BUILDING
COMMON GROUND

MAX FRANK®

Pecafil®

Permanent formwork

www.maxfrank.com

International edition


HOLLAUS

BUILDING COMMON GROUND

MAX FRANK®

Pecafil® permanent formwork

The polyethylene film

is heat-shrunk onto the mesh, creating a sealed panel that can withstand even the strongest concrete pressure.
Depending on the application, the combination of the film and the mesh makes Pecafil® a dimensionally stable and permanent separation layer between the soil and the foundation or between the excavation shoring and the outer wall of the building.

The steel mesh

is encapsulated between two layers of signature yellow Pecafil® film - a high-quality, non-toxic material made from naturally occurring hydrocarbons that is highly resistant to physical damage and is UV stabilized for six months to form a strong and durable barrier.

What is Pecafil®?

The yellow of Pecafil® is an instantly recognisable and distinctive colour on today's construction sites. But what's behind the eye-catching product, and what is it made of?

Permanent formwork

Pecafil® permanent formwork is a truly versatile product: It can be used for many applications, because Pecafil® is produced in various panel and strip formats with application-specific wire diameters and mesh sizes. The uses of the product are therefore diverse – both as a stay-in-place formwork for foundations as well as a separation layer for bored piles or sheet piling, Pecafil® offers numerous possibilities and benefits. This is particularly the case with easily dissolvable soil types such as sand or gravel, where the product proves to be the ideal formwork solution.

Product components and properties

MAX FRANK manufactures the steel mesh for the Pecafil® according to exact specifications, to ensure that the wire diameters and spacing provide the optimum core strength of the mesh, while the low overall weight of the panel is kept to a minimum. Pecafil® permanent formwork material consists of two components: a special steel mesh and a yellow polyethylene foil. More details can be found in the red box on the left.

The benefits to you:

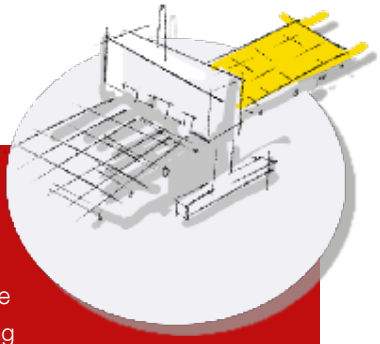
- Wide range of dimensions and sizes available
- Easy handling thanks to lightweight material
- Easy on-site customisation with simple tools
- Optimal strength, minimum product weight
- Withstanding concrete pressure in backfilled or supported installation
- High product quality and output due to high-quality materials
- Considerable time savings during installation compared to conventional methods
- Reliable system - tried and tested for over 40 years

Pecafil® – more than just a product

In the early 1980s, MAX FRANK developed the Pecafil® permanent formwork – a system that improves construction quality and reduces time and overall costs on the construction site. In the course of our more than 40 years of expertise, the product has proven itself as a popular formwork solution. But it's not just about the product – MAX FRANK's holistic service concept enables quick and effective turnaround of foundations on site, making us the partner of choice for groundwork contractors.

We are here for you!

Clear, local contact with our customers is important to us. Our experienced on-site team are on-hand to provide advice over the phone or on the construction site. The professional service provided by our office ensures smooth handling of project developments and a reliable after-sales service. Our technical team work with the latest CAD tools to produce take-offs from drawings and to find the best and most cost-effective solutions for your individual requirements.

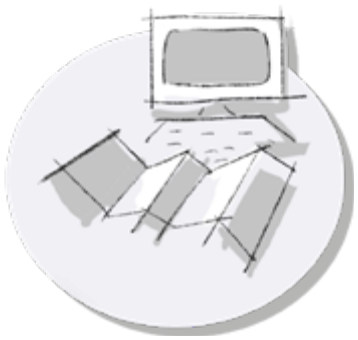


Turning the idea into reality...

Production is at the heart of our function. The automated manufacturing process of the sheet material ensures cost-effectiveness without compromising high product quality. Our experienced Pecafil® operatives process and bend the units according to your exacting requirements. The Pecafil® sections are then labelled and packaged accordingly for fast identification on-site.

Planning is half the battle...

We are often involved from the tendering stage of the initial concept, through to the final foundation design. Our technical and sales teams work together to determine the required quantities and to price as per the drawings supplied. Any bespoke details are considered to ensure straight-forward installation.

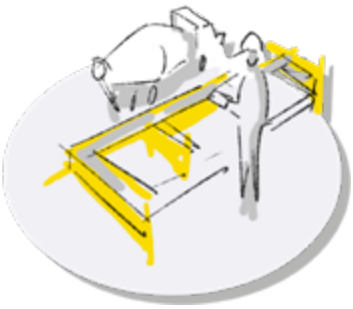


Reliable and fast delivery...

Your dedicated in-house contacts at MAX FRANK are on-hand to help you with any queries and to ensure your orders are processed efficiently and delivered to meet your on-site timetables. The carefully planned location of our production facilities, teamed with optimised communications and logistics, ensure fast delivery. When it comes to distribution, our experience and day-to-day handling of Pecafil® means we can comply to tight delivery schedules. And if you have any special requirements, just talk to us!

Installation and concrete pour - job done!

Pecafil® is a lightweight formwork material which can be carried, bent and positioned manually on-site. Once the appropriate spacers and reinforcement is in situ and Pecafil® sections backfilled, the concrete pour can take place. As a permanent, stay-in-place formwork, it is not necessary to remove or strip the material afterwards - saving valuable time.



