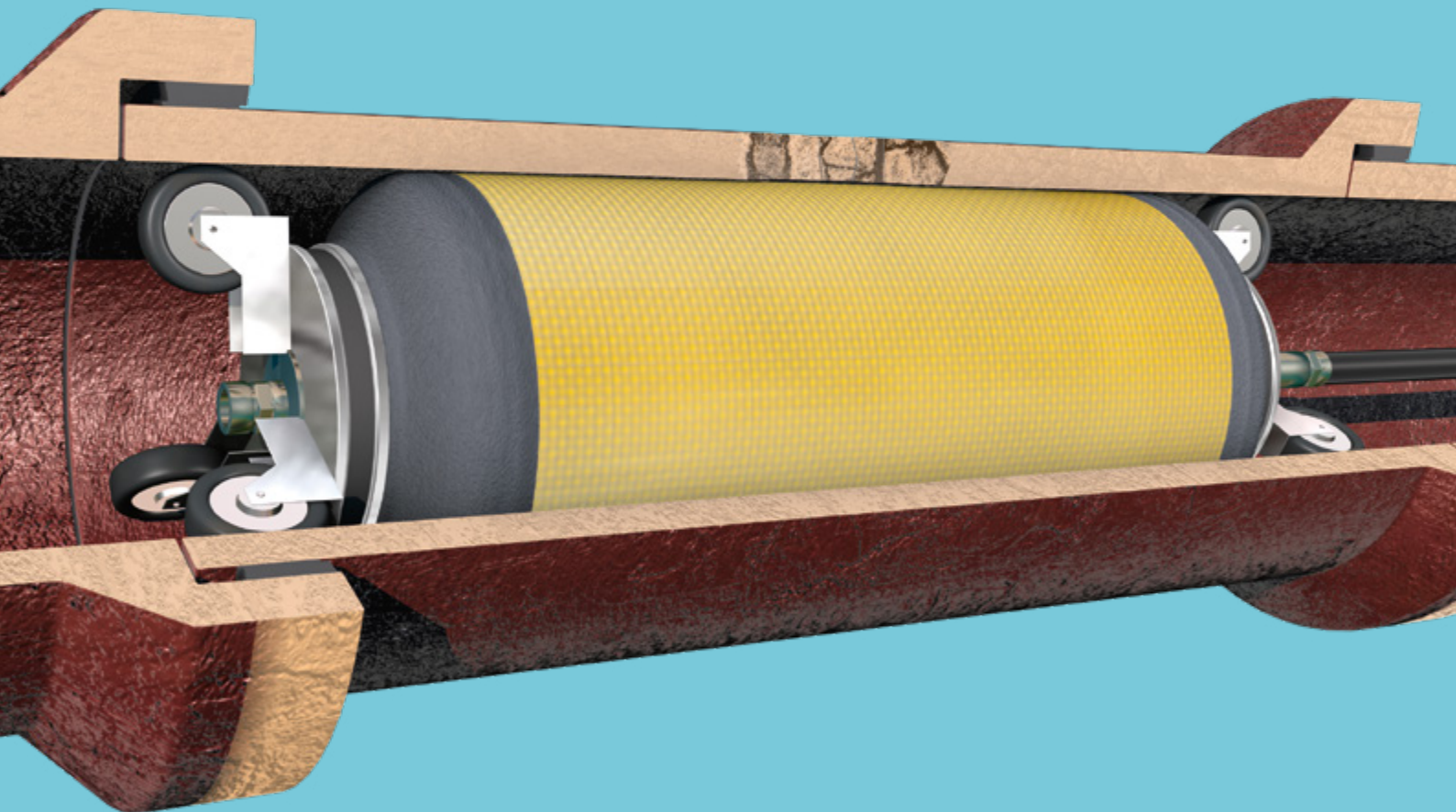


# Sectional repair of Pipes and Sewers



**Trelleborg DrainPacker System**



# Introducing Trelleborg Seals & Profiles

**Part of the wider Trelleborg Industrial Solutions Business Area of Trelleborg Group, Trelleborg Seals & Profiles is a world leader in new seals and rehabilitation sealing solutions for concrete and plastic pipes, manholes, and connectors used for water supply, sewerage and drainage. Drawing on advanced polymer technology, the high performance of our seals ensures the fulfilment of the highest possible reliability standards.**

With a global reach and a track record spanning more than half a century, we deliver continuous innovation to customers across the globe with a logistics and sales network spanning Asia Pacific, Europe, Middle East, Africa, North America and South America. Drawing on our engineering expertise and advanced technological solutions, we will see your project through from the beginning to the end.

