

## The Insituform® CIPP Process



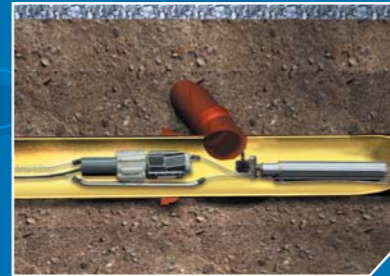
### Step 1:

A resin-saturated, coated felt tube is inverted (left) or pulled (right) into a damaged pipe.



### Step 2:

Next, hot water or steam is used to cure the resin and form a tight-fitting, jointless and corrosion-resistant replacement pipe.



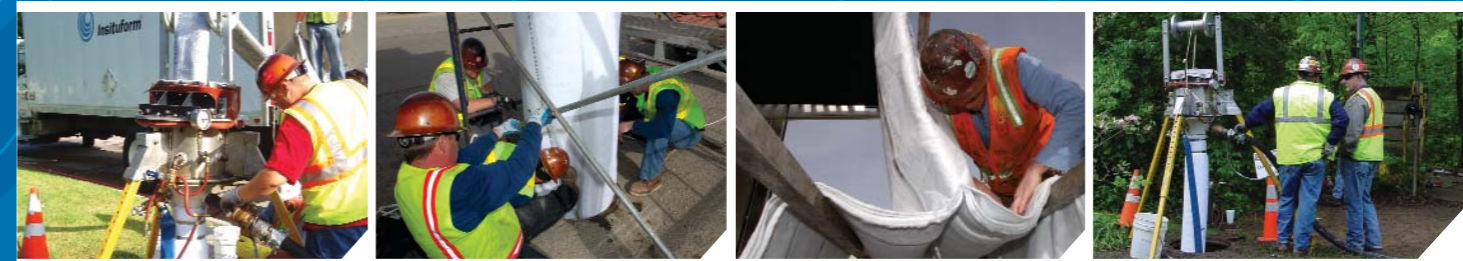
### Step 3:

We restore service laterals internally with robotically controlled cutting devices and inspect the rehabilitated pipe by closed-circuit TV.

## The Insituform® CIPP Technical Envelope

	Insituform CIPP
Diameter Range	150 - 2,500 mm
pH Range	.5 - 10.5
Effluent Temperature	up to 60° C
Pipe Condition - Fully Deteriorated	Yes
Pipe Condition - Partially Deteriorated	Yes
Bends	Yes
Offset Joints	Yes
Diameter Changes	Yes, without manhole access
Thickness Changes	Yes, without manhole access
Typical Shot Length	60 - 300 m
Host Pipe Shape	All Shapes
Host Pipe Material	All Materials

*This table refers to general purpose municipal sewer CIPP projects. Insituform can provide products that extend beyond these parameters through our engineering group.*



## Insituform® CIPP

Affordable, reliable and non-disruptive solutions for sewer pipe reconstruction.

## Our Trenchless Solution

The Insituform® process can be used to rehabilitate sanitary sewers, storm sewers and force mains. Insituform® cured-in-place pipe (CIPP) is a jointless, seamless, pipe-within-a-pipe with the capability to rehabilitate pipes ranging in diameter from 150 to 2,500 mm and to negotiate bends. Insituform® CIPP addresses your top concerns:

### Infiltration reduction

Water entering your sewer system through cracks, holes and joint failures can significantly tax treatment facilities, especially during wet weather. Insituform® CIPP can significantly reduce this infiltration and leakage. In dry climates, tree and plant roots find the sewer system an attractive source of water and nutrients, entering through pipe defects, roots create blockages and overflows. Insituform® CIPP contains flow within the pipe while keeping external water and roots out. We can help you avoid the large capital cost of expanding treatment facilities and the environmental problems caused by sewer overflows.

### Structural integrity

Insituform® CIPP restores structural integrity to damaged sewer pipes. The design models used, independent test results and 35 years of service all confirm that Insituform® CIPP is a structural product with a 100-year design life.