We are here to help - scan the code to find your local contact.

MAX FRANK®

BUILDING
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Pecafil®

foundation formwork

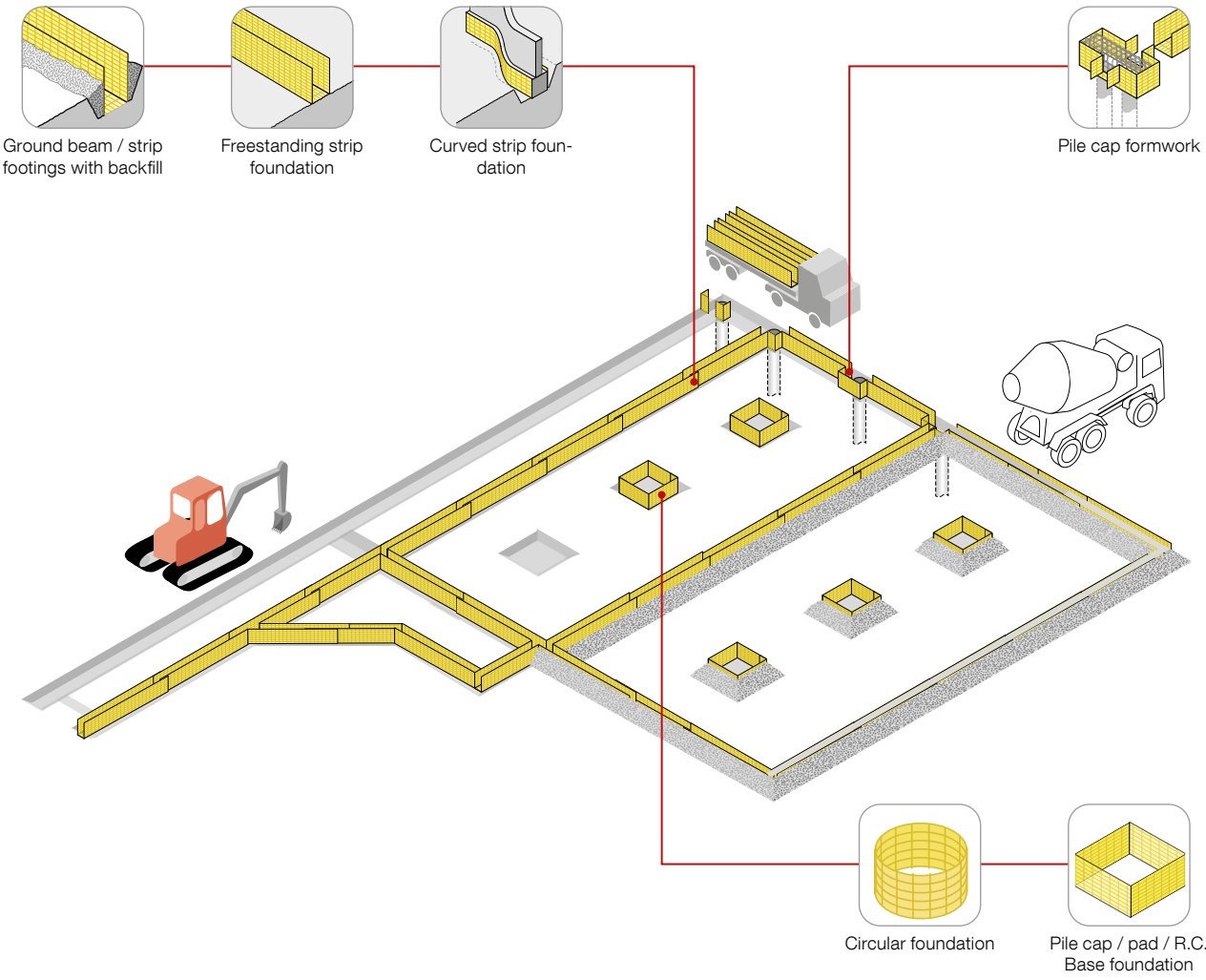
Pecafil® foundation formwork

for strip foundations, individual foundations and edge formwork

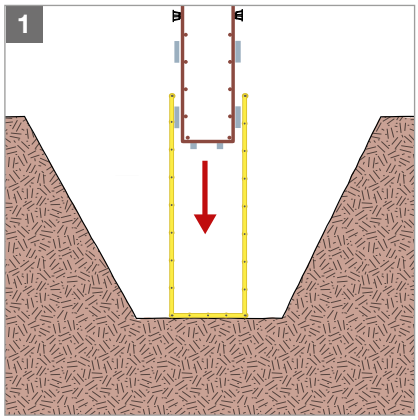
The foundation of a building is an important component for the subsequent stability of the structure. The individual design of the foundations, which depends on the soil conditions and the design of the building, is often a challenge on the construction site. As a permanent formwork, Pecafil® offers a flexible and economical solution for strip footings, pad foundations or reinforced concrete bases, pile caps or as edge formwork. Pecafil® is lightweight, easy to handle and can be customised on site and given that the formwork remains in the ground - or in some cases it can be stripped and re-used, enormous time savings can be achieved.

