



TECEfloor – universal panel
Technical information



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**Low installation height
of 30 mm – ideal for
the renovation of old
buildings**



Simple "one-man assembly"

- (1) Polystyrene completely covered with glued aluminium sheets in the factory reduce the assembly steps.
- (2) Predetermined breaking joints for width and length adjustment without tools.
- (3) Omega pipe guide with flanged edges ensures the pipes hold perfectly and protects pipes from damage.



The sheets can be used with the SLQ-Al/PE-RT floor heating pipe dim. 16.

TECEfloor – now with universal panel UP

The new universal panel UP is suitable for wall-, ceiling- and floor heating systems, for dry and wet installation as well as for heating and cooling solutions.

- Low installation height of 30 mm (+ top covering) – ideal for renovations
- Low weight permits laying without structural problems
- Optimum heat dissipation through direct covering of parquet and flooring
- High performance at low flow temperature



**16 x 2 mm SLQ Al/PE-RT
floor heating pipe**

The panel is designed to be combined with a wide variety of floor coverings. High thermal conductivity of the aluminium sheets glued to the whole surface of the polystyrene ensures a fast response time and optimum distribution of heat.

- Greater comfort in the home thanks to fast response time and fast heat distribution over the entire area
- Saves energy costs as a result of lower flow temperature
- No building moisture, mould or parquet damage through fast floor completion

Technical drawing explanations

| | |
|--|---|
| | Use in the floor |
| | Use in the wall |
| | Use in ceiling |
| | Use in heating |
| | Use in cooling |
| | Surface thickness |
| | Tile size |
| | Joint size |
| | Thermal output in accordance with DIN EN 1264 |
| | Maximum surface temperature (°C) |
| | Thermal resistance (R) |
| | Heat transfer coefficient (U) |
| | Impact sound improvement (dB) |

| | |
|--|--|
| | Dead/material weight (kg/m ²) including surface |
| | Permitted net load (q _k) |
| | Permitted individual load (Q _k) → supporting surface ≥ 20 cm ² |
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Wooden joist ceilings must be torsionally rigid and free of deflection |
| | Building waterproofing in accordance with DIN 18195 |
| | Glue system elements/material layers together over the complete surface |
| | Filling for compensation not permitted |
| | Lay tiles in combined process with MAPEI adhesive Elastorapid and joint mortar Ultracolor Plus |
| | Thermal insulation |
| | Additional insulation |
| | Important information |
| | Further information |

| Application area A: Residential areas | | | |
|---------------------------------------|---|--|--|
| | EN 1991 | EN 1991/NA | SIA 261 |
| | ✓ A : Rooms in residential buildings, hotel rooms, wards | ✓ A2 A3 : Rooms in residential buildings, hotel rooms | ✓ A1 : Rooms in residential buildings, hotel rooms, wards |

| Application area B: Office and working areas | | | |
|--|---------------------------|---|--|
| | EN 1991 | EN 1991/NA | SIA 261 |
| | ✓ B : Office areas | ✓ B1 : Office areas, doctor's practices, wards | ✓ D1 : Sales areas up to 50 m ² base area ✓ B : Office areas |

| Application area C: Assembly and sales areas | | | | | | | | | |
|--|----------------|----------------|--|-------------|-------------|--|-------------|----------------|--|
| | EN 1991 | EN 1991/NA | SIA 261 | EN 1991 | EN 1991/NA | SIA 261 | EN 1991/NA | EN 1991/NA | SIA 261 |
| | ✓ C1 C3 | ✓ C1 C3 | ✓ C1 C2 | ✓ D1 | ✓ D2 | ✓ D | ✓ E1 | ✓ B2 B3 | ✓ C3 |
| Areas in churches, theatres or cinemas, congress rooms, lecture theatres, waiting rooms, museum areas, exhibition areas, entrance areas in public buildings and hotels | | | Areas in retail stores and department stores | | | Factories and workshops with light operation | | | Concert halls, treatment and operation rooms |
| | | | | | | Sports and games areas | | | |

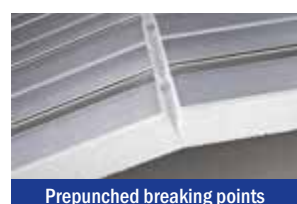


| | |
|--|----|
| TECEfloor universal panel UP | 8 |
| Load distribution and separating board | 9 |
| Hot cutting machine | 10 |



