

# THIN-BED HEATING SYSTEM

**System overview**



**ONE MANUFACTURER!  
ONE SYSTEM!**



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## A comparison is worth it!

**Underfloor heating systems are almost standard nowadays. Cosy and consistent warmth throughout the whole room. A few questions about this should be asked:**

- What are the advantages and disadvantages of different systems?
- Are conventional superstructures still up to date at all, especially now with constantly rising energy prices and refurbishment costs?
- How do different systems affect construction time?

### Conventional underfloor heating according to DIN 18560-2

- **Pipe coverage mostly  $\geq 45$  mm, a lot of mass that has to be heated up**
- Thus, inertia of the entire heating system e.g. no night setback possible
- **Long drying periods** until permissible residual moisture values are reached (cement screed  $\leq 2,0$  % CM, gypsum-bonded screeds  $\leq 0,3$  % CM), **usually 4-6 weeks**
- **Large installation heights**
- Large **amounts of material**, that need to be moved  $\rightarrow$  topic **freight costs**

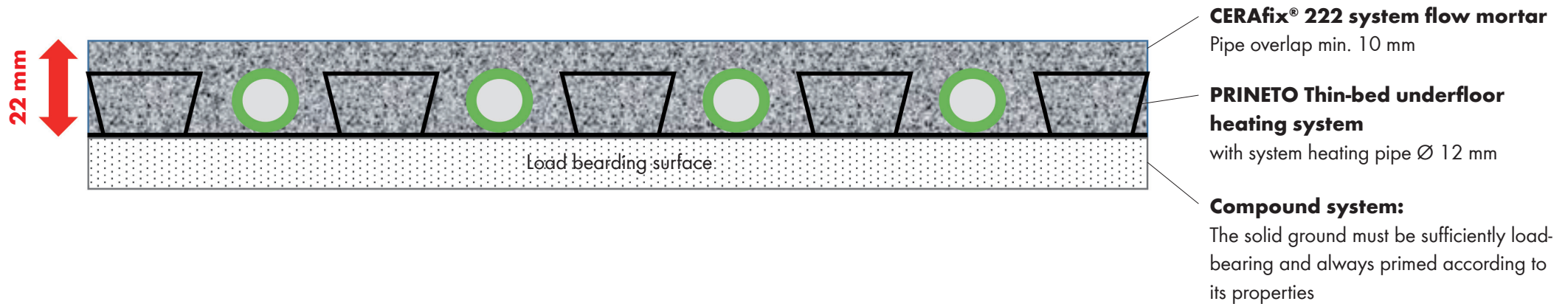
### Thin-bed heating systems from IVT / Würth



- Pipe cover depending on system from 10-15 mm  $\rightarrow$  **very short heating times**
- Thereby high flexibility of the entire heating system e.g. **energy saving** because of night lowering
- **Short drying periods!** By following the heating protocol, ready for occupancy after only 10-11 days. Permissible residual moisture value for vapor-tight coverings  $\leq 1.3$  % CM  $\leq 1.3$  % CM  $\rightarrow$  **Construction time reduced by weeks! Heating is already during casting!**
- **Low installation heights** e.g. on separating layer from 24 mm possible
- Lean logistics  $\rightarrow$  topic **freight costs**
- **Mainly tool-free installation**
- **One manufacturer! One System!** From the raw floor to the finished laid tile flooring (installation of other surface coverings also possible)

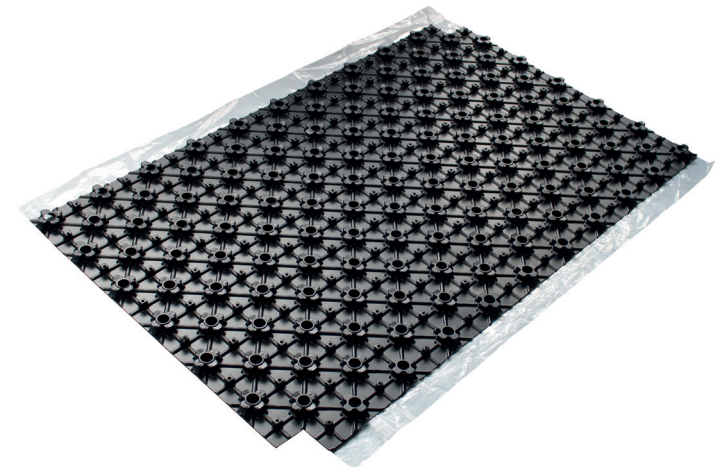
## System: Thin-bed heating system in compound