Advantages

- Fast and simple installation
- No time or costs for stripping, cleaning and returning the formwork
- No need for lifting equipment
- Release agent is not necessary

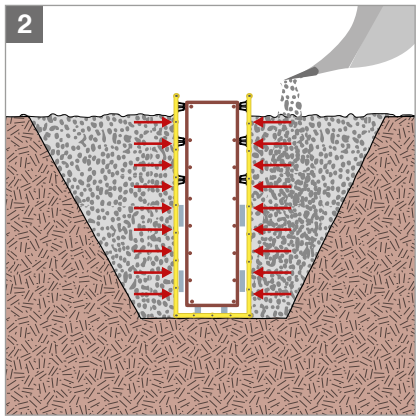


Principles of application



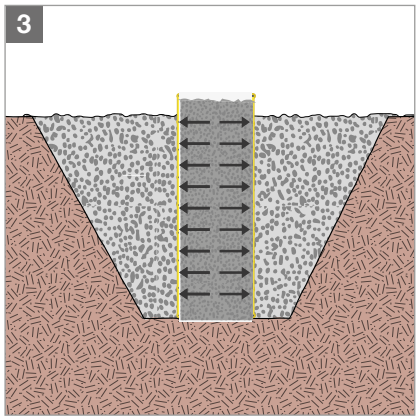
Excavating and inserting the Pecafil® units

Excavating to the Pecafil® profile is not possible, especially in sandy soils. When excavating before positioning Pecafil®, only estimated dimensioning of the foundations is necessary, provided that the concrete level is ensured. The Pecafil® sections are positioned and aligned by hand.



Inserting the reinforcement cage and backfilling

The reinforcement cage is then positioned. The concrete cover is ensured by using spacers. Plastic spacers can be used for low foundation heights and fibre-reinforced concrete spacers for more solid components. Their regular arrangement prevents deformation of the formwork during backfilling.



Concreting the foundation

Concrete compaction produces high-quality foundations. The resulting pressure is absorbed by the backfill. Pecafil® remains in the ground as a stay-in-place formwork, which saves further labour steps such as stripping and cleaning the formwork.

Watch our installation video on foundation formwork!

Simply scan the QR code!

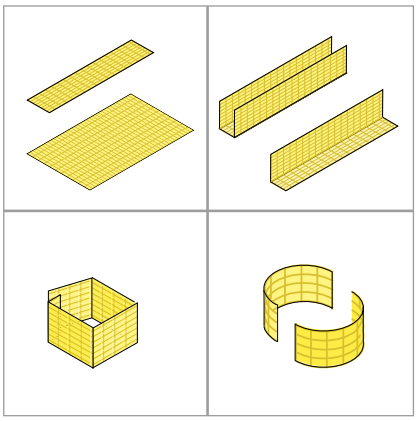
Technical information

Delivery forms and types

Pecafil® is a strong, permanent formwork for foundations in concrete construction. Depending on the application, Pecafil® can be supplied as:

- Flat panels for direct installation or bending on site
- Factory pre-bent ‘U’ or ‘L’ sections for beams
- Factory pre-bent pile cap formwork
- Factory pre-bent curved panels for circular formwork

We primarily recommend type VR6 for shallow to medium depth foundations; type VR8 is recommended for deeper foundations.

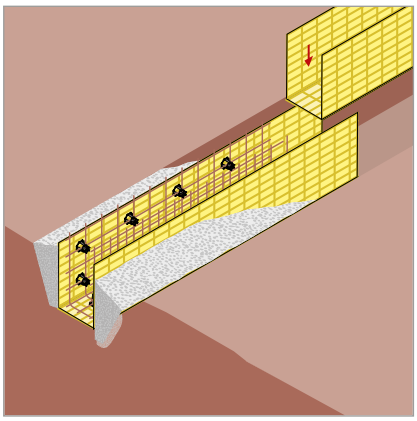


Find the right Pecafil® type on the data sheet - simply scan the QR code!

Compensation of the concrete pressure by backfilling

In below-ground applications, the backfill supports the Pecafil® sections against the pressure during concrete pour. The deeper the backfill, the higher the pressure before concreting. This must be taken into account during appropriate spacer selection.

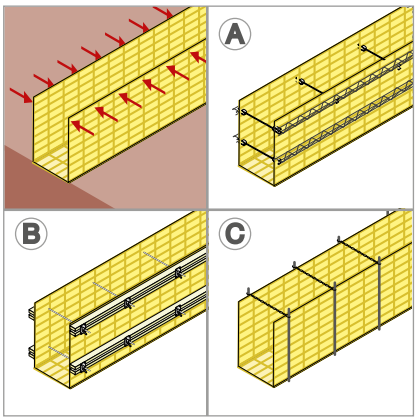
There is a suitable Pecafil® type (VR6, VR8 or VR10) for different foundation depths. Care must be taken to ensure the backfill pressure does not deform the Pecafil® formwork. To avoid high pressure, backfill must not be compacted.