Whether you need an entirely new system or if your existing one needs rehabilitation, we offer a range of market-leading seals that promise:

**High quality**

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**Quick and easy installation**

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**Improved productivity**

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**Zero leakage**

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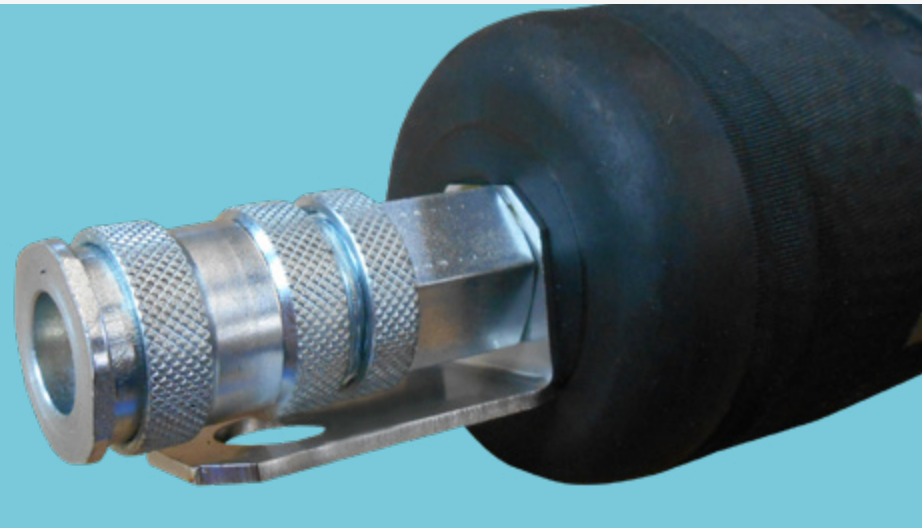
Trelleborg offers the highest reliability and performance standards, providing watertight solutions that protect not only your pipe cycle, but your reputation too.



# Trelleborg DrainPacker

## What it's used for

**Trelleborg Seals & Profiles is among the leading specialist companies offering innovative technologies for the maintenance of sewer systems.**



**The Trelleborg DrainPacker system is a sectional or point repair method for all types of wastewater, sewer and drainage pipes. The system uses Trelleborg Silicate Resins and chemically resistant, non-corroding Trelleborg Glass Fiber Mats CRF+.**

The Trelleborg DrainPacker method is suitable for the sectional repair of buried, damaged gravity sewer pipes. The process provides structural repair with a frictional fit in the pipes of public and private sewerage systems. Pipe sizes that can be repaired range from DN 35 to DN 1200 [1.4" – 48"] – General Technical DIBt Approval for DN 100 to DN 800 [4" – 31.5"] – and include diverse eggshaped crosssections.

Repair lengths range from between 0.5 m to 5 m [1.6 ft to 16½ ft], depending on the packer design (please refer to the related operation and maintenance manual of the packer).

For repair lengths exceeding 5 m [16½ ft], it is possible to use the Trelleborg DrainPacker method in an overlapping technique. Longer pipe segments need to be repaired from pipe joint to pipe joint. Lateral connections that are no longer in use can be blocked off. This product can be used in the case of heavy infiltration or even underwater.

