



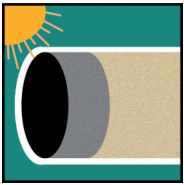
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Pipeline Accessories



PSI Fibertec

A high tech GRP material for ideal mechanical protection regarding corrosion protection and piping systems



General information

Fibertec is a resistant, glass fibre reinforced composite plastic. It offers the optimum mechanical protection for pipe coatings and is completely water-tight. It adheres to almost any type of surface, such as metal, PE, PVC, PP, stoneware, GRP materials and concrete. In addition, it is highly resistant to chemicals.

A resistance table can be supplied on request. Fibertec is supplied in rolls (0.95 x 10 m, material thickness 1.8 to 2 mm), is exceptionally flexible to work with and can be adapted to substrates without any problems. It cures in sunlight or under a UV lamp. Once cured (curing time is 30 minutes to 8 hours in sunlight or 20 to 60 minutes under a

UV lamp, depending on thickness), the surface can be machined and painted. It is suitable for a wide variety of applications, e.g. as a horizontal drilling kit, as protection for pipe coatings, at sub-surface-to-surface joints, for lining manholes, etc. Conceived as an open system, it can also be installed retrospectively.



Full coating

Technical Data			
Fibertec possesses outstanding resistance to chemicals. A resistance table can be supplied on request.			
		Value	
Specific volume	kg/m ³	1805	DIN 53479
Tensile force	N/mm ²	55.7	DIN 53455
Elasticity under tension	N/mm ²	13,500	DIN 53457
Breaking elongation	%	1.1	DIN 53455
Bending strength	N/mm ²	146	DIN 53452
Elasticity under bending	N/mm ²	100,000	DIN 53457
Resistance to compression	N/mm ²	150	DIN 53454
Elasticity under compression	N/mm ²	15,600	DIN 53457
Impact resistance	kJ/m ²	57.5	DIN 53453
Fibre content	weight%	20	DIN 53479
Volumetric contraction	%	0.15	DIN 53464
Vapour permeability	mg/100 hour	0.34	DIN 53495
Emission of styrene	ppm	<20	

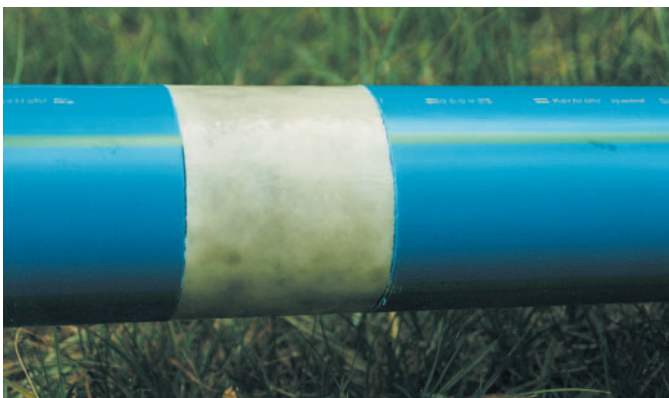
(The specified data may exhibit minor tolerances.)

Other possible applications

Fibertec is not only outstandingly suitable for protecting plastic coated pipes and plastic pipes against mechanical stress but can also be used for other applications, e.g. subsurface-to-surface joints, pipe clamp underlays, linings, etc. In short, wherever there is a need for high resistance to indentation and impacts, Fibertec offers the optimum protection.