Installation height: 22 mm



### Benefits:

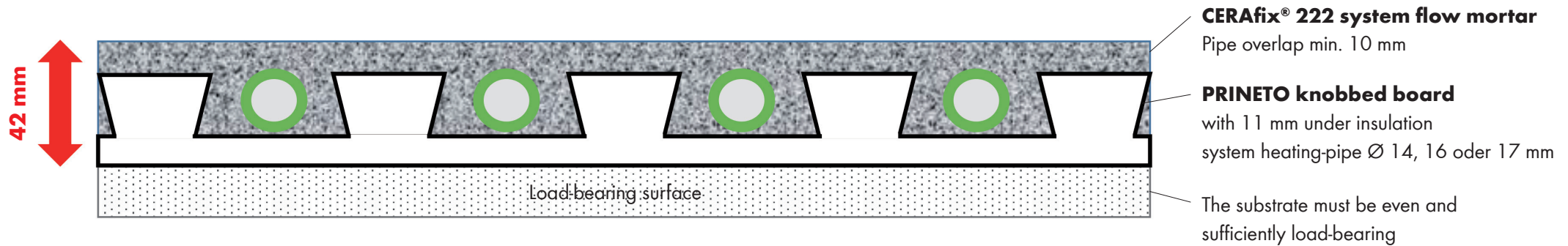
- low installation height of only 22 mm
- low weight per unit area about 42 kg/m<sup>2</sup>
- therefore suitable for almost all renovation projects
- very short reaction time





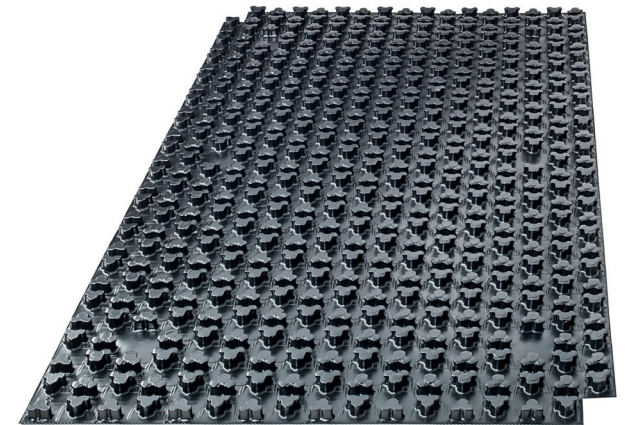
## System: Knobbed board with 11 mm insulation

Installation height: 42 mm



### Benefits:

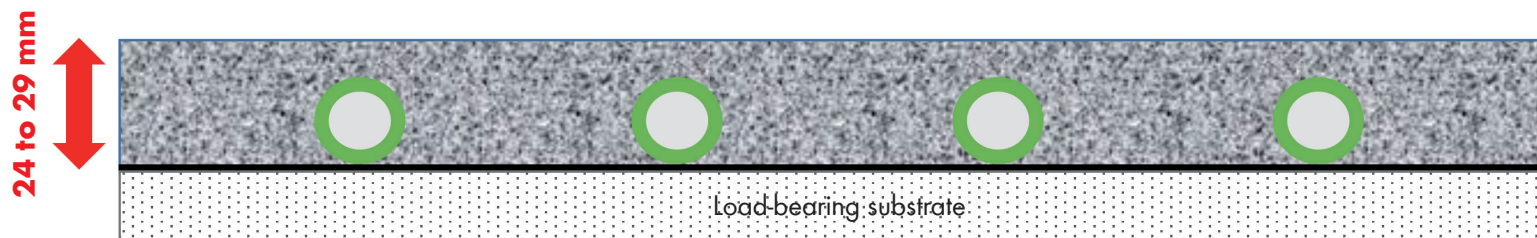
- low installation height of only 22 mm
- low weight per unit area of  $\leq 50 \text{ kg/m}^2$
- very short reaction time
- including 11 mm insulation
- for new construction and renovation projects