TECEfloor universal panel UP

Product data



| | | |
|-----------------|---------------------------------------|---|
| Material | Base plate | Polystyrene plate EPS 035 DE0; 240kPa |
| | Heat conducting plate | Aluminium 0.5 mm, with pipe guides (Omega form), flanged |
| Data | Thermal conductivity | 0.033 W/mK WLG 035 |
| | Thermal resistance | > 0.8 m ² K/W |
| | Vapour diffusion factor | 40 in accordance with DIN EN 12086 |
| | Bending strength (N/mm ²) | < 0.4 in accordance with DIN EN 12089 |
| | Compression strength | 240 kPa at 10 % compression in accordance with DIN EN 826 |
| | Building material class | B1 |

Prerequisite in accordance with DIN 18202

| | | Inside micrometers as limit values in mm for measuring point intervals in m | | | | |
|------|--|---|------|------|-------|-------|
| Line | Reference | 0.1 m | 1 m | 4 m | 10 m | 15 m |
| 4 | Ready-to-cover floors with higher requirements, e.g. with self-levelling fillers | 1 mm | 3 mm | 9 mm | 12 mm | 15 mm |

| Recommended pipe | Product | Type | Dimension | Art. No. |
|------------------|---------------------------------|-----------|-----------|---|
| | SLQ Al/PE-RT floor heating pipe | TECEfloor | 16 x 2 mm | 77 15 16 12 77 15 16 30 77 15 16 60 |

| Accessories | Product | Type | L x W x H | Art. No. |
|-------------|-------------------------|-----------|-----------------------|-------------|
| | Load distribution sheet | Steel | 800 x 200 x 1 mm | 77 52 00 24 |
| | Edge insulation strip | TECEfloor | 25 m x 10 mm x 160 mm | 77 62 00 10 |



Load distribution and separating board

Product data



1150 x 600 x 5 (+0.5) mm (L x W x H)
Art. no. 77 52 00 18




High proportion of aluminium



Load distribution layer for tiles



Load distribution layer for laminate

| | | | |
|--------------------------|---|--|--|
| Material | Base plate | Polyester-fibre plate made of aluminium-clad polyester fleece and thermoplastic binder based on styrene acrylic with high tear resistance and compression strength | |
| | Data | Weight | 5.2 kg/m ² ± 5 % |
| | | Thermal conductivity | 0.2 W/mK |
| | | Humidity resistance | Rot-proof |
| | | Vapour diffusion resistance factor | Approx. 30 μ |
| | | Coefficient of linear expansion | 2.75 x 10 (exp -5) 1/K |
| | | Thickness increase under effect of temperature (100h, 80°C) | < 0.3 mm |
| | | Thickness increase under effect of water (80h, 23°C) | < 0.5 mm |
| | | Fire behaviour in accordance with DIN EN 13501-1 | E(f) |
| | | Impact sound improvement with ceramic top covering (test stand value in accordance with DIN ISO 140- 8:1998, used as a guide) | 14 dB with TECEfloor universal panel UP |
| | | Field size | Max. 60 m ² , length and width ratio max. 2:1 |
| | | Waste code | 170701 |
| Material releases | Tile formats | Minimum size: 10 x 10 cm or 100 cm ² , maximum size: 60 x 40 cm, minimum thickness (natural stone): 10 mm | |
| | Joint sizes | Tile format up to 30 x 30 cm = min. 3 mm, 40 x 40 cm = min. 4 mm, 40 x 60 cm = min. 5 mm | |
| | Tile adhesive | Mapei Elastorapid or similar | |
| | Joint mortar | Mapei Ultracolor Plus or similar | |
| | Fixing on heating elements (with tile layer) | Mapei Ecofix or similar | |
| Accessories | Product | Type | Art. No. |
| |  Joint adhesive strip for load distribution and separating board | 120 m | 77 52 00 19 |



Hot cutting machine UP

Product data



Hot cutting machine
Art. no. 77 52 00 21

Easy to operate

Precise pipe grooves (16 mm)

Data

| | |
|----------------------|--|
| Type | SC-11 |
| Operating voltage | 230 V ~ 50-60 Hz |
| Power input | 60 W |
| Intermittent service | 12s ON 48s OFF |
| Weight | 1025 g |
| CE mark | Meets the requirements of EU directives: 2004/108/EC and 2006/95/EC |



For further information, see the operating instructions.

