

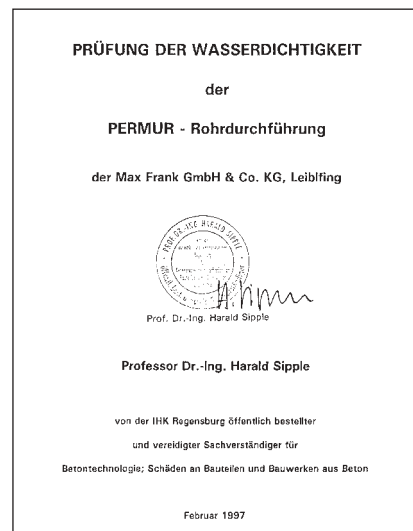
Permur Liner Pipes

keep leadthroughs of service and sanitation pipes in building components made of concrete impermeable to water securely and lastingly tight



With the Permur system we offer you a durable and reliably tight wall (house) penetration in the fields of pressing and non-pressing water. Permur is mainly used in building components impermeable to water and it has proved to be the optimal solution for sealing service and sanitation pipes in basements.

The circular chases in the wall can be produced by means of the PFR Permur fibre-cement pipes or with our Permur Monolith special mould. The PDE - Permur sealing inserts - are placed directly into the chase.



The Permur pipe penetration system was tested on watertightness, which has been approved by a test certificate issued by Professor Dr.-Ing. Harald Sipple. Testing was carried out following the regulations of DIN 1048, part 5. Further lab-examination reports are available at FRANK.

Permur

PFR – Permur fibre-cement pipes



Benefits of PFR – Permur fibre-cement pipes:

- Ideal bonding with in-situ concrete
- Material does not shrink
- High dimensional accuracy
- Special lengths up to 2.00 m can be supplied
- Material impermeable to water
- Stable fibre-cement pipe

PFR – Permur fibre-cement pipes can be supplied in lengths of 150 to 2000 mm.

* Lengths marked with this symbol are special lengths subject to a delivery time of approx. 8 working days. The standard sizes of 100 to 300 mm in diameter can be supplied within approx. 2 working days.

xxxx = length in mm

In other words the article number for lengths of 1 m must be completed by "1000". For lengths of 25 cm "0250" must be added to the article number.

Article number	Permur pipe DN internal Ø mm	Service duct external Ø mm
PFR1000100xxxx	100	20 – 56
PFR1000125xxxx	125	57 – 78
PFR1000150xxxx	150	78 – 111
PFR1000200xxxx	200	108 – 141
PFR1000250xxxx	250	142 – 180
PFR1000300xxxx	300	181 – 230
PFR1000400xxxx	400*	281 – 338
PFR1000500xxxx	500*	381 – 415
PFR1000600xxxx	600*	416 – 490
PFR1000700xxxx	700*	491 – 565
PFR1000800xxxx	800*	566 – 665
PFR1000900xxxx	900*	666 – 765
PFR1001000xxxx	1000*	766 – 865

Instructions for use:

Pre-wetting

When dry, the fibre-cement absorbs water. This water would be taken from the concrete, if the pipe was not pre-wetted. This could lead to an imperfect bond. This means you should pre-wet the pipe well before concreting, as usual.

Vibrate carefully

To avoid cavities and segregation in the concrete around the liner pipe, vibrate carefully and compact again before completing the pour.

Ensure sufficient load

To ensure that there is sufficient concrete pressure onto the pipe surface, the pipe should be built in at least 0.5 m below the concrete surface.

Keep the pipe clean

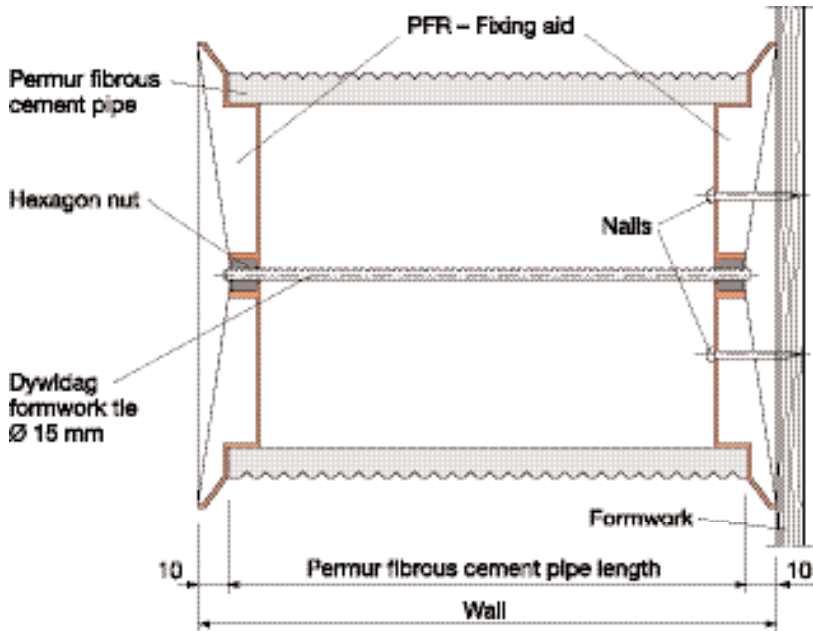
A clean surface is imperative for fixing the seal insert later. You should therefore protect the inner surface of the pipe from soiling.



