



# Making Pipelines Last



## INVESTOR PRESENTATION

**A technology that solves the largest problem in pipeline infrastructure.**

Pipeline corrosion costs just the oil & gas industry in North America more than \$8B USD per year.

Around 2 trillion gallons of fresh water are lost in the U.S. alone each year through pipeline leaks.



Internal corrosion accounts for 60 – 75% of corrosion-related pipeline failures.

Internal coatings do a great job of protecting the steel from corrosion, but one big problem remains...

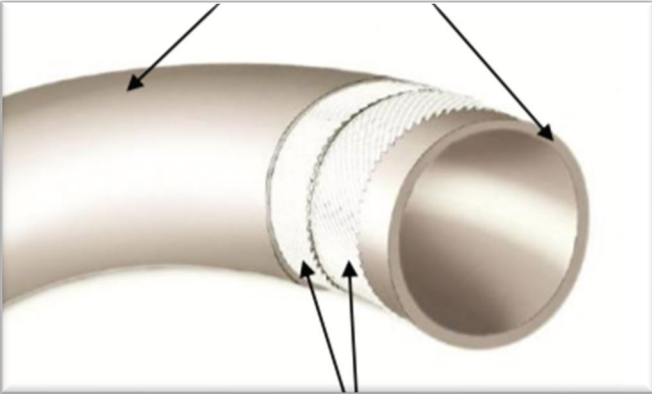


How to protect the interior of welded joints from corrosion?





High Density Polyethylene Pipe (HDPE) is widely used because plastic doesn't corrode. However, plastic does not withstand higher pressures.

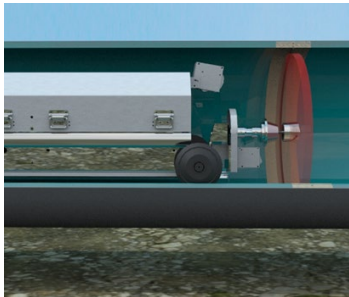


Reels of plastic pipe reinforced with fibers or steel mesh will hold much higher pressure, but has a maximum diameter of 8".



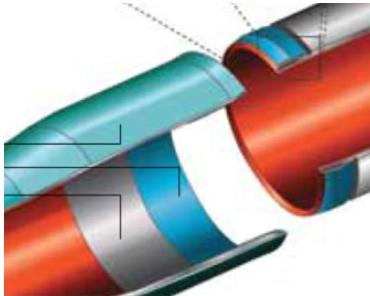
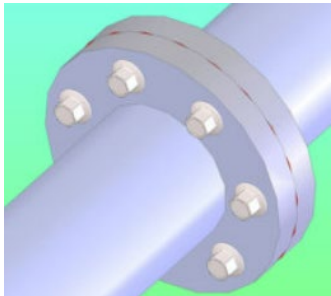
For high pressure & larger diameters, HDPE pipe is pulled through long sections of steel pipe. It's expensive for diameters larger than 18", and still uses bolted mechanical joints for connections.

Steel pipe with welded joints provides the highest strength combined with ductility (flexibility). It's often the only option for large diameter, long distance, and high-pressure pipelines. But how to protect the joints?



## Human or Robot Patches Each Joint

- Very slow = high construction cost
- Quality issues
- Dangerous for people to enter pipe

