

Creating High Performance Pipe Rehab Technology

AlphaLiner®

UV-light curing GRP pipe liners

- :: GRP pipe liners for the rehabilitation of sewage pipes DN 150 - DN 1800
- :: UV curing systems & support equipment
- :: TQM - Total Quality Management



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Alphaliner® – GRP pipe liners by RELINEEUROPE Technologies for sewer rehabilitation

Our trenchless sewer rehabilitation with seamless pipe liners and innovative UV-light curing has proved itself as a safe and economical system. With its Alphaliner technology, RELINEEUROPE provides a complete rehabilitation system with coordinated components. Sewer sections that have been refurbished using Alphaliner have a long operating life, over 50 years in most cases.

Quick, economical and long-lasting rehabilitation

RELINEEUROPE' Alphaliner technology is characterised by extremely rapid curing times, enabling rehabilitation projects to be completed safely, quickly and economically. The Alphaliner is the latest in pipe liner technology, having particular advantages over traditional liner technologies due to its modern and innovative design.

Highest flexibility for many areas of use

Whether in sewer rehabilitation, in heavily travelled roads in the town, in impassable terrain in the country, in rehabilitation in narrow factory buildings or in mountain projects, the Alphaliner has stepped up to the market on rehabilitation projects in over 50 countries.

Clean, safe, quick – Installation of Alphaliner

Alphaliner's installation and curing process is defined by uncomplicated building site management and rapid execution of the entire construction project. Up to 350 Meter of pipe lines can be rehabilitated in a single application, enabling the pipe line to be put into use again in the shortest possible time. Traffic obstructions, building noise, debris, and bypass pumping operations can be significantly reduced.

Minimal CO₂-Emissions

Sewer rehabilitation with Alphaliner is energy efficient and produces minimal CO₂ emissions. Disruption for residents and traffic are reduced to a minimum due to the rapid execution of construction work. No handling of chemicals and resins takes place on the construction site and there is no energy-intensive production of hot water or steam. Additionally, the rehabilitation of long sections of sewer is usually completed within one working day. As a result, this procedure is perfectly suited for projects in heavily populated urban areas.

Rehabilitation with Alphaliner in just a few steps:

-  **Preparation** of the pipe to be rehabilitated by cleaning and possibly milling, as well as TV camera inspection to survey the condition of the sewer.
 -  **Installation of the liner:** The Alphaliner is pulled in the damaged pipe through the manhole by a winch and possibly assisted by a conveyor for larger liners. When using an Alphaliner with integrated slide protection or integrated preliner, a separate slide protection foil is not necessary. The condition of the liner prior to curing is documented using the TV camera inspection with light sources. Water bypass is usually required.
 -  **The curing process** of the liner utilizes a UV-light source with a specially designed UV lamp. The curing process is checked and documented online using predetermined measured curing parameters.
 -  **Leak test** and material samples of the liner for quality control.
 -  **Completion:** The liner ends are connected to the shaft and side connections are reinstated with a milling robot. **OPTIONAL:** Connecting the liner to the side connections are carried out with a "top hat" profile or by grouting.
- A final CCTV inspection with complete documentation.

* **Times:** Example of sewer rehabilitation with a diameter of DN 300, 4,4 mm composite wall thickness, single length 150 m.



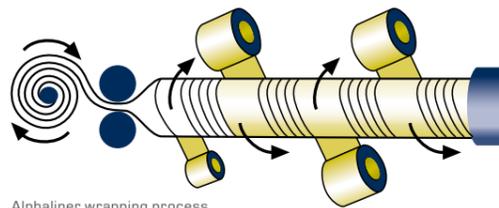
More on liner
installation

Alphaliner® – an innovative and modern design for many areas of application

Materials of the highest quality, special ECR glass fibers and resin adjusted for UV-light curing form the basis of the Alphaliner design. This technology enables a rapid curing process with innovative UV-light curing and long-lasting quality of the end product.

With the Alphaliner system, RELINEEUROPE provides the best GRP pipe liners to meet the static requirements, taking into account the quality of the wastewater and the provided safety requirements. This huge diversity of technological varieties and appropriate installation equipment enables technological and economical solutions for the rehabilitation of circular, oval, box and other profiles in municipal and industrial sewer networks. The Alphaliner's spectrum of use covers pipes of a nominal size from DN 150 to DN 1800.

Alphaliner liners are manufactured in a continuous process with pre-impregnated glass fiber bands that have been homogeneous impregnated with resin to make a seamless pipe with individual lengths of up to 350 Meter. The spiral-shaped wrapping creates the characteristic formation on the interior surface. RELINEEUROPE' production procedure enables the special design (sandwich construction) of a variety of liner types and each end product has precisely defined characteristics.



