SEKISUI SPR
Leading-Edge Trenchless Solutions

Spiral Wound

PIPE REHABILITATION

SEWER PIPE LINING

CULVERT LINING

STORM DRAIN LINING

6” - 200+”

TRENCHLESS PIPE LINING SOLUTIONS



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WHY CHOOSE SPIRAL WOUND

Spiral Wound liners are a structural rehabilitation solution for gravity pipe applications from **6" to over 200"**. Utilizing machinery, a continuous strip of PVC is constructed as a uniform liner. Spiral Wound lining is 100% trenchless; only existing access points are used for rehabilitation.

With over **4 million ft.** installed in the United States, and over **20 million ft.** globally, Spiral Wound offers numerous advantages compared to other pipe renewal methods.





- FULLY STRUCTURAL REHABILITATION
- LIVE FLOW INSTALLATIONS
- 100% TRENCHLESS TECHNOLOGY
- ASTM F1697-18 & ASTM F1741-18 STANDARDS







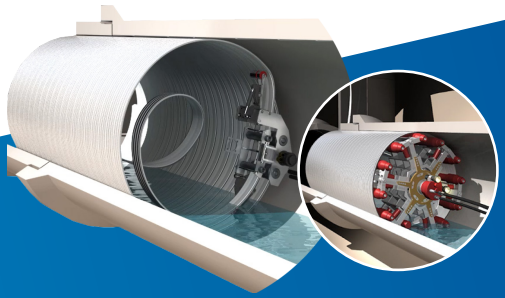
INNOVATIVE INSTALLATIONS

For installations, a continuous strip of PVC is fed from a spool above ground into the winding machine. From there, the machine continuously winds the profile to construct the PVC liner within the host pipe. We offer 3 different winding methods based upon the host pipe.



SPR™EX | 6" - 42"

The SPR™EX liner is formed by a static machine that pushes the liner from access chamber to access chamber. A wire within the liner is then pulled, severing a secondary lock. This expands the PVC liner to fit tightly against the host pipe, requiring no annular space grouting.



SPR™TF | 40" - 70"

SPR™TF is a tight-fitting liner that does not require annular space grouting. Profile is fed into a traverse winding machine which forms a continuous liner between access points.

SPR™TF features 2 different winding machines depending on the project; a lightweight, compact machine or one featuring rotating hydraulic arms. Both machines traverse the pipeline while constructing a tight-fit liner.



SPR™ | 32" - 200+"

SPR™ renews large diameter, round and non-round shaped pipelines. The PVC is wound by a traversing machine that forms the liner while traveling the pipe segment. The liner is constructed leaving a gap between the PVC and pipe wall. This annular space is subsequently grouted.

LIVE FLOW INSTALLATION

Bypass pumping often reaches 15% - 25% of the total project bid. As Spiral Wound liners can be installed in live flow, the cost of flow management is often eliminated if not significantly reduced.

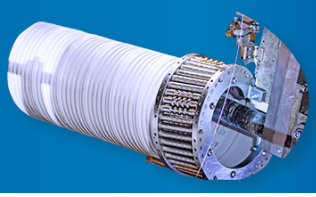


STATIC & TRAVERSE WINDING MACHINES

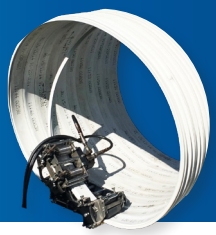
SPR™EX is a stationary installation process. The equipment pushes the wound PVC liner from access chamber to access chamber.

In contrast, SPR™TF and SPR™ traverse the pipeline while winding and pulling the liner along with the machine.