## System: Velcro system (separating layer)

Installation height: 24 to 29 mm, depending of Ø heating pipe

### The universal heating system on a separating layer (PRINETO velcro system)



**CERAFIX® 222 system flow mortar**

Pipe overlap min. 10 mm

**PRINETO velcro system** (self-adhesive)  
system heating pipe Ø 12/14/16 and 17 mm possible.

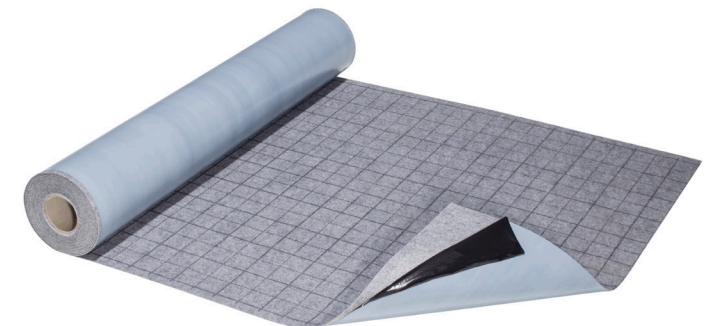
#### **System on separating layer:**

The substrate must be dry and dust-free and primed if necessary.

The substrate must be sufficiently load-bearing and may require priming.

#### **Benefits:**

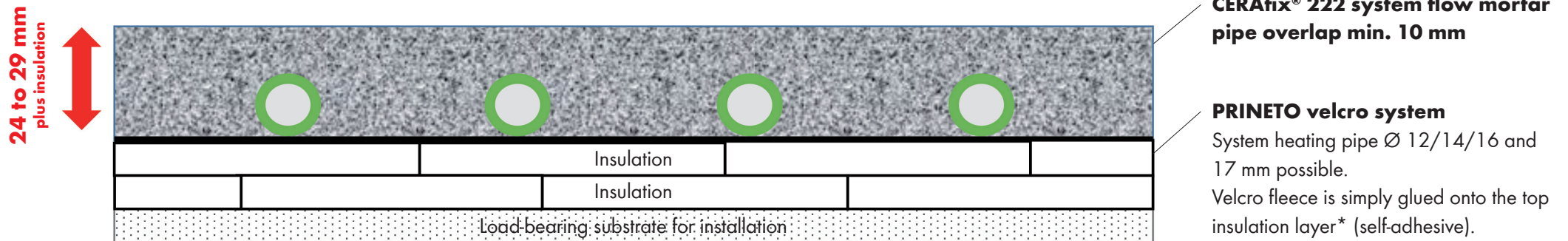
- low installation height of only 24 mm
- low weight per unit area of  $\leq 45 \text{ kg/m}^2$  (12 mm heating pipe)
- fast, economical and tool-free installation
- therefore suitable for almost all renovation projects
- very short reaction time



## System: Velcro system on insulation \*

Installation height: 24 to 29 mm, depending on the diameter of the heating pipe and the insulation \*

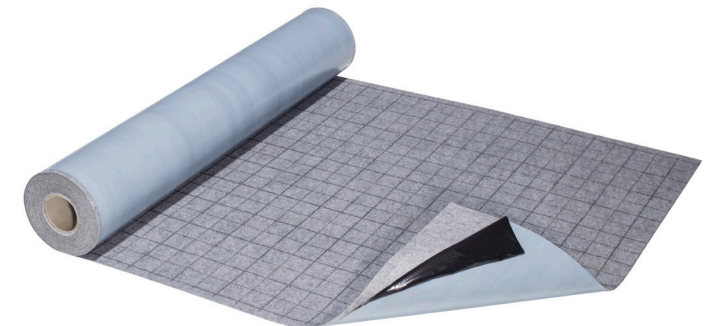
### The universal heating system on insulation \*



