

Schlüter®-BEKOTEC-EN 12 FK

Covering assembly

Thin layer bonded covering assembly
for renovation projects

9.5

Product data sheet

Application and function

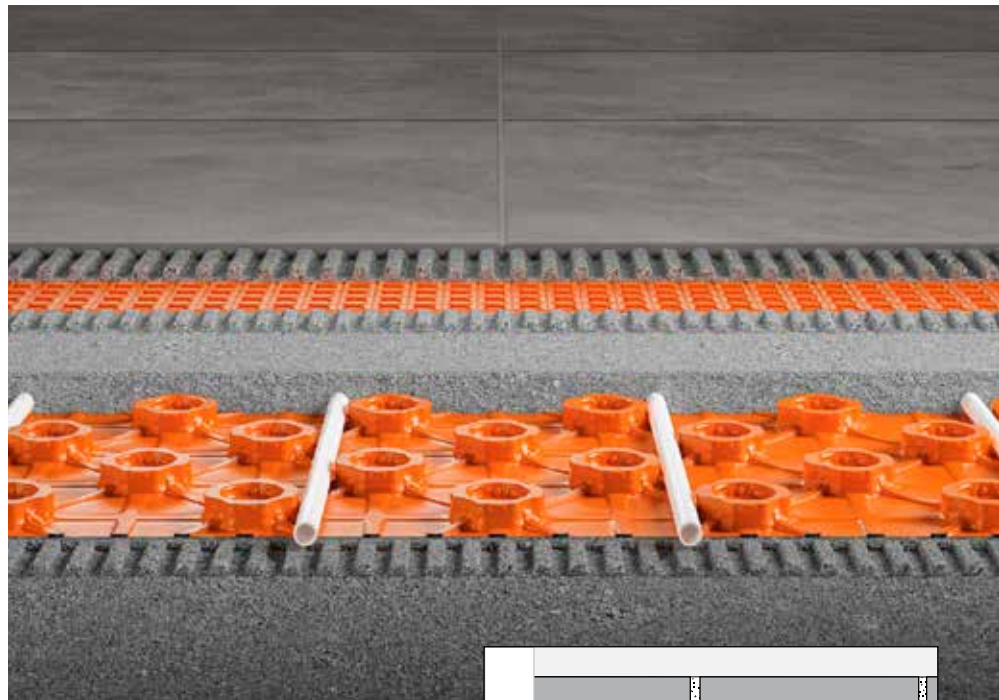
The reliable **Schlüter-BEKOTEC-EN 12 FK** covering assembly technology is a system for crack-free and functionally safe floating and heated screeds, with coverings made of ceramic tiles, natural stone, and other covering materials.

The bonded assembly is installed directly on load bearing, weight-distributing substrates, such as concrete, existing screeds or wooden ceiling structures. The thin-set mortar must be suitable for the corresponding substrate according to manufacturer specifications. The suitability of the substrate for heating purposes has to be verified (movement joints, edging strips, etc.).

This system is based on the studded screed panel BEKOTEC-EN 12 FK with anchoring fleece on the underside. The geometry of the BEKOTEC-EN 12 FK studded panel dictates a minimum screed layer thickness of 20 mm between the studs and 8 mm above the studs. The stud spacing allows for clamping the heating pipes of the system, which have a 10 mm diameter, in a 50 mm grid to produce a heated screed.

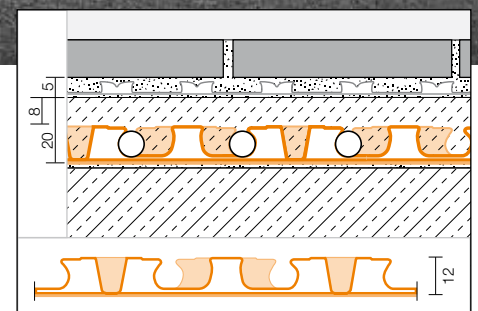
Since only a relatively small amount of screed has to be heated or cooled (with a coverage of 8 mm, approx. 40 kg/m² \approx 20 l/m²), the floor heating system is easily adjustable and ideally suited for operation at low supply temperatures.