Above ground

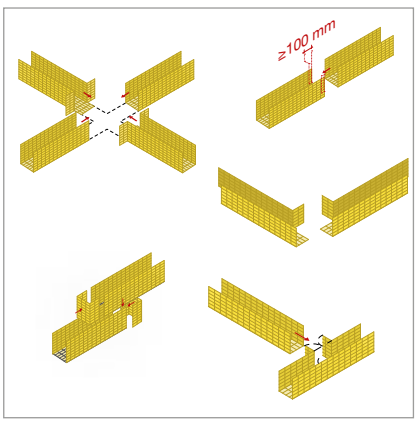
For above-ground applications, Pecafil® formwork must be braced against the concrete pressure. This can be done in several ways:

- A: Installation of lattice girders in combination with the corresponding Pecafil® spacers
- B: Horizontal bracing with timber battens, fixed with tie rods
- C: Bracing with steel rods, connected at the top with binding wire



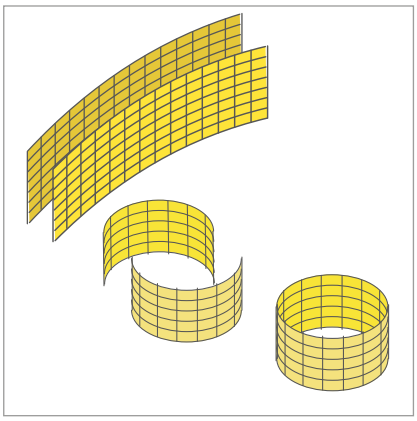
Jointing variants

Different connection variants are possible for the creation of strip foundations, which have proven themselves in practice. These can be easily formed onsite with standard tools. An overlap is considered in our measurements but a minimum of 100 mm must be ensured at all joints. The units can be easily connected by sliding them on top of each other and fixing with tie wire.



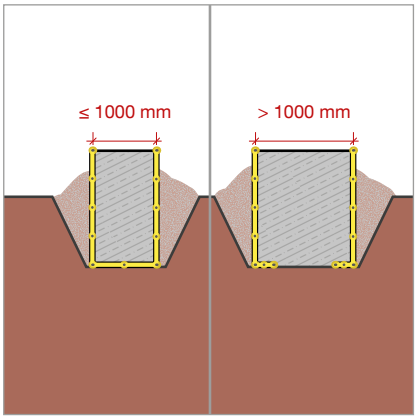
Circular and curved foundations

Pecafil® formwork is ideal for curved strip foundations, where formwork is required on both sides, as well as for circular foundations. The Pecafil® sections for round foundations are delivered pre-formed and can be installed and also re-used on the construction site.



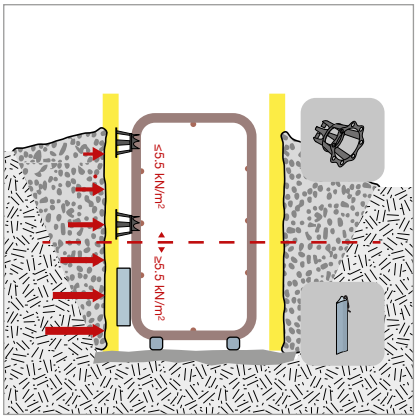
Blinding layer

The use of a concrete blinding layer prevents mixing of the concrete slurry and soil during concrete pour. In the case of U-shaped Pecafil® units, a blinding layer is usually not necessary, as the Pecafil® foil adapts to the substrate during concrete pour and enables uniform load transfer.



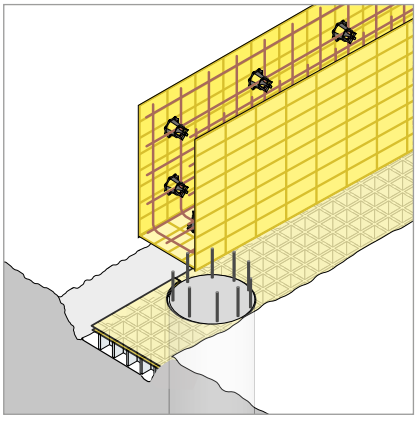
Spacers

Spacers provide the necessary concrete cover to prevent corrosion of the reinforcement. Below the reinforcement cage, the spacers also contribute to the load transfer of the weight of the reinforcement. For this purpose, bar spacers made of fibre concrete are recommended. The lateral spacers prevent deformations due to the lateral pressure of the backfilled material. The Pecafil® spacer is particularly suitable for lower heights, as it allows different concrete covers to be created through a 90° rotation. For deep foundations, we recommend fibre concrete bar spacers with integrated hooks.



Pecafil® combined with Pecavoid® ground heave solution

For piled foundations in areas affected by ground heave, we recommend the use of Pecavoid® ground heave system. The load is transferred to the ground via the piles, avoiding any unnecessary stresses in the building's foundation due to the swelling of the clay or soil. Pecavoid® creates a void beneath the suspended beams.

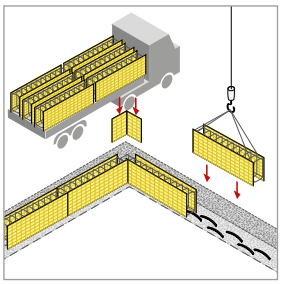


Read more about Pecavoid® ground heave solution!

Special applications

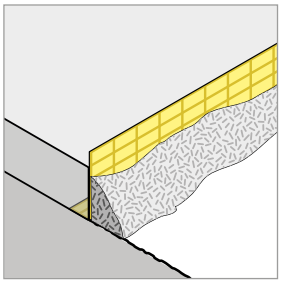
Pecafil® for prefabricated reinforcement cages

Prefabricated reinforcement cages simplify foundation construction on site. Pecafil® formwork material can be prefabricated and fixed to the reinforcement cages in advance. Backfilling before concreting ensures stability during concrete pour.