HDD-Coating



Two-layer PE pipe



Pipe clamp underlay

Ordering Service

Horizontal drilling kit with WLAS shrink sleeve/Fibertec

Kit with 1 x shrink-type sleeve, 600 mm wide complying with EN1208/DIN30672-C/50
 1 x Fibertec mat, 950 mm wide, including adhesive tape and disposable gloves.
 ND ... (please specify)



Concrete lining

PSI-Fibertec

Description	Art.-no.
Fibertec roll, 0.95 x 10 meter, thickness 1.8 - 2 mm (cut lengths can be supplied)	4-033- 23015
Heavy duty UV lamp, 400 watts	4-033- 23012
Disposable gloves, pair	4-033- 22950
Transparent adhesive tape, 50 mm x 60 m	4-033- 23011

Horizontal drilling kit WLAS shrink sleeve/Fibertec

The WLAS/Fibertec horizontal drilling kit with high tech Fibertec material was specially developed to provide the corrosion protection of horizontal drillings. It comes complete with highly peel and shear resistant hot melt adhesives and, with the additional security of the Fibertec mat, affords exceptional protection for the pipe wrapping during the boring process, irrespective of whether only the outer wrapping or entire pipelines are to be safely protected. The WLAS/Fibertec horizontal boring kit consists of a WLAS shrink-type sleeve of 600 mm in width and a precisely fitting Fibertec mat. The excess length of the mat of 600 mm brings the critical front part of the sleeve well ahead of the welded seam area. Installation is easy and can also be carried out retrospectively. The shrinksleeve is applied in the conventional manner but must be preheated to a temperature of approx. 90°C. The Fibertec mat is then placed centrally around the sleeve and carefully pressed down. Curing is carried out by sunlight or with a UV lamp.

The combination of the WLAS corrosion protection system (approved in accordance with EN 12068/ DIN 30672 C/750 DVGW) and a GRP protective mat (Fibertec) ensures the maximum mechanical load resistant capacity for horizontal drilling operations.

Note:

The suitability of Fibertec must be tested by the user for the intended application and expected loading on his own responsibility. The applicable DVGW and other local regulations relating to the coating of pipes and outer wrapping systems used for trenchless pipelines must be followed.

How to process Fibertec

Process only outdoors

The length of the mat is calculated from the circumference of **the pipe + approx. 50 mm overlap. Uncoated and dry edges must be trimmed off before installation.** Roughen the sleeve and approx. 300 mm of the existing pipe-coating with emery cloth and dry the area to be glued. Pull off the coloured backing (pipe side) from the Fibertec mat. Pull off the upper transparent plastic sheet in the area of the overlap and place the mat centrally on the shrink-type sleeve.

Press down the mat with a roller.

Wind the transparent adhesive tape around the pipe (of whatever size) so as to achieve a flat joint between the existing coating and the Fibertec. For pipe sizes up to ND 400, wind the clear tape tautly over the whole surface, in order to ensure that it is pressed tightly on to the pipe. After curing, the transparent sheet can be completely removed.

The maximum processing time is 5 minutes in bright sunlight or 15 minutes under an overcast sky.

Our tip:

Cure the side turned away from the sun with a UV lamp. If the sky is overcast, cure the entire Fibertec mat with the UV lamp in order to shorten the thermosetting time.

Caution: Boring must not take place until the Fibertec mat is fully cured (min. Shore D 80° ±5°).



How to process PSI Fibertec

"Process only outdoors"

The mat length is calculated as follows: Pipe circumference + about 50 mm overlap. Uncoated and dry edges have to be cut off prior to the assembly. Start the assembly **at the opposite end** of the drill hole so that the overlap edges of the Fibertec sleeves **point towards the feed direction**.

1. Use a cloth **to remove any dirt or dust** from the entire pipe envelope to be coated with Fibertec sleeves, dry the adhesive area and roughen it with emery cloth.
2. Remove the coloured film (pipe side) from the PSI Fibertec sleeve. Remove the transparent film from the top around the overlap and place the sleeve around the pipe. It is normal that the exterior film is partly difficult to remove; therefore, you have to proceed with reasonable care.
3. Carefully press against the mat with a roll. **Make sure** that the **overlap** is **offset** lengthwise (e.g. alternatively twelve o'clock and three o'clock).
4. Completely remove the transparent film. Then wrap the **stretch film included in the delivery tightly** around the entire surface of the PSI Fibertec sleeve in order to obtain a perfect contact pressure with regard to the pipe. The stretch film also serves as a **weather shield** during the **curing process**. You must leave 50mm at the end of the sleeve uncovered so that the next sleeve can be overlapped wet on wet.
5. **Repeat steps 2 to 4** until the entire pipe is protected. Ensure **at least 50 mm overlap** from sleeve to sleeve.
6. If you **interrupt the work**, you have to protect **at least 100 mm** at the end of the Fibertec sleeve with a **UV-impermeable** tape. This way, the next sleeve can be overlapped once more wet on wet.
7. The stretch film can be removed completely after the curing process. **The processing time amounts to 5 minutes max.** when exposed to sunlight and 15 minutes max. with cloudy skies.