Any contraction occurring while the screed cures is absorbed by the studded pattern. As a result, stresses from contraction buckling cannot affect the entire area, and it is not necessary to install movement joints in the screed. Once the cement screed is ready to support weight, the uncoupling mat Schlüter-DITRA (alternatively, Schlüter-DITRA-DRAIN 4 or Schlüter-DITRA-HEAT) can be installed (gypsum based screed



≤ 2 CM-%). Ceramic tiles or natural stone can then be installed directly over this layer, using the thin bed method. Movement joints in the covering layer have to be created with Schlüter-DILEX in the customary spacing. Covering materials that are not susceptible to cracking, such as parquet or carpeting, are directly installed over the screed as soon as it reaches the appropriate residual moisture level.

Further information can be found in our Technical Manual.





Material

Schlüter-BEKOTEC-EN 12 FK is made of high impact structured polystyrene with an anchoring fleece and is suited for use with conventionally applied cement or gypsum screeds as well as flowing screed.

Installation

1. Install Schlüter-BEKOTEC-EN 12 FK as a bonded assembly by adhering the anchoring fleece on the underside to a load bearing and level substrate. The substrate must be free of components that may inhibit bonding, load bearing and levelling. Any necessary levelling work must be completed before installing BEKOTEC-EN 12 FK.

The selection of the adhesive for installing BEKOTEC-EN 12 FK depends on the substrate. The adhesive must bond with the substrate and mechanically attach to the BEKOTEC-EN 12 FK anchoring fleece. A dry setting cementitious tile adhesive can be used for most substrates. Review any potential material incompatibilities beforehand. Apply cementitious tile adhesive on the substrate with a notched trowel (recommended size: 6 x 6 mm).

2. Cover the edges of the covering at rising walls or structural elements with the 8 mm edging strip Schlüter-BEKOTEC-BRS 808 KSF. The adhesive leg integrated into the edging strip features a self-adhesive strip on the underside for attachment. The edging strip is pressed toward the wall by the adhesion on the substrate and the pre-tensioning of the integrated foil leg. When the studded BEKOTEC panel is adhered to top of the adhesive leg, the panel bonds with the substrate and flowing screed can no longer flow underneath the panel.
3. Fully embed the studded panels BEKOTEC-EN 12 FK in the adhesive, creating a bond with the anchoring fleece. The curing time of the adhesive must be observed. The BEKOTEC-EN 12 FK studded panels must be precisely cut to size in the edge areas. Connect the BEKOTEC panels by overlapping a row of studs (see picture).

In threshold areas and near distributor boxes, the smooth levelling panel Schlüter-BEKOTEC-ENFGK may be used to simplify the pipe installation. It is adhered by bonding the anchoring fleece on its underside to the load bearing and level substrate. If necessary, use the supplied double sided adhesive strip to attach the studded panels to the levelling panel. The self-adhesive pipe clamping strip Schlüter-BEKOTEC-ZRKL 10/12 enables precise pipe layout in these areas.

4. Once the cementitious tile adhesive has fully cured, clamp the system pipes with a diameter of 10 mm between the cutback studs to create a Schlüter-BEKOTEC-THERM floor heating system. The spacing of the pipes must be determined based on the required heating output, as shown in the BEKOTEC heating diagrams.
5. As part of the screed installation, install fresh cement screed of screed quality CT-C25-F4, max. F5, or gypsum based screed CA-C25-F4, max. F5, over the studded panels with a minimum screed cover of 8 mm (recommended aggregate size 0-4 mm). The layer thickness can be partially increased to up to 15 mm for levelling.



Re 3.



Re 3.

Suitable flowing screeds CAF/CTF with the corresponding specifications may be used as well. Observe the system approval for this application.

Note: Please contact our Technical Department in advance to discuss different screed properties for specific projects.

To prevent impact sound transmission between two rooms, separate the screed in the relevant places with the expansion joint profile Schlüter-DILEX-DFP.