Permur pipe leadthroughs and their exact location facilitate subsequent plumbing work.

Permur

PFR – Fixing aid for Permur fibre-cement pipes



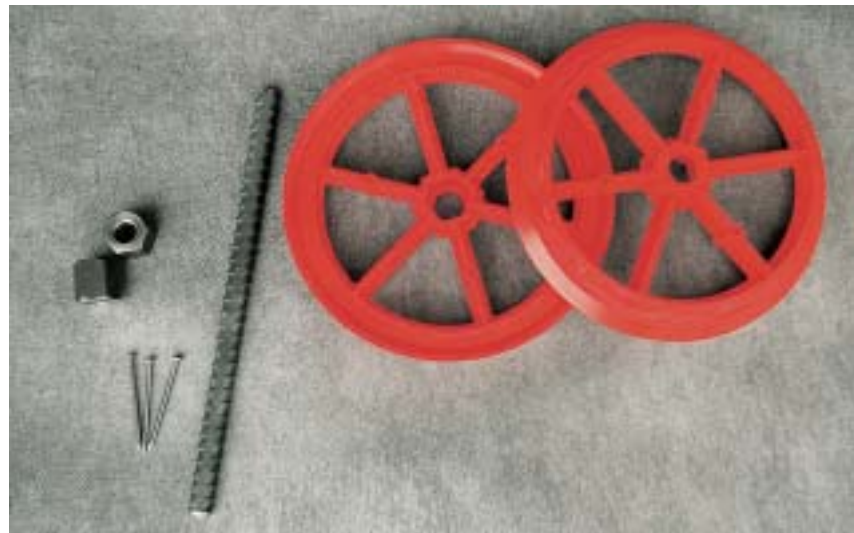
The PFR – Fixing aid fixes the fibre-cement pipe securely and simply to the existing formwork using site-typical formwork tie material (Ø 15 mm from DYWIDAG).

To avoid drilling through the formwork, the fixing aid can also be nailed to the formwork skin as shown in the illustration.

The formwork ties are used to fix the PFR - Permur fibre-cement pipe by clamping it between the two fixing aids.

At the same time the pipe is protected from penetration of laitance.

- Saves labour time
- Is re-usable
- Various applications possible
- Secure protection against laitance penetration
- Looks good



Article number	Fixing aid DN (mm)
PFRMD080	80
PFRMD100	100
PFRMD125	125
PFRMD150	150
PFRMD200	200
PFRMD250	250
PFRMD300	300

Attention: When ordering PFR – Permur fibre-cement pipes take the fixing aid thickness into account.

The order length is 2 cm shorter than the wall thickness.

$$\text{Wall thickness} - (2 \times 1.0 \text{ cm}) = L_{\text{PFR}}$$

Here the PFR – Permur fibre-cement pipe is fixed to the formwork skin on one side with the fixing aid. The fixing aid and the formwork accessories can be recovered and used repeatedly.



Permur Monolith

Special mould for monolithic circular chases cast in a concrete wall

This special mould is used for casting monolithic circular chases in concrete walls. It replaces the conventional fibre-cement lining tube.

The circular chases produced with Permur Monolith correspond to the diameters produced with the well-known fibre-cement liner pipes complying with the DIN 19850 standard.

PDE sealing inserts can be embedded directly into the monolithic cast round chases made in this way.



Advantages of Permur Monolith:

- The inner concrete surface of the chase, which shows the advantages of a surface formed with Zemdrain®, is ready for direct installation of the sealing insert.

- No increased risk of water permeability between the lining tube and the concrete.

- Permur Monolith is prefabricated and delivered to site with 2

mounting covers, ready for installation.

- Lightweight design and thus a quicker, simpler and easier installation in the formwork.



Installation instructions:

1. Nail one mounting cover to the formwork with the arrow pointing downward.
2. Place the Permur Monolith special mould with the second cover mounted to it onto the cover nailed to the formwork in the first step, with the separating strip located on the bottom side.
3. No further fixing is necessary and the formwork can be closed.



