Pecafil® site installation guidelines

Contents

The material

Pecafil® universal formwork material consists of a special steel mesh with varying thicknesses and shaped to meet your requirements, and a heat-shrunk layer of polyethylene made from carbon and hydrogen. Pecafil® universal formwork material is environmentally friendly, does not affect groundwater, and is both recyclable and bio-degradable.

The field of application

Pecafil® can be used as lost formwork, as reusable formwork or as formwork stop-end.

The tools

The following tools are required for installation:

- Waterproof marker pen
- Retractable blade craft knife
- Bolt cutter
- Nail (length 90 mm)
- Tying wire

Installation of Pecafil®
above ground

Circular formwork
for foundations

Pecafil® for
single foundations

Pecafil® installed
in-ground

Pecafil® partition formwork, optionally with thermal insulation lining

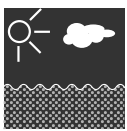
Reusable formwork material for ribbed slabs and panelled slabs

Formwork stop-end with continuity reinforcement

Weather and dust protection and screens

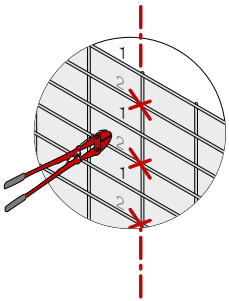
No lifting means are required
for the site installation of Pecafil®.

No electrical current is required
for the site installation of Pecafil®.

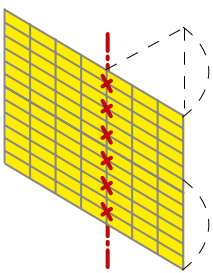


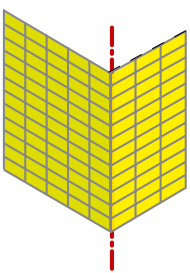
The use of polyethylene sheet makes Pecafil® **environmentally friendly** and suitable for use in ground water preservation areas.

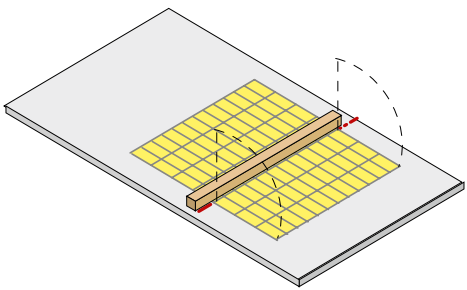
Depending on the construction site,
it is possible to **reuse Pecafil® several times.**

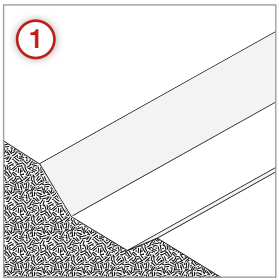


- Mark line of fold on Pecafil®
- Leave top and bottom wire intact and cut alternate wires **(X)** for width of unit.
- Start with each second top or bottom wire.
- Only cut wires at fold – not polyethylene sheet.
- Fold Pecafil® on ground or on appropriate bench.
- A suitable timber straight edge may be used to assist with folding (clean cut).

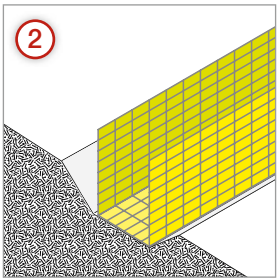




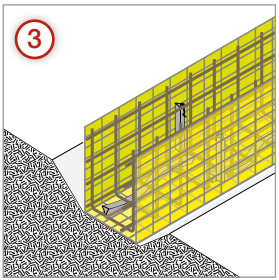




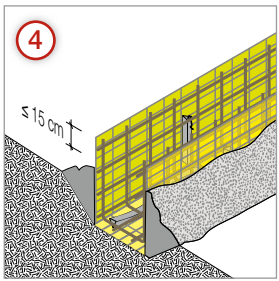
Produce a level trench base (no granular sub-base required)



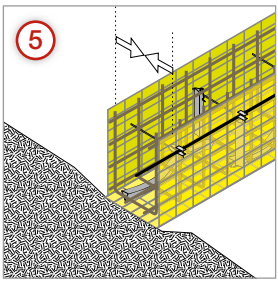
Place Pecafil® formwork elements in position in trench



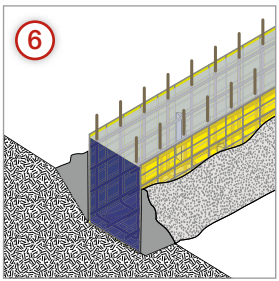
Install reinforcement and spacers



Backfill material equally on both sides

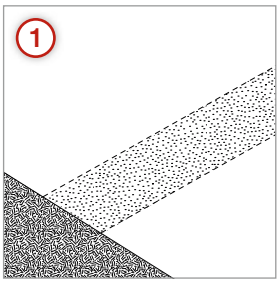


Stiffening via grid supports or other alternatives (see pages 56 – 58) becomes necessary if the formwork protrudes the filling material by more than 15 cm

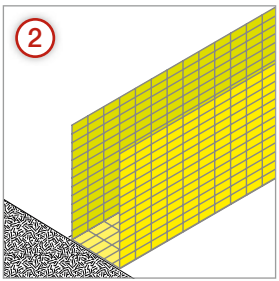


Concrete the entire foundation in one pour

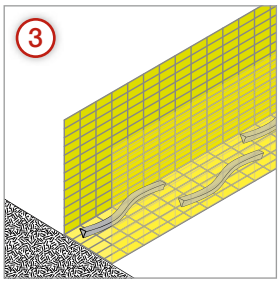
Pecafil® installed above ground



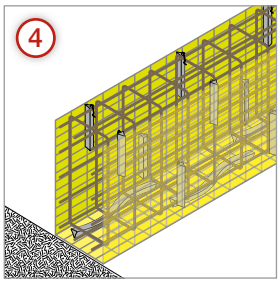
Produce a level foundation base



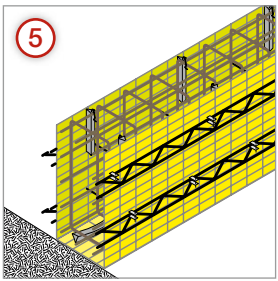
Place Pecafil® formwork elements in a flush position