Alphaliner wrapping process

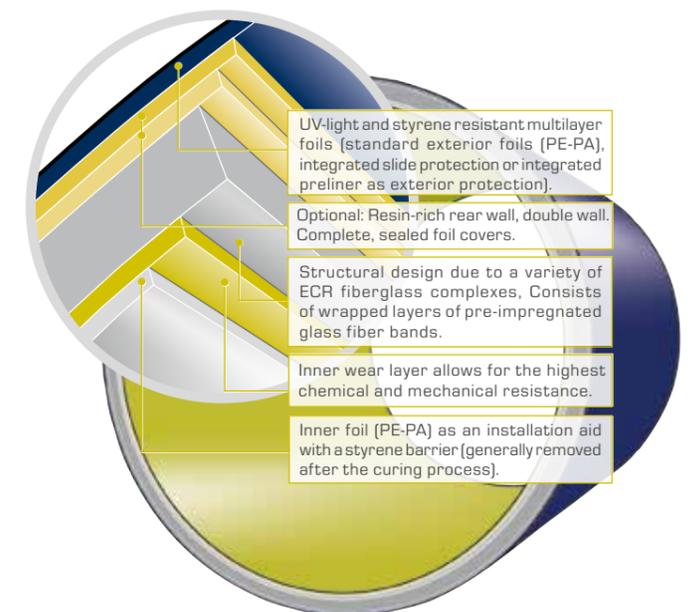


Unique

Defined wear (interior) protection layer for durable rehabilitation

As the world's only GRP pipe liner currently available, the Alphaliner has a special wear protection layer on the liner's interior surface that is defined by its thickness and which meets requirements stipulated in DWA-A 143-3 and DIN EN ISO 11296-4. The Alphaliner's wear protection layer is not part of the composite design strength. Rather, it is applied to the inner wall of the Alphaliner during production. The Alphaliner500G is made with a particularly stable, resin-rich glass fleece and at least 0.3 mm thickness. The Alphaliner800/Alphaliner1800H consists of a high-quality polyester fleece with at least 0.5 mm thickness.

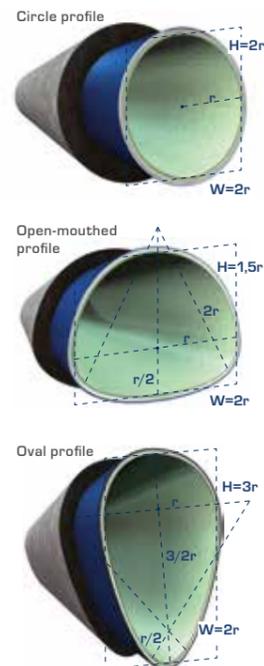
This wear protection layer of the Alphaliner offers mechanical resistance e.g. against abrasion and high-pressure cleaning. As a result, the Alphaliner has very high safety factor for a service life of at least 50 years.



High-quality raw materials form the basis of the different Alphaliner varieties:

- Special chemical resistant ECR glass fiber
- A resin system coordinated with the UV-light curing process
- Unique sandwich construction allowing for a wider range of specially designed liners
- Defined wear protection layer for optimal safety and durable rehabilitation
- Particularly stable multilayer foils

With the UVCIPPs **Alphaliner500G**, the **Alphaliner1800** and the **Alphaliner1800H**, RELINEEUROPE offers different types of liners of the newest generation. They differentiate in the special ECR glass fiber grades used as well as glass fiber orientation and, therefore, in their mechanical properties.



Large system diversity

The right Alphaliner for every rehabilitation project

Different resin systems are used according to resistance requirements: **polyester resin (UP)** particularly for the rehabilitation of municipal sewer networks and high resistant **premium vinylester resin (VE)** for industrial rehabilitation projects. For construction sites with particular requirements regarding CO₂ emissions, the **AlphalinerECO**, a variety with styrene-free, resin is the best solution. For the rehabilitation of sewer networks in sensitive areas such as protected ground water areas with high safety requirements, the **AlphalinerHP** is a pipe liner with a unique sandwich construction and resin-rich double wall. All Alphaliner liners have the option of being equipped with an **integrated slide protection** or **integrated preliner**, increasing speed during construction and ensuring the safety of the rehabilitation.

Alphaliner500G

Rapid and economical rehabilitation for small to medium diameter

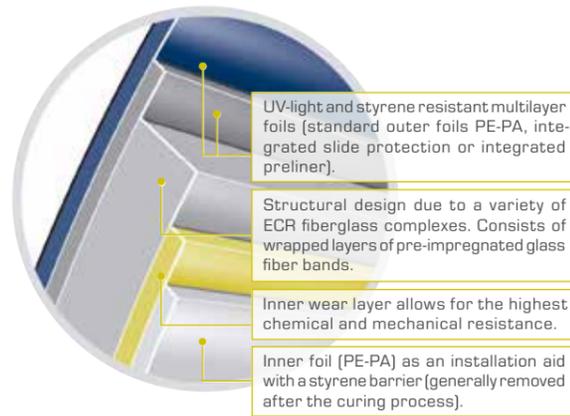
The Alphaliner500G is ideal for quick and efficient installation in small and medium sewer networks of nominal sizes DN 150 bis DN 500. This Alphaliner has extremely high transparency against UV-light with good mechanical values. This construction enables rapid curing speeds of up to 120 Meter per hour and, as a result, achieves particularly economical, safe and long-lasting rehabilitation.

