

Energy efficient. Comfortable. Dependable.

Schlüter®-BEKOTEC-THERM /-BEKOTEC



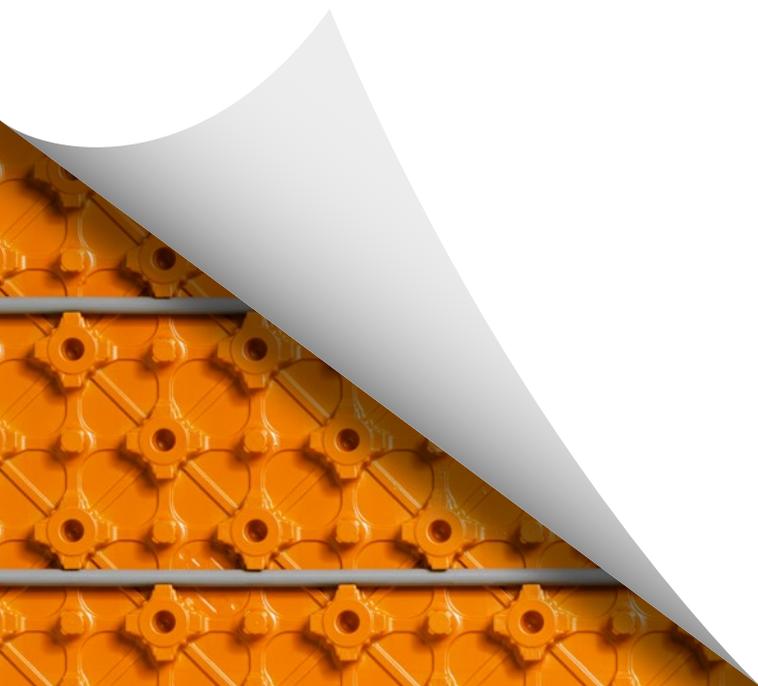


# Welcome to the Schlüter®-BEKOTEC product family

Schlüter-BEKOTEC-THERM combines ecologically sound heating technology with hygiene and comfort. The patented floor assembly, which combines a low assembly height with innovative heating and control technology, creates an energy and cost-efficient, highly responsive thermal comfort floor with especially low supply temperatures. But that is not all – the quick and easy handling of the ceramic thermal comfort floor offers many benefits even during installation.

Whether ceramic tiles, natural stone or other floor coverings, BEKOTEC-THERM is always the right choice. To make the installation process even faster, we now offer peel-and-stick product variants as well!

BEKOTEC even keeps your outdoor coverings safe. BEKOTEC-DRAIN is the perfect substrate for installing appealing tile or natural stone coverings on your balcony or terrace.



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# FOCUS ON – Saving energy with ceramic tiles



## Ceramic thermal comfort floor

Discussions about energy-efficient constructions tend to primarily focus on economical heating and insulating the external envelope of buildings. Many analysts wrongly overlook the factor of heat dissipation. In fact, efficient, large-scale heat dissipation and distribution has become a key factor in energy-saving construction in addition to renewable energy sources and modern insulation systems. This brochure shows you

how you can turn your floor into a highly effective heating system with the thin-layer Schlüter-BEKOTEC-THERM system. BEKOTEC-THERM combines ecologically sound heating technology with hygiene and comfort. The patented floor assembly, which combines a low assembly height with innovative heating and control technology, creates an energy and cost-efficient, highly responsive thermal comfort floor with espe-

cially low supply temperatures. But that is not all – the quick and easy handling of the ceramic thermal comfort floor offers many benefits even during installation.



**Note**  
BEKOTEC-THERM is also suited for other surface coverings such as parquet!



## Advantages of Schlüter®-BEKOTEC-THERM

You will love it



### Easy

The installation of Schlüter-BEKOTEC does not require complex components or expensive construction materials. All you need is simple technology, proven for decades. You can start heating the screed just 7 days after installing the ceramic/natural stone tile covering. Depending on the supply temperature, the heat curing phase only takes 2–3 days (start with a water temperature of 25 °C, then gradually increase the temperature by up to 5 °C a day until the supply temperature has been reached).