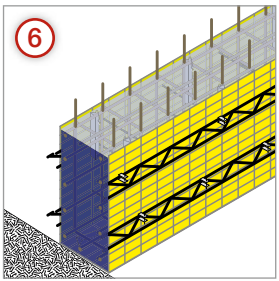
Install concrete spacers on ground



Install reinforcement and lateral concrete spacers



Stiffening via girder supports or other alternatives
(see pages 56 – 58)

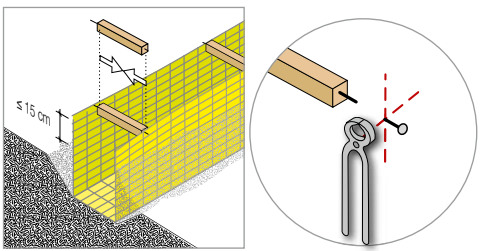


Concrete the entire foundation in one pour

Support of Pecafil® formwork for low foundation heights (up to approximately 15 cm above filling height)

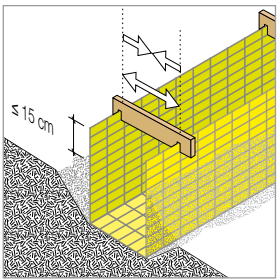
In order to avoid any distortions of the Pecafil® formwork as a result of inner concrete pressure or outer soil pressure prior to concreting, stiffening of the upper formwork edge is necessary even for a formwork of low height.

The following alternatives are possible:

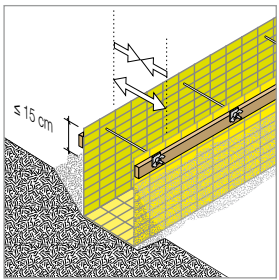


Billet of wood with nail

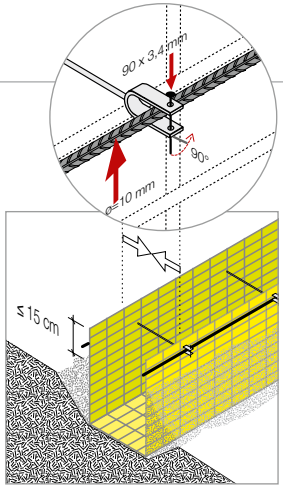
Although this system is compression-proof and resistant to tensile strength only to a limited degree it is well suited for provisional distance spacer installation during assembly and concreting.



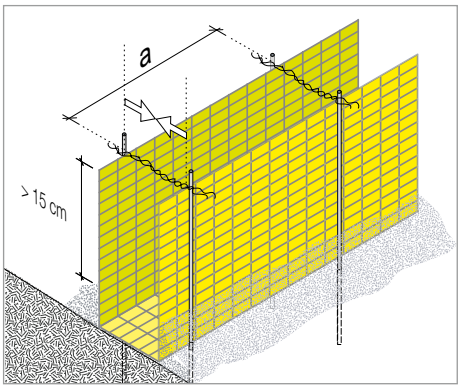
Slotted timber board
Suitable for a foundation height of up to 15 cm above filling



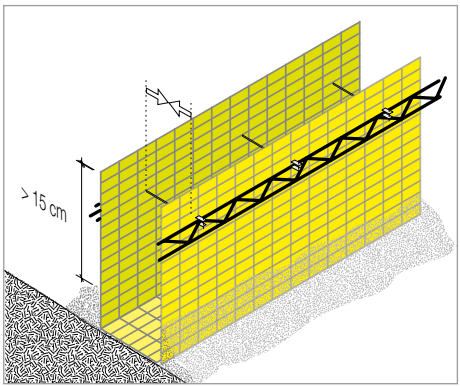
Tying wire with spring clip
Suitable for a foundation height of up to 15 cm above filling



Distance support without formwork girder
Suitable for a foundation height of up to 15 cm above filling



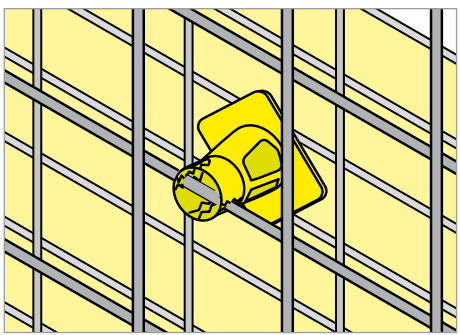
Support posts and tying wire
Distance a = approx. 50 cm
(between plug-in iron)



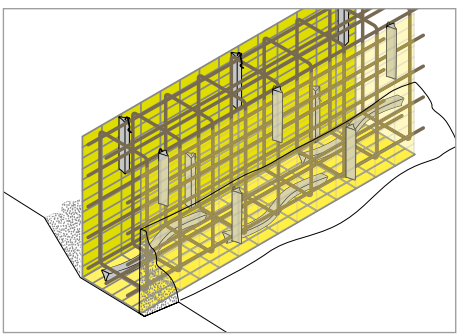
Pecafil® distance spacers with formwork girder – Suitable for foundation heights up to 180 cm

Cover spacers between reinforcement and Pecafil®

The use of cover spacers will ensure that the required cover between the reinforcing steel and the Pecafil® formwork is achieved. Depending on requirements with regard to the quality of the ground beams, Pecafil® plastic spacers or fibre concrete spacers may be used.