Alphaliner1800 | Alphaliner1800H

For the highest static design requirements and the rehabilitation of large profiles

The Alphaliner1800 and Alphaliner1800H have been developed for the utmost static loading resistance and thereby enable economical rehabilitation of sewer networks with large diameter in particular. During the manufacturing process, the fiberglass, which is specially adjusted to the UV-light curing, is used. This increases the material's transparency, optimising the curing and through-hardening. This new generation of materials, together with high quality impregnating resin, leads to unique technical characteristics. During rehabilitation, a liner pipe is formed which is highly resistant and which can also withstand extreme static and dynamic influences.





Rehabilitation of municipal sewer networks

AlphalinerUP

UV-light curing pipe liner system with high-quality polyester resin for durable rehabilitation

The AlphalinerUP is one of the latest generation of pipe liners and has been specially developed for the rehabilitation of sewer networks.

With the UV-light curing GRP pipe liner AlphalinerUP, it is possible to carry out trenchless rehabilitation measures of individual lengths of up to 350 Meter. As a result, disruptions for residents and traffic are reduced to a minimum, particularly for inner-city projects. The service life of a rehabilitated pipe is at least 50 years.

Highly resistant resin system

The AlphalinerUP uses one of the most resistant polyester resins for municipal sewage (UP; classified DIN EN 13121 in group 4; DIN 16946-2 type 1140; DIN 18820 group 3), as well as corrosion resistant ECR glass fibers.

Protected against the highest static loadings

The Alphaliner is approved by the Deutsches Institut für Bautechnik (DIBt: no. Z-42.3-447). The varieties Alphaliner500G-UP, Alphaliner1800-UP and Alphaliner1800H-UP have fantastic mechanical values and are classified into different groups of materials according to DWA-M 144-3. As a result, they fulfil all material quality requirements and can withstand the highest static loadings with comparatively low wall thickness.

The AlphalinerUP is characterised by:

- Excellent chemical resistance to municipal drain water
- High mechanical values for design strength
- Unique wear layer on the interior surface of the liner
- Optimal solution for cross, oval, box and special profiles



Mechanical characteristic values

Characteristic values	Alphaliner500G-UP	Alphaliner1800-UP	Alphaliner800H-UP
E-modulus acc. DIN EN 1228	13.265 MPa	24.507 MPa	26.581 MPa
E-modulus short-term value 5% quantile acc. DIN EN 1228	9.776 MPa	19.541 MPa	21.209 MPa
E-modulus long-term value 5% quantile acc. DIN EN 1228	6.110 MPa	14.804 MPa	16.190 MPa
E-modulus short-term value 5% quantile acc. DIN EN ISO 178	8.500 MPa	18.406 MPa	19.062 MPa
Flexural strength Short-term value acc. DIN EN ISO 178	180 MPa	300 MPa	380 MPa
Flexural strength long-term value	110 MPa	227 MPa	290 MPa
Reduction factor 50 years	1,6	1,32	1,31
Glass fiber quality	ECR	ECR	ECR
UP resin acc. DIN EN 13121 acc. DIN 16946-2 acc. DIN 18820	group 4 type 114 group 3	group 4 type 114 group 3	group 4 type 114 group 3
Abrasion value acc. CEN/TR 15729	0,09 mm	0,12 mm	0,12 mm
Wear layer Fleece bonded	0,3 mm	0,5 mm	0,5 mm
Individual lengths	≤ 350 m	≤ 350 m	≤ 350 m
Wall thickness	≤ 25,2 mm	≤ 25,2 mm	≤ 25,2 mm
Diameter circle profile	DN 150-DN 1800	DN 150-DN 1800	DN 150-DN 1800
Diameter oval profile	200/300-1200/1800	200/300-1200/1800	200/300-1200/1800
DWA-M 144-3 classification	13	23	25
DIBt approval	Z42.3-447	Z42.3-447	Z42.3-447

Deliverable variants:

- Alphaliner500G-UP
- Alphaliner1800-UP
- Alphaliner1800H-UP

These Alphaliner liners are also offered with integrated slide protection or integrated preliner.

Rehabilitation of industrial sewer networks

AlphalinerVE

UV-light curing pipe liner system with high-quality premium vinylester resin for durable rehabilitation

The AlphalinerVE is one of the latest generation of pipe liners and has been specially designed for the rehabilitation of industrial sewer networks.

Sewage in industrial plants is both chemically and thermally under significantly higher requirements than municipal waste water and consists mostly of very aggressive ingredients. The AlphalinerVE pipe liner is designed keeping higher material requirements in mind while ensuring longterm use of the rehabilitated pipe systems.

Resilient vinylester resin

The AlphalinerVE, specially designed by RELINEEUROPE for the rehabilitation of industrial sewer networks, is new and unique and uses one of the most resistant premium vinylester resins. Its unique characteristics are its high temperature and chemical resistance combined with very good mechanical characteristics in terms of its rigidity and elongation properties.