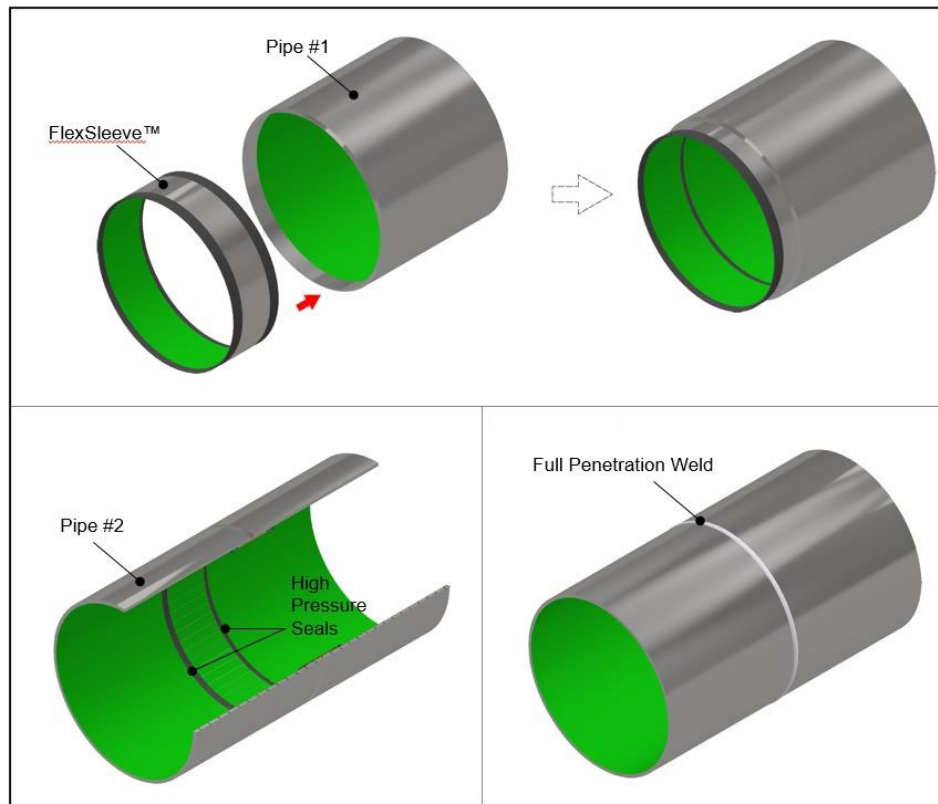


## Mechanical Joints

- Avoids problem of welding heat damaging internal coating
- Bolted joints are expensive and leak-prone.
- Mechanical interference joints require special equipment that's suitable only to 12" diameter.

A flexible, corrosion-resistant sleeve that seals off the weld zone from corrosion and permits fast, standard steel pipeline construction methods.

FlexSleeve™ is used for pipelines with thin internal paint or powder coatings.





# FlexSleeve™ Disruptive Advantages

## Construction Rate (meters/day)

Welding w/ FlexSleeve

1500

Joint Coating w/ Robot

200 - 500

Reference: 42" diameter x 340km desal water pipeline

## Cost of FlexSleeve vs. Bolted Joints

FlexSleeve

X

Flanged Joints

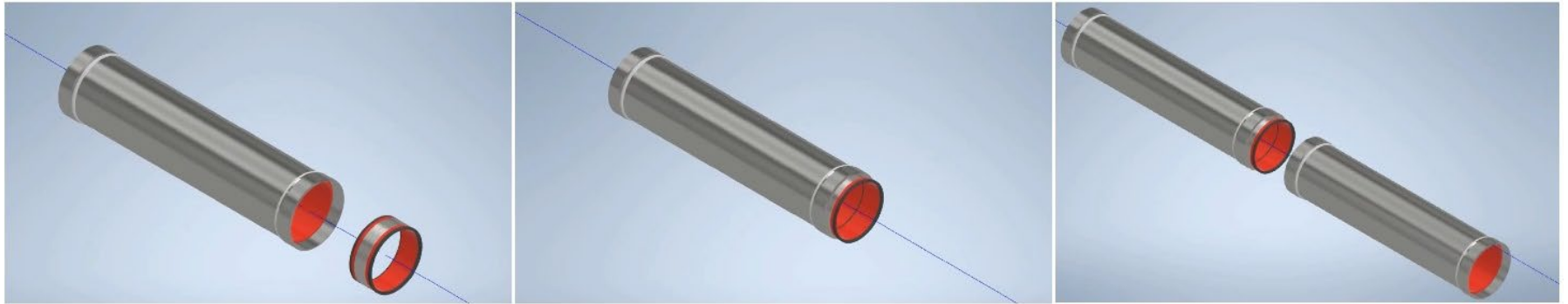
3X

Reference: 24" diameter FlexSleeve vs. 24" dia. Class 300 flanges (bolted mechanical joint)



Used for thick linings such as HDPE or polyurethane that are the safest way to protect the interior of pipelines transporting corrosive liquids and abrasive slurries.