### Easy

The BEKOTEC system does not require joints in the screed (except for structural expansion joints etc.). The control joints in the top covering specified by the relevant guidelines can therefore be positioned independent of the screed. That eliminates unsightly joints in the tile pattern and creates results that speak for themselves.



### Safe

Are you planning to install a ceramic tile covering? Great! Schlüter-BEKOTEC keeps ceramic coverings permanently crack-free – starting from tile formats of 5 x 5 cm, without any size limitation. That means you can safely install and maintain stylish large formats free of damage. Another advantage: screeds over BEKOTEC do not curl or buckle, which relegates torn skirting joints to the past.



### Sustainable

Due to its low assembly height, the BEKOTEC-THERM system can be operated with low supply temperatures. That makes it an excellent fit for combined use with sustainable, modern heat pumps. As an added benefit, the lower screed volume also decreases the consumption of resources such as sand and cement, which significantly lowers the ecological footprint.



### Quick

If using conventional cementitious screed and ceramic tile coverings, there is no need to measure or reach specific residual moisture levels. Your tile installation can start as soon as the screed is ready to bear weight. Without complex and expensive special construction materials, your customer will be able to move in up to 28 days earlier. That saves time and money.



### System warranty

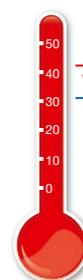
Schlüter-Systems KG offers an expanded, project-specific warranty for users of the BEKOTEC floor covering assembly. It includes sufficient weight bearing ability and cracks forming in coverings made of ceramic tiles, natural stone or agglomerated stone. To qualify for the warranty, BEKOTEC systems must be installed in accordance with the relevant product data sheets and the specifications of Schlüter-Systems KG. Do you have any questions? Our sales team will be pleased to assist you!

E-Mail: [sales@schluter.co.uk](mailto:sales@schluter.co.uk) or Tel.: 01530 813396

## Cost and energy efficient ...



The supply temperature is the temperature of the medium that transfers heat to the ceramic thermal comfort floor (for instance, water). The supply temperature level depends on the heat dissipating surfaces and the heat requirements of each space. In conventional systems, this temperature used to be 70–90 °C. With its low supply temperature around 30 °C, Schlüter-BEKOTEC-THERM is the ideal partner for combination with heat pumps and solar technology, with sufficient excess energy to heat utility water for your bathroom and kitchen. As an additional benefit, the control technology continuously adjusts to fluctuating operating conditions to optimise the system energy consumption. A practical scientific test conducted by ITG Dresden has documented that BEKOTEC-THERM can save up to 9.5 % of energy compared to conventional floor heating systems.



conventional  
 ↓ Schlüter®-BEKOTEC-THERM  
 Cost savings up to 9.5 %





## The insulated type

Schlüter®-BEKOTEC-EN-P/-PF

- ✓ **Assembly heights: 52–69 mm (plus DITRA uncoupling mat)**
- ✓ **With integrated 20 mm heat insulation**
- ✓ **Can be combined with additional insulation materials**
- ✓ **Weight per unit area: from 57 kg/m<sup>2</sup>**
- ✓ **Installation grid: 75 mm**
- ✓ **Heat output: up to 100 W/m<sup>2</sup>**

## Your options with BEKOTEC-EN-P/-PF

Schlüter-BEKOTEC-EN-P/-PF is a polystyrene studded screed panel which is directly installed on top of a load bearing substrate or on conventional heat insulation and/or sound insulation panels. The stud spacing allows for clamping the heating pipes of the system, which have a 16 mm diameter, in a 75 mm grid to produce a heated screed. The panels create ideal conditions for creating crack-free and functionally safe floating screeds with coverings such as ceramic tile or natural stone as well as parquet, vinyl, linoleum and laminates.