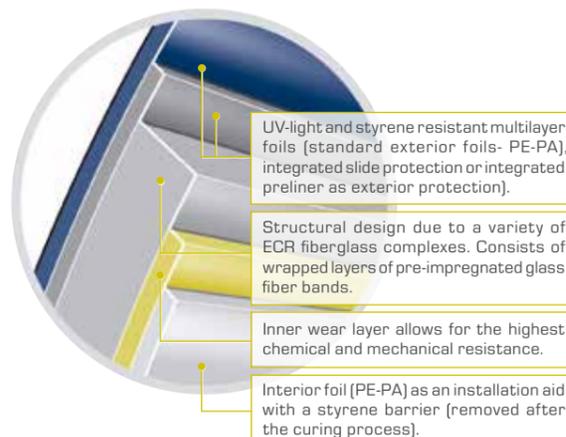
This Alphaliner uses highly corrosion and chemical resistant ECR glass fiber and a chemical resistant vinylester resin (VE), classified according to DIN EN 13121 in group 7b, DIN 16946 TYPE 1310.

Designed for higher static loads

The variations of Alphaliner500G-VE and Alphaliner1800-VE or Alphaliner1800H-VE have an extraordinary mechanical value and are categorised into different groups of materials according to DWA-M 144-3. As a result, they fulfil all material quality requirements and can withstand the highest static loadings with comparatively low wall thickness.

Low production restrictions through fast rehabilitation

Rehabilitation with the UV-light curing Alphaliner system enables quick and flexible execution of the rehabilitation measures. The site equipment is developed to meet the higher standard requirements for industrial plants operations.



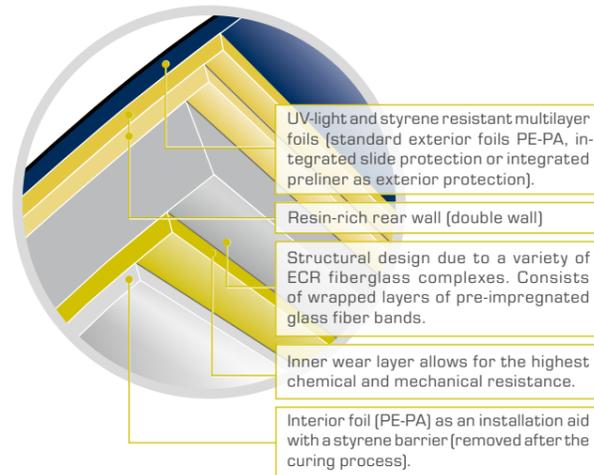
Mechanical characteristic values

Characteristic values	Alphaliner500G-VE	Alphaliner1800-VE	Alphaliner800H-VE
E-modulus acc. DIN EN 1228	13.265 MPa	24.507 MPa	26.581 MPa
E-modulus short-term value 5% quantile acc. DIN EN 1228	9.776 MPa	19.541 MPa	21.209 MPa
E-modulus long-term value 5% quantile acc. DIN EN 1228	6.110 MPa	14.804 MPa	16.190 MPa
E-modulus short-term value Short-term value acc. DIN EN ISO 178	8.500 MPa	18.406 MPa	19.062 MPa
Flexural strength Short-term value acc. DIN EN ISO 178	180 MPa	300 MPa	380 MPa
Flexural strength long-term value	110 MPa	227 MPa	290 MPa
Reduction factor 50 years	1,6	1,32	1,31
Glass fiber quality	ECR	ECR	ECR
VE resin acc. DIN EN 13121 acc. DIN 16946-2	group 7b type 1310	group 7b type 1310	group 7b type 1310
Abrasion value acc. CEN/TR 15729	0,09 mm	0,12 mm	0,12 mm
Wear layer Fleece bonded	0,3 mm	0,5 mm	0,5 mm
Individual lengths	≤ 350 m	≤ 350 m	≤ 350 m
Wall thickness	≤ 25,2 mm	≤ 25,2 mm	≤ 25,2 mm
Diameter circle profile	DN 150-DN 1800	DN 150-DN 1800	DN 150-DN 1800
Diameter oval profile	200/300-1200/1800	200/300-1200/1800	200/300-1200/1800
DWA-M 144-3 classification	13	23	25

Deliverable variants:

- Alphaliner500G-VE
- Alphaliner1800-VE
- Alphaliner1800H-VE

These Alphaliner liners are also offered with integrated slide protection or integrated preliner.



Specialities AlphalinerHP

UV-light curing pipe liner system for rehabilitation in sensitive areas with high safety requirements

The AlphalinerHP provides twice as much safety: High performance.

The advantages of the AlphalinerHP come into their own when rehabilitating sewer networks in areas with especially high safety requirements. It has been developed for:

- Groundwater protection zones II and III
- Rehabilitation with varying leak test requirements
- Busy traffic areas
- Areas under development/mining areas, marshy areas

Here, especially high requirements are made of installed sewer rehabilitation systems: no groundwater contamination during the rehabilitation measures, higher and longer impermeability conditions.

With the GRP pipe liner AlphalinerHP, RELINEEUROPE provides a pipe liner system to meet these high requirements: High requirements – double safety through additional safety barriers!

