

## SPR<sup>®</sup>RO

STRUCTURAL, CLOSE FIT LINER  
FOR GRAVITY PIPELINES FROM  
DN 800 - 1800 mm (32 - 72 inch)



**ROTALOC<sup>®</sup>**

SPR<sup>®</sup>RO technology, incorporating  
ROTALOC<sup>®</sup> spirally wound system  
by RIB LOC<sup>®</sup>



# SEKISUI RIB LOC AUSTRALIA'S TECHNOLOGIES AND SERVICES

SEKISUI Rib Loc Australia Pty Ltd (SRLA) is the internationally recognised inventor of RIB LOC® spirally wound technologies. Owned since 2008 by SEKISUI Chemical Co., Ltd., one of Japan's largest global plastics developers and manufacturers, SRLA develops, manufactures and supports the delivery of its spiral pipe renewal technologies through its worldwide network of distributors and installation partners.

## Vision – Innovation for the Earth

SRLA's vision is to provide well-being and peace of mind to all current and future generations by contributing to the sustainability of the Earth and society by using the power of innovation that is in our people's DNA to continue opening new frontiers in social infrastructure.

## Mission

With customer satisfaction as a priority, our mission is to supply, educate and support stakeholders in the use of our innovative, high-quality pipe renewal technologies for the benefit of the environment and society.



SRLA's innovative, patented and world renowned RIB LOC® spirally wound technologies are used the world over for the time and cost efficient means they offer for rehabilitating damaged pipes with minimum impact on the environment.

The spirally wound technologies for gravity pipelines are based on the principle of winding a continuous plastic strip into a liner directly within the deteriorated pipe. The plastic strip is spirally wound via a patented winding machine positioned in the base of an

existing maintenance hole or access chamber. The edges of the strip interlock as it is spirally wound to form a continuous watertight liner inside the host pipe.

For the spirally wound rehabilitation of gravity pipes SRLA offers six systems:

	SPR®EX Expanda®	SPR®RO Rotaloc®	SPR®TF	SPR®ST Ribsteel®	SPR®PE Ribline®	SPR®
Diameter	150 - 1050 mm 6 - 42 inch	800 - 1800 mm 32 - 72 inch	1050 - 1650 mm 42 - 66 inch	450 - 2500 mm 18 - 100 inch	900 - 3000 mm 36 - 120 inch	800 - 5500 mm 32 - 220 inch
Material *	PVC	PVC	PVC	PVC	HDPE	PVC
Shape	Circular	Circular	Circular	Circular	Circular	Circular, non-circular, custom shape
Installation	Close fit	Close fit	Close fit	Fixed diameter	Fixed diameter	Fixed diameter

\* Steel reinforcement used in selected profiles



## A STRONG AND FLEXIBLE LINER

SPR®RO technology, incorporating Rotaloc® spirally wound system by RIB LOC®, is a unique process for restoring the hydraulic efficiency, reliability and integrity of aging sewers, storm drains and culverts.

The system consists of a single strip of PVC profile which is progressively wound into the existing pipeline by the SPR®RO / Rotaloc® machine. The edges of the profile are interlocked by the SPR®RO / Rotaloc® machine as it moves inside the deteriorated pipeline, forming a continuous watertight liner.

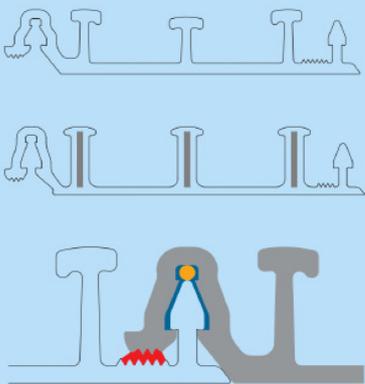
The winding machine can alter diameter as it traverses the pipeline to produce a liner of optimal diameter.

SPR®RO / Rotaloc® liners can structurally rehabilitate brick, concrete, glass reinforced plastic or corrugated metal sewer and stormwater pipelines with diameters from 800 - 1800 mm (32 - 72 inch).

### Project experience

SPR®RO / Rotaloc® has been used to rehabilitate sewer and stormwater lines around the world. It has proven capable of providing a structural liner for severely deteriorated pipelines and has been installed under difficult site conditions with minimal community disruption.

### PVC Profile and Sealant Materials



HOT MELT



O-RING



Cross-section of a typical profile, showing the mechanism that locks together successive wraps of profile

### **Fast installation with minimum community disruption**

The deteriorated pipeline is first cleared of debris and obstructions, cleaned and inspected.

The SPR®RO / Rotaloc® winding machine is lowered to the base of the access chamber through a standard opening. The PVC profile is fed into the machine from an above ground spool.

Winding commences as the SPR®RO / Rotaloc® machine rotates and traverses inside the deteriorated pipeline. As winding continues the hydraulic rams forming the "arms" of the machine adjust the diameter at which the liner is wound. This ensures it fits tightly against the wall of the host pipe.

The position of service connections can be logged for later reconnection. The process continues until the SPR®RO / Rotaloc® winding machine reaches the end of the pipeline length to be rehabilitated.