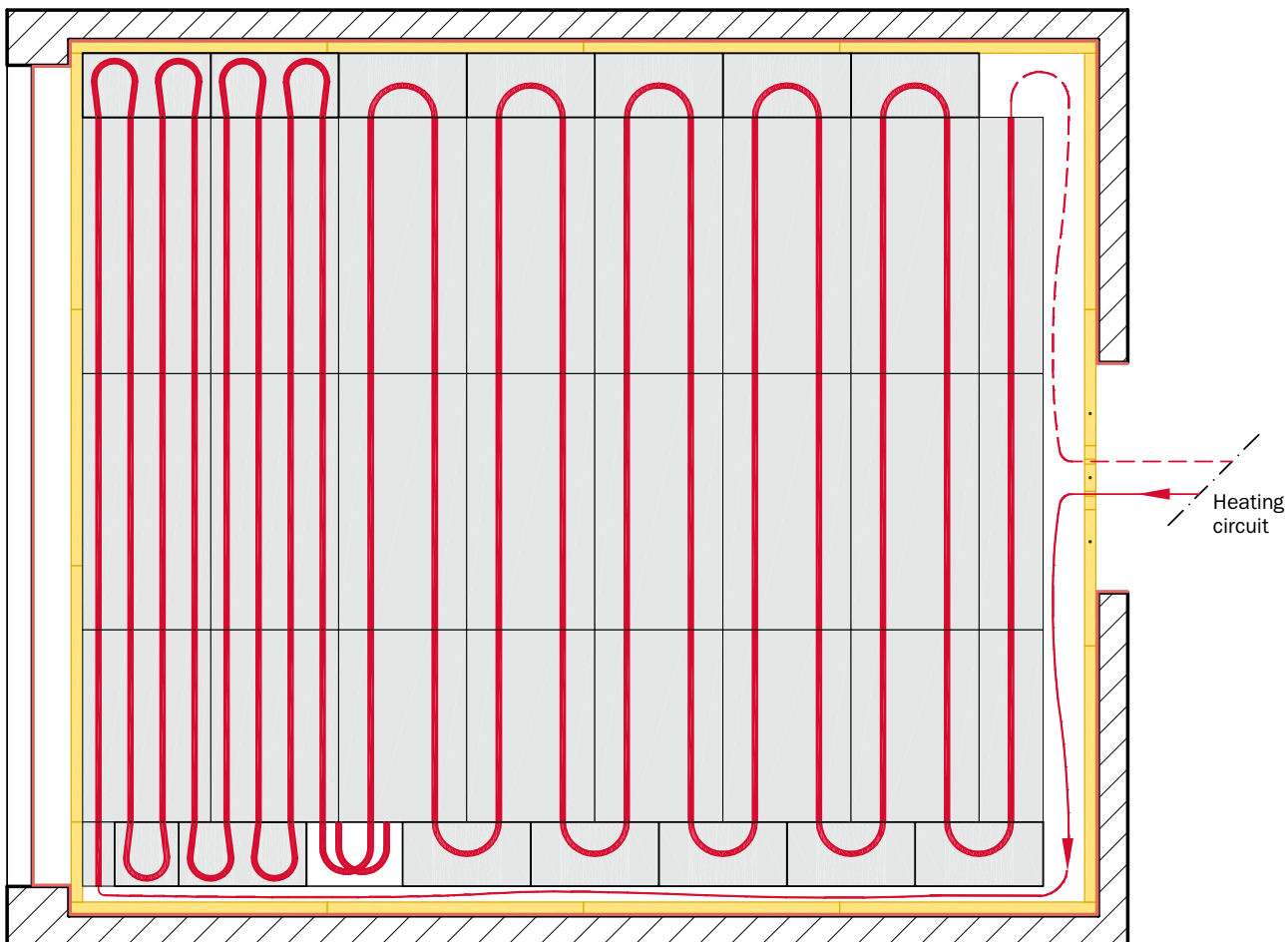
Sample layout plans



| | |
|--|----|
| Living room - 1 heating circuit - 17 m ² | 12 |
| Living room - 2 heating circuits - 28 m ² | 13 |
| Living/dining room - 3 heating circuit - 44 m ² | 14 |
| Stairwell - inlet pipes | 15 |
| Bedroom - 1 heating circuit - 17 m ² | 16 |
| Bathroom - 1 heating circuit - 9 m ² | 17 |
| Conservatory - 2 heating circuits - 24 m ² | 18 |



Living room – 1 heating circuit – 17 m²



The heating circuit starts in front of the floor-level window with laying type RA 125. After 1 m switch to RA 250. Inlet pipes are cut into the compensating elements in a wave pattern with the hot cutter.