### Application areas

- Renovation
- New construction
- Residential and commercial
- Large-scale areas

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Screeds
- Wooden substrates
- Suitable insulation layers

Learn more online and on YouTube





## The all-round talent

Schlüter®-BEKOTEC-EN-F



- ✓ Studded sheet with 70% recycled material content
- ✓ Assembly heights: 31–48 mm (plus DITRA uncoupling mat)
- ✓ Without insulation; can be combined with insulation materials
- ✓ Weight per unit area: from 57 kg/m<sup>2</sup>
- ✓ Installation grid: 75 mm
- ✓ Heat output: up to 100 W/m<sup>2</sup>

## Your options with BEKOTEC-EN-F

The studded screed panel Schlüter-BEKOTEC-EN 23 F made of impact resistant polystyrene foil is directly installed on top of a load bearing substrate or on conventional heat insulation and/or sound insulation panels. The stud spacing allows for clamping the heating pipes of the system, which have a 14 mm diameter, in a 75 mm grid to produce a heated screed. The panels are the ideal basis for creating crack-free and functionally safe floating screeds and heated screeds with coverings made of ceramic tile, natural stone or other materials.

### Application areas

- Renovation
- New construction
- Residential and commercial
- Large-scale areas

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Screeds
- Wooden substrates
- Suitable insulation layers

Learn more online and on YouTube





## The all-round talent – now in a self-adhesive version too

Schlüter®-BEKOTEC-EN-F-PS

- ✓ Quick, simple and clean installation
- ✓ Lift and reposition mats that are not under pressure
- ✓ Peel-and-stick technology is suitable for 14 mm and 16 mm heating pipes
- ✓ Studded sheet with 70% recycled material content
- ✓ Assembly heights: 31–48 mm (plus DITRA uncoupling mat)
- ✓ Without insulation; can be combined with insulation materials
- ✓ Weight per unit area: from 57 kg/m<sup>2</sup>
- ✓ Installation grid: 75 mm
- ✓ Heat output: up to 100 W/m<sup>2</sup>

## Your options with BEKOTEC-EN-F-PS

Schlüter-BEKOTEC-EN-F 23 PS is a studded screed panel made of high impact polystyrene, designed for the attachment of Schlüter heating pipes (Ø 14/16 mm) with a self-adhesive backing. The studded panel is installed on suitable substrates after peeling off the release film. A minimum coverage of 8 mm (max. 25 mm) and using a commercial screed ensure that system coverings made of ceramic tile and natural stone remain permanently crack-free.



### Application areas

- Renovation
- Residential and commercial

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Suitable insulation layers
- Screeds
- Wooden substrates
- Existing, load bearing coverings

Learn more online and on YouTube





## The quiet type

### Schlüter®-BEKOTEC-EN-FTS

- ✓ Studded sheet with 70% recycled material content
- ✓ Assembly heights: 31–43 mm (plus DITRA uncoupling mat)
- ✓ Integrated impact sound insulation up to 25 dB
- ✓ Weight per unit area: from 52 kg/m<sup>2</sup>
- ✓ Installation grid: 50 mm
- ✓ Heat output: up to 100 W/m<sup>2</sup>

## Your options with BEKOTEC-EN-FTS

The studded screed panel Schlüter-BEKOTEC-EN 18 FTS features an integrated 5 mm sound insulation layer and is installed directly on the load bearing substrate. An impact sound improvement of 25 dB in acc. with DIN EN ISO 717-2 has been measured for the system. The stud spacing allows for clamping the heating pipes of the system, which have a 12 mm diameter, in a 50 mm grid to produce a heated screed. The system is directly installed on weight bearing, load distributing substrates such as concrete or wooden ceiling structures as a floating assembly to ensure crack-free and functional floating screeds and heated screeds and to reduce impact sound.