(See supplemental “SealSleeve Investor Presentation”)





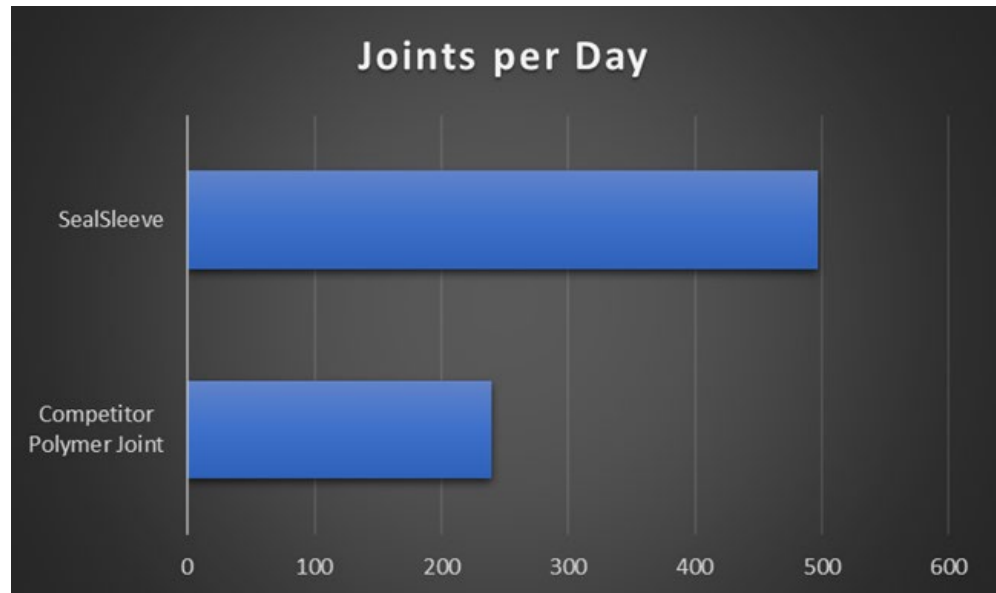
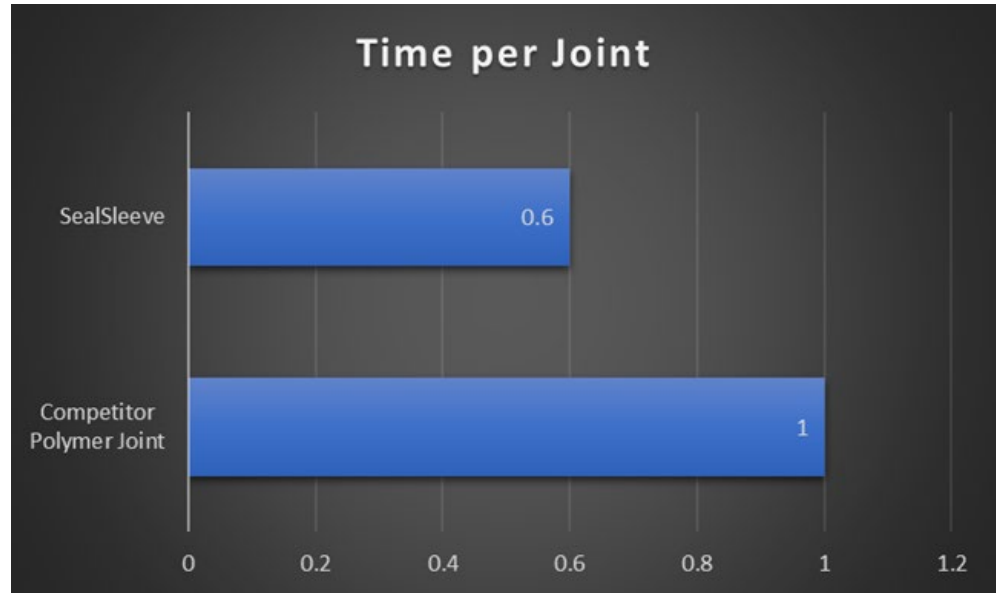
# SealSleeve™ Disruptive Advantages

## Offshore Construction Speed\*

**J-Lay Vessel**  
(~\$500,000/ day)

**S-Lay Vessel**  
(~\$300,000/ day)

\*Construction speed is estimated. Actual speed costs will vary due to various factors, including pipe diameter & wall thickness..