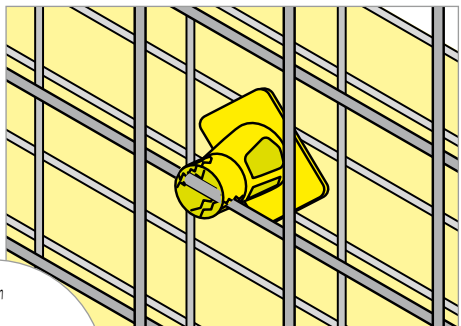
Use of Pecafil® plastic spacer

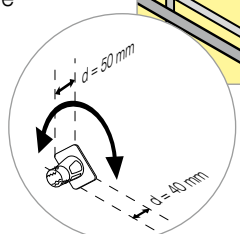


Use of fibre concrete spacers

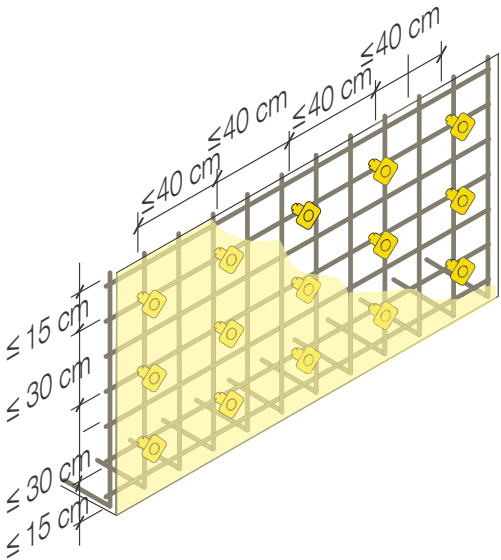
Pecafil® plastic spacer: lateral spacing system between reinforcement and Pecafil®

Due to their rotation through 90° Pecafil® spacers may be adjusted during assembly to achieve concrete covers between 40 mm and 50 mm.
The supporting surface of the Pecafil® spacer being larger than the largest Pecafil® mesh width, punching of the polyethylene sheet is prevented.

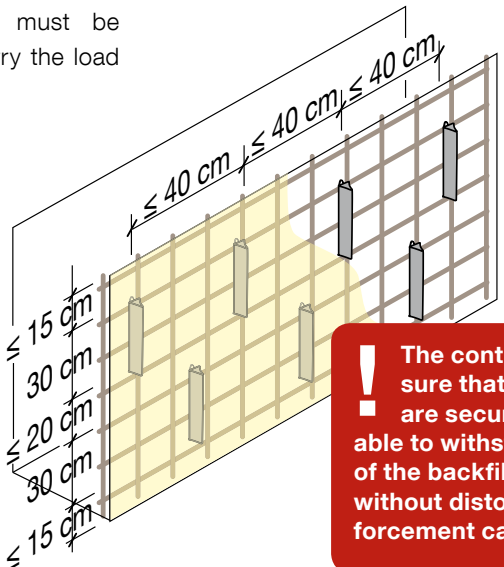




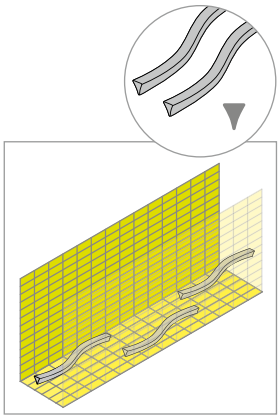
Pecafil® spacers – positioning and quantities required approx. 8 piece per m² (recommendation)



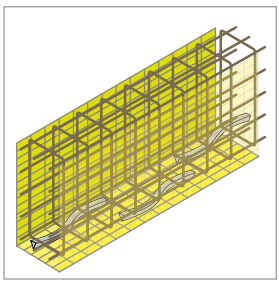
The spacers used must be stable enough to carry the load of the reinforcement.



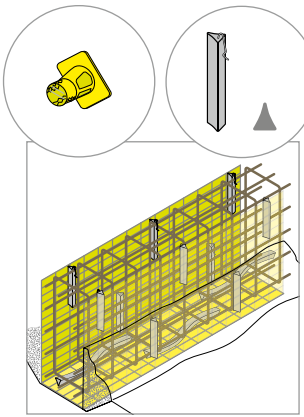
! The contractor must ensure that any paired links are securely tied to be able to withstand the pressure of the backfill on the Pecafil®, without distorting the reinforcement cage.



Insertion of fibre concrete spacers, e.g. type banana or type snake in the base

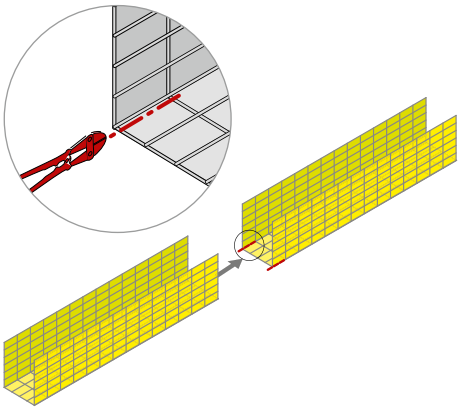


Assembly of reinforcement cage



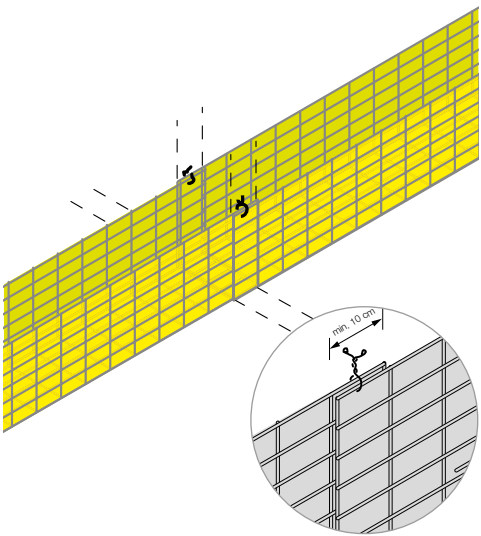
Lateral assembly of clevis type bar spacers or of Pecafil® spacers

Overlap U-shaped formwork



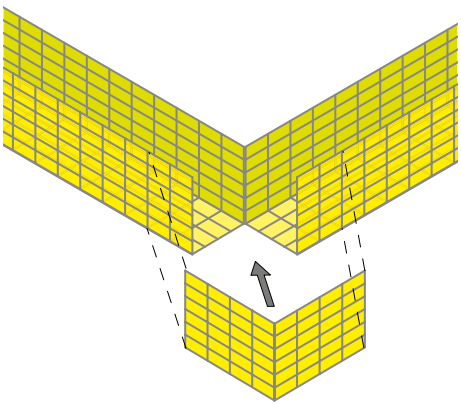
Cut the ultimate wire of the element already installed to enable lapping of the next element

Fix overlap using tying wire.