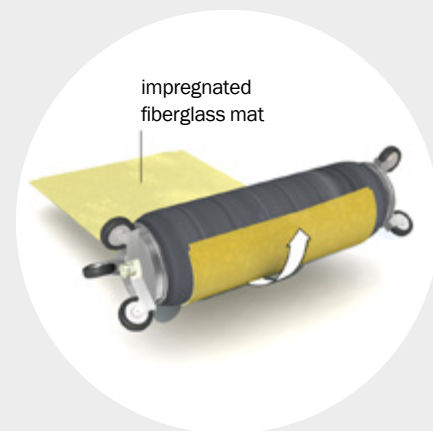
The method is applicable to circular and eggshaped pipes made of concrete, asbestos cement, plastic (PVC, PP, HDPE), cast iron, ductile cast iron, reinforced concrete or vitrified clay.

### BENEFITS

- Trelleborg Silicate Resins have a high chemical and heat resistance
- Trelleborg Silicate Resins are ambient-cure resins with a cure time of approx. 1 to 3 hours (cure times can be controlled and adjusted)
- Components are able to create a frictional bond with all kinds of pipe material (i.e. vitrified clay, plastic, steel, etc.) and provide a close and tight fit to HDPE pipes
- Excellent performance at extreme temperatures whether hot or cold
- Quick and easy installation
- No volatile organic compounds (VOC) (styrenefree)
- Virtually no shrinkage (< 0.6 %)
- Method can be used in critical areas such as airports and tunnels due to the selfextinguishing properties of the cured resin
- The Trelleborg DrainPacker is available in four different models – short, long, flex and lateral – and in lengths ranging from 0.6 m to 5 m [2 ft to 16½ ft] and in pipe diameters ranging from 35 mm to 1,200 mm [1.4" to 48"]
- The short and flex packers allow the service flow to be maintained during the cure time without expensive bypass pumping
- Independently tested (IKT Gelsenkirchen, WRc UK) in conformance to worldwide standards such as ASTM, WIS and DIN EN. Approved by the German government body, DIBt.
- Tested service life of 50+ years (10,000 hrs)
- Recommended by experienced users worldwide with more than 100,000 installations every year

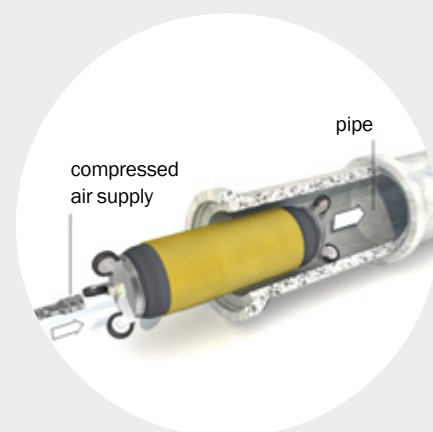
# Trelleborg DrainPacker

## Functional principle



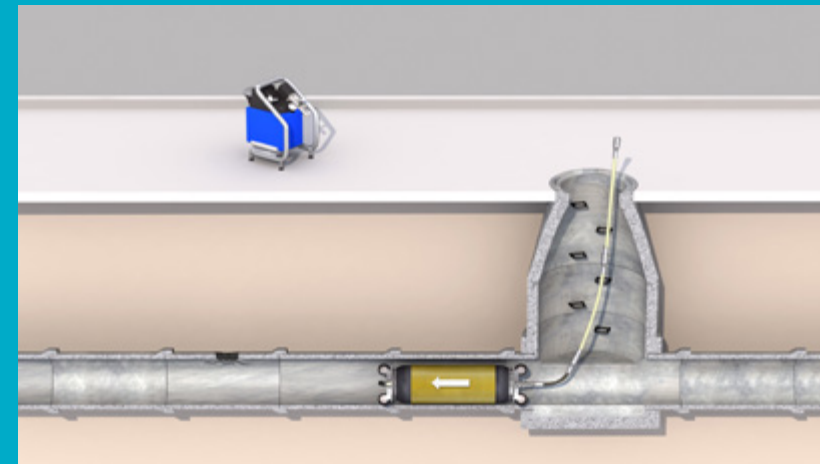
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A fiberglass mat is impregnated with resin according to the Trelleborg DrainPacker method, then folded and wrapped around the prepared foil-protected packer.