## Domestic Water

- Continental Water
- Desalinated Water



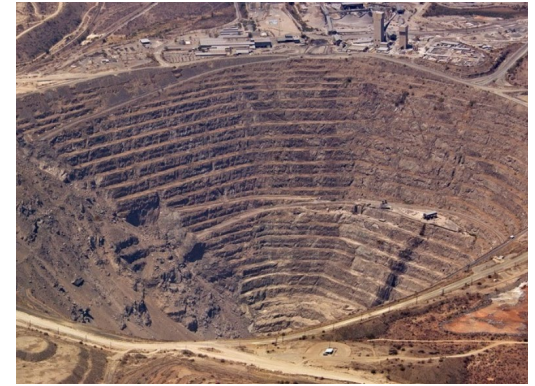
## Oil & Gas

- Produced Water
- Sour Gas & Oil
- Saltwater & CO<sup>2</sup> Injection
- Process Water



## Mining

- Process Water
- Tailings Slurry
- Coarse Ore Slurry
- Concentrate Slurry
- Solution Mining (Brines)



The background of the slide is a photograph of dry, cracked earth with some sparse green grass. Three white rounded rectangular boxes are overlaid on the image, containing text.

**10% Annual Growth**  
in desalinated water production

**Middle East**  
1,000+ km/ yr. of new desal pipelines

**Chile**  
500+ km/ yr. of new desal pipelines

Oil industry pipelines suffer internal corrosion from water, H<sub>2</sub>S, and CO<sub>2</sub>.



LPS is in partnership discussions with companies that wish to merge their internal lining technology with LPS' welded joint technology.



Successful trial installation for offshore service  
January 2022

# First Major Project

More than 400 FlexSleeves have been successfully installed in a 28” diameter x 92km domestic water pipeline in Brazil.

This serves as a critical case study that engineers are asking for.

See <https://www.linedpipesystems.com/award-winning-technology-used-in-brazil-water-pipeline/>



Product demonstrations and successful trials have been performed for water agencies, mining, and oil companies.

All have said that FlexSleeve far outperforms competitive technologies, and several have certified it for use in their pipelines.

See [https://youtu.be/dAfl2LuK5\\_s](https://youtu.be/dAfl2LuK5_s)



**At least eight large companies world-wide are interested in distributing FlexSleeve or SealSleeve. LPS has entered negotiations with three of them to bring capital in exchange for exclusive distribution rights.**

**A deal with any of them would accelerate market penetration and secure financing while LPS technology is being qualified for major pipelines.**







# Large Market & Big Margins

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- **Total Available Market worldwide exceeds \$1B USD. An estimated 1 – 2 million joints per year are constructed on pipelines transporting corrosive and/or abrasive substances.**
- **FlexSleeves are assembled from low-cost, readily available sheet metal and have superior functionality to competitor sleeves, which are machined from expensive solid steel blanks.**
- **Vastly improved construction speed saves millions for contractors vs. other technologies, thus relieving price pressure.**
- **Gross margins will exceed 40%, and potentially reach 70% as we automate manufacturing.**