#### Benefits:

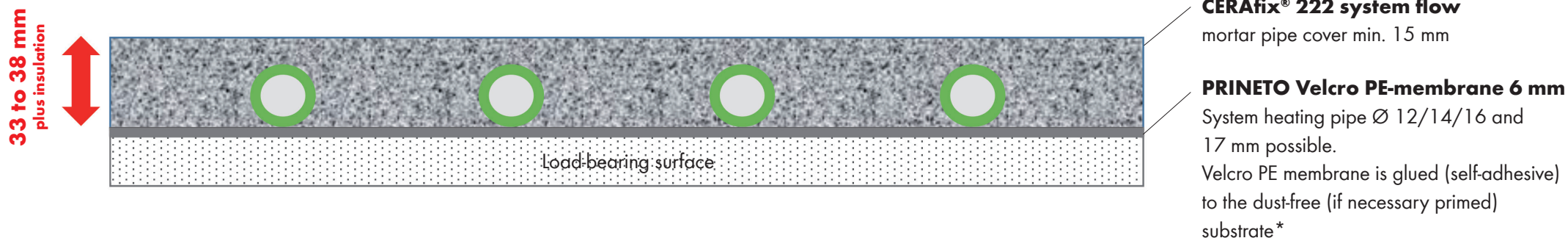
- low installation height from 24 mm plus sub-insulation \*
- low weight per unit area from  $\leq 50 \text{ kg/m}^2$  (12 mm heating pipe)
- fast, economical and tool-free installation
- very short reaction time
- for new construction and renovation projects

\* Requirements for the insulation: Compressive stress  $\geq 150 \text{ kPa}$



## System: 6 mm self-adhesive velcro PE sheeting

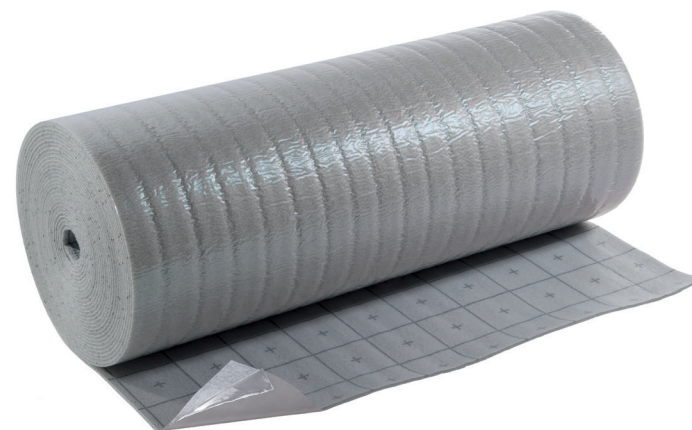
Installation height: 33 to 38 mm, depending on Ø heating pipe incl. insulation \*



### Benefits:

- low installation height from 33 mm
- low weight per unit area from  $\leq 51 \text{ kg/m}^2$  (12 mm heating pipe)
- fast, economical and tool-free installation
- very short reaction time
- impact sound reduction up to 21 dB
- perfectly suitable for renovating existing buildings

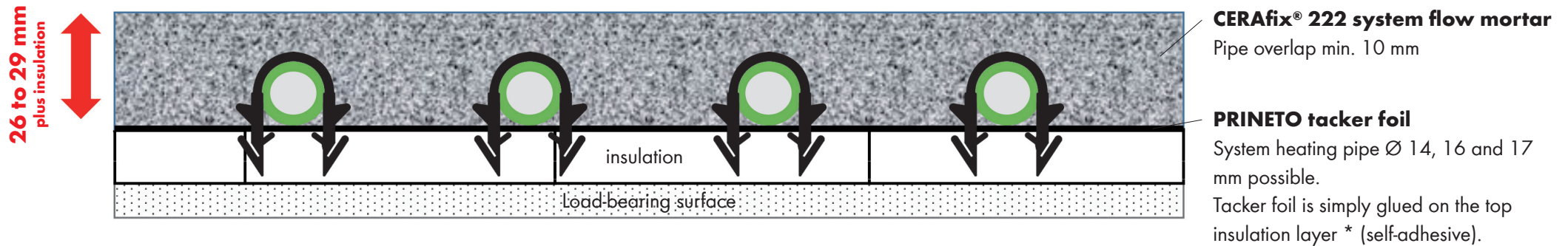
\* Requirement for the insulation: Compressive stress  $\geq 150 \text{ kPa}$