The Permur Monolith mould should be removed after 2 to 3 days at the latest (take the separating strip out and remove the Monolith mould)



Finished voidfree and monolithic cast pipe leadthrough - provided that the concrete has been poured and compacted correctly.



Mounted sealing insert with service pipe installed

Permur

PDE – Permur seal insert



PDE - Permur seal inserts are used to seal the annular clearance between circular wall chases (produced with Permur fibre-cement liner pipes or with Permur Monolith special moulds) and the service pipes to be led through the wall against soil moisture and water passage.

Benefits of the PDE – Permur seal inserts:

- Clean and secure solution
- Simple to fix
- High dimensional accuracy
- Can be supplied for all standard service duct diameters
- Increased corrosion protection with Dacromet coating or stainless steel version



PDE in use on site.

In this case the seal insert has been screwed on from the outside. Normally it is screwed on from the inside so that it is easy to access the seal insert without removing the formwork.

Depending on the model PDE – Permur seal inserts consist of one or two seals which are clamped by galvanized or stainless special steel flanges. In the case of the galvanized version the metal parts are Dacromet coated which is a new type of coating predominantly used in the automobile industry because of its increased corrosion protection in comparison to conventional galvanized zinc coatings.

The seals are made of an EPDM elastomer mix which is suitable for use in the drinking water sector according to the KTW recommendations (Kommissi-

on für Trinkwasser = Drinking Water Commission of the Federal Health Department) issued by the Federal Institute for Consumer Health Protection and Veterinary Medicine (BGVV).

Important order information:

- Liner pipe diameter
- Service duct external diameter
- Galvanized or stainless special steel
- Single or double seals.

We recommend the double seal version when used with pressing water.

Instructions for use

To achieve a reliable seal in the annular gap, you should observe the following details:

1) Cleanness

The inner surface of the circular chase, as well as the outer surface of the service pipe to be led through must be clean. Impurities cause leakages.

2) Stress-free service duct

Seal inserts are seals and not bearings. The service duct should therefore only be inserted as long as it is movable on both sides if possible. A pipe which has already been fixed is very difficult to insert concentrically in the liner pipe and can cause difficulties when sealing.

3) No experiments!

Only the right combination of service duct, circular chase and seal inserts can result in a watertight leadthrough. Please only use seal inserts which fit

the service duct. Self-made alterations carried out will result in leaks in the long term.

4) Correct insertion of the seal insert

Build in parallel, do not jam, do not use lubricants containing mineral oil.

5) Tighten the screws evenly to 20 Nm

Tighten screws evenly and crosswise, do not use excessive force (otherwise service duct could be damaged), retighten screws after approx. 2 hours. Suitable torque wrenches, extensions and sockets are available in the FRANK product range.

Sample specification

Tender text: PFR - Permur fibre-cement pipes

Item	Qty.	Specification	Total
_____	_____ pcs.	<p>Deliver PFR – Permur fibre-cement pipes from FRANK which are used for the production of circular chases in concrete structures (components impermeable to water) and serve as a basis for pipe leadthroughs, and install and fix them to the formwork according to the drawings and to the manufacturer's fixing instructions</p> <p>PFR</p> <p>Internal diameter: _____ mm</p> <p>Length: _____ mm</p>	

Tender Text: Permur Monolith

Item	Qty.	Specification	Total
_____	_____ pcs.	<p>Deliver Permur Monolith special moulds from FRANK which are used for the production of monolithic circular chases in concrete structures (components impermeable to water) and serve as a basis for pipe leadthroughs, and install and fix them to the formwork according to the drawings and to the manufacturer's fixing instructions</p> <p>Permur Monolith</p> <p>Chase diameter: _____ mm</p> <p>Length: _____ mm</p>	

Tender text: PDE - Permur seal inserts

Item	Qty.	Specification	Total
_____	_____ pcs	<p>Deliver PDE – Permur seal inserts from FRANK which are used for sealing service and sewage pipes in concrete structures.</p> <p>Liner pipe or core diameter: _____</p> <p>Service duct external diameter: _____</p> <p>Seal version:</p> <p><input type="checkbox"/> single seals <input type="checkbox"/> double seals</p> <p>Material version:</p> <p><input type="checkbox"/> galvanized <input type="checkbox"/> stainless steel</p> <p>The price indicated must include the correct installation of the PDE – Permur seal inserts under observance of the manufacturer's installation instructions.</p>	

FRANK



Max Frank GmbH & Co. KG
Accessories for the reinforced
concrete construction
Mitterweg 1 · 94339 Leiblfling
Germany

Sales
Phone + 49/(0)94 27/189-117
Fax + 49/(0)94 27/189-220
<http://www.maxfrank.de>
E-mail: info@frank-online.de