Beam corner sections U-shaped formwork

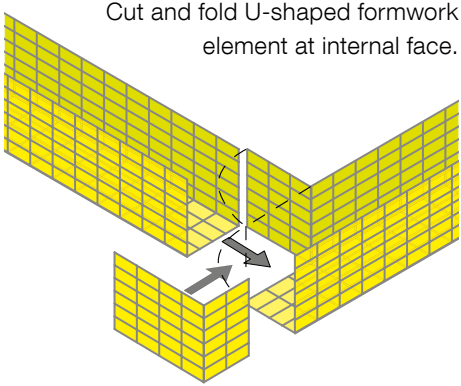
Connect butted lap joint using tying wire.



Connect bent corner element to overlapping U-elements.

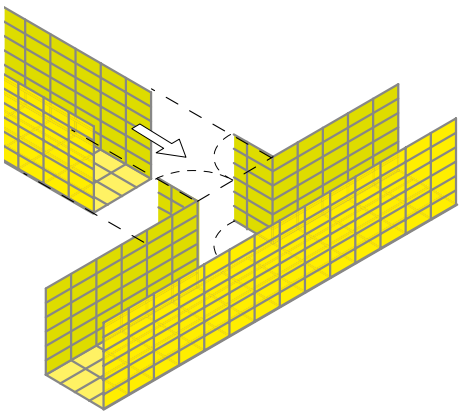
Insert U-element.

Cut and fold U-shaped formwork element at internal face.

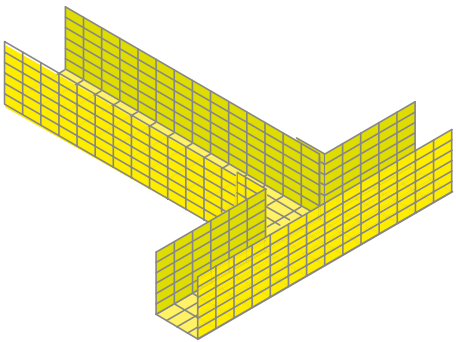


Connect bent corner element to overlapping U-elements.

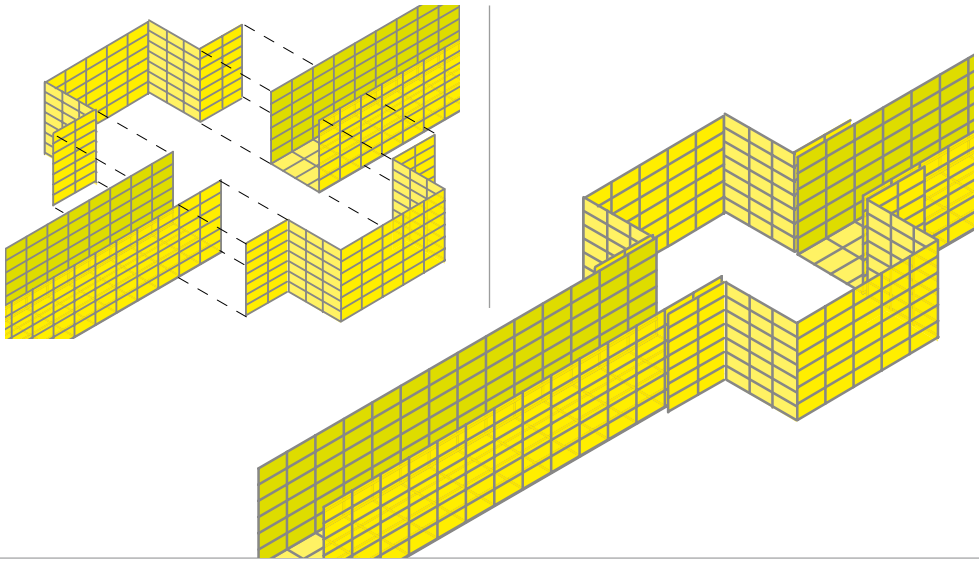
U-shaped formwork - T-intersection



Connect bent out flaps to the outside face of the joining U-beam using a tying wire.



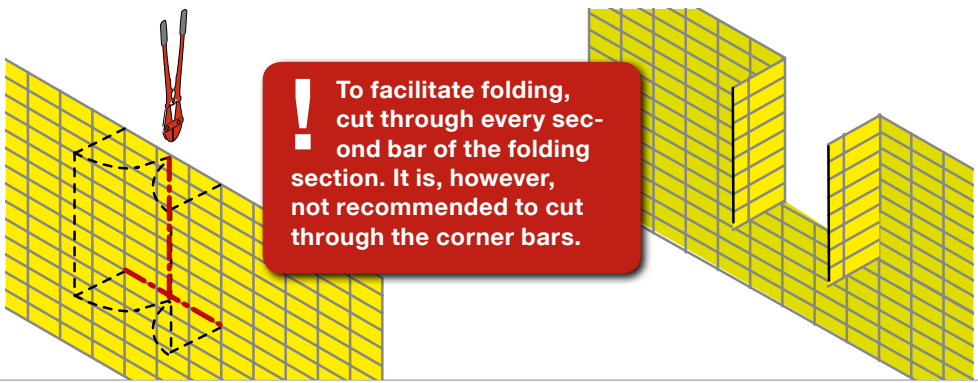
U-shaped formwork combined with widened foundation