Legend

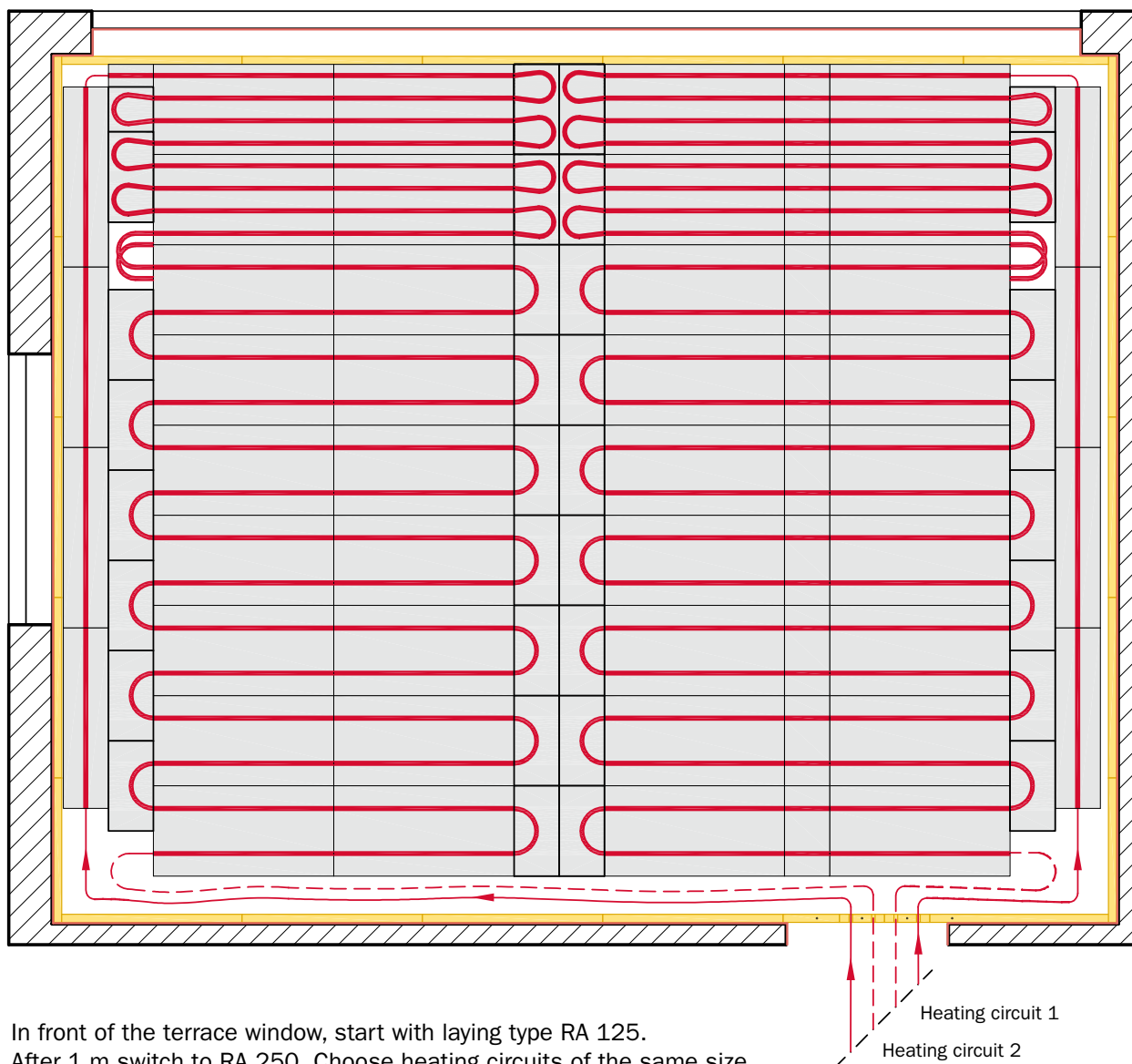
| | |
|--|---------------------------------|
| | Residence zone (RA = 250 mm) |
| | Edge zone (RA = 125 mm) |
| | Compensating element |

| | |
|--|------------------------------------|
| | Head element with aluminium RA 250 |
| | Head element with aluminium RA 125 |
| | Transition element |

| | |
|--|-----------------------|
| | Edge board |
| | Door opening |
| | Edge insulation strip |
| | Flow |
| | Return |