### Application areas

- Renovation
- Residential and commercial

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Screeds
- Wooden substrates
- Existing, load bearing coverings

Learn more online and on YouTube





## The lightweight type

Schlüter®-BEKOTEC-EN-FK

- ✓ Studded sheet with 70% recycled material content
- ✓ Assembly heights: 20–27 mm (plus DITRA uncoupling mat)
- ✓ Adhered to substrate
- ✓ Weight per unit area: from 40 kg/m<sup>2</sup>
- ✓ Installation grid: 50 mm
- ✓ Heat output: up to 100 W/m<sup>2</sup>

## Your options with BEKOTEC-EN-FK

Schlüter-BEKOTEC-EN 12 FK is a studded screed panel with an anchoring fleece laminated on the underside, which is installed directly on load bearing, weight-distributing substrates, such as concrete, existing screeds or wooden ceiling structures, using the thin-bed method. 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. This results in an especially thin bonded assembly that enables crack-free and functionally safe screeds and heated screeds with coverings made of ceramics, natural stone, and other materials.

### Application areas

- Renovation
- Residential and commercial

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Screeds
- Wooden substrates
- Existing, load bearing coverings

## Learn more online and on YouTube





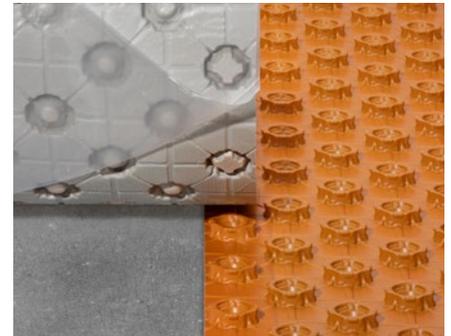
## The lightweight type – now in a self-adhesive version too

Schlüter®-BEKOTEC-EN-FK-PS

- ✓ Quick, simple and clean installation
- ✓ Lift and reposition mats that are not under pressure
- ✓ Studded sheet with 70% recycled material content
- ✓ No thin-bed mortar needed, which eliminates curing
- ✓ Assembly heights: 20 – 27 mm (plus DITRA uncoupling mat)
- ✓ Weight per unit area: from 40 kg/m<sup>2</sup>
- ✓ Installation grid: 50 mm
- ✓ Heat output: up to 100 W/m<sup>2</sup>

## Your options with BEKOTEC-EN-FK-PS

Schlüter-BEKOTEC-EN-FK-PS is a studded screed panel made of high impact polystyrene with a self-adhesive backing. The studded panel is installed on suitable, weight bearing substrates after peeling off the release film. The cut back studs hold the heating pipe in a defined pattern (50 mm grid). The BEKOTEC panels are connected by overlapping a row of studs and clicking the panels together. A minimum coverage of 8 mm (max. 15 mm), using a commercial screed of quality CT-C25-F4 (ZE 20) or CA-C25-F4 (AE 20) and the BEKOTEC-THERM-HR heating pipes ensure that system coverings made of ceramic tile and natural stone remain permanently crack-free. Please refer to our Technical Manual for coverings and installations made of alternative materials.



### Application areas

- Renovation
- Residential and commercial

### System properties

- Low assembly height
- Suited for all types of floor coverings
- Quick reacting system
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required
- Option to use for cooling

### Suitable substrates

- Concrete
- Screeds
- Wooden substrates
- Existing, load bearing coverings

Learn more online and on YouTube





© Villeroy & Boch Fliesen

## The outdoor specialist

Schlüter®-BEKOTEC-EN 23 FD

- ✓ Evenly spaced openings and interconnected drainage channels
- ✓ Reduces blooming and discolorations
- ✓ Low assembly height
- ✓ Highly durable
- ✓ Suitable for large tile sizes

## Your options with BEKOTEC-EN 23 FD

Schlüter-BEKOTEC-DRAIN is the ideal solution for creating functionally safe, thin screed assemblies in outdoor areas with ceramic tile or natural stone coverings. It also is perfect for drainage screeds. The system is based on the Schlüter-BEKOTEC-EN 23 FD specially structured studded foil panel with evenly spaced openings and interconnected drainage channels, which, depending on the construction, is either installed over a sloped waterproofing layer or over the Schlüter-TROBA-PLUS area drainage membrane.