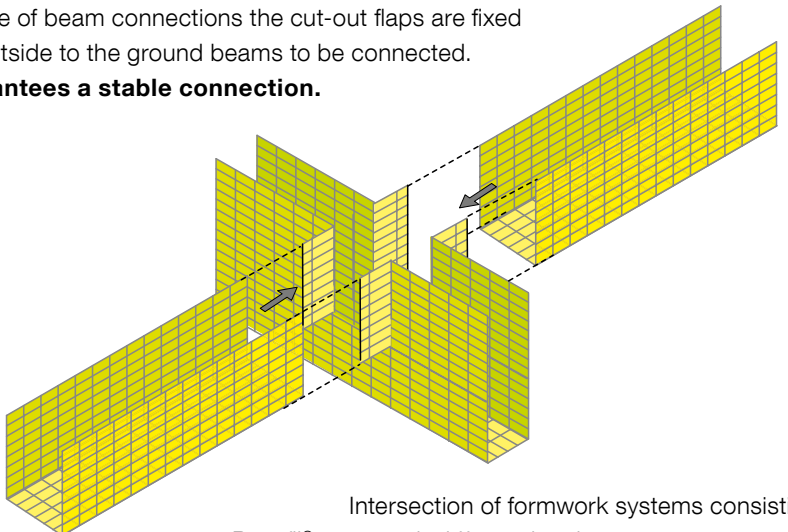
Overlaps of formwork systems with different heights consisting of Pecafil® strips

Determine position of the Pecafil® element to be connected.
Mark both, centre line (axis) and contour on the erected Pecafil® element.

Cut through (foil and bars) of Pecafil® along the centre line (axis) and along the lower edge. Afterwards bend flaps along the marking outward.

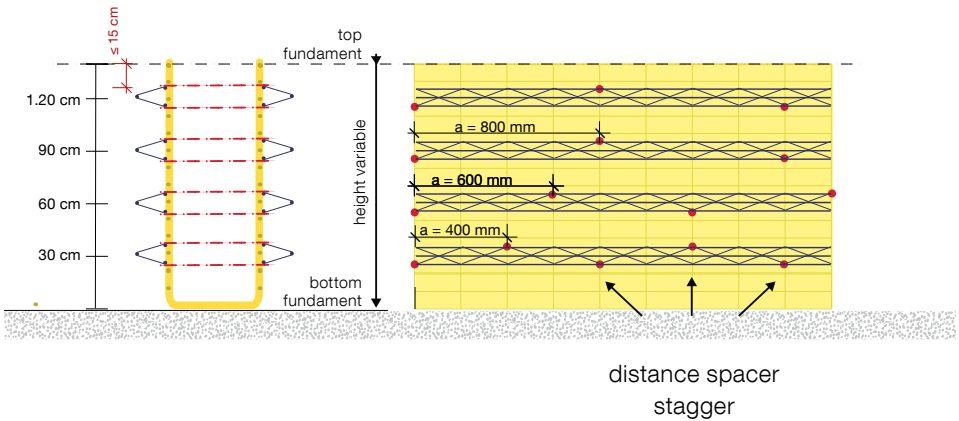


For this type of beam connections the cut-out flaps are fixed from the outside to the ground beams to be connected.
This guarantees a stable connection.

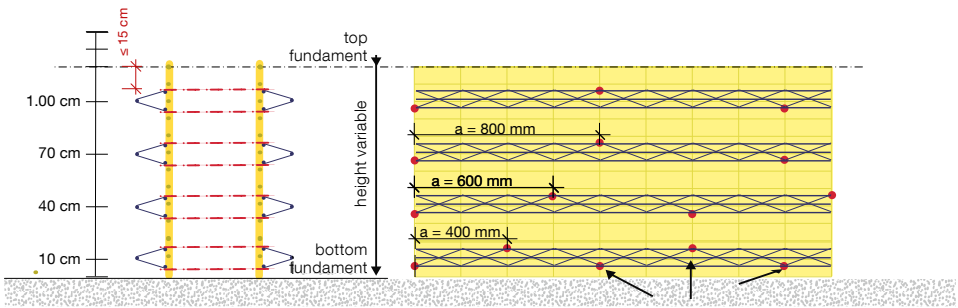


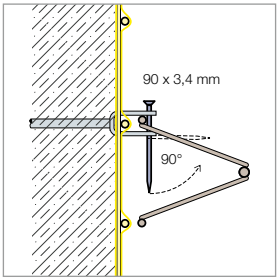
Intersection of formwork systems consisting of Pecafil® strips with different heights – position connecting pieces to the appropriately bent flaps and connect.

Distance spacer arrangement with U-shaped formwork

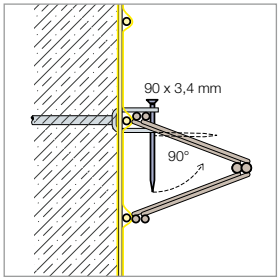


Distance spacer arrangement with two seperate panels



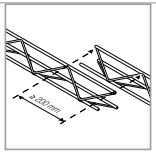


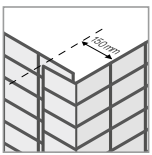
Fixing of formwork girder after pre-assembly of Pecafil® with nails. Ensure that Pecafil® distance spacers do not come into direct contact with the beam cage.

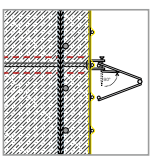


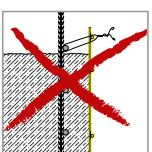
Fixing with a nail in the intersection area of the formwork girders (overlap: at least 200 mm). Lock the nail by bending.