Living room – 2 heating circuits – 28 m²



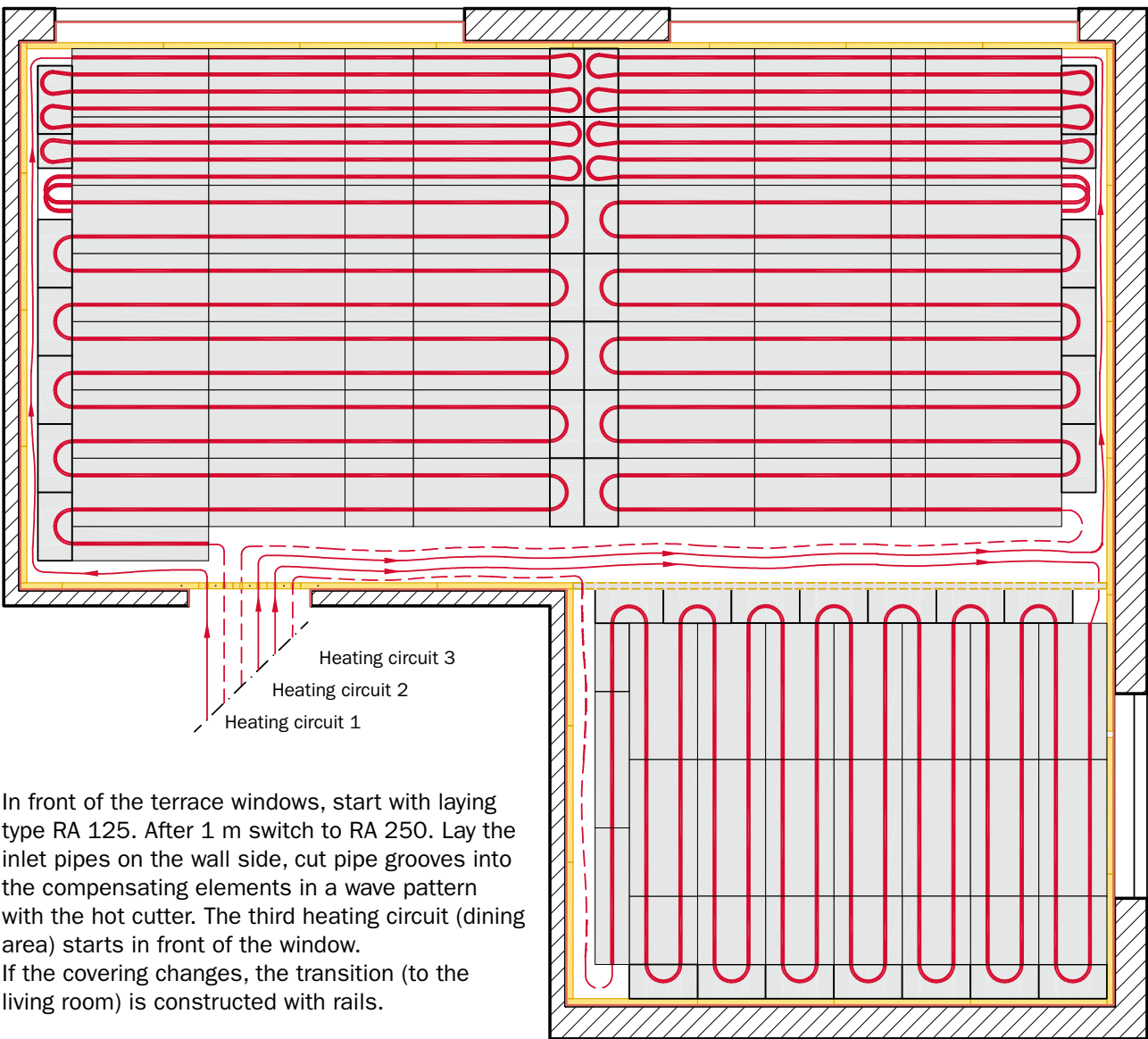
In front of the terrace window, start with laying type RA 125. After 1 m switch to RA 250. Choose heating circuits of the same size. Lay inlet pipes along the outer wall and cut missing pipe grooves into the compensating elements in a wave pattern with the hot cutter.

Legend

| | | | | | |
|--|------------------------------|--|------------------------------------|--|-----------------------|
| | Residence zone (RA = 250 mm) | | Head element with aluminium RA 250 | | Edge board |
| | Edge zone (RA = 125 mm) | | Head element with aluminium RA 125 | | Door opening |
| | Compensating element | | Transition element | | Edge insulation strip |
| | | | | | Flow |
| | | | | | Return |



