

SPR[®]PE

STRUCTURAL, REINFORCED HDPE LINER
FOR GRAVITY PIPELINES FROM
DN 900 - 3000 mm (36 - 120 inch)



RIBLINE[®]

SPR[®]PE technology, incorporating
RIBLINE[®] spirally wound system
by RIB LOC[®]



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



STRUCTURAL, REINFORCED HDPE LINER FOR GRAVITY PIPELINES

SPR®PE technology, incorporating Ribline® 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 fully encapsulated steel reinforcement is designed to provide a liner of optimum stiffness for the application.

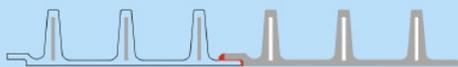
SPR®PE / Ribline® liners can structurally rehabilitate brick, concrete, glass reinforced plastic or corrugated metal sanitary sewer and stormwater pipelines with diameters from 900 - 3000 mm (36 - 120 inch).

The plastic profile that forms the liner is provided in a range of sizes. The profile is reinforced with steel that is completely encapsulated within the HDPE material. The steel reinforcement is selected to provide a liner with sufficient stiffness to meet the design requirements of the project.

Project experience

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

HDPE Profile and Welding Material



POLYETHYLENE WELD BEAD

Cross-section of a typical profile, showing the weld that joins together successive wraps of steel reinforced HDPE profile

Easy mechanism installation

The deteriorated pipeline is first cleared of debris and obstructions, cleaned and inspected, the diameter measured and then proved. The winding machine is lowered to the base of the access chamber through standard maintenance hole openings. The reinforced HDPE profile is fed into the machine from an above ground spool.

The winding machine then winds the reinforced HDPE profile to form a new pipe.

The process continues until the liner wound by the SPR[®]PE / Ribline[®] 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.

The annulus between the fixed diameter liner and the host pipe can be filled with cementitious grout immediately after the winding is completed.

FULLY ENCAPSULATED STEEL

Flow advantages

- Hydraulically efficient, smooth bore with circular cross section.
- Usually greater hydraulic capacity than the host pipe.
- No ripples or wrinkles even when host pipe joints are offset.

A strong flexible liner

- Can be designed as a structural liner, a range of HDPE and steel combinations are available to meet design requirements.
- Structurally efficient circular cross section – even when the host pipe is misaligned.
- Constant wall thickness even when negotiating voids in the host pipe.
- Factory manufactured and machine installed, liner 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.
- No need to excavate launch pits or store pipes on-site.
- Small support vehicles – less disruption of traffic.
- Can operate with some flow in the existing pipe, up to 25% subject to velocity and safety considerations.
- Installation possible from difficult to reach access chambers – support vehicles and equipment can be placed remotely.



Quality control during the profile extrusion process



Production tested in accordance with global standards

Proven pipe material

- Made from similar grade of HDPE as new sewer and drainage pipe.
- Cell Classification of 335420C (or E) in accordance with ASTM D3350.
- Profile sealing is achieved by extrusion welding to produce a continuous jointless HDPE liner.
- Consistent material properties. The pipe strength does not rely upon the grout for its strength, only to transfer the load to the liner.

Design

Numerous industry specifications provide design methods applicable to SPR[®]PE / Ribline[®], including:

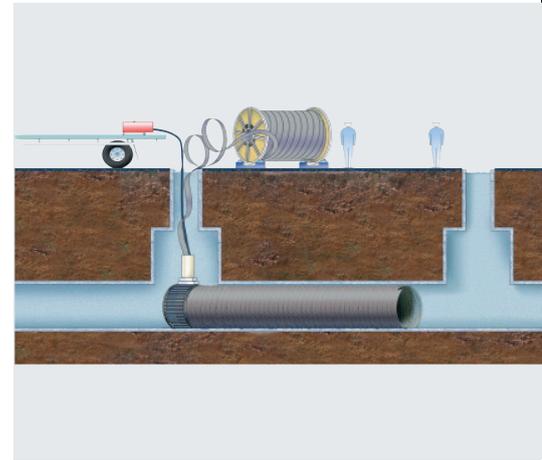
- ASTM F1741 "Standard Practice for Installation of Machine Spiral Wound Poly (Vinyl Chloride) (PVC) Liner Pipe for Rehabilitation of Existing Sewers and Conduits" modified for SPR[®]PE / Ribline[®] (HDPE) liner pipe.
- Australian Water Authority Specifications, usually based on Australian Standard AS/NZS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

Section Properties of Typical SPR[®]PE / Ribline[®] Profiles

PROFILE	HEIGHT	TYPICAL PIPE DIAMETER	
112 - 20RL	20	900 - 1200	mm
112 - 20RL	0.8	36 - 48	inch
112 - 30RL	30	1100 - 1650	mm
112 - 30RL	1.2	48 - 66	inch
112 - 40RL	40	1650 - 3000	mm
112 - 40RL	1.6	66 - 120	inch

The benefits of SPR[®]PE / Ribline[®] at a glance

- Structural liner, strong and light weight.
- Manufactured from pipe grade high density polyethylene (HDPE) with embedded steel reinforcing.
- Steel thickness can be varied to vary pipeline stiffness.
- Diameters from 900 - 3000 mm (36 - 120 inch) using three profile types.
- Suitable for gravity flow sanitary sewer and stormwater pipelines.
- WRc Approved[®] (PT/463/0720).



On-site setup for SPR[®]PE / Ribline[®] installation



SPR[®]PE / Ribline[®] liner being produced by the winding machine

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