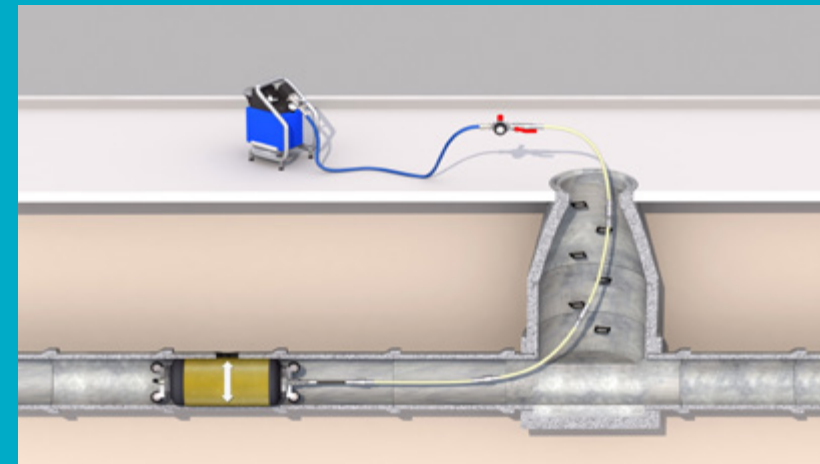


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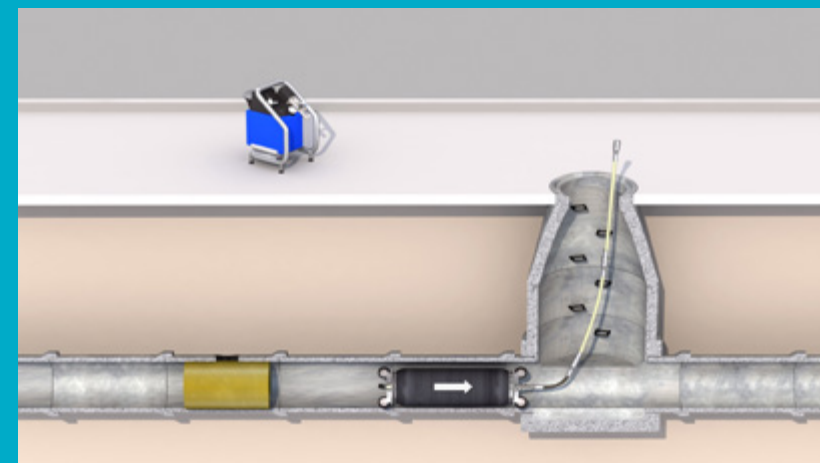
The pre-assembled Trelleborg DrainPacker is introduced into the pipe section with the help of air push rods or pulled in place with a rope.



The preassembled Trelleborg DrainPacker carrying the impregnated fiberglass mat is pushed with the help of air push rods or pulled with a rope to the point of repair. The exact position of the repair point is determined beforehand through the use of a CCTV system.



When the Trelleborg DrainPacker has reached the correct position in the pipe, it is gradually inflated using compressed air. This causes the packer to expand and press the impregnated fiberglass mat against the pipe wall. This creates a tight-fit, permanent bond against the host pipe, with the excess resin penetrating into the pipe's damaged areas (cracks and voids).



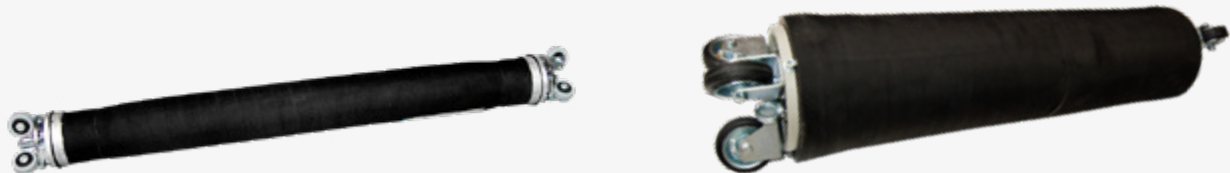
The resin-impregnated fiberglass mat can then be cured at ambient temperatures according to the information provided in the method statement or technical data sheets. The required cure times depend on the climatic conditions within the sewer. After the resin is completely cured, the packer is deflated and removed from the pipe.

