

# ROTATIONAL LINING SOLUTIONS

*High-performance thermoplastic lining*



## Rotational Lining Process

Rotational lining (aka rotolining) is a technology which allows us to bond a uniform, seamless polymer layer to the interior of virtually any metallic structure, regardless of shape and complexity. In the rotolining process, granular resin is placed inside the structure to be lined and all openings are covered. The structure is heated while simultaneously being rotated about two axis. The resin melts and flows evenly over the entire inner surface of the structure, bonding to the metal substrate. Once cooled, the result is a monolithic corrosion and chemical resistant lining that conforms to complex shapes and virtually free of stresses.

Wall thicknesses can range from 0.090 inches to 0.450 inches, but typically range from 0.250 inches to 0.400 inches, depending on the size and service of the part. Standard raised face weld neck (RFWN) flanges, or United's proprietary welded connection may be integrated into the lined fitting allowing for installation in either a mechanical or fully welded system.

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## High-performance Thermoplastic Lining

United Pipeline Systems is a global leader in providing high performance polymer lining technology for the oil and gas, mining, industrial and public utility markets. United Pipeline Systems offers the perfect complement to United's Tite Liner® system through its integrated rotational lining solutions for metallic structures with complicated geometry.

United Pipeline Systems fulfills, in a comprehensive way, the needs for protection against corrosion and abrasion of fluid management infrastructure and equipment.

## Standard and Custom Sizes

We line a wide range of chemical processing, transfer and storage equipment, including some the largest pipe and vessels in the industry. Our breadth of size and manufacturing capabilities can accommodate most size requirements.

Maximum dimensions for rotolined structures:

- 6ft in diameter x 20ft length
- OR-
- 12ft in diameter

Our state-of-the-art technology uses different high performance thermoplastics to internally protect steel structures, such as:

- Manifolds and well heads
- Tees
- Bends and reducers

Thousands of rotational lining solutions have been installed over the last 30 years, and many are still in service today. This application provides a permanent solution to the corrosion and abrasion challenges of the oil & gas, mining and industrial processing industries.

## Tailored Design and Manufacturing

In its engineering and development center, United Pipeline Systems can address all of our customer needs, from system design and resin selection, to the manufacturing and rotational lining of components.

## High-performance Thermoplastics

United Pipeline Systems can cover a wide range of fluid requirements, temperatures and applications through the use of high performance thermoplastics such as:

- High Density Polyethylene (HDPE)
- ETFE (Tefzel)
- PFA
- Options: Nylon 12, PVDF (Kynar), ECTFE (Halar)

## Global Scope

Only United Pipeline Systems has the resources and global reach to support projects in any part of the world, with the reliability and capabilities that only we can offer.

United Pipeline Systems is a global leader for the internal lining of pipelines and process lines. The Tite Liner® system has protected more than 20,000 miles of pipelines in the last three decades across over 30 countries.



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