6. The Schlüter-DITRA uncoupling mat (or alternatively, Schlüter-DITRA-DRAIN 4 or Schlüter-DITRA-HEAT) can be installed in accordance with the installation instructions of product data sheets 6.1 (alternatively: 6.2 or 6.4) as soon as the screed is ready to bear weight. The uncoupling mat can be installed over gypsum based screeds as soon as they have reached a residual moisture level of 2 CM % or less.
7. Install the corner movement profile Schlüter-DILEX-EK or -RF as a flexible perimeter movement joint in the area of the floor-wall transition (see product data sheet 4.14). Cut off the protruding part of the edging strip BEKOTEC-BRS 808 KSF in advance.
8. If the BEKOTEC-THERM ceramic thermal comfort floor is to function as a floor heating system, the full covering assembly is ready for heating only 7 days after completion. Start from a water temperature of 25 degrees C and increase the supply temperature by no more than 5 degrees C a day until the desired usage temperature has been reached.
9. Covering materials that are not susceptible to cracking (e.g. parquet, carpet or vinyl coverings) can be installed without the uncoupling mat, directly on top of the BEKOTEC screed. The screed thickness must be adjusted to the relevant material thicknesses.
Note: In addition to the applicable installation guidelines, the permissible residual moisture level of the screed must be observed for the selected covering material. For detailed installation instructions in conjunction with non-ceramic surface coverings, please refer to our technical manual for Schlüter-BEKOTEC-THERM or contact our Technical Department.



Notes

Schlüter-BEKOTEC-EN 12 FK, -ENFGK, and -BRS do not rot and require no special maintenance or care. Before and during the installation of the screed, the studded panel may need to be protected from mechanical damage with suitable measures, such as laying out wooden boards.

Screed coverage over Schlüter-BEKOTEC-EN 12 FK for various covering types

Schlüter®-BEKOTEC-THERM-EN 12 FK					
Screed coverage and maximum traffic loads for various surface coverings					
Ceramic coverings	(a)	Max. traffic load q_k according to DIN EN 1991	Max. individual load Q_k according to DIN EN 1991	System coverage with conventional screeds (b)	Total thickness of BEKOTEC assembly (c)
Floor covering					
	Ceramic tile/ natural stone	5.0 kN/m ²	3.5 - 7.0 kN	8 – 15 mm	25 – 32 mm
	Soft coverings: PVC, vinyl, linoleum, carpet, cork	2 kN/m ²	2.0 - 3.0 kN	15 mm	27 mm
Adhered parquet without tongue and groove connection	5.0 kN/m ²	3.5 - 7.0 kN	15 mm	27 mm	
Adhered parquet with tongue and groove connection	5.0 kN/m ²	3.5 - 7.0 kN	8 – 15 mm	20 – 27 mm	
Floating parquet, laminare	2 kN/m ²	2.0 - 3.0 kN	8 – 15 mm	20 – 27 mm	



Advantages of the Schlüter®-BEKOTEC system

■ Warranty:

Schlüter-Systems offers a five-year warranty for the usability and crack-free functionality of the covering assembly, provided the installation instructions were followed and the covering is used as intended.

■ Crack-free covering:

The BEKOTEC system is designed to reduce shearing tensions of the screed in the modular studded membrane pattern. No structural reinforcement is required.

■ Non buckling assembly:

The covering assembly built with the BEKOTEC system is free of inherent stresses when in use, which means the occurrence of buckling in the area can virtually be ruled out. This applies in particular to stresses resulting from temperature fluctuations, e.g. in heated screeds.

■ No screed joints:

No expansion joints are needed in the screed since the BEKOTEC system evenly distributes any shearing tension in the screed across the entire area.

■ Movement joints in the joint pattern of the tile or paver covering:

The BEKOTEC system allows for adapting the design of movement joints to the selected joint pattern of the covering for tile or paver coverings since expansion joints from the screed do not have to be continued into the top covering. Only the general rules on the sizes of covering fields need to be followed.

■ Short construction time:

The uncoupling mat ensures that the screed created with the BEKOTEC system is ready for covering with ceramic tiles, natural stone or agglomerate stone as soon as the screed is ready to bear weight. Floor heating systems are ready for heating just 7 days after completion.

■ Low material requirement:

With a screed coverage of 8 mm, only approx. 40 kg/m² ± 20 l/m² screed volume is needed.

■ Fast responding floor heating system:

A covering assembly using the BEKOTEC system in conjunction with a floor heating system is able to respond to temperature changes faster than a conventional heated screed since the volume to be heated or cooled, depending on the design, is significantly smaller. That allows for operating the floor heating system in the low temperature range to save energy.