Living/dining room – 3 heating circuit – 44 m²



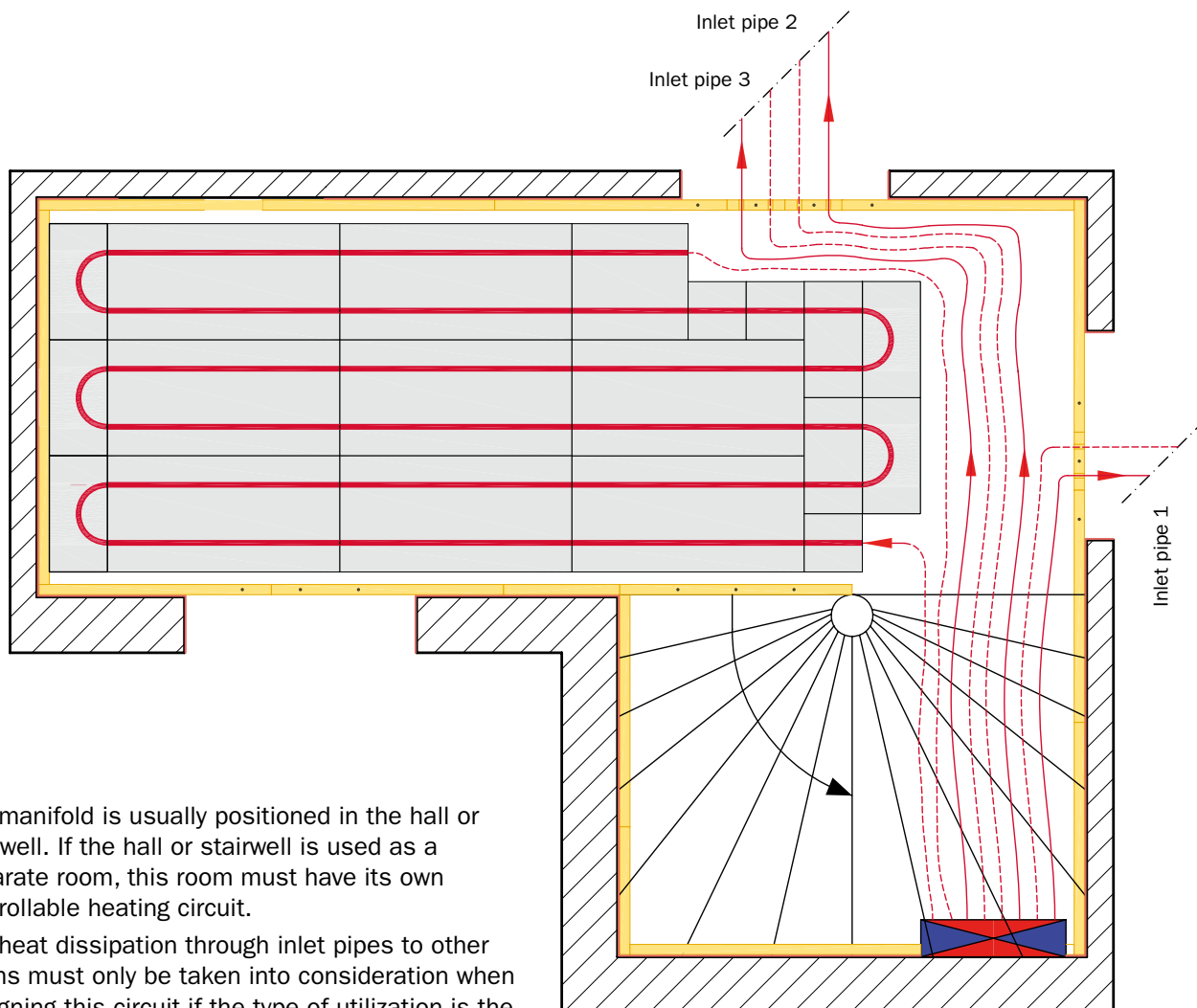
In front of the terrace windows, start with laying type RA 125. After 1 m switch to RA 250. Lay the inlet pipes on the wall side, cut pipe grooves into the compensating elements in a wave pattern with the hot cutter. The third heating circuit (dining area) starts in front of the window. If the covering changes, the transition (to the living room) is constructed with rails.

Legend

| | | | | | |
|--|------------------------------|--|------------------------------------|--|-----------------------|
| | Residence zone (RA = 250 mm) | | Head element with aluminium RA 250 | | Edge board |
| | Edge zone (RA = 125 mm) | | Head element with aluminium RA 125 | | Door opening |
| | Compensating element | | Transition element | | Edge insulation strip |
| | | | | | Flow |
| | | | | | Return |



Stairwell – inlet pipes

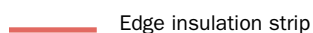
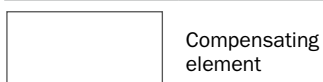
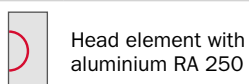
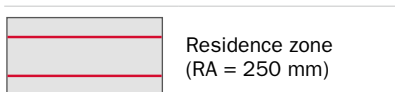


The manifold is usually positioned in the hall or stairwell. If the hall or stairwell is used as a separate room, this room must have its own controllable heating circuit.