BEKOTEC-DRAIN is suitable for all tile formats in outdoor spaces. For example, you can uniformly continue the modern large-scale tile covering of your living room on a balcony or terrace. There is no need to set up expansion joints in the screed. The movement joints in the covering layer created with Schlüter-DILEX in the customary spacing can therefore be perfectly adapted to the selected joint pattern.

### Application areas

- Renovation and new construction
- Large tile sizes
- Cantilevered balconies
- Terraces built directly on the ground
- Roof terraces

### Functions

- Low assembly height
- Material and weight savings
- Short construction time
- Low-stress assembly
- No screed joints required

### Suitable substrates / uses

- For installation over TROBA PLUS surface drainage
- Can be combined with cement-based screed and DITRA-DRAIN
- Can be combined with drainage screed

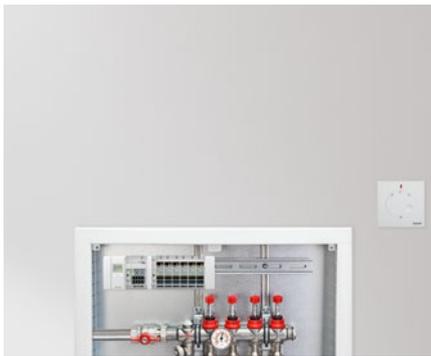
Learn more online





# High efficiency with innovative control technology

For new construction and renovation – including partial areas



Everything from a single source: The assortment of our Schlüter-BEKOTEC-THERM ceramic thermal comfort floor of course includes the necessary modern control technology. We offer various models of distributors, actuators and thermostats for operating an energy-efficient heating system. All of these products are fully eligible for subsidies.

## Flexible control technology in 3 steps



# 1

**1.1 ER/WL – room sensor, wireless**  
Room sensor for wireless temperature control. The device wirelessly transmits the current room temperature and the setpoint value to the EAR/WL connection module.

**1.2 ER – room sensor, wired**  
Room sensor for wired temperature control. The device transmits the current room temperature and the setpoint value to the EAR connection module.

# 2

**2.1 EBC – “Control” base module**  
Base unit for operating the room temperature control. The wireless and wired connection modules for the room sensors are connected to the “Control” base module, which makes it easy to realise mixed installations and upgrades as well. The base module supplies the wired room sensors with 5 V ultra-low voltage via the respective connection modules and controls the connected actuators with 230 V AC.

**2.2 EET – timer unit**  
The optional EET timer unit is used for time control of the temperature reduction (set-back). It can be removed from the “Control” base module to manually program the temperature reduction and plugged back in. A temperature reduction (set-back) of 4 °C is then effected in the cooler phases. Due to the responsiveness of the BEKOTEC-THERM ceramic thermal comfort floor, the timer unit meets the requirements for quickly controllable systems as specified in the German Energy Savings Regulation (EnEV).