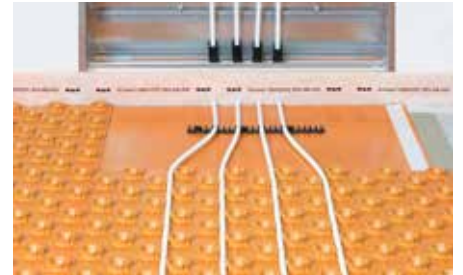


Supplementary system products

Levelling panel

The levelling panel Schlüter-BEKOTEC-ENFGK is installed on the load bearing substrate in the area of door thresholds and heating circuit distributors to simplify connections and to minimise cutting waste. It consists of smooth polystyrene foil material. If necessary, the studded panel can be secured on the levelling panel with additional strips of the double sided adhesive tape BEKOTEC-BTZDK 66.

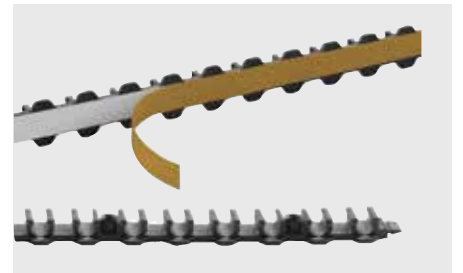
Dimensions: 1100 x 700 mm



Pipe clamping strip

Schlüter-BEKOTEC-ZRKL 10/12 is a pipe clamping strip for securing the pipes on the levelling panel. The clamping strips are self-adhesive to allow for permanent attachment on the levelling panel.

Length: 80 cm



Double sided adhesive tape

Schlüter-BEKOTEC-BTZDK 66 is a double sided adhesive tape for adhering the studded panel to the levelling panel or to the substrate if necessary.

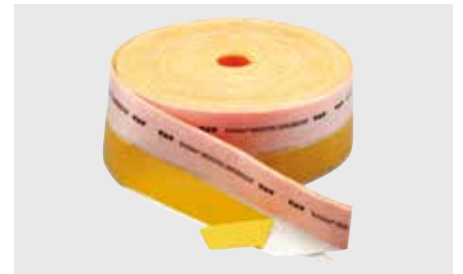
Roll: 66 m, height: 30 mm, thickness: 1 mm



Edging strip

Schlüter-BEKOTEC-BRS 808 KSF is an edging strip of closed cell polyethylene foam with an integrated adhesive leg that features an adhesive strip on both sides for attachment. The edging strip is pressed toward the wall by the adhesion on the substrate and the pre-tensioning of the integrated foil leg. When the studded BEKOTEC panel is placed on top of the adhesive leg, the panel bonds with the substrate and flowing screed can no longer flow underneath the panel.

Roll: 25 m, height: 8 cm, thickness: 8 mm

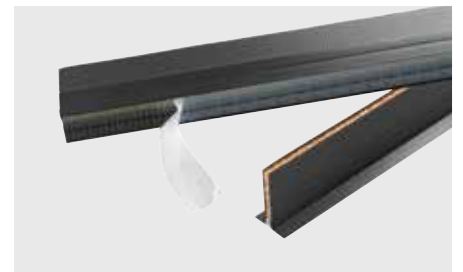


Flexible movement joint

Schlüter-DILEX-DFP is an expansion joint profile for installation in door threshold areas to prevent sound bridges. Due to the bilateral coating and the self-adhesive strip, straight line installation is very easy.

Length: 1.00 m, height: 60 / 80 / 100 mm, thickness: 10 mm

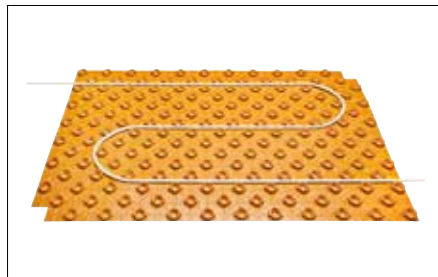
Length: 2.50 m, height: 100 mm, thickness: 10 mm





Technical data

1. Stud size: approx. 44 mm
 Installation spacing: 50, 100, 150 mm ...
 Diameter of system heating pipes:
 ø 10 mm
 The studs have a cutback design to securely keep heating pipes in place without the need for clamps.
2. Connections:
 The studded panels are connected by overlapping a row of studs and clicking the panels together.
3. Working area: 1.1 x 0.7 m = 0.77 m²
 Panel height: 12 mm
4. Packaging: 10 units/carton = 7.7 m²
 Carton dimensions are approx.
 1160 x 800 x 80 mm.