Patented resin-rich double wall

The AlphalinerHP has a particularly unique sandwich construction. The resin-rich interior layer and the static bearing part of the glass fiber reinforcement are finished with a patented, especially resin-rich rear wall. With traditional pipe liners, only outer foils are used on the rear side, this resin-rich double wall provides safety in the case of particularly high requirements regarding in/exfiltration.



Mechanical characteristic values

Characteristic values Alphaliner500G-HP Alphaliner1800-HP Alphaliner1800H-HP

E-modulus acc. DIN EN 1228	13.265 MPa	24.507 MPa	26.581 MPa
E-modulus short-term value 5% quantile acc. DIN EN 1228	9.776 MPa	19.541 MPa	21.209 MPa
E-modulus long-term value 5% quantile acc. DIN EN 1228	6.110 MPa	14.804 MPa	16.190 MPa
E-modulus short-term value 5% quantile acc. DIN EN ISO 178	8.500 MPa	18.406 MPa	19.062 MPa
Flexural strength Short-term value acc. DIN EN ISO 178	180 MPa	300 MPa	380 MPa
Flexural strength long-term value	110 MPa	227 MPa	290 MPa
Reduction factor 50 years	1,6	1,32	1,31
Glass fiber quality	ECR	ECR	ECR
HP resin acc. DIN EN 13121 acc. DIN 16946-2 acc. DIN 18820	group 4 type 114 group 3	group 4 type 114 group 3	group 4 type 114 group 3
Abrasion value acc. CEN/TR 15729	0,09 mm	0,12 mm	0,12 mm
Wear layer Fleece bonded	0,3 mm	0,5 mm	0,5 mm
Individual lengths	≤ 350 m	≤ 350 m	≤ 350 m
Wall thickness	≤ 25,2 mm	≤ 25,2 mm	≤ 25,2 mm
Diameter circle profile	DN 150-DN 1800	DN 150-DN 1800	DN 150-DN 1800
Diameter oval profile	200/300-1200/1800	200/300-1200/1800	200/300-1200/1800
DWA-M 144-3 classification	13	23	25
DIBt approval	Z-42.3-447	Z-42.3-447	Z-42.3-447

Deliverable variants:

- Alphaliner500G-HP
- Alphaliner1800-HP
- Alphaliner1800H-HP

These Alphaliner liners are also offered with integrated slide protection or integrated preliner.

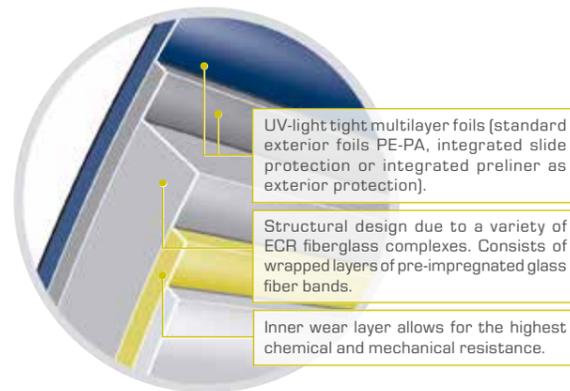
Specialities AlphalinerECO

UV-light curing pipe liner system with high-quality styrene-free resin

The AlphalinerECO: for sensitive areas

For particularly sensitive rehabilitation projects, RELINEEUROPE has developed a pipe liner based on a styrene-free resin for series production. The use of a styrene-free resin presents an efficient and environmentally friendly alternative to styrene systems. The AlphalinerECO is perfect for anywhere where there are high requirements regarding emissions (particularly after liner curing) and flammability.

The AlphalinerECO has fantastic chemical resistance against municipal sewage and complies with high mechanical characteristic values for lasting resilience. The liner also has a unique wear protection layer on the interior surface.



Mechanical characteristic values Characteristic values

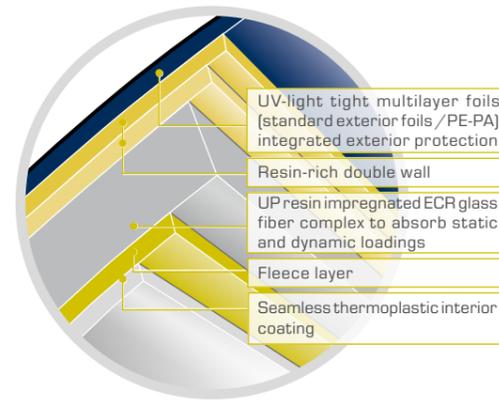
Alphaliner1800ECO

E-modulus acc. DIN EN 1228	15.998 MPa*
E-modulus short-term value 5% quantile acc. DIN EN 1228	12.798 MPa
Long-term circumferential Young's modulus 5% quantile acc. DIN EN 1228	6.394 MPa
E-modulus short-term value 5% quantile acc. DIN EN ISO 178	12.932 MPa
Flexural strength Short-term value acc. DIN EN ISO 178	240 MPa
Flexural strength long-term value	120 MPa
Reduction factor 50 years	2,0*
Glass fiber quality	ECR
Styrenefree resin acc. DIN EN 13121 acc. DIN 16946-2 acc. DIN 18820	group 2*
Abrasion value acc. CEN/TR 15729	0,3 mm*
Wear layer Fleece bonded	0,5 mm
Individual lengths	≤ 350 m
Wall thickness	≤ 25,2 mm
Diameter circle profile	DN 150-DN 1800
Diameter oval profile	200/300-1000/1500
DWA-M 144-3 classification	16

Deliverable variants:

- Alphaliner1800-ECO

This Alphaliner is also offered with integrated slide protection or integrated preliner.