SPR™EX Static Winding Machine



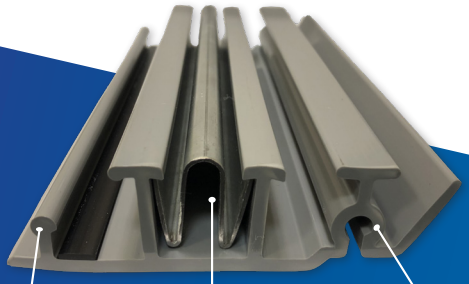
SPR™TF Traverse Winding Machine



SPR™ Traverse Winding Machine



PVC PROFILE



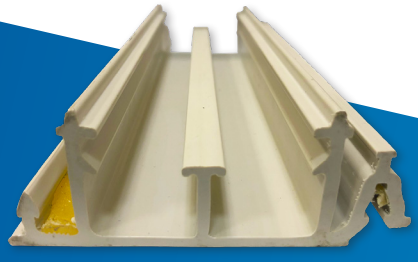
Male Lock *Optional Steel Reinforcement* *Female Lock*

SPR™ | 32” - 200+”

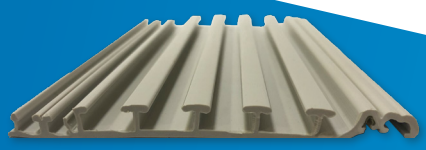
LINING MATERIAL

The liner material is a pipe grade PVC with a ribbed profile design, which is for added strength. The profile features a male and female lock along the edge of the material. These are interlocked as successive wraps of the strip are wound by the machine.

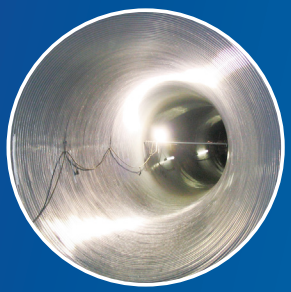




SPR™TF | 40” - 70”



SPR™EX | 6” - 42”



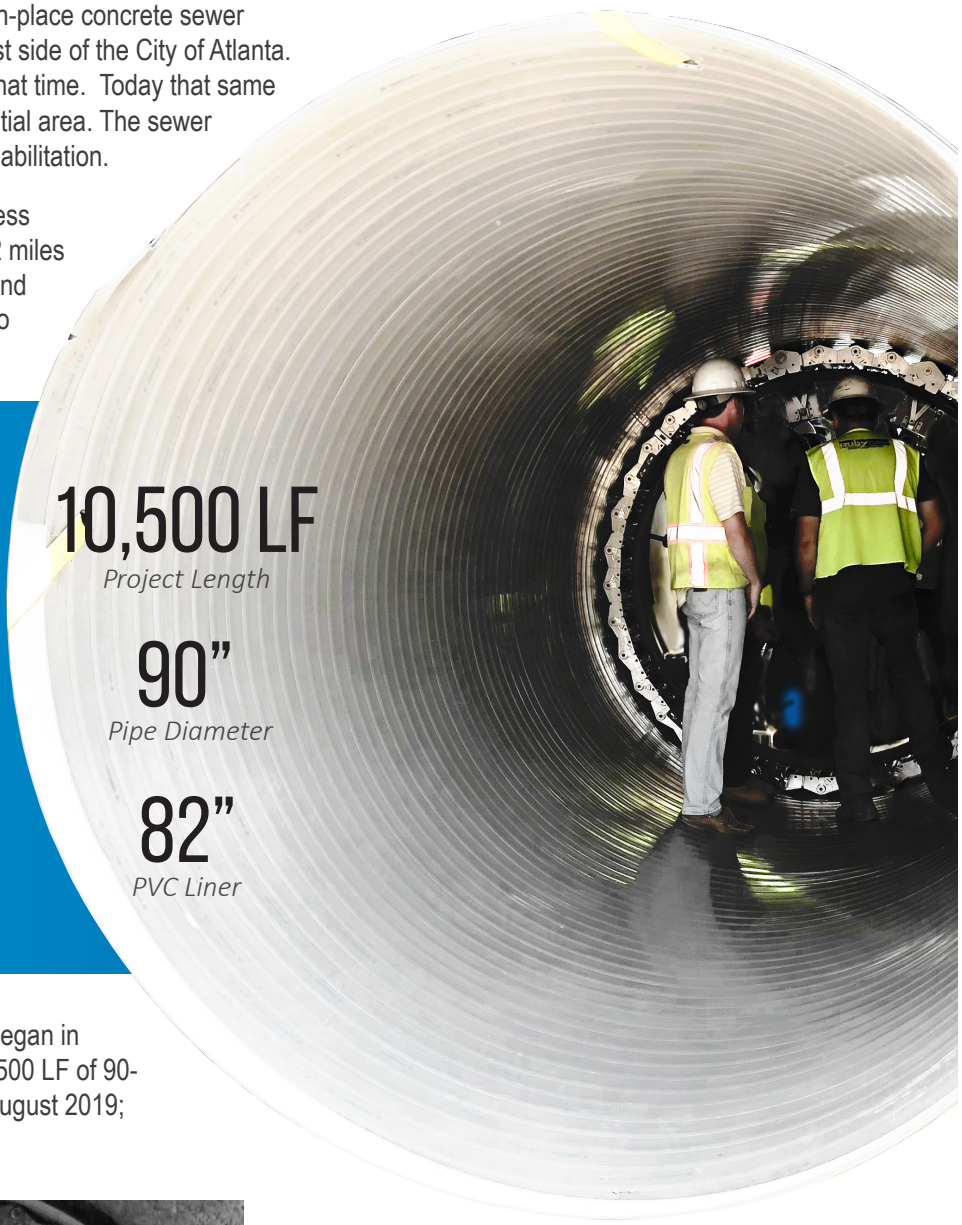
- Pipe Grade PVC
- Mechanical Lock with Gasketing Material
- Impervious to I/I & Root Intrusion
- .009 Manning’s N Value