Product overview:

Schlüter®-BEKOTEC-EN 12 FK

Studded screed panel	Dimension	Packaging
EN 12 FK	1.1 x 0.7 m = 0.77 m ² Working area	10 units (7.7 m ²)/carton

Schlüter®-BEKOTEC-BRS

Edging strip	Dimension	Roll
BRS 808 KSF	8 mm x 80 mm	25 m

Schlüter®-BEKOTEC-ENFGK

Levelling panel	Dimension
EN 12 FGK	1100 x 700 mm

Schlüter®-BEKOTEC-ZRKL

Pipe clamping strip	Dimension
BTZRKL 1012	800 mm x 25 mm

Schlüter®-BEKOTEC-ZDK

Double sided adhesive tape	Dimension	Roll
BTZDK66	30 mm x 1 mm	66 m

Schlüter®-DILEX-DFP

DFP = expansion joint profile Supplied length 1.00 m

H = mm	Packaging
60	20 units
80	20 units
100	20 units

Schlüter®-DILEX-DFP

DFP = expansion joint profile Supplied length 2.50 m

H = mm	Packaging
100	40 units



Text template for tenders:

_____m² Schlüter-BEKOTEC-EN 12 FK as a studded panel for bonded screed, made of structured polystyrene with undercut, 12 mm studs and an anchoring fleece on the underside. The heating pipes can be installed in a spacing pattern of 50, 100, 150 ... mm. The stud pattern on the edge has an interlocking design to connect panels, with a working area of 1.1 m x 0.7 m = 0.77 m², to be professionally installed, including cuts in the edge area, if necessary with the use the levelling panel Schlüter-BEKOTEC-ENFGK.

The manufacturer's specifications must be observed.

Material: _____ /m²
 Labour: _____ /m²
 Total: _____ /m²

___ linear metres of Schlüter-BEKOTEC-BRS 808 KSF as an edging strip made of closed-cell polyethylene foam, 8 mm thick and 80 mm high, with a self-adhesive leg on both sides, to be adhered to rising walls or fixed structural components. The adhesive leg of the edging strip must be installed below the studded screed panel and bond with the underside of the studded panel.

The manufacturer's specifications must be observed.

Material: _____/m
 Labour: _____/m
 Total: _____/m

_____linear metres of Schlüter-DILEX-DFP as an expansion joint profile of closed cell polyethylene foam, lateral rigid plastic coating, 10 mm thick and with a self-adhesive leg, to be installed in the door threshold area.

The manufacturer's specifications must be observed.

Height: 60 mm 80 mm 100 mm
 Material: _____/m
 Labour: _____/m
 Total: _____/m

___ linear metres of Schlüter-BEKOTEC-THERM-HR as a heating pipe 10 x 1.3 mm, quality-controlled, of high-quality PE-RT plastic, with high temperature resistance, very flexible for optimised installation in the BEKOTEC studded screed panels, to be supplied and professionally installed.

The manufacturer's specifications must be observed.

Type: _____ Art.-No.: _____
 Material: _____ /m
 Labour: _____/m
 Total: _____/m

_____m²

- Cement screed of strength class CT-C25-F4 (ZE 20)
 - conventional installation
 - flowing screed
- Gypsum based screed of strength class CA-C25-F4 (AE 20)
 - conventional installation
 - flowing screed
 - equivalent screeds

with a minimum coverage of 8 mm over the studs of the polystyrene panel Schlüter-BEKOTEC-EN without joints, to be compacted and levelled. Sound bridges at wall transitions or fixed structural components as well as in door transitions must be avoided.

The manufacturer's specifications must be observed.

Material: _____ /m²
 Labour: _____ /m²
 Total: _____ /m²



Text template for tenders
 can be found at www.schluter.co.uk