The ends of the liner at both access chambers are sealed and rendered to make them smooth with the host pipe. Lateral connections can be cut and sealed immediately on completion of liner installation.

## **PROVEN MATERIAL AND VAST PROJECT EXPERIENCE**

### **Flow advantages**

- Installed to fit tightly against the existing pipe wall - minimum loss of cross sectional area.
- Flow efficient, smooth bore with circular cross section.
- No ripples or wrinkles even when host pipe joints are offset.
- Winds smoothly around large radius pipeline bends.
- Usually greater hydraulic capacity than the host pipe.

### **A strong flexible liner**

- Can be designed as a structural liner. A range of PVC profiles is available to meet design requirements.
- Structurally efficient circular cross section - even when the host pipe is misaligned.
- Constant wall thickness and shape. The wall will not 'balloon' and thin in unsupported areas.
- No heating, stress cracking, shrinkage or stretching.
- Machine installed. Installation does not depend on the standard of workmanship in difficult conditions.

### **Fast installation with minimum community disruption**

- Rapid set up, safe work sites and low noise during construction.
- Uses existing access chambers. No need to excavate launch pits.
- No on-site pipe storage required.
- Small support vehicles - less disruption of traffic.
- No waiting for curing or heat treatment.
- Can operate with some flow in the existing pipe.
- Installation possible with difficult to reach access chambers - support vehicles and equipment can be placed remotely.



SPR®RO / Rotaloc® winding machine



Products tested in accordance with global standards

### Proven pipe material

- Made from similar grade of PVC as new sewer and drainage pipe.
- Cell Classification of 13354 in accordance with ASTM D1784.
- Profile sealing materials are tested to confirm suitability in high ambient temperature sewer environments.
- Factory manufactured, with consistent material properties. The pipe strength does not rely on curing in uncertain conditions.

### Plastic and steel profiles

The plastic profile that forms the liner is provided in a range of sizes, with or without steel reinforcement.

The appropriate profile, and steel section if needed, is selected to provide a liner with sufficient stiffness to meet the design requirements for the project.

### Design

Numerous industry specifications provide design methods applicable to SPR®RO / Rotaloc®, including:

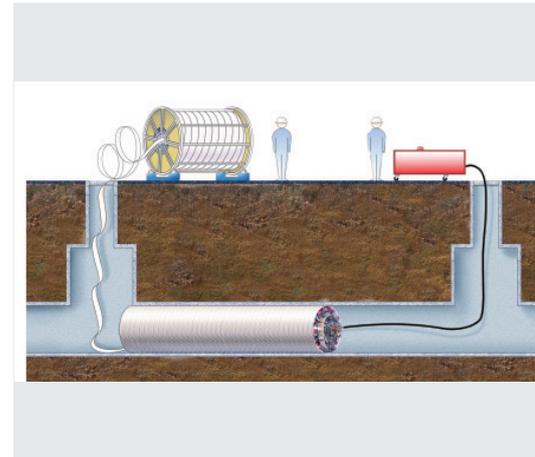
- ASTM F1741 "Standard Practice for Installation of Machine Spiral Wound Poly (Vinyl Chloride) (PVC) Liner Pipe for Rehabilitation of Existing Sewers and Conduits".
- Australian Water Authority Specifications, usually based on Australian Standard AS/NZS 2566.1 "Buried Flexible Pipelines, Part 1: Structural Design".

Section Properties of Typical SPR®RO / Rotaloc® Profiles

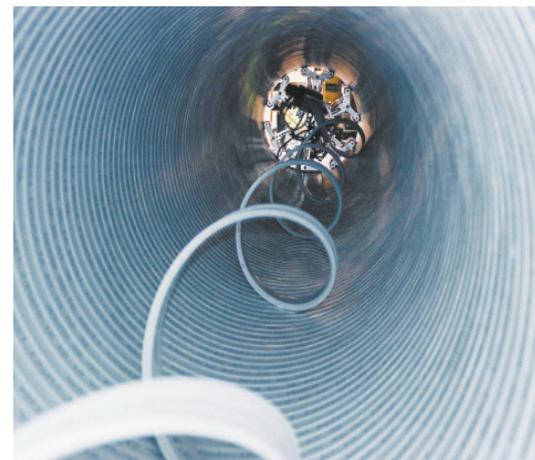
PROFILE	HEIGHT	TYPICAL PIPE DIAMETER	
91 - 21RO	20	800 - 1200	mm
91 - 21RO	0.8	32 - 48	inch
91 - 37RO	38	1000 - 1800	mm
91 - 37RO	1.52	42 - 72	inch
91 - 22ROS	22	900 - 1350	mm
91 - 22ROS	0.88	36 - 54	inch
91 - 32ROS	32	1050 - 1800	mm
91 - 32ROS	1.28	42 - 72	inch

### The benefits of SPR®RO / Rotaloc® at a glance

- Structural liner.
- Close fit.
- Diameters from 800 - 1800 mm (32 - 72 inch) using four profile types.
- Manufactured from pipe grade PVC.
- Suitable for gravity flow sanitary sewer and stormwater applications.
- WRc Approved® (PT/466/0720 and PT/467/032).



On-site setup for SPR®RO / Rotaloc® installation



The PVC profile is wound into the pipe

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