# 3

**3.1**  
Orange actuators for the heating system.

**3.2**  
White actuators for the heating system.

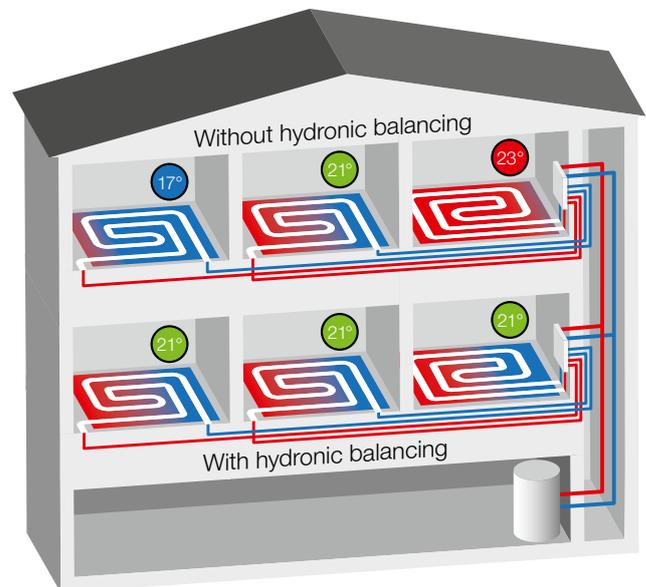
# Adaptive hydronic balancing

## Schlüter®-BEKOTEC-THERM-EAHB

The efficiency of a heating or cooling system depends largely on its hydronic balancing. Since adjustment provides every heating circuit with exactly the right supply volume, it makes the heating system especially responsive and energy efficient. Water in a heating system always uses the path of least resistance, which means it will flow more easily through short heating circuits than long ones. If this causes overly warm water to flow back to the boiler, the heat generated in the boiler can no longer be absorbed by the water and the boiler shuts off. As a result, a heating system without hydronic balancing "cycles" too much and becomes inefficient.

**There are various options for hydronic balancing. An intelligent adaptive adjustment has many advantages over the conventional static mode:**

- ✓ Continuous adjustment to fluctuating operating conditions
- ✓ Optimised cold leg temperatures
- ✓ No set point calculation for individual heating circuits
- ✓ Self-learning ability
- ✓ Simple to install
- ✓ Energy savings: 20% energy savings compared to non-adjusted systems (see also Optimus study, Wolfenbüttel Polytechnic)
- ✓ Increased comfort: No uneven room temperatures



### 2.3 EAR/WL – connection module, wireless

Modules for connecting 2 or 6 ER/WL wireless room sensors. The connection modules can simply be plugged together. This allows for easy adjustment and expanding the number of rooms/heating circuits to be regulated and the matching actuators. Each channel of the connection module can be assigned to 4 actuators. Combination with wired EAR connection modules is also possible.

### 2.4 EAR – connection module, wired

Modules for connecting 2 or 6 ER wired room sensors. The connection modules can simply be plugged together. This allows for easy adjustment and expanding the number of rooms/heating circuits to be regulated and the matching actuators. Each channel of the connection module can be assigned to 4 actuators. Combination with wireless EAR/WL connection modules is possible.

## 3

### 3.1 EAHB – actuator

The EAHB actuators for intelligent, adaptive hydronic balancing allow for optimum energy efficiency depending on the hot leg and cold leg temperature of the heating circuit.

### 3.2 ESA – actuator

The ESA actuators typically regulate the flow at the individual cold leg valves of the heating circuit distributor based on thermostat settings. The static hydronic balancing occurs at the distributor.



# Expertise. In all areas.

The system solutions of Schlüter-Systems are market leaders in many areas. The products are carefully matched to create perfect system solutions from a single source. They are the result of expertise, know-how and innovation.

## Waterproofing / uncoupling / heating / drainage / impact sound

The products Schlüter-KERDI, -DITRA and -TROBA are optimally matched system solutions for installing ceramic tiles and natural stone in wet spaces, outdoor areas and on critical substrates.

## Balconies and terraces

Tiles make ideal floor coverings for balconies and terraces. The well thought out assemblies of Schlüter-Systems create durable exterior tile floors. No matter whether you are planning to renovate a terrace or want to build a new place in the sun, we offer everything you need for balcony assemblies. From bonded waterproofing to edge profiles and drainage channels - the products of Schlüter-Systems are a perfect match.

## Technology and design with Schlüter profiles

Schlüter profiles offer an ideal combination of functionality and design. Our product portfolio includes profiles for finishing wall and floor coverings, stair nosings, and profiles for expansion, perimeter, edge and connection joints.