- Formwork girders must be installed with a minimum overlap of 200 mm.
- Distance Pecafil® spacers at 800 mm alternating between upper and lower girder main wires (for exact distances see page 69).
- Bend Pecafil® at intersections.
  Take care of a minimum overlap of 150 mm of Pecafil® sheets.
  Securely fix elements to each other at lap joints.
- Ensure that Pecafil® distance spacers do not come into direct contact with the beam cage.
- Pecafil® sheets must not be tied to the reinforcement.
- Concreting must be done by specialists only.
- Pour in concrete vertically and at continuous speed into all ground beams. Observe a maximum height of fall of 300 mm during concrete pouring.





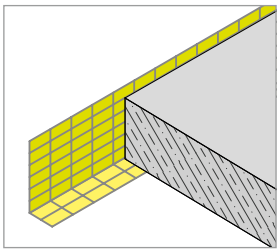




L-shaped formwork bases and slabs

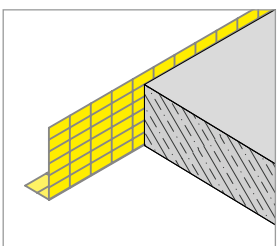
Angle inside

Lost formwork
(Example: corner formwork base slab)

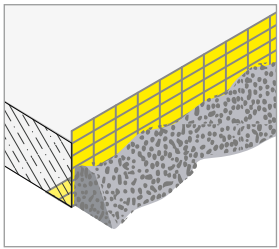


Angle outside

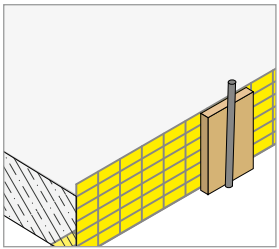
Reusable formwork
(Example: corner formwork base slab)



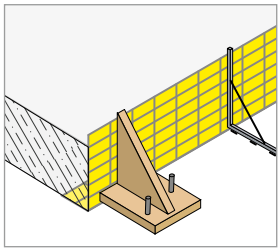
Backfilling (toe-in)

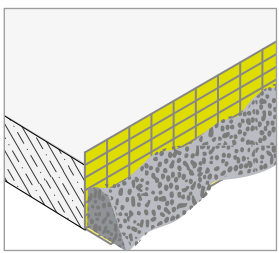


Support posts

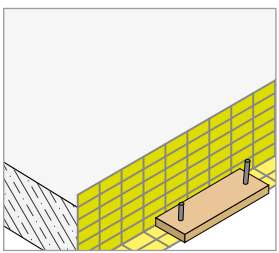


External angle



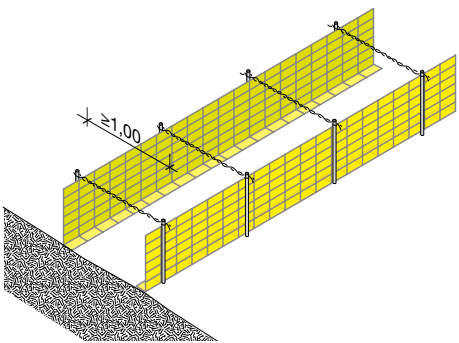


Backfilling (toe-out)

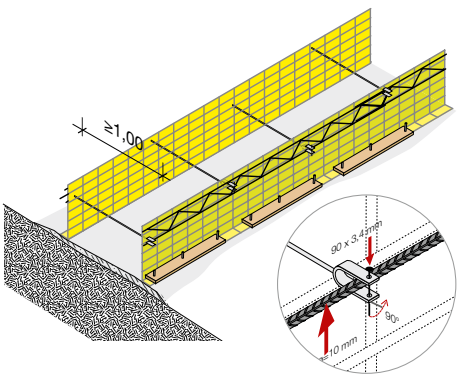


Anchor board

For large foundations and in case of frequently changing ground beam cross sections or projecting ground beams, two Pecafil® L-formworks can be used instead of one U-shaped formwork.

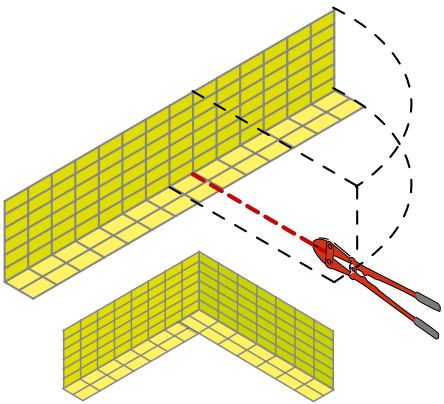


Pecafil® is reusable if it is used for an outside L-angle. We would recommend fixing the material on a pre-concreted granular sub-base.



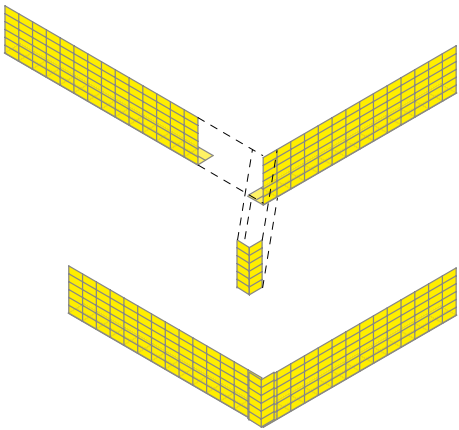
Corner sections with L-shaped formwork

Cut in element base at desired spot using a bolt cutter and subsequently bend to the desired position.



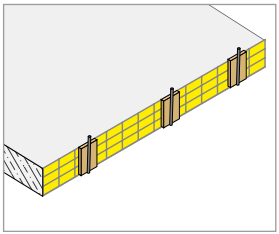
Bent corner element.

Push and tie L-elements together

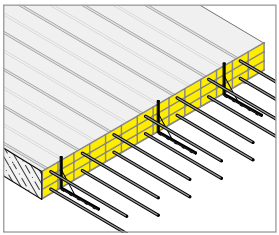


Tie the bent corner angle section to L-elements with overlap.

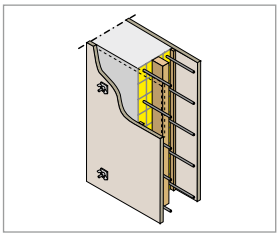
Formwork stop-end with and without continuous reinforcement



Formwork produced for one concrete pour without continuous reinforcement.