The cured fiberglass/resin compound now covers the full area of the repaired pipe section without obstructing service flow. This pipe-in-pipe system is thus integrated with the host pipe and fully meets hydraulic requirements. The line is ready for immediate service.

# Trelleborg DrainPacker

## Packer types

Trelleborg supplies a wide range of high-quality, inflatable, multi-sized packers for point or sectional pipe repair. They are installer friendly as they are light and easy to insert into small manholes and inspection chambers.



### Trelleborg Flex Packer (very flexible)

- Available in diameters ranging from DN 100 to DN 1200 [4" – 48"] and multiple sizes, for example, from DN 150 to DN 250 [6" – 10"]
- Maximum repair length, depending on the packer size, ranges from 560 mm to 4,630 mm [approx. 22" to 182"]
- Flexible packers allow for easy insertion into the pipe from the manhole or inspection chamber
- Uniform results thanks to adjustable wheel-sets which allow for the centring of the packer in the pipe
- With bypass, except for packer size DN 100/150 [4"/6"]
- Low maintenance and repairable

### Trelleborg Packer S (short)

- Rigid design specifically built for a larger flow through
- Available in diameters ranging from DN 150 to DN 700 [4" – 28"] applicable for multiple sizes, e.g. DN 150 to 200 [6" – 8"]
- Maximum repair length, depending on the packer size, ranges from 605 mm to 765 mm [approx. 23.8" – 26.4"]
- Uniform results thanks to adjustable wheelsets which allow for the centring of the packer in the pipe
- Bypass model
- Low maintenance and repairable

# Trelleborg DrainPacker

## Packer types



### Trelleborg Packer HL (for the house lateral connection)

- Available in diameters ranging from DN 35 to DN 200 [1.4" – 8"]
- Maximum repair length, depending on the packer size, ranges from 210 mm to 4710 mm [approx. 8.3" – 15.4 ft]
- Highly flexible and thus, easy to install, even through small access points
- Can be positioned using pull-in-place (rope) or push-in-place (rods) methods
- Without wheel-set and bypass

### Trelleborg Packer L (long)

- Available in diameters ranging from DN 200 to DN 800 [8" – 32"]
- Maximum repair length, depending on the packer size, ranges from 200 mm to 4,565 mm [approx. 8" – 15 ft]
- Lightweight and highly flexible
- Packers can be easily inserted through DN 600 [24"] manholes
- Can be positioned using pull-in-place (rope) or push-in-place (rods) methods
- Without wheel-set and bypass, special models available upon request

Flexible air push rods and flexible adapters are available with all packers. This allows repair from a single access point. All air push rods and flex adapters are equipped with air couplers incl. retaining ring.



# Trelleborg Silicate Resin Systems

Trelleborg Silicate Resins are highly chemical-resistant and heat-resistant. In case of fire, they are self-extinguishing and can therefore be used in critical areas such as airports and tunnels. **Their patented formula does not contain any volatile organic compounds (VOC) and is completely styrene-free.** They can be used in a wide range of locations with differing ambient temperatures, ranging from Iceland to Abu Dhabi, and boast a service life of 50+ years. Trelleborg Silicate Resins are also able to forge excellent bonds with all pipe materials and provide a tight fit when used with HDPE pipes – all of which results in them being one of the most popular and well-established consumables among pipe repair installers and customers worldwide.



### Trelleborg Silicate Resin Type W

A patented resin mixture made up of two components: a resin (B) and a hardener (A) in a mixing ratio of 2:1 by volume. This so-called “winter resin” is recommended for use under lower outdoor temperatures.

It provides an ample pot time and cures at ambient temperature. It is also possible to customise pot and curing times by mixing this Type W resin with Type A or Type S.