Our advice:

Irradiate the side turned away from the sun with a **UV lamp** (curing time for irradiation by a **UV lamp** is about **25 minutes**). With cloudy skies, irradiate the entire PSI Fibertec mat with the UV lamp in order to reduce the curing time.

Warning:

Drilling can only take place with a completely cured (shore D 80° ±5°) PSI Fibertec mat.

Note:

The processor has to independently verify the use of PSI Fibertec for the respective application and the stress to be expected. Applicable DVGW rules have to be observed for the coating of pipes and subsequent coating systems in case of trenchless laying.

Storage and safety advice:

Avoid temperatures above +25°C and below +5°C, direct exposure to sunlight, rain, snow, dust or other unfavourable environmental influences. Processing must take place in compliance with the regionally decisive health and safety regulations.



Description

Pipecast is the latest development in the field of composite plastics for the protection of pipes against specific mechanical loadings (e.g. for horizontal drillings, etc.). Pipecast is a resin-saturated glass fibre mat (GRP), which is activated with water. It is packed in

airtight aluminium foil bags, in ready-to-use condition. No mixing of components on site is required.

Simply immerse in water for around 15 seconds. The reaction time of the resin is about 3 minutes. Pipecast sets hard in less than 30 minutes and is

fully cured in 12 hours (at 21°C). The innovative fibreglass/resin material possesses high resistance to chemicals, can withstand both high and low temperatures and can even be applied under water.

Advantages

- Short curing time, rapid installation
- Simple and easy to apply; no mixing of components required
- Resistant to extreme temperatures
- Can be applied under water and on damp substrates
- Outstanding adherence and resistance to chemicals, particularly mineral oil products
- Can be shaped to provide mechanical protection for irregularly shaped parts

Technical data:

Colour	black
Thickness	0.8 - 0.9 mm
Dimension	4.57 m x 97 mm
Dielectric strength	10 KV/mm
Water absorption	< 2%

Typical uses

Mechanical protection of pipes, particularly suitable for corrosion protection system for HDD in a combination with an exceptionally shear resistant Canusa WLAS shrink sleeve or cold applied tape (DIN/EN approved to category C/50).



Material consumption with steel pipes (typical use):

With rolls of 4.57 metres x 97 mm with 1 x 75% overlap (4 layers) and approx. 450 mm width application:

DN 80 (88.9 mm)	approx. 2 rolls
DN 100 (114.3 mm)	approx. 2 rolls
DN 150 (168.3 mm)	approx. 3 rolls
DN 200 (219.1 mm)	approx. 3 rolls
DN 250 (273.0 mm)	approx. 4 rolls
DN 300 (323.9 mm)	approx. 5 rolls
DN 400 (406.4 mm)	approx. 6 rolls

Rates of consumption can vary according to use and should be calculated on an individual basis.

Note:

The suitability of Pipecast for the intended purpose and the expected loading must be tested by the user on his own responsibility.

The applicable DVGW directive on the coating of pipes and outer wrapping systems on trenchless pipelines is to be followed.

Typical use: Pipecast as additional mechanical protection for heat-shrink material e.g. on a fibre-cement encased steel pipe.