CASE STUDY

LARGEST SPR™ PROJECT IN USA

The Peachtree Creek Trunk is a 90” arched cast-in-place concrete sewer pipeline constructed in the 1930‘s on the northwest side of the City of Atlanta. This section of town was largely undeveloped at that time. Today that same pipe alignment is surrounded by a thriving residential area. The sewer recently showed signs of failures and need for rehabilitation.

With the area being densely populated, a trenchless lining solution was needed to fully restore nearly 2 miles of the sewer. The City determined that Spiral Wound liners were the best trenchless pipe lining option to fully restore the old sewer.



The SPR™ design called for installation of an 82" PVC liner inside the 90" arch sewer. The annular space was to be filled with lightweight grout to serve as load-transfer for the PVC liner.

Installation began in the Fall of 2018, where Ruby-Collins set out to rehabilitate over 10,500 linear feet of sewer. The combination of innovative technology and efficient installers resulted in early project completion.

10,500 LF
Project Length

90”
Pipe Diameter

82”
PVC Liner

The Peachtree Creek Trunk Stabilization project began in October 2018. The rehabilitation of more than 10,500 LF of 90-in. arched sewer finished just 10 months later in August 2019; **roughly four months ahead of schedule.**



“The SEKISUI SPR Lining Technology was the perfect fit for the specific needs of this project. The technology was able to accommodate variable flow conditions and continuous rehabilitation through numerous curves in the pipe alignment with ease.”

- Scott Cline, President & COO
Ruby-Collins Inc.

2 DECADES OF SPR™EX

CASE STUDY

The City of San Diego's Metropolitan Wastewater Division has been rehabilitating their deteriorated sewers for nearly twenty years. This program however was not completely voluntary. The City entered a Consent Decree with the Environmental Protection Agency in 2001 to address the chronic problem of sanitary sewer spills.

Before 2000, the City had hundreds of sewer overflows each year, largely due to root intrusion and deteriorating pipe joints. As part of their EPA agreement, the City of San Diego embarked on an aggressive Sewer Spill Reduction Program.

> "We've reduced the problem dramatically and anticipate even fewer overflows as we continue to renew our sewers."
>
> Craig Whittemore, P.E., San Diego Metropolitan Wastewater Department

+1M LF
Installed since '01

8" - 42"
Pipe Diameters

+ 90%
Reduction in Spills

Since the program was implemented, the spill problem has been reduced dramatically. In 2001 the City had 365 sewer spills – one a day. By 2015 that number was down to 35; a greater than 90% reduction.

As of 2020, the City has inspected over 2040 miles of sewer and have identified 779 miles for replacement/rehabilitation. Over 300 miles of sewers have been rehabilitated with more slated for repair.