## System: tacker foil on insulation\* minimum thickness insulation 20 mm

Installation height: 26 to 29 mm, depending on Ø of heating pipe plus insulation



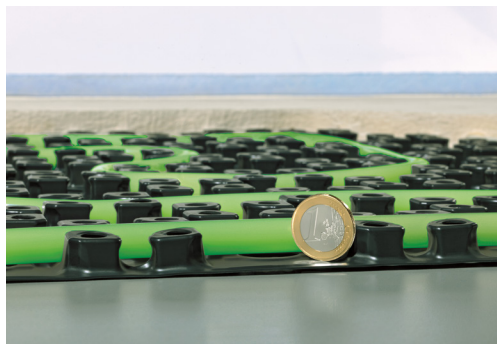
### Benefits:

- low installation height from 26 mm plus insulation\*
- low weight  $\leq 46 \text{ kg/m}^2$  (14 mm heating pipe)
- fast and economical installation
- very short reaction time
- for new construction and renovation projects

\* Requirement for the insulation: Compressive stress  $\geq 150 \text{ kPa}$



## Overview thin-bed heating systems



Thanks to sophisticated technique, the PRINETO thin-bed underfloor heating system with its self-adhesive knobbed foil and the ultra-flexible 12 x 2 mm heating pipe, is a quick and easy installation possible.

Benefits PRINETO thin-bed system:

- extremely flat floor structure (total height 22 mm to top edge of screed)

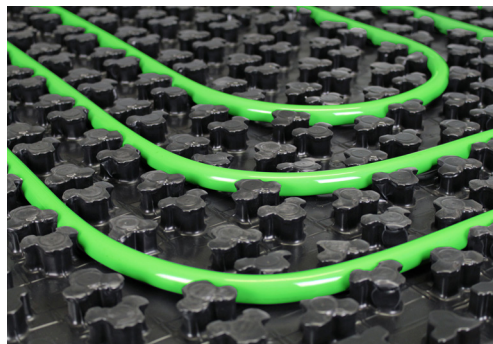
Product:

Knobbed foil 12,

**Art.-No. 878 386 229**

ECO-FLEX surface heating pipe 12,

**Art.-No. 878 311 322**



When installing underfloor heating with the PRINETO knobbed board with insulation thickness 11 mm, you have the choice between PRINETO surface heating pipes with dimensions of 14, 16 and 17 mm.

Benefits PRINETO knobbed board system:

- the knobbed board is insulation, covering foil and pipe fastening in one – only one step of work
- fast and easy pipe mounting
- low installation height

Product:

Knobbed board 14-17 EPS 11,

**Art.-No. 878 386 085**

ECO-FLEX surface heating pipe 14,

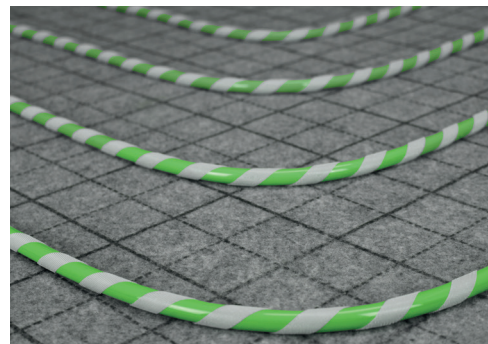
**Art.-No. 878 311 332**

Surface heating pipe Stabil 16 x 2,

**Art.-No. 878 311 442**

ECO-FLEX surface heating pipe 17,

**Art.-No. 878 311 352**



The velcro heating pipe belonging to the PRINETO velcro system is spirally wrapped with a velcro tape so that it can be laid on the specially laminated PRINETO velcro fleece.