1. Pipe preparation as per GW 15, clean, dry and free of grease. If shrink sleeves are used, preheat to 70°C.



2. Installing the shrink sleeve



3. After saturating with water, wind the Pipecast tape around the pipe with a minimum of 1 x 75% (4 layers) overlap.



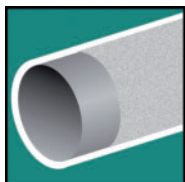
4. Wind adhesive tape around the ends of the Pipecast tape in order to press it firmly on to the pipe.



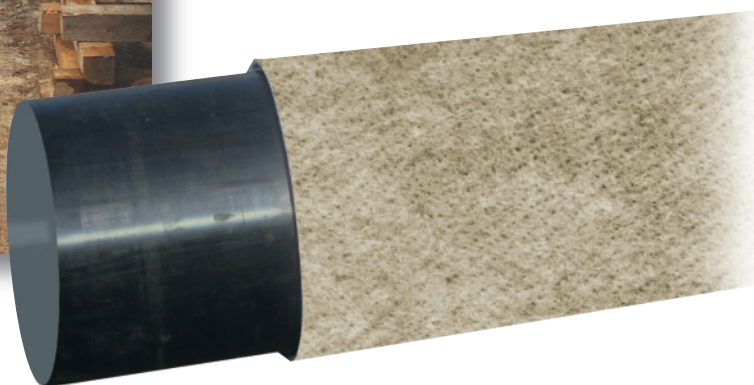
5. Allow the Pipecast to cure for 20-30 minutes at 23°C. It is ready to be buried after in approx. 1 hour.