Sewage pressure pipe AlphalinerPN

Economical rehabilitation of sewage pressure pipes in municipal and industrial sewer networks

The AlphalinerPN is the only stand-alone pipe liner in the world with a seamless thermoplastic interior coating and offers special technical characteristics for the trenchless rehabilitation of pressure pipes.

Patented seamless thermoplastic interior coating

The AlphalinerPN's patented seamless fleece bonded thermoplastic interior coating is unique in the world. It forms an unit with the load-bearing glass complex. As a result, this Alphaliner can continuously hold against enormous pressures of up to 16 bar.

Self-bearing stand-alone pipe liner

The AlphalinerPN is a pipe liner according to class A of the DIN EN ISO 1125 and, due to its design, it is a load-bearing pipe liner (stand-alone pipe liner). This means that it is statically stable, without the old piping system, and is independently statically resilient.

The AlphalinerPN also independently withstands the regular changes in pressures, which occur in pressure pipes. During creep resistance tests, according to DIN 50100 with pressures of 10 bar, the AlphalinerPN showed no loss of water through "weeping". After the total of 10^7 pressure cycles no defects could be identified.

The abrasion behaviour of the AlphalinerPN was checked according to DIN EN 295-3 ("Darmstädter Kipprinne"). After 100,000 load changes abrasion was an average of 0.06 mm. After a test of high-pressure cleaning in accordance with DIN 19523, which exposed the same material to high-pressure flushing of 450 Watt/mm² load intensity, the AlphalinerPN was free of damages. So the AlphalinerPN fulfills all the normative requirements.

Ready-made delivery to the construction site

The AlphalinerPN is delivered ready-made to the construction site. There is no need for mixing of the resin and impregnation on site. The quality remains steadily high.

Faster and safer installation

The AlphalinerPN combines all the advantages of the UV-light curing GRP pipe liners: Fast, safe, economical and environmentally friendly.

Cooperation with RELINEAPTEC

In the field of the rehabilitation of sewage pressure pipes the RELINEEUROPE cooperates with RELINEAPTEC, which is a specialist company in the RELINE UV® Group in this sector.

RELINEAPTEC
Advanced Liner for Pressure Pipes

More information: www.reline-aptec.com



AlphalinerPN

- Load-bearing, seamless stand-alone pipe liner for working pressures up to 16 bar
- Highly resistant due to special interior thermoplastic coating
- Low space requirements, short rehabilitation preparation, minimum interference on infrastructure and traffic
- Very quick construction due to UV-light hardening

Mechanical characteristic values

Characteristic value	AlphalinerPN	
Density	1,5 g/cm ³	DIN EN ISO 1183-1
Glass fiber content (mass median)	55 ± 5 (average) %	DIN EN ISO 1172
Circumferential E-modulus	19.541 MPa	DIN EN 1228
Flexural stress	300 MPa	DIN EN ISO 178
Tensile strength axial	93,1 MPa	DIN EN ISO 527-1
Tensile strength radial	239 MPa	DIN EN ISO 527-0
Creep tendency	≤ 7.1 %	DIN EN 761
Vibration resistance	10 bar / - 0,9 bar	DIN 50100
Poisson's ratio	0,22	DIN EN ISO 527-1
Reduction factor A1	1,31	DIN EN 761
Individual lengths	≤ 350 m	
Wall thickness	≤ 20 mm	
Diameter circle profile	DN 150-DN 1200	

Area of use:

Rehabilitation of sewage pressure pipes (concrete, reinforced concrete, steel, iron, thermoplastic etc.); underground or exposed.