Benefits PRINETO Velcro system:

- fast, easy and tool-free installation
- up to 30% shorter installation time
- ideal for angled rooms
- Impact noise reduction up to 21 db (with 878 386 298)

Product:

Velcro fleece, self-adhesive,

**Art.-No. 878 386 297**

Velcro PE sheet 6 mm, self-adhesive,

**Art.-No. 878 386 298**

Velcro ECO-FLEX surface heating pipe 12,

**Art.-No. 878 311 520**

Velcro ECO-FLEX surface heating pipe 14,

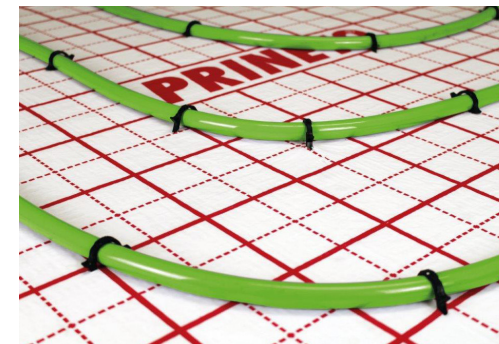
**Art.-No. 878 311 531**

Velcro surface heating pipe Stabil 16x2,

**Art.-No. 878 311 542**

Velcro ECO-FLEX surface heating pipe 17,

**Art.-No. 878 311 551**



Because of the adhesive layer on the back, the PRINETO tacker foil is easily and securely applied to the insulation and protects it from penetration of screed water. The robust foil also ensures a firm hold of the tacking needles on the insulation.

Benefits PRINETO Tacker system:

- ideal for complicated and small floor plans
- laying distance and piping free selectable
- separation of installer / screed layer possible

Product:

Tacker foil, self-adhesive,

**Art.-No. 878 386 041**

Tacker needle with double hook,

**Art.-No. 878 386 238**

ECO-FLEX surface heating pipe 12,

**Art.-No. 878 311 322**

ECO-FLEX surface heating pipe 14,

**Art.-No. 878 311 332**

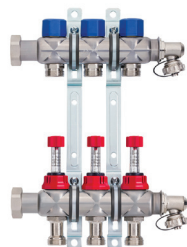
Surface heating pipe Stabil 16x2,

**Art.-No. 878 311 442**

ECO-FLEX surface heating pipe 17,

**Art.-No. 878 311 351**

## Thin-bed heating systems - accessories (for more products please visit: <https://shop.ivt-group.com>)



### PRINETO Distributor

3-fold to 16-fold incl. flow meter with memory function

**Art.-No. 878 386 116 f .**



### PRINETO Distributor cabinet

Flush mounted 80 or 110 mm or surface installation 126 mm

**Art.-No. 878 386 022 f .**

(flush mounted 110 mm)

**Art.-No. 878 386 030 f .**

(surface installation)

**Art.-No. 878 386 322 f .**

(flush mounted 80 mm)



### PRINETO RTL regulation box with external thermostatic valve

**Art.-No. 878 390 020**

### PRINETO RTL regulation box for electrical actuator (picture below)

**Art.-No. 878 390 021**



### PRINETO Border insulating strip or edge insulating strip, self-adhesive

**Art.-No. 878 386 046, ...039, ...050, ...232**



### PRINETO actuator, switched currentless, 230 V

**Art.-No. 878 386 018**

### PRINETO actuator, with knurled nut and manual opening (picture below)

**Art.-No. 878 386 020**



### PRINETO auto balancing actuator EGO

**Art.-No. 878 386 318**



### PRINETO Raised room temperature controller optional for heating / cooling

**Art.-No. 878 386 096, ...151**



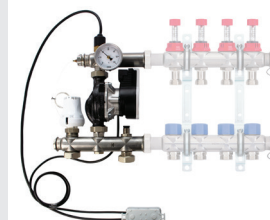
### PRINETO Raised room temperature controller digital (picture below)