6. Pipecast after application.



PSI Rock Shield Fleece



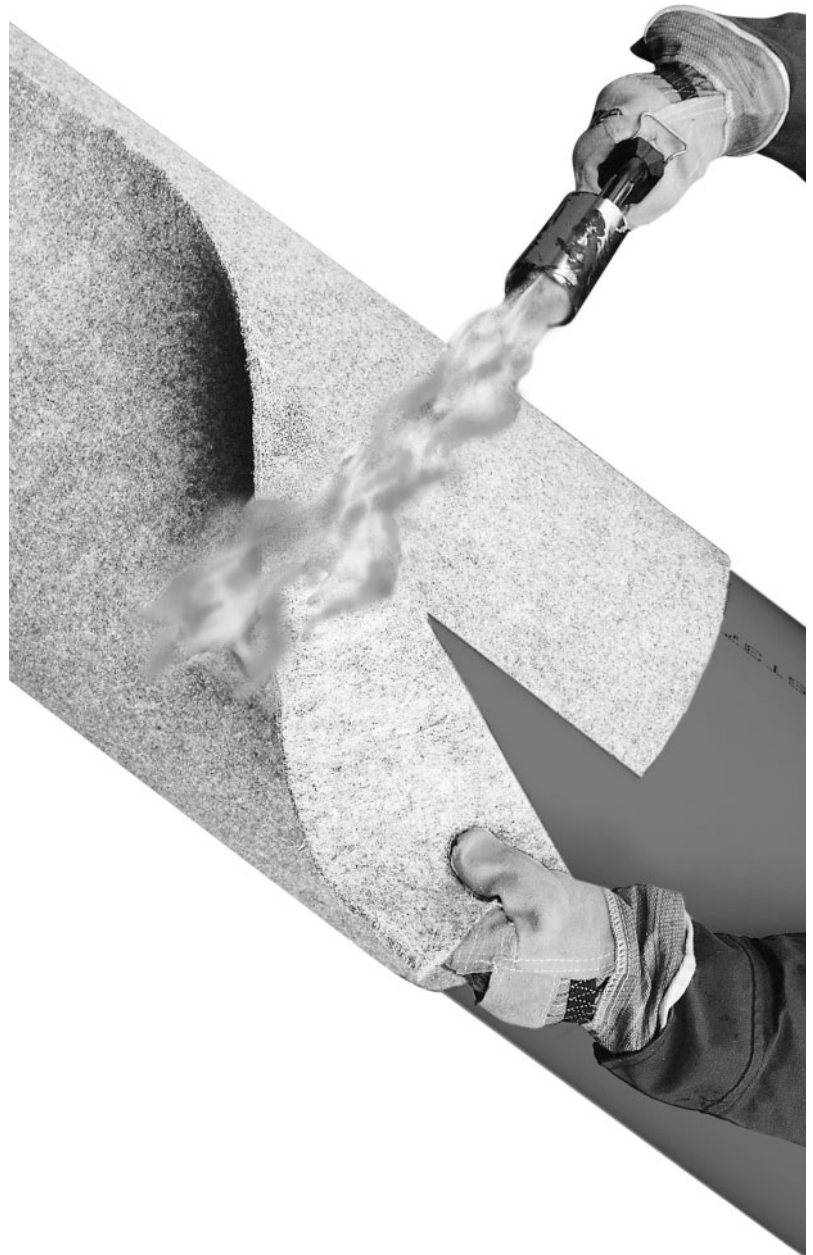
PSI Rock Shield Fleece

General Information

Pipe protection fleece is an outstanding **eco-nomical alternative** to traditional bedding in sand.

The relevant regulations governing pipe bedding, filling and sealing are to be observed at all times. In particular, DIN 1612, DIN 18300 and the DVGW worksheets G462, G463 and G472 apply.

The PSI rock shield fleece consists of mechanically compressed PP/PES. It is offered with a higher **impact strength of 5800 N**, suitable for different kinds of applications. With an overlap of approx. 10 cm and a low density gas-flame the PSI rock shield fleece can be welded safely. Rockshield fleece is also suitable for separating pipe coating systems against the earth at thermal loadings of $>50^{\circ}\text{C}$.



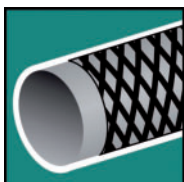
Technical data:

PP 1000

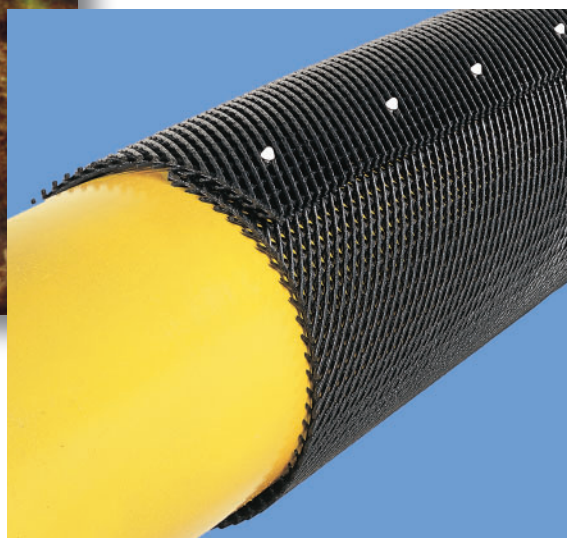
Material:	100 % PP/PES
Weight per unit area:	1000 g/qm
Type of solidification:	Mechanical needle compression
Thickness at 2 kPa superimposed load:	7 mm
Maximum tensile force lengthwise:	27 kN/m
Maximum tensile force across:	55 kN/m
Impact strength:	5800 N
Width:	0.4 up to 5.0 m
Length per roll:	25 m
Biological resistant:	good
Colour:	colored

The a.m. technical data are average value and could differ up to 10 %.

Please contact us for further information.



PSI Rock Shield Net



PSI Rock Shield Net

General Information



The ideal alternative to protection with sand.

The Rock shield net is used as an external protection to avoid damaging the corrosion protection coatings of pipes and in order to improve the mechanical strength.

Damages caused by ground settlement are eliminated and impacts are absorbed due to its high deforming capacity limiting the shrinkage pressure.