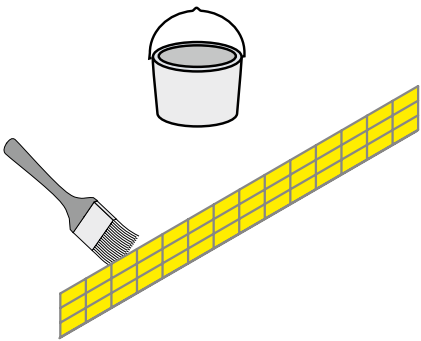
Formwork produced for one concrete pour with continuous reinforcement.

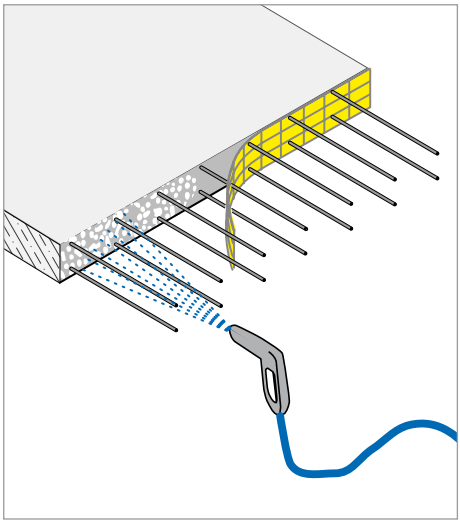


Formwork produced for one concrete pour inside a wall.

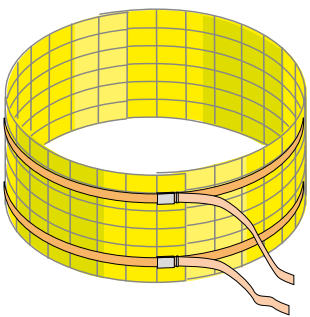
Joints for exposed aggregate concrete

The application of an inhibitor to Pecafil® creates an optimum bond to the adjoining concrete layer.

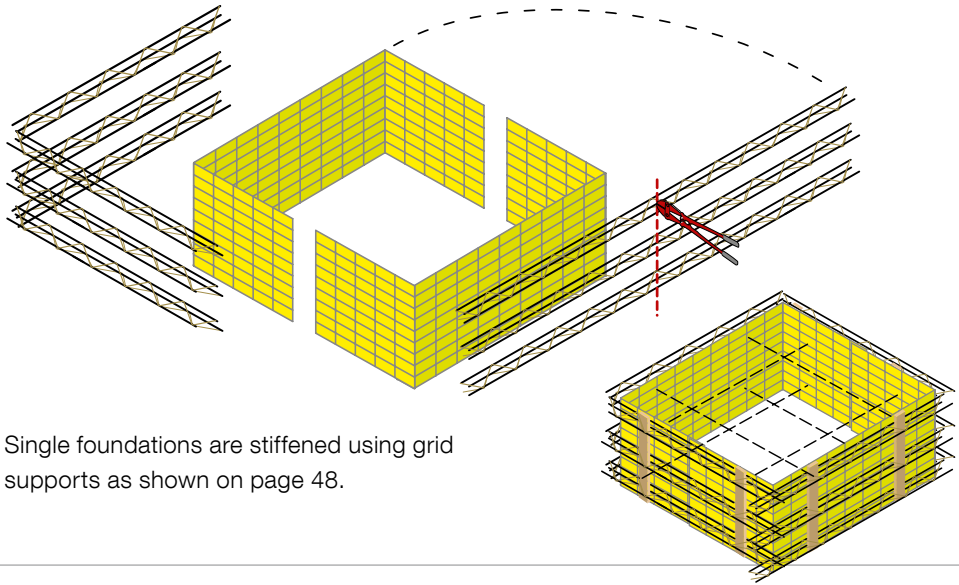




Circular formwork is produced from flat material, which is folded to the desired round shape in our factory.
Circular formwork elements are stiffened using lashing straps or similar.



Rectangular arrangement of single foundations made of flat material

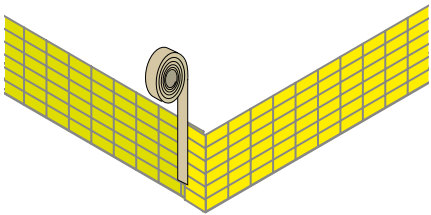


Single foundations are stiffened using grid supports as shown on page 48.

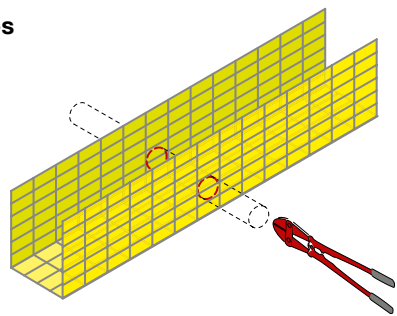
Sealing of overlaps

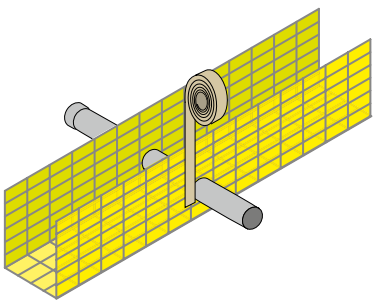
If required:

Overlaps are sealed with a wide adhesive tape order to avoid any leakage of cement laitance.