**Art.-No. 878 386 097, ...100**



### PRINETO Terminal strip 230 V

**Art.-No. 878 386 094**



### PRINETO Thermostat set UFH compact Wilo Para

**Art.-No. 878 386 240**

### PRINETO Thermostat set UFH Wilo Para

**Art.-No. 878 386 246**

## Consumption calculator CERAfix® 222 and technical key data of the individual systems

System	Consumption CERAfix® 222 in kg/ m <sup>2</sup> with minimum pipe covering	Additional consumption CERAfix® 222 in kg/ m <sup>2</sup> with more overlap 5 mm	<sup>*2</sup> maximum load in kN/m <sup>2</sup> with minimum overlap	<sup>*2</sup> point loads	<sup>*2</sup> maximum load in kN/m <sup>2</sup> with 5 mm more overlap	<sup>*2</sup> targeted loads
<b>PRINETO thin-bed heating system</b> in compound pipe Ø 12 mm	approx. 42	approx. 9,5	3,0	1,5	5,0	2,0
<b>PRINETO knobbed board</b> with insulation 11 mm pipe Ø 14/16/17 mm	approx. 45	approx. 9,5	2,0	1,0	3,0	1,5
<b>PRINETO velcro system</b> (separating layer) pipe Ø 12/14/16/17 mm	approx. 42/46/49/51	approx. 9,5	3,0	1,5	5,0	2,0
<b>PRINETO velcro PE sheet 6 mm</b> pipe Ø 12/14/16/17 mm	approx. 52/56/59/61	approx. 9,5	2,0	1,0	3,0	1,5
<b>PRINETO velcro system</b> on insulation <sup>*1</sup> pipe Ø 12/14/16/17 mm	approx. 42/46/49/51	approx. 9,5	2,0	1,0	3,0	1,5
<b>PRINETO tacker system</b> on insulation <sup>*1</sup> pipe Ø 14/16/17 mm	approx. 46/49/51	approx. 9,5	2,0	1,0	3,0	1,5

Thin flow screed CERAfix® 222 – technical documentation and heating protocol can be found on [www.eshop.wuerth.de](http://www.eshop.wuerth.de)



## What happens after screed installation?

To ensure the fastest possible construction progress, the flow temperature is set up to 20-25°C before casting. Dry heating already begins with screed installation.

The floor areas are usually ready to be walked on the next day.

For further advice for dry/ready-to-use heating, please have a look to the form „heating protocol“. If this heating protocol is followed, the top layer can usually be laid after 10-11 days.

### Max. permissible residual moisture values:

- vapor-proof coverings maximum 1,3% CM
- vapor-permeable coverings maximum 1,8% CM

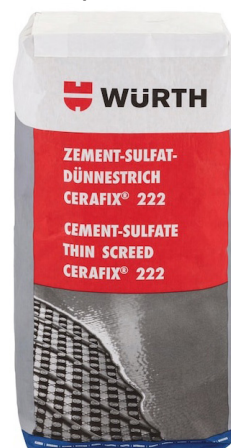
## What should i pay attention to while laying the top layer?

When the heating screed has reached its readiness for covering or the heating protocol is completed, the surfacing work can begin. In principle, a decoupling layer, for example decoupling fleece CERAfix® 205, should be installed for thin-bed systems and permanently bonded surface coverings.

**To take full advantage of our thin-bed heating systems, please use only products of the PRINETO and CERAfix® product lines!**

## Why thin floating screed CERAfix® 222?

- **Special binder cement sulfate: all advantages of a cementitious mass, but without its disadvantages, e.g. cupping or strong deformations**
- high strength and almost self-leveling
- **Cement-sulfate thin screed CA/CT-C30-F8 according to DIN 18560**
- **No formation of sinter layers if the recommended water quantities are observed, i.e. no grinding necessary!**
- Almost joint-free surfaces
- Very early possibility for floor covering
- Heating up already during screed installation
- Best properties in combination with thin-bed heating systems
- Also ideally suited as a thin screed in renovation projects



System floating screed CA-CT C 30 F 8  
CERAfix® 222 – 25 kg

- for thin-bed heating systems
  - for pipe overlap from 10 mm
  - very early possibility for floor covering
- Art.-No. 5875 300 222

## CERAFix® decoupling system for thin-bed heating systems



### Decoupling fleece

CERAFix® 205 - 25 m<sup>2</sup>

- thickness only 0,8 mm
- for all living areas

Art.-No. 5875 100 205



### Impact sound and decoupling board

CERAFix® 206 - 4, 9 and 15 mm

- for all living areas

Art.-No. 5875 101/102/103 206



### Sealing- and decoupling sheet

CERAFix® 205 - 30 m<sup>2</sup>

- fulfills W 2 I and W 3 I
- for highest demands in indoor areas

Art.-No. 5875 100 305

The CERAFix® decoupling systems for living areas can be combined with all CERAFix® glues.