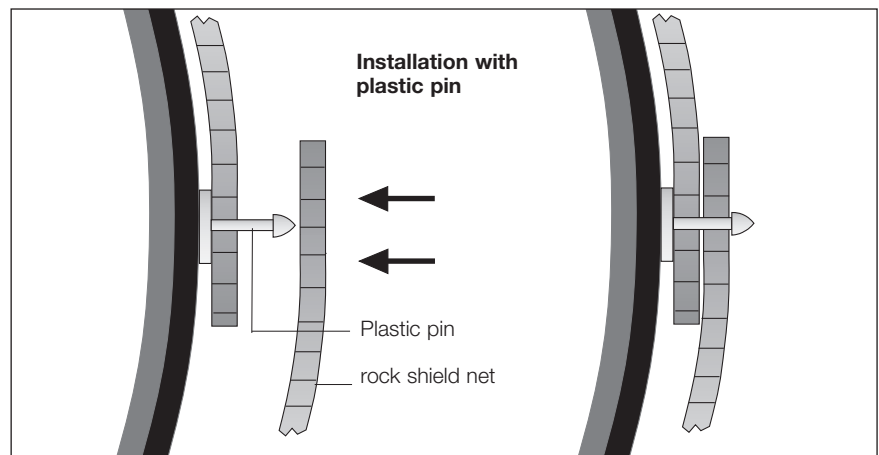
Advantages

- shock-absorbing and load-distributing
- high deforming capacity
- highly resistant to tearing
- corrosion resistant and water-proof
- permeable to electricity
- resistant to soil chemicals agents and microorganisms
- UV-stabalized

Installation

The net is applied as a sleeve around the pipe to be protected, with a minimum overlaps (80-100mm) and fused together with a small flame in the overlap area or fixed with our special plastic pin every 30/35 cm.

Description	Type 6	Type 9
Material	HDPE	HDPE
Colour	black	black
Thickness	6 mm	9 mm
Net dimension	4x4 mm	3x4 mm
Weight	1.1 kg/m ²	1.4 kg/m ²
Packing unit	roll 20 m width 1.0 m	roll 20 m width 1.0 m
Special widths and cuttings on demand		
Article-No.	4-033-23001	4-033-23002
Accessories: Plasic pin (approx. 3pcs/m)	Bag with 100 pcs	Bag wih 100 pcs



Order Form


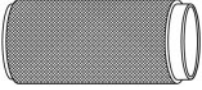


To:

From:

PSI Products GmbH
Fax +49 (0)7473/37 81 35

Just copy form, fill out the volumes and fax to PSI

Description	Quantity	Type	Art. no.	€/pcs.	Sum
 <p>Rock Shield Net 6 mm (Roll 20 x 1 m)</p>		6	4-033-23001		
<p>Rock Shield Net 9 mm (Roll 20 x 1 m)</p>		9	4-033-23002		
 <p>Accessories Plastic Pin (Bag with 100 pcs.)</p>			4-033-23016		
<p>Special width 6 mm (Roll 20 x Meter)</p>		6			
<p>Special width 9 mm (Roll 20 x Meter)</p>		9			
 <p>Rock Shield Fleece 1000g/m² (Roll 1 x 25 m)</p>		PP 1000	4-033-22990		
<p>Special width PP 1000 (Roll 25 x..... Meter)</p>					

* Prices acc. to valid pricelist

 Date / Signature

Disclaimer

Please note, failure to select the correct materials or products we supply ("the Products") may result in damage to plant, equipment or property. In some instances, it may cause death or personal injury. We are not designers and do not give advice about design related matters concerning the Products. We can help and assist with the technical specifications for the Products. In specific applications, particularly where critical conditions exist, we will try to assist you within the limitations of the services that we offer. All information supplied by us is intended as technical co-operation outlining the specifications of the different Products which we supply. To the extent permitted in law, no warranty is given in respect of any information supplied by us. The customer must satisfy themselves as to the suitability of the Products for their intended application and use. The correct fitting of Products is the responsibility of the customer. Your statutory rights remain unaffected. Save in respect of death, personal injury or fraud, our entire liability to you, however arising from the supply of Products shall be limited to the £10M indemnity amount provided by our insurers.