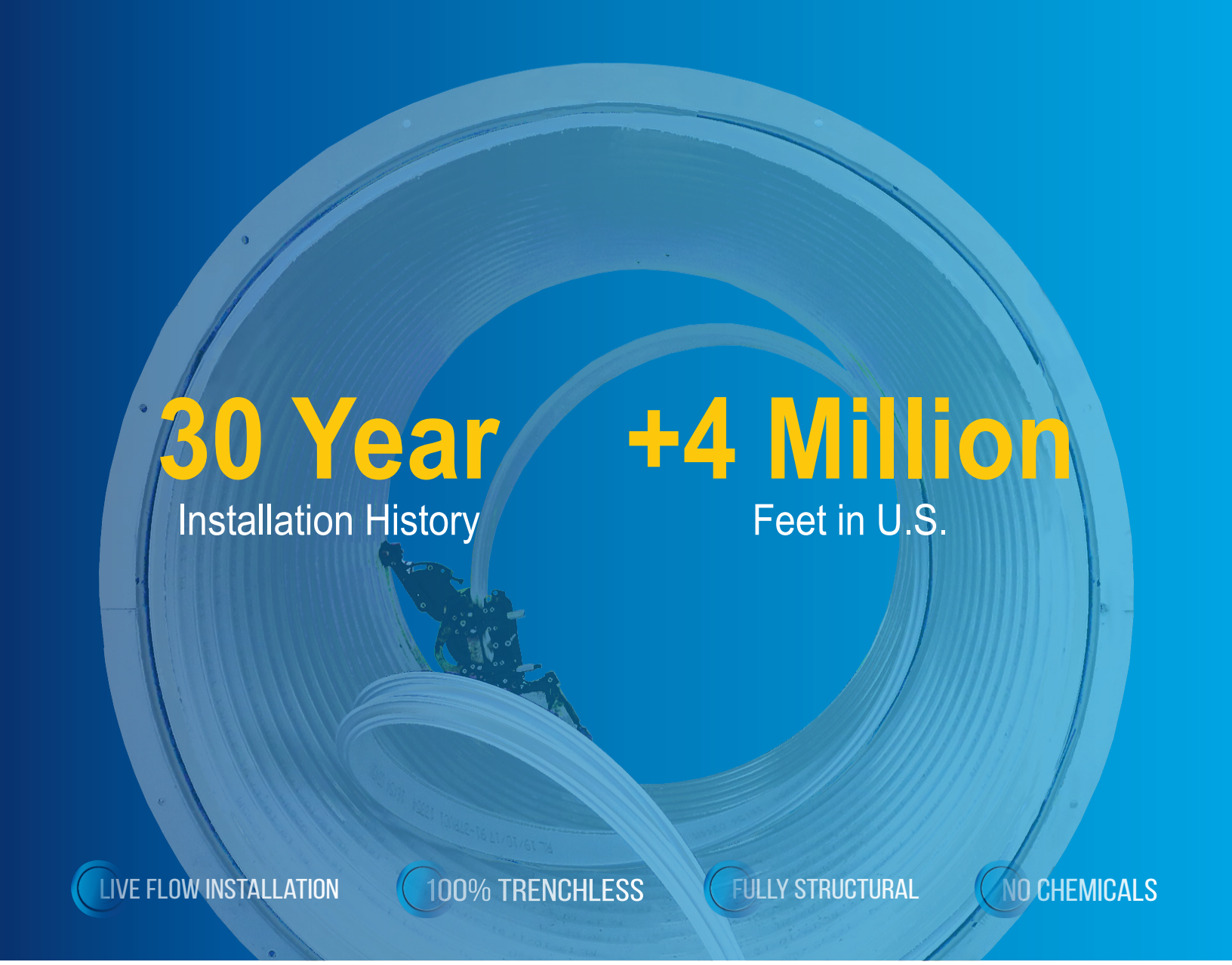


Since 2001, Sekisui licensees have bid on over 50 sewer rehabilitation projects and to date have installed **over 1 million feet of SPR™EX liners on City projects** with several projects currently in construction.



Though the mandatory repairs as outlined in the EPA Consent Decree were completed in 2015, the City continues a robust rehabilitation schedule.

The current CIP program is funded through 2024 with an annual goal of 40 to 45 miles of sewer to be replaced or rehabilitated per year. With the cost savings associated with trenchless technologies, the focus is to use structural liners where possible.



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See Spiral Wound in action on YouTube and LinkedIn

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