### System tile glue for surface heating:

- |  |                       |
|--|-----------------------|
| • Flex glue CERAFix® 402 2 C2 TE         | Art. No. 5875 200 402 |
| • Flex mortar CERAFix® 403 2 XL C2 TE S1 | Art. No. 5875 200 403 |
| • Quick glue CERAFix® 402 2 XL C2 FT S1  | Art. No. 5875 200 404 |
| • Natural stone glue 412 2 C2 TE         | Art. No. 5875 200 412 |

### System tile glue for surface heating and CERAFix® sealing systems:

- |  |                       |
|--|-----------------------|
| • Flex glue CERAFix® 402 PLUS C2 TE                | Art. No. 5875 100 402 |
| • Light flex mortar CERAFix® 403 PLUS XL C2 TE     | Art. No. 5875 100 403 |
| • Flex mortar CERAFix® 403 PLUS XL C2 TE S1        | Art. No. 5875 100 404 |
| • Natural stone quick glue CERAFix® 412 PLUS C2 FT | Art. No. 5875 100 412 |

For CERAFix® sealing systems, please use only tested adhesives/mortars of the CERAFix® PLUS line!

## More CERAfix® system components

### CERAfix® primers



#### Tile dispersion primer

CERAfix® 101 10/25 l

- for absorbent surfaces
- ready for use

Art.-No. 5875 100/101 205



#### 1-K special primer

CERAfix® CERAfix 104 1/5 l

- for non-absorbent surfaces
- fast drying

Art.-No. 5875 200/210 104



#### 2-K special primer

CERAfix® CERAfix 103 - 3/10 kg

- for all critical surfaces
- sprinkle with quartz sand in excess

Art.-No. 5875 100/110 103

CERAfix® quartz sand 0,4 1,2 mm  
Art.-No. 5875 500 540

### CERAfix® sealing systems



#### Liquid foil

CERAfix® 101 - 12/20 kg

- for moderately loaded areas
- W1-l

Art.-No. 5875 100/101 302



#### 1-K sealing slurry

CERAfix® 300 - 15 kg

- for highly loaded areas
- W2-l

Art.-No. 5875 100 300

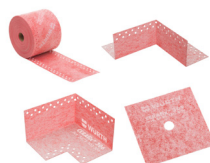


#### 2-K sealing slurry

CERAfix® 301 - 21 kg

- for highly loaded areas
- W2-l/W3-l

Art.-No. 5875 100 301



#### Moulded parts / Sealing tape

CERAfix® 306 - inside corner

CERAfix® 307 - outside corner

CERAfix® 309 - wall collar

CERAfix® 316 - sealing tape

Art.-No. 5875 100 ...

### CERAfix® permanently elastic sealant



#### Grout 2-25 mm

CERAfix® 505 - 5/15 kg

- for highest demands
- fibre reinforced
- CG2 WA

Art.-No. 5875 ... 505



#### Grout 1-10 mm

CERAfix® 106 - 5/15 kg

- 1-10 mm
- CG2 WA

Art.-No. 5875 ... 506



#### Acetate silicone wet cell 310 ml

- Acid crosslinking (acetate)
- in 15 colors

Art.-No. 0892 560 ...



#### Natural stone sealant 4 in 1 310ml

- Oxime crosslinking (acetate)
- in 10 colors

Art.-No. 0893 351 ...

# THIN-BED HEATING SYSTEM

## System overview

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E-Shop



CERAFix brochure



CERAFix overview



CERAFix 222



IVT online shop



IVT assembly heights



IVT thin-bed systems