The heat dissipation through inlet pipes to other rooms must only be taken into consideration when designing this circuit if the type of utilization is the same.

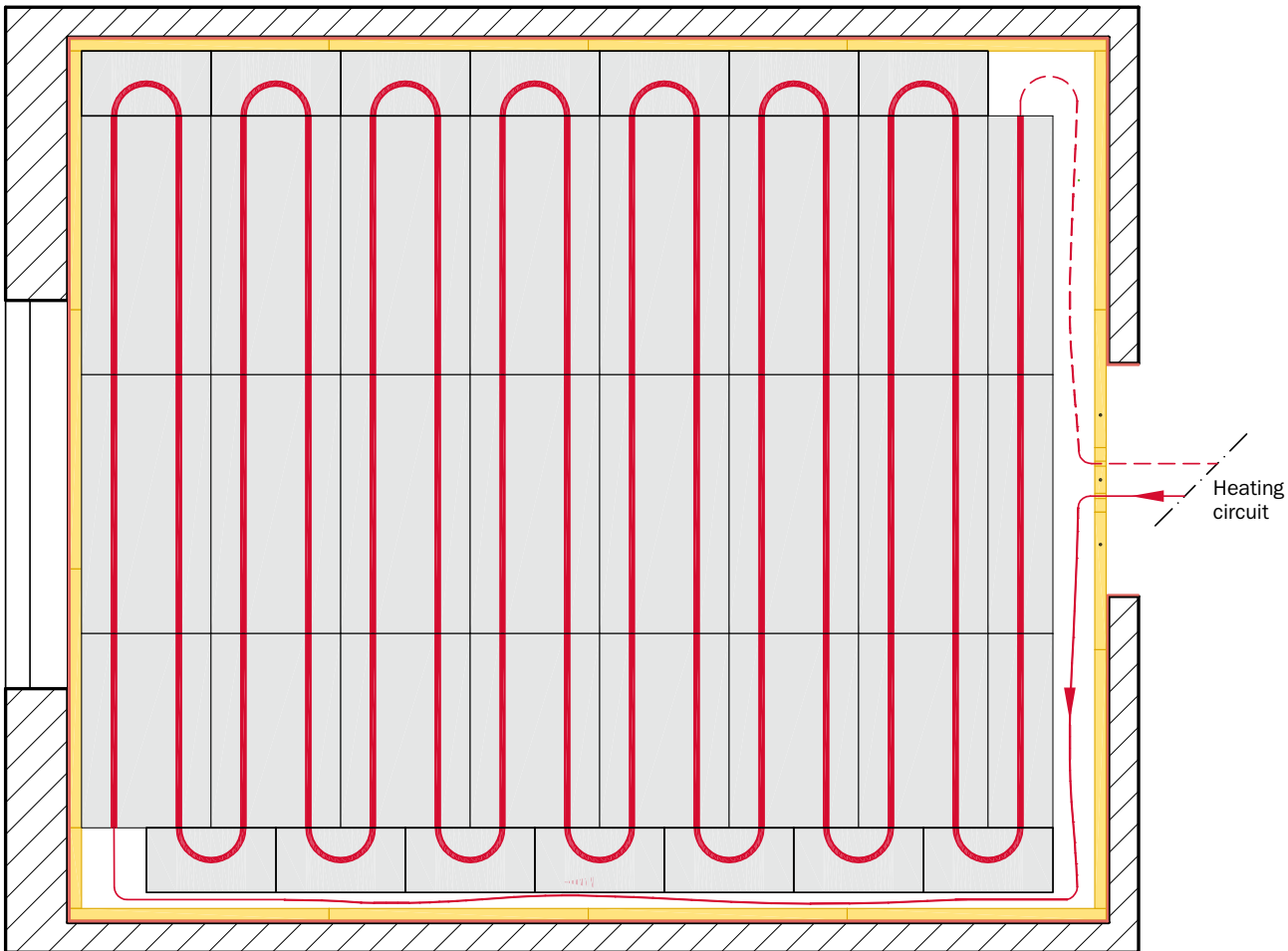
Inlet pipes that run in freely cut-in pipe channels without a baffle plate dissipate far less heat than inlet pipes that are laid in system sheets with aluminium.