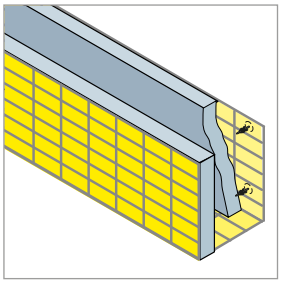
Pecafil® edge formwork

With Pecafil® edge formwork, floor or ceiling slabs can be shuttered at the edge. When using semi-prefabricated members, Pecafil® units are suitable for the shuttering of the slab edges.



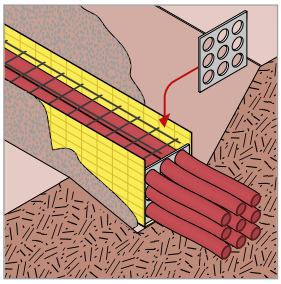
Pecafil® with thermal insulation

Before concreting the foundation, the on-site thermal insulation can be installed between the reinforcement and the Pecafil® formwork or between the Pecafil® formwork and the earth to be filled. Both methods are quick and simple to construct.



Pecafil® for media channels

Pecafil® can be used as formwork for cable ducts. The encapsulation in concrete protects the pipes and cables in the ground from potential damage, for example by construction work or unforeseen earth movements.



MAX FRANK®
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Pecafil®

separation layer

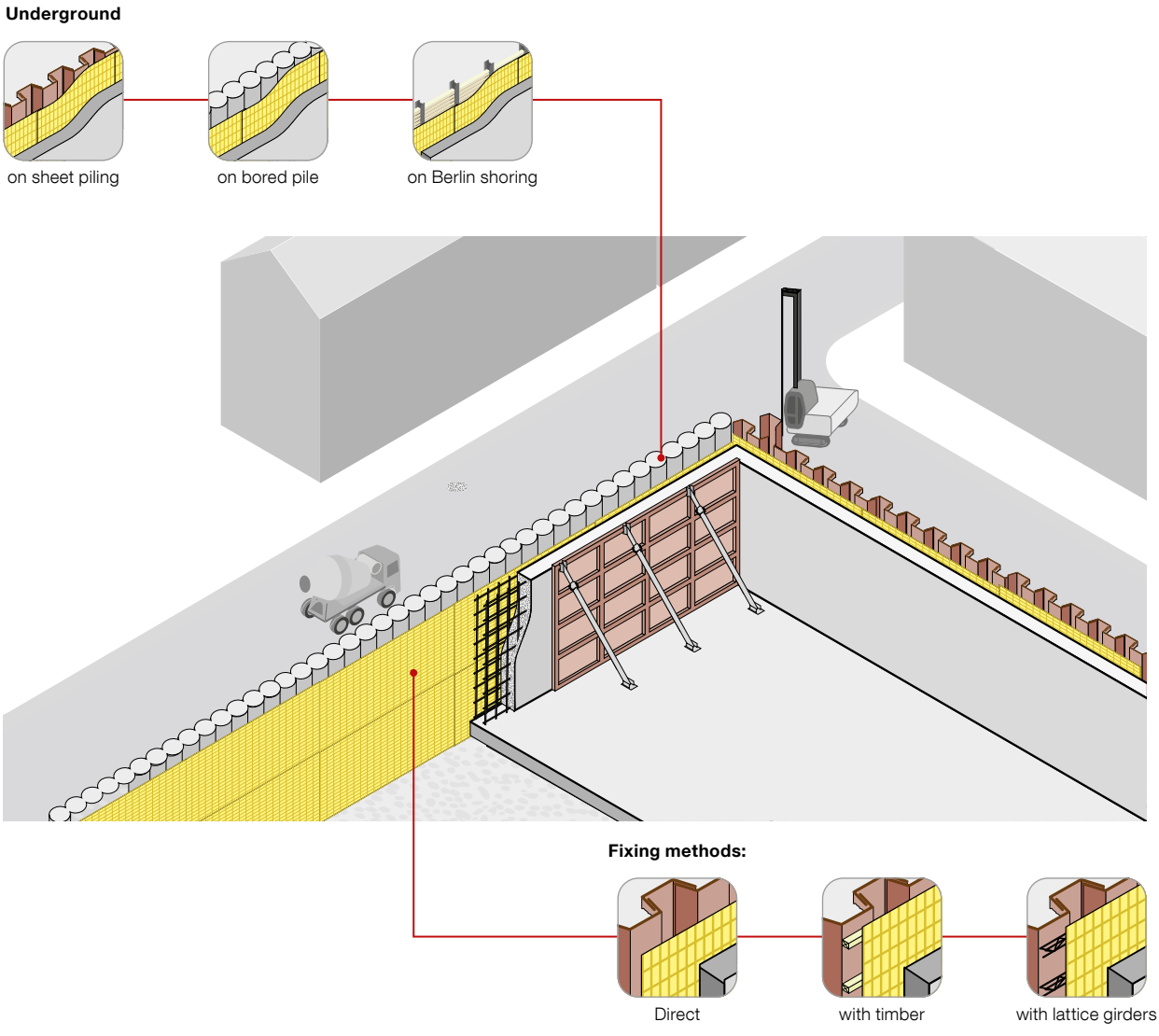
Pecafil® separation layer

as a separating layer for bored piles and sheet pile walls

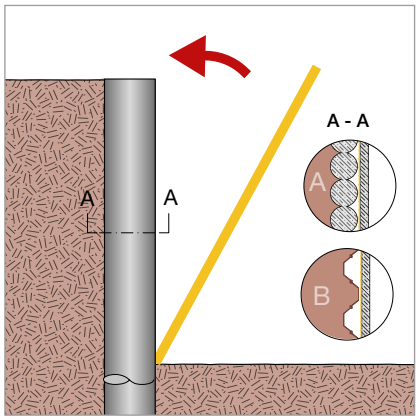
In below ground construction, particularly in confined spaces, the retaining and stabilisation of the excavation pit is an important and challenging step during the early construction phase. The resulting earth pressure in deep excavation pits is often absorbed by sheet piles or bored piles. Pecafil® is used here as a lost separating layer between the excavation pit enclosure and the outer wall of the new structure. Waterproofing systems such as fresh concrete composite systems and perimeter insulation can be efficiently integrated.

Advantages

- Concrete and cost saving
- Sliding layer enables subsequent removal of sheet piles
- Low deflection due to increased wire diameters
- Levelling of unevenness, especially in the case of bored piles

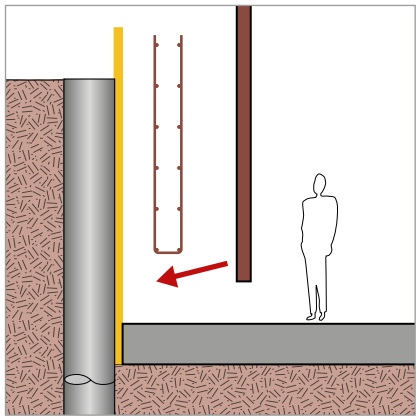