### Increased flow capacity

Insituform® CIPP provides the least cross-sectional reduction of all methods used to rehabilitate pipes. Despite the cross-sectional reduction, the smooth, jointless interior of our product typically improves flow capacity. There are no joints or seams that can separate over time. The smooth interior also provides excellent abrasion resistance.

### Affordability

The Insituform® process is usually less expensive than conventional dig methods of sewer repair, even for everyday problems. When you consider the lost business revenues, traffic congestion and social costs associated with other methods, savings are immeasurable.

### Installation flexibility

Insituform® offers flexibility in both the method of installation and the cure process. Insituform® CIPP can be inverted with either air or water, or pulled into place. The cure can be done with steam or hot water. All processes are consistent with recognized standards and Insituform's own ISO-certified quality control program. Since each job is unique, we can apply the most cost effective, technically optimal solution to solve your pipeline rehabilitation problem.

### IPLUS COMPOSITE™

iplus Composite™ is a fibre-reinforced version of Insituform's proven CIPP technology for medium diameter, 600 to 2,400 mm gravity sewer pipe rehabilitation. Using the same laminated-composite engineering approach used to optimise structures in the sporting goods and aerospace industries, Insituform® engineers have incorporated glass and carbon reinforcing fibres in the iplus Composite™ pipe wall, at the optimum locations to achieve higher strength and stiffness than possible with traditional CIPP materials. The resulting laminated composite pipe provides full structural performance with about 60% of the wall thickness required by traditional materials.



iplus Composite™ eliminates the difficulties of transporting and installing a heavy, thick-walled, cured-in-place pipe, and provides the added advantage of increased flow area in the finished product. The increased strength and stiffness of iplus Composite™ are even more advantageous when rehabilitating noncircular host pipes.

### MEETING YOUR NEEDS; LARGE AND SMALL.

Large-diameter repairs tend to be put on hold in order to address less expensive, small-diameter problems. But large-diameter failures pose enormous risks to public safety and can be very disruptive to large populations. Emergency repair costs to large-diameter pipes can be devastating to your maintenance budget. We have years of experience installing large-diameter Insituform® CIPP. Our crews work on large-diameter projects everyday.



### INSITUFORM® OFFERS MANY BENEFITS.

#### Experience

- More than 35 years experience
- Over 22,000 kilometres of pipe rehabilitated

#### Installation capacity

- More than 70 crews
- Operations or licensees in 40 countries worldwide
- Ability to mobilise quickly

#### Specialized, safe crews

- Our crews are specially trained to install Insituform® CIPP and do it every day
- Every crew member has gone through extensive safety training, follows a site specific safety plan and is backed by a large network of safety support individuals

#### High quality products & services

- ISO 9001:2000 certification covering design, manufacturing, installation and service capabilities
- Total quality culture ensures complete customer satisfaction

### Single point of contact

- Vertical integration means we have single source responsibility and accountability for research and design, manufacturing, installation and service

Insituform® is a worldwide company that has been renewing underground infrastructure for more than 35 years.

### The answer is clear.

Insituform® CIPP:

- Reduced infiltration
- Restored structural integrity to damaged sewers
- Increased flow capacity of existing sewers
- Leaking joints eliminated
- Minimal disruption



**Problem solved.**

The Insituform® CIPP process works on pipes of all shapes and sizes from 150 to 2,500 mm in diameter.

**Trenchless rehabilitation is the best choice for several reasons:**

### Minimal disruption

No digging means quicker rehabilitation with little inconvenience to citizens and businesses and less effects on environmentally sensitive areas such as wetlands, rivers, public parks, natural habitats and historic sites.



### Community image-building

Wise, timely investment in repairs and new construction using the most current and non-disruptive construction technologies available is a visible way to demonstrate proactive community rebuilding.

### Time savings

Many trenchless rehabilitation projects can be completed in days compared to the weeks and months that you can encounter with traditional dig and replace methods.

### Safety

Because repairs can be completed more quickly and there are seldom open trenches, trenchless solutions are safer than conventional dig and replace methods.