Legend





Bedroom – 1 heating circuit – 17 m²



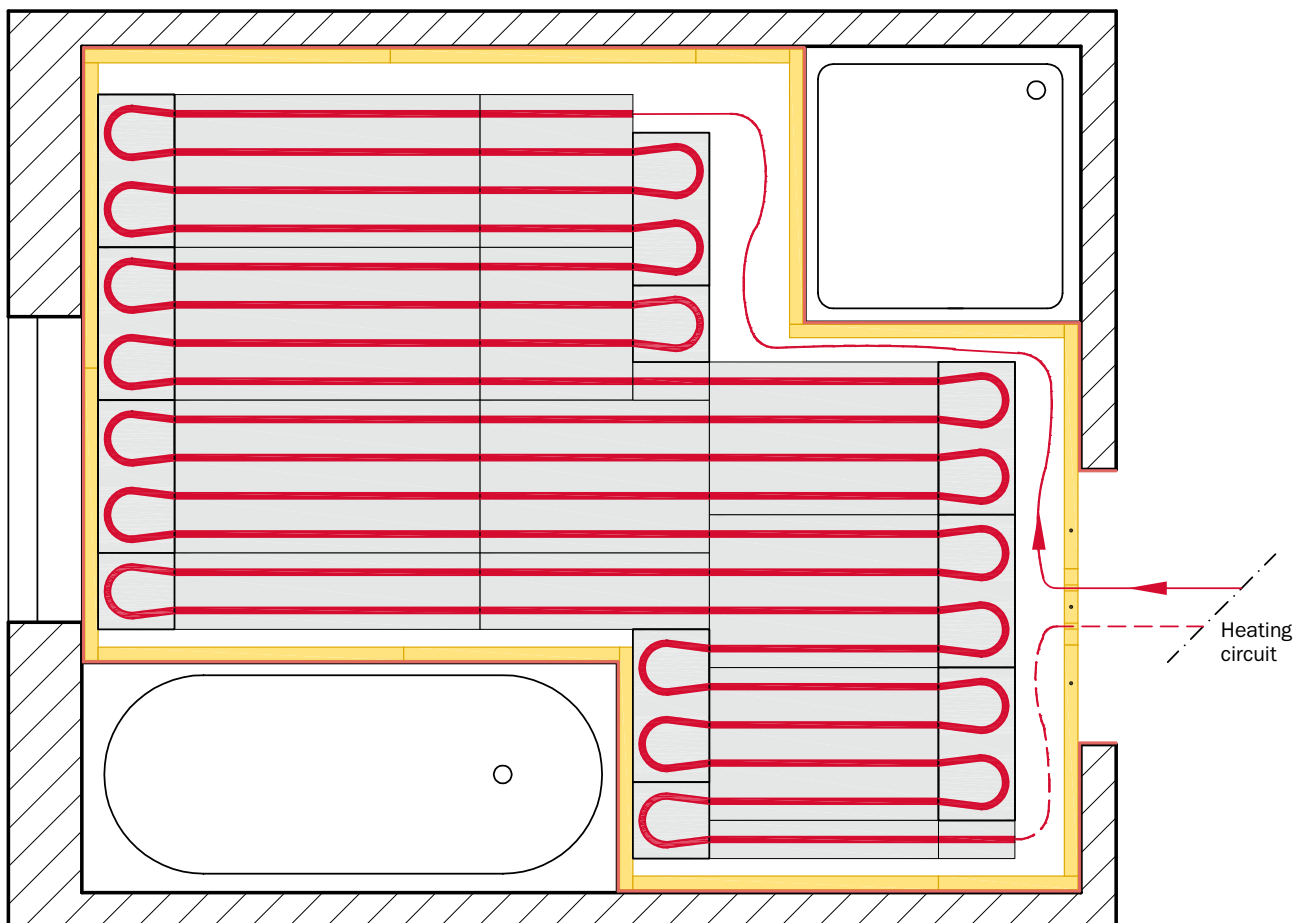
In rooms without floor-level windows, RA 250 can usually be used. The heating circuit starts in front of the window, the inlet pipe is guided along the outer wall, the pipe grooves are cut into the compensating elements in a wave pattern with the hot cutter.

Legend

| | | | | | |
|--|------------------------------------|--|-----------------------|--|--------|
| | Residence zone (RA = 250 mm) | | Edge board | | Flow |
| | Head element with aluminium RA 250 | | Door opening | | Return |
| | Compensating element | | Edge insulation strip | | |



Bathroom – 1 heating circuit – 9 m²



Unheated shower and bathtub areas are fitted with compensating elements and closed with a rail. The heating area is constructed in RA 125.