Principles of application



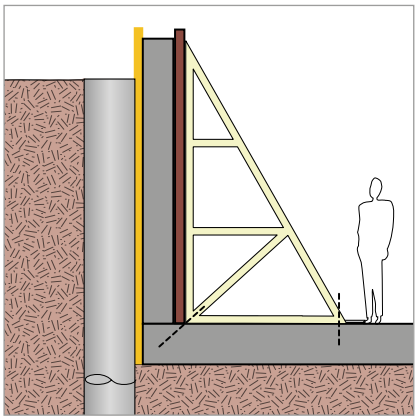
Installation of the Pecafil® formwork material

Pecafil® is attached to the bored pile wall or sheet pile wall and secured at selected points by shot fixing. If necessary, tolerances can be compensated with the help of lattice girders or wooden battens.



Installation of the inner formwork

After the reinforcement including the necessary spacers has been installed, the inner formwork, which will later form the inner basement wall, can be set and installed at an appropriate distance. In order to ensure stability, the formwork system is to be braced.



Concreting of the wall

This is followed by concreting. The Pecafil® separation layer significantly reduces concrete consumption, as the cavities of the excavation pit do not have to be filled. After the concrete has set, the sheet piles can be removed. In other cases, the Pecafil® system serves as a sliding layer to prevent any damage to the new basement wall caused by settlement.

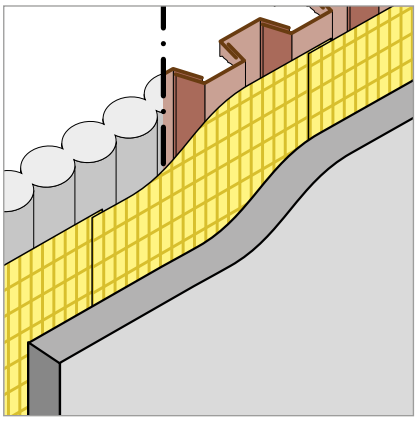
Take a look at our video on excavation shoring!

Simply scan the QR code!

Technical information

Areas of application

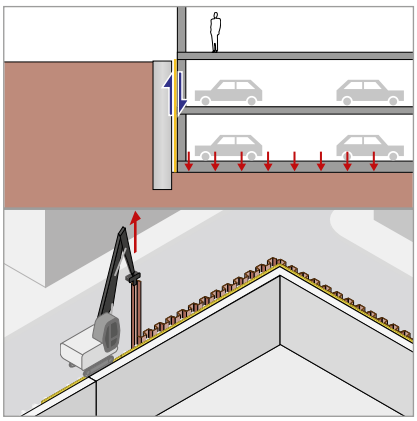
The separation layer made of Pecafil® is mainly used for sheet piling, bored piles and Berlin shoring. By using lattice girders or timber, tolerances can be compensated for and specified distances to the excavation pit shoring can be maintained.



Find the right Pecafil® type on the data sheet - simply scan the QR code!

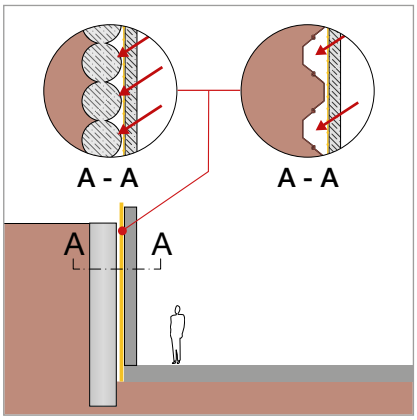
Function of the sliding layer

Pecafil® as separation layer enables sliding of the new structure against the foundation pit. This on the one hand allows the building to settle evenly. On the other hand, the use of Pecafil® makes it easier to remove the sheet pile profiles for multiple use.