### Trelleborg Silicate Resin Type A

A patented resin mixture is made up of two components: a resin (B) and a hardener (A) in a mixing ratio of 2:1 by volume, recommended for use in subarctic areas or as an accelerator for Type W and Type S.



### Trelleborg Silicate Resin Type S

A patented resin mixture is made up of two components: a resin (B) and a hardener (A) in a mixing ratio of 2:1 by volume. This so-called “summer resin” is recommended for use under higher outdoor temperatures.

It provides an ample pot time and cures at ambient temperature. It is also possible to customise pot and curing times by mixing this Type W resin with Type W or Type A.

# Trelleborg Silicate Resin Systems



### OVERVIEW

System Description	Colour		Mixing ratio	Pot time	Curing time
	Resin (comp. B)	Hardener (comp. A)		Minutes at 20 °C [68 °F]	Minutes at 20 °C [68 °F]
Trelleborg Silicate Resin Type S	brown	neutral	2 : 1	32 ±2	260 ±30
Trelleborg Silicate Resin Type W	brown	neutral	2 : 1	17 ±2	170 ±20
Trelleborg Silicate Resin Type A	brown	neutral	2 : 1	8 ±1	55 ±10



# Trelleborg Glass Fiber Mats

The Trelleborg DrainPacker method is designed for repairing pipes and joints at lengths of up to 5 m [16½ ft]. The chemically resistant, non-corroding (CRF+) **Trelleborg Glass Fiber Mat CRF+ 1050 g/m²** and **Trelleborg Glass Fiber Mat CRF+ 1400 g/m²** are used in conjunction with Trelleborg Silicate Resin systems to restore the structural stability of the host pipe or replace entire part lengths.

- Acid-proof fiberglass matting
- Woven fiberglass fabric and powder-bonded glass mat, sewn together into a flat sheet material wound into rolls.