Liner pipes

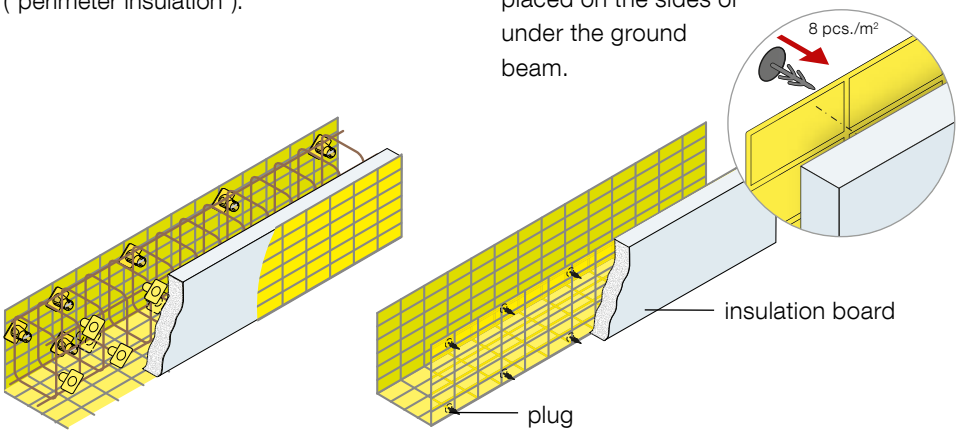




Ground beams with heat insulation

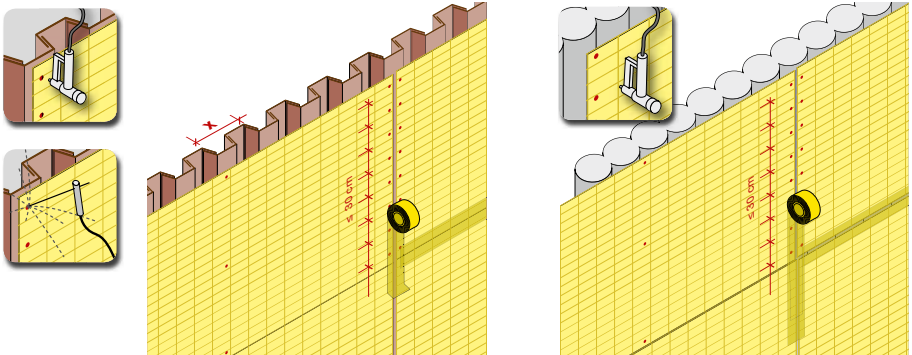
Pecafil® may be securely glued to insulation board using a polyurethane hybrid glue or other insulation materials (“perimeter insulation”).

Pecafil® can also be used in ground heave applications where a specified compressible material should be placed on the sides or under the ground beam.



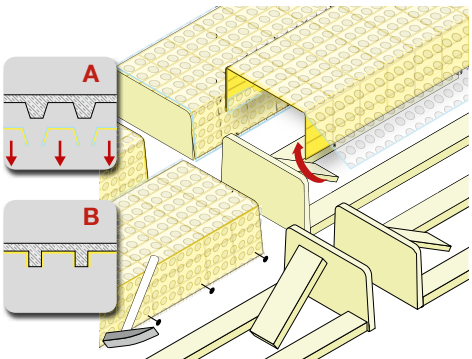
Partition formwork

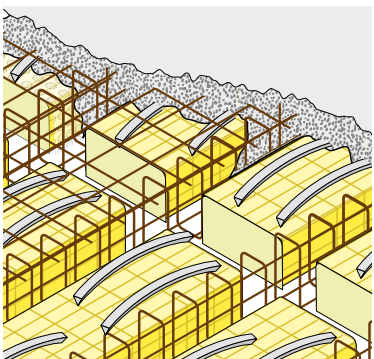
The mounting depends on the substructure. In the case of drilled piles, Pecafil® is mechanically fixed on and for sheet piling it is welded on. The connection of the panels to each other by means of welding the horizontal bars is particularly useful for sheet piling to be extracted later on.



Ribbed slabs

The displacement elements are laid on continuous formwork. Stress bars that are nailed to the substructure provide longitudinal reinforcement. The U-bent Pecafil displacement elements are cut to length using a knife for the foil and a bolt cutter for the wire insert or using an angle cutter.





Protective clothing:

Gloves must be used for transport and handling of Pecafil®. Suitable clothing must be worn to avoid cuts to limbs.

Special precautions:

Work practices:
Storage – to be in a fenced compound or the material should be weighted down to prevent wind dispersal.

Handling – a clear field of vision to be maintained when carrying and care to be taken when placing material in windy and / or confined working spaces.
Remove all offcut wire from work areas to avoid stumbles, slippage and skin puncture.
Keep site traffic away from the excavation of the ground beams made of Pecafil® strips.

- Our technical project office will be delighted to provide you with more detailed information for individual projects. Our technical sales managers can also advise installers on site.
- The individual elements are marked and they can be clearly identified with an installation schedule in order to facilitate installation.
- This installation schedule is enclosed in every Pecafil® delivery consignment.
- For questions or special application kindly get in contact with our technical project office.

MAX FRANK®

BUILDING COMMON GROUND

Max Frank GmbH & Co. KG
Mitterweg 1
94339 Leiblfing
Germany

Tel. +49 9427 189-0
Fax +49 9427 1588

info@maxfrank.com
www.maxfrank.com

Diese Montageanleitung kann nur als Empfehlung gelten. Sie ersetzt nicht das für die Montage erforderliche Fachwissen. Die Anleitung wird stets auf dem neuesten Stand der Technik gehalten und wird ständig aktualisiert. Technische Änderungen sind daher - auch ohne vorherige Information des Kunden - ausdrücklich vorbehalten. Die jeweils gültige Version ist auf unserer Homepage unter: www.maxfrank.de zu finden. Ergänzend gelten unsere Allgemeinen Verkaufsbedingungen.

This Installation Guideline is a condensed description of factors having a direct effect on the performance of the MAX FRANK product and is based on the present state of the art. It may be necessary to alter these recommendations, as more information becomes available. Correct use is the responsibility of the user, if in doubt please consult your local supplier. The German version of this legal notice is legally binding. The English translation is only for a better understanding.

205EA01/01-
INT/DE/GB-12/15