TQM Total Quality Management

Quality assurance is our top priority

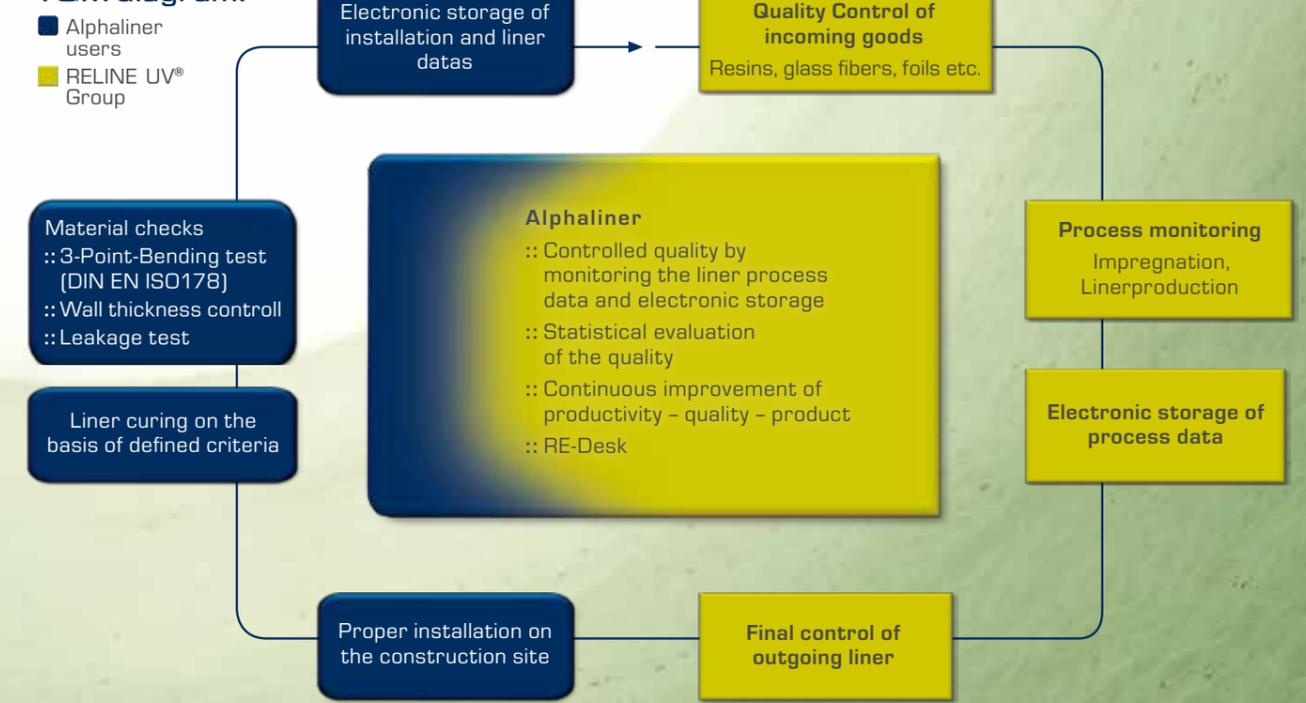
The pipe liner product is only finished when installed at the construction site. This is why the RELINE UV® Group has implemented its Total Quality Management System (TQM) which is unique in the industry. It ensures controlled and managed quality throughout the entire supply chain – from the raw material to the cured Alphaliner. Qualified installation companies are incorporated into the TQM process. The TQM forms the basis for a consistent high quality of all RELINE UV® Group's products.

The TQM monitors all relevant production and installation steps in and outside the organisation. Customers' feedback is directly integrated into the TQM and ensures a steady improvement process. Results from on-site tests are also recorded in the database. These are regularly reviewed and analysed to identify potential areas of development.

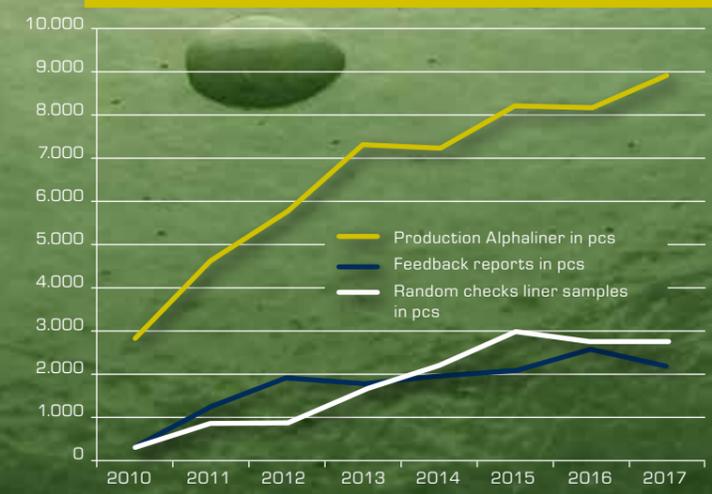
RELINE UV® Group's TQM covers:

- Quality assurance in the liner production process
- Quality assurance in the liner installation
- Quality control of the results

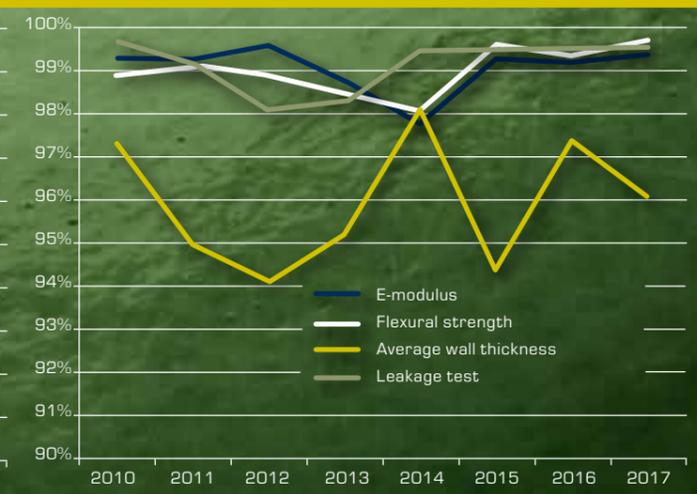
TQM diagram:



Development Alphaliner production/ Feedback reports



Test results of material samples* – Reference/feedback in %



Graph: RELINE UV® Group – Development production Alphaliner/ Feedback report/ checked material samples 2010-2017 (Entire Alphaliner production since 2010: 53,000 Alphaliner with 3.600.000 Meter)

* Tests done by IKT, Polytest Ingenieure, SBKS and SIEBERT + KNIPSCHILD



UV equipment by RELINEEUROPE

High-performance technologies for the UV curing of GRP pipe liners

The success of a rehabilitation project with UV-light curing GRP pipe lines depends hugely on the used technologies. As system provider for trenchless sewer rehabilitation, RELINEEUROPE offers complete systems for curing with UV-light and equipment. All components are exactly coordinated and ensure the quality of the rehabilitation and the efficiency on the construction site.

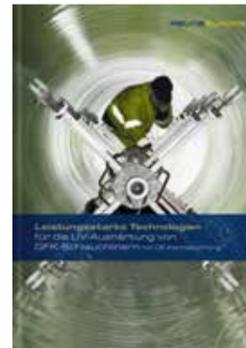
RELINEEUROPE' offers a wide range of UV equipment: from individual components with special control electronics to ready-to-use complete rehabilitation vehicles or mobile solutions.

The UV curing equipment has the highest curing performance on the market and is equipped with smart permanent performance surveillance which automatically offsets the power loss of individual beams. The system management provides an array of innovative features, relieving personnel and improving safety on the construction site.

Service and Maintenance

RELINEEUROPE also offers a broad spectrum of maintenance and repair service. An experienced team is available all over the world.

For more information please order our UV equipment brochure. Just send us an email: info@relineuv.com



pipetronics®
Intelligent Pipe Robots

Together with its cooperative partner Pipetronics, RELINEEUROPE develops and sells high-performance robot systems for pipe rehabilitation. Pipetronics offers a complete portfolio of electric and hydraulic driven robots, including vehicle and trailer development, services and resins.

For more information, go to: www.pipetronics.com

REE4000 – autonomous UV curing.

RELINE UV® Group sets new standard for pipe rehabilitation.



Our product range:

- :: **REE400, REE2000, REE4000** – Innovative UV curing equipment
- :: **High-performance UV-light sources for all diameter up to DN 1800**
Ready-to-use complete expansion of UV rehabilitation vehicles, tailor-made to your expectations and wishes
- :: **Construction site equipment for liner installation**
such as conveyor belt, winches, generators, etc.

RELINEACADEMY

Offers for practically oriented training programs

The RLINEACADEMY provides a basic training and advanced level education programs which can be used both by experienced practitioners as well as consulting engineers and investors.

Increasingly high demands are required for using modern technologies for pipe rehabilitation. Quality must always be ensured.

In order to support RLINE UV® partners to keep up constant level of knowledge concerning technological and normative developments, a practically orientated training program for trenchless rehabilitation of sewer system has been developed. It covers the areas of UV-light curing pipe liners, UV technology and robot systems.

Our advanced training programs includes:

- Training of rehabilitation crew members and site project managers in the technology of pipe liners – especially with UV-light curing
- Practical training of rehabilitation specialists in the use of high tech equipment (UV equipment, robot technology)
- Sharing product knowledge in theory and in practice (Alphaliner liners, UV-light curing, equipment and robots)
- Training in project management and quality assurance
- Inhouse-seminars

The courses are held by experienced experts, engineers and technicians. Theoretical content is combined with practical application..

Inhouse-seminars

RELINEACADEMY offers inhouse-seminars for customers. Here, staff members receive theoretical and practical on-site training with their own equipment in all aspects of liner installation and UV curing.



For more information please order our RLINEACADEMY training course calendar.

Just send us an email: info@relineuv.com



RELINE UV®-Group

The **RELINE UV®-Group** offers under one umbrella a complete range of trenchless UV pipe rehabilitation technologies. Comprehensive products and services include UV-cured pipe liners (UV CIPP), UV-light curing systems, milling robots and injection systems, on site accessories, system training and consulting services.

Since the first member, **RELINEEUROPE**, was founded in 2009, the **RELINE UV®-Group** has become a leading international provider of trenchless pipe line rehabilitation systems, especially in UV curing. During this short period, the **RELINE UV®-Group** has already delivered UV light curing Alphaliner or Alphaliner for rehabilitation projects in more than 50 countries. The annual liner production volume in Germany currently stands at over 600,000 meter.

Members of the RELINE UV®-Group

- RELINEEUROPE AG, Rohrbach Germany
- RELINE UV Technologies LP, Orlando USA
- RELINEJAPAN LLC, Tokyo Japan
- RELINECHINA Environmental Technology Co., Ltd, Shanghai China



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