper into the soil strata
- Uses the confinement of the surrounding soil as the resistant force
- Once expansion begins to occur, surrounding soils begin to compact and densify
- Hydro-insensitive nature of the polymer expels water away from zone of interest
- Can be strategically injected at desired depth and location
- The area is ready for normal operation within 15 minutes

**Alchatek**





## **Seawall and Port Soil Stabilization: Seawall Stabilization**

Cracks in seawalls lead to water infiltration and soil loss, creating voids behind the wall. Chemical grouting with polyurethane foam injection will fill voids and seal cracks or failing joints.





# TIME.

It is the single common word  
that connects ***all of our offerings.***

*How valuable is your time?*

**We tell time** - Condition assessment

**We preserve time** - Environmental value

**We predict time** - Inspection and condition assessment

**We inject time** - Inject resins to stabilize or bind soils

**We protect time** - Warranties and life cycle

**We add time** - Lining products that fix failing infrastructure

**We gain time** - Quicker installation, less disruption  
(system and public)





## Contact Us

[www.infrastruct.ca](http://www.infrastruct.ca)

### Products Division:

11571-149 Street  
Edmonton, AB  
T5M 1W9

780-454-2006

Toll Free: 1-800-461-0006

### Services Division:

Unit 10, 32929 Mission Way  
Mission, BC  
V2V 6E4

604-424-9999



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