## **Trelleborg Glass Fiber Mat CRF+ 1050 g/m²**

CRF+ 1050 g/m², 125 cm

CRF+ 1050 g/m², 250 cm

## **Trelleborg Glass Fiber Mat CRF+ 1400 g/m²**

### **Cut to size\***

CRF+ 1400 g/m², 35 cm – for DN 100 [4"]\*

CRF+ 1400 g/m², 44 cm – for DN 125 [5"]\*

CRF+ 1400 g/m², 53 cm – for DN 150 [6"]\*

CRF+ 1400 g/m², 70 cm – for DN 200 [8"]\*

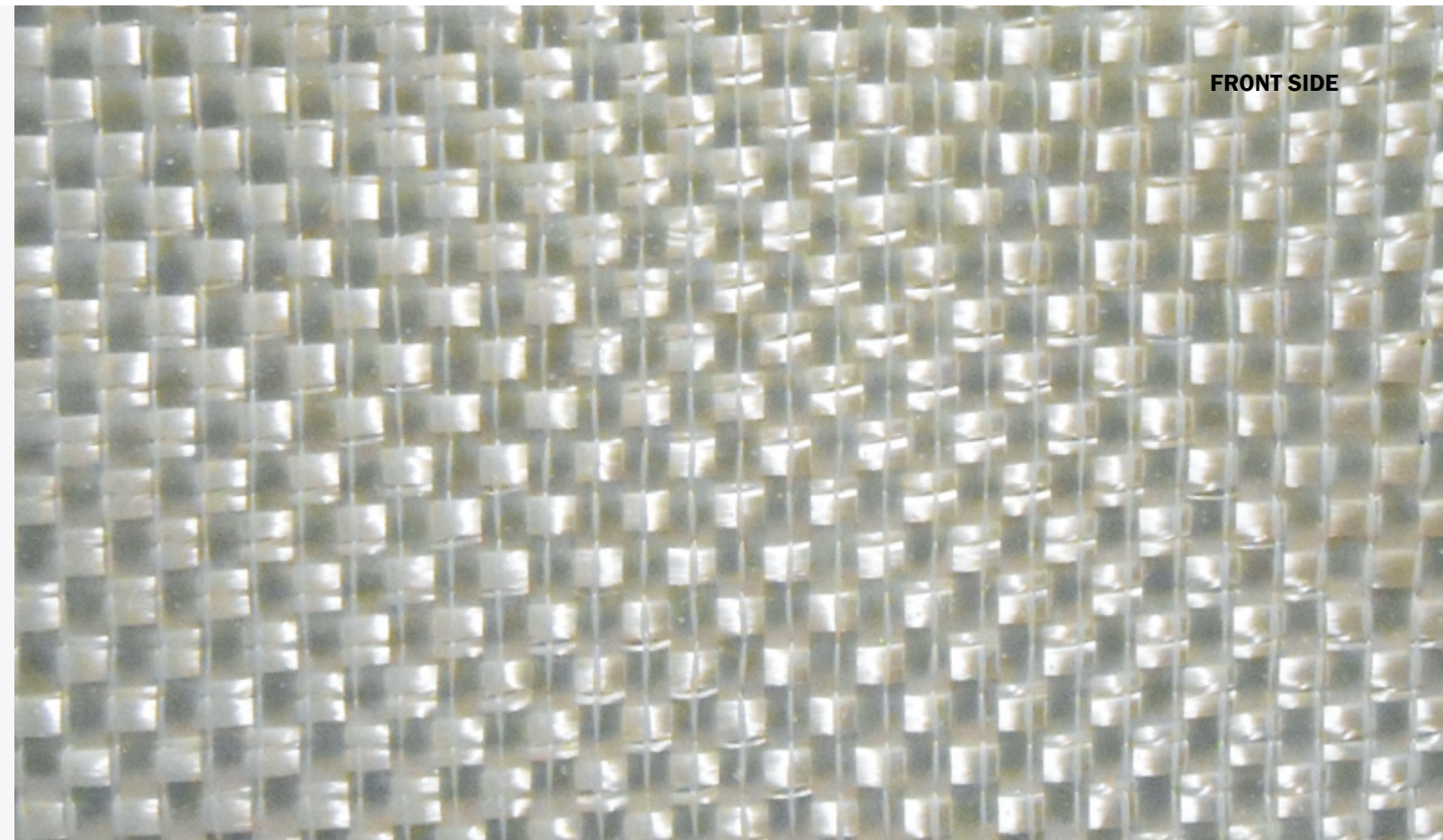
CRF+ 1400 g/m², 88 cm – for DN 250 [10"]\*