# Total Available Market

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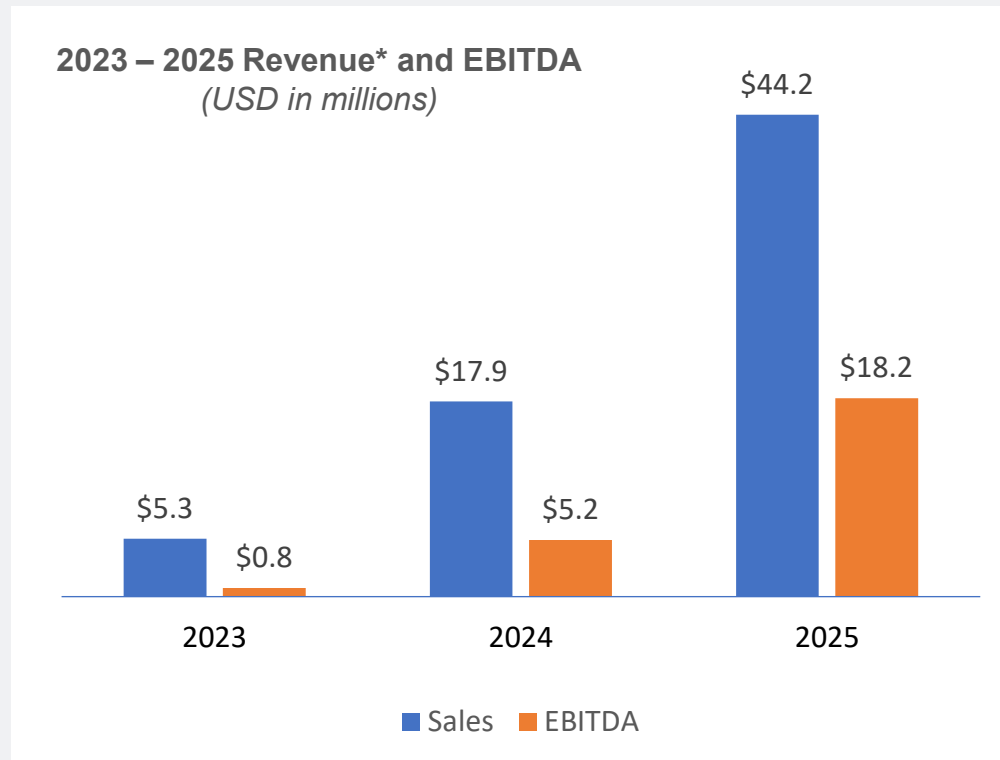
Market	Type	Total Available Market (USD)
FlexSleeve small diameter (primarily upstream oil & gas)	Existing	>\$50M
FlexSleeve in large diameter (domestic & industrial water - desal)	Disruptive	>\$400M
SealSleeve industrial water	Existing	>\$50M
SealSleeve mining slurries	Disruptive	>\$50M
SealSleeve sour oil & gas	Disruptive	>\$400M



# Budgetary Financial Projections

Mean project value is between \$1 – 2M USD. Some proposals exceed \$15M USD, making it difficult to forecast amount and timing of revenue.

Revenue will jump when early adopters qualify the technology for large projects, and skyrocket once more conservative companies see it in use.





Raising Money to  
Scale Manufacturing

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- \$3+ million USD spent over 5 years on product development, testing, & trials.
- 2 patents issued. Multiple patents pending.
- Conservative industry = slow adoption but long viability





## **Ryan Sears, Co-Founder & CEO**

- General Manager and then President of Goodwest Linings & Coatings from 2001 until LPS was formed in 2018, during which time Goodwest grew 5-fold and became a reputable industry leader in the Southwest U.S.
- Innovation leader with particular strengths in business development, marketing, technical solutions, costing and forming trusted relationships with team members, partners, clients, and shareholders.



## **José Anisio de Oliveira e Silva, Co-Founder & CTO**

- Held instrumental roles in the engineering and construction of high-profile pipelines, including Engineering Manager for the 523km Bolivia to Brazil gas pipeline and 530km Anglo American Minas Rio Iron Ore Slurry Pipeline
- The inventor of patented LPS technology, his superior technical skills and pipeline construction knowledge are vital to the development and proper implementation of LPS technology.



## **Marian Hagler, General Counsel**

- Deep global experience in the development of natural resources and related infrastructure, including Global Major Projects (O&G and Mining) with Baker & McKenzie in Russia, Kazakhstan, North Africa, and the Middle East
- Excellent contract negotiating skills and provides important strategic analysis.



**Ezechiel Decote**  
Production Mgr.

**Jorge Barcelos**  
Quality Mgr.

**William Pacheco**  
Engineer/Project Mgr.

**Bruno Galvao**  
Mfg. Engineer

**Douglas Barcelos**  
Field Engineer



# Disclaimer

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# Contact Information

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