## Tile substrates

Schlüter-KERDI-BOARD is an innovative system to quickly create fully functional, dimensionally stable substrates for tiles.

Whether you are planning to install mosaics, standard tiles or large stone pavers, substrates created with KERDI-BOARD are immediately ready for tiling without further preparation.

## Covering assembly technology

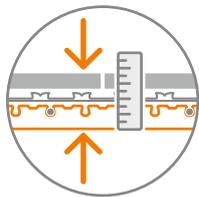
Schlüter-BEKOTEC is a floor assembly system that can be constructed quickly. It is thin, will not buckle, and does not develop tensions. The heating and cooling components of Schlüter-BEKOTEC-THERM results in an efficient ceramic thermal comfort floor.

## Illuminated profile technology

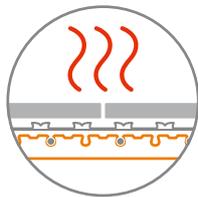
The use of light is an essential factor in the design of room aesthetics and atmospheres. Modern lighting technology offers many options for creative and decorative interior design that go beyond the sole purpose of illumination.



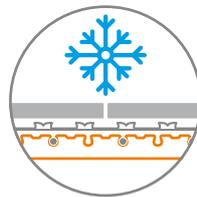
## Function overview of the Schlüter-BEKOTEC product family



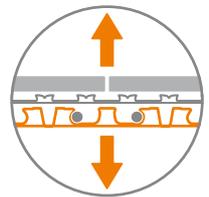
Low assembly height



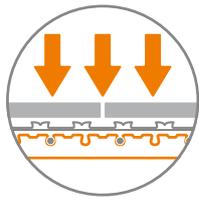
Floor heating



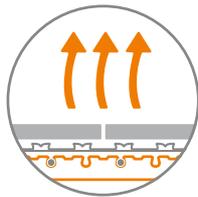
Cooling



Bonded assembly



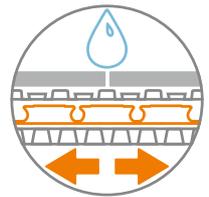
Load transfer



Heat insulation



Impact sound insulation



Bonded drainage/  
passive capillary

Schlüter®-BEKOTEC-EN-P/-PF  
 Schlüter®-BEKOTEC-EN-F  
 Schlüter®-BEKOTEC-EN-F-PS  
 Schlüter®-BEKOTEC-EN-FTS  
 Schlüter®-BEKOTEC-EN-FK  
 Schlüter®-BEKOTEC-EN-FK-PS  
 Schlüter®-BEKOTEC-EN 23 FD

	Schlüter®-BEKOTEC-EN-P/-PF	Schlüter®-BEKOTEC-EN-F	Schlüter®-BEKOTEC-EN-F-PS	Schlüter®-BEKOTEC-EN-FTS	Schlüter®-BEKOTEC-EN-FK	Schlüter®-BEKOTEC-EN-FK-PS	Schlüter®-BEKOTEC-EN 23 FD
Low assembly height	•	•	•	•	•	•	•
Floor heating	•	•	•	•	•	•	•
Cooling	•	•	•	•	•	•	•
Bonded assembly	•	•	•	•	•	•	•
Load transfer	•	•	•	•	•	•	•
Heat insulation	• (I/Z)	• (Z)	• (Z)				
Impact sound insulation	• (Z)	• (Z)	• (Z)	•			
Self-adhesive (peel-and-stick)				•		•	
Bonded drainage/ passive capillary							•

Z = add-on option / I = integrated

# Visit our website

The website [bekotec-therm.co.uk](http://bekotec-therm.co.uk) offers full information about the innovative floor heating systems of Schlüter-Systems, from informative videos to FAQs.

If you need additional information, please use the contact feature on our website to get in touch with us directly. We look forward to hearing from you!



[bekotec-therm.co.uk](http://bekotec-therm.co.uk)





P R O F I L E   O F   I N N O V A T I O N

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