CRF+ 1400 g/m², 105 cm – for DN 300 [12"]\*

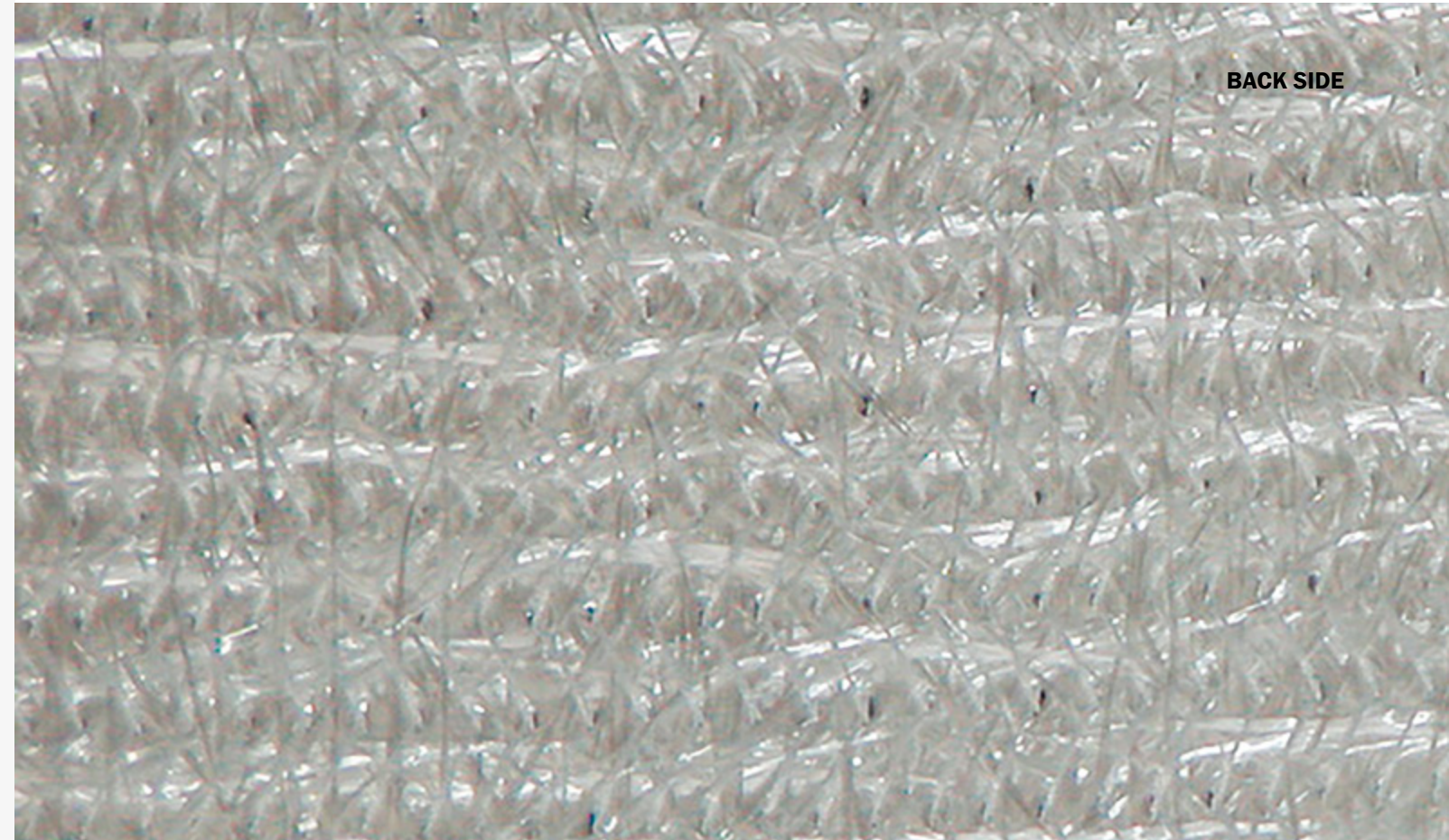
CRF+ 1400 g/m², 125 cm



FRONT SIDE



BACK SIDE





# Trelleborg Seals & Profiles around the world

## COUNTRIES WITH OWN OFFICES

USA

Germany

## COUNTRIES WITH DISTRIBUTORS

Australia

Belgium

China

Croatia

Czech Republic

Denmark

Finland

France

Great Britain

Hong Kong

Ireland

Malaysia

Mexico

Netherlands

New Zealand

Norway

Poland

Portugal

Russia

Spain

Sweden

## FURTHER INFORMATION

DIBt Approvals

DIBt Approval No. Z-42.3-385 Trelleborg Drain Packer Method  
(previously known as epros® DrainPacker Method)  
DN 100 – DN 800 with Silicate Resin Systems A (W01)/W/S

<http://www.trelleborg.com/pipe-seals>

Video <http://www.youtube/c/trelleborgpipeseals>

Technical Data Sheets

Method Statement





Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has annual sales of about SEK 34 billion (EUR 3.32 billion, USD 3.92 billion) and operations in about 50 countries. The Group comprises three business areas: Trelleborg Industrial Solutions, Trelleborg Sealing Solutions and Trelleborg Wheel Systems, and a reporting segment, Businesses under development. The Trelleborg share has been listed on the Stock Exchange since 1964 and is listed on Nasdaq Stockholm, Large Cap.

[WWW.TRELLEBORG.COM/PIPE-SEALS](http://WWW.TRELLEBORG.COM/PIPE-SEALS)



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