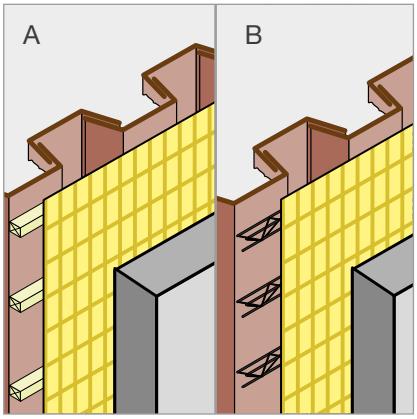
Reduced concrete requirement

Pecafil® reduces the amount of concrete required, as the void areas remain free of concrete. By using a levelling layer of lattice girders or timber, the wall thickness can also be optimised and excess usage of concrete can be avoided.



Compensation of tolerances

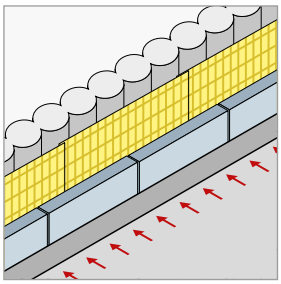
Large tolerances may occur between the excavation pit shoring and the adjoining basement wall due to the inaccurate placement of sheet piles or the drilling of bored piles and Berlin shoring. In order to compensate for these tolerances and to maintain the specified distances to the excavation pit shoring, as well as ensuring the structurally required wall thickness, timber battens (A) or lattice girders (B) can be installed.



Special applications

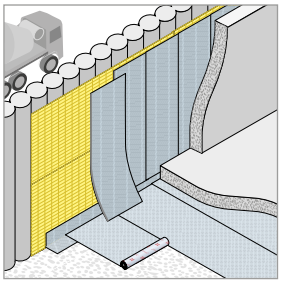
Pecafil® as a separation layer with thermal insulation

In the case of heated basements, perimeter insulation is recommended to reduce heat loss. By using Pecafil®, the load is distributed across sheet piles or bored piles. In this way, deformation of the thermal insulation can be avoided.



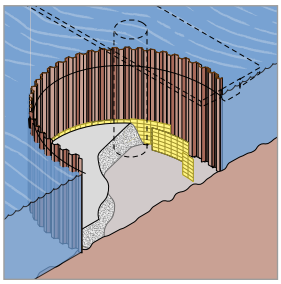
Pecafil® with Zemseal® waterproofing membrane

High-quality basements can be lined with the Zemseal® pre-applied waterproofing membrane system to ensure water-tight construction. In the case of irregular excavation pits, Pecafil® serves as a levelling layer so the membrane can be applied on an even surface.



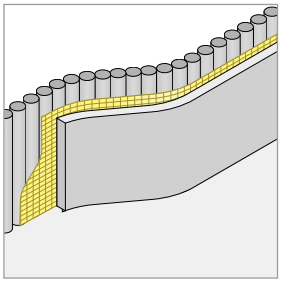
Pecafil® for circular sheet piling

Circular sheet pile formwork is used for underwater casing for bridge piers. The Pecafil® sliding layer enables the sheet pile wall to be pulled effortlessly once the foundation and piers have been created.



Pecafil® for curved bored pile formwork

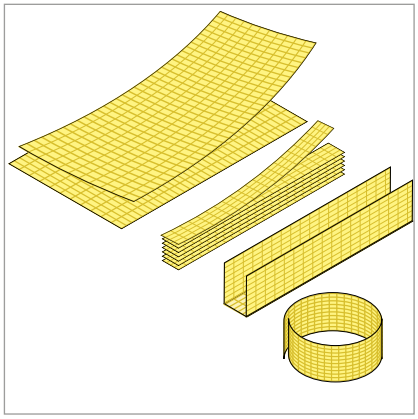
Thanks to the versatility of Pecafil®, profiled pile head formwork can be decoupled in the event of varying subsidence and excess concreting in the voids can be prevented. The material is also ideal as a carrier for the Zemseal® waterproofing membrane.



System components

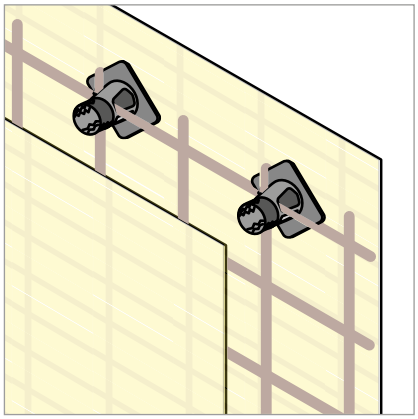
Product variants

Pecafil® is offered according to varying strengths of the steel mesh: VR6 is mainly used in the foundation area.
VR8 is recommended for deep foundations and VR10 mainly for separation layer application.
The available dimensions and weights are available in our MAX FRANK online catalogue, scan the QR code at the bottom of the page.



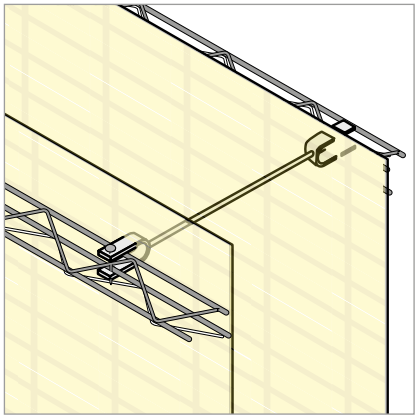
Pecafil® plastic side spacers

Choosing the right spacers ensures maintaining the right concrete cover. The special Pecafil® spacers allow compaction of the concrete through the large openings. For deeper foundations, as well as below the reinforcement cages, MAX FRANK fibre concrete spacers are the ideal solution.



Distance spacers and lattice girders

Especially for above ground applications without backfilling, the combination of spacers and lattice girders offers a fast and stable solution. The spacers are supplied according to the required foundation width. The lattice girders can be adjusted and reused on site.



Pecafil®: MAX FRANK online catalogue

You can find our entire portfolio of Pecafil® permanent formwork and its system components in the MAX FRANK online catalogue.
Simply scan the QR code and search, find and compare!

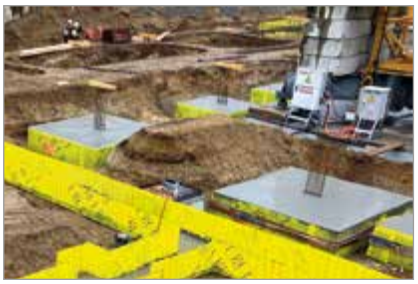
References

St. Hedwig's Cathedral, Berlin (DE)

The lightweight, easy handling and short installation time of the curved Pecafil® ring beam formwork were particularly advantageous during the renovation of the existing cathedral. The workers on the Berlin construction site were impressed by the effortless installation of the material.

Poschacherpark, Linz (AT)

An exciting ensemble with two new buildings is being created in the park of the listed Poschachervilla. The stay-in-place formwork Pecafil® is being used as foundation formwork for the two buildings. The product is quick and easy to install on the construction site.



Eisring South, Vienna (AT)

For the residential complex, the basement walls were provided with thermal insulation around the perimeter. Sheet pile walls were driven to limit the excavation of the construction pit. To compensate for tolerances, the Pecafil® formwork was applied to timber battens. The perimeter insulation was then glued to the Pecafil®.

Standeiland, Amsterdam (NL)

Construction of circa 8,000 apartments were built on sandy subsoil on an artificial island in a new development area. Bored piles were required for the uniform slope of the sewage system. Pecafil® circular formwork was used to precisely adjust the height of the pile heads.

Las Terrazas de Rivas, Madrid (ES)

A residential complex project in Madrid was supplied with over 2,000 square meters of prefabricated Pecafil® for foundation formwork. The foundation could be concreted in a single operation with corresponding time and cost savings.

New Housing development, London, UK

MAX FRANK delivered groundwork products, Pecafil® permanent formwork and Pecavoid® ground heave solution to this residential development. Pecafil® was supplied to site as individual flat strips, which are light to handle and simple to cut onsite. Once the concrete foundations had set, the Pecafil® sections were carefully stripped back to be re-used - revealing a flawless concrete finish!

The Mersey Gateway, Widnes & Runcorn, UK

The use of Pecafil® as a sheet pile separation layer enabled fast and simple installation in the temporary cofferdams, for three main bridge pylon foundations, the North and South approach viaduct pile caps and abutment bases. The need for heavy traditional formwork was avoided and significant cost savings were achieved.

Supermarket canopy foundations, Nakomis (US)

In the west of the US state of Florida, formwork for eight foundations were created for a supermarket canopy with Pecafil®. The required sections of the stay-in-place formwork material were simply shortened and adjusted on site.

Multi-storey car park in the city centre, Kävlinge (SE)

In Kävlinge, a municipality in the Swedish province of Skåne län, a multi-storey car park incorporating circa 500 parking spaces has been built for a new city district. This provides sufficient parking spaces for residents, commuters and visitors. Pecafil® was used as permanent formwork for the foundation work.

Avram Iancu Street car park, Cluj-Napoca (RO)

In 2022, a multi-storey car park was built in Romania's second largest city. Pecafil® was used in the excavation pit in conjunction with the Zemseal® waterproofing membrane. Pecafil® served as a level substrate for Zemseal®, which was used to waterproof the basement floors.


Plastic nail for thermal insulation
With thermal insulation
Beam foundation
Separation layer bored pile wall
Separation layer sheet pile wall
Lattice girder
Spacer
Box-out shutter
Edge formwork
Circular formwork
Pecavoid® ground heave solution
Pecafil® weather protection

BUILDING COMMON GROUND

MAX FRANK®

PRODUCT PAGE

On our Pecafil® product page www.maxfrank.com/pecafil you will find general information on the areas of application, extensive image and video material, current topics relating to the formwork material and helpful product documentation.

DOWNLOADS

In the download area of the Pecafil® product page you will find documents such as ordering aids, installation instructions, tender texts and environmental declarations.

PRACTICAL VIDEOS

We have carried out various demonstrations with the stay-in-place formwork material. Our videos show the product application in practice and on the construction site.

ONLINE CATALOGUE

Use our online catalogue for your Pecafil® selection with practical features such as product comparison or watch list.

REFERENCES

You can find further references on our website.

We are here for you!

Our aim is to support you through every phase of your project - from planning through to completion.
Find your local contact at:

www.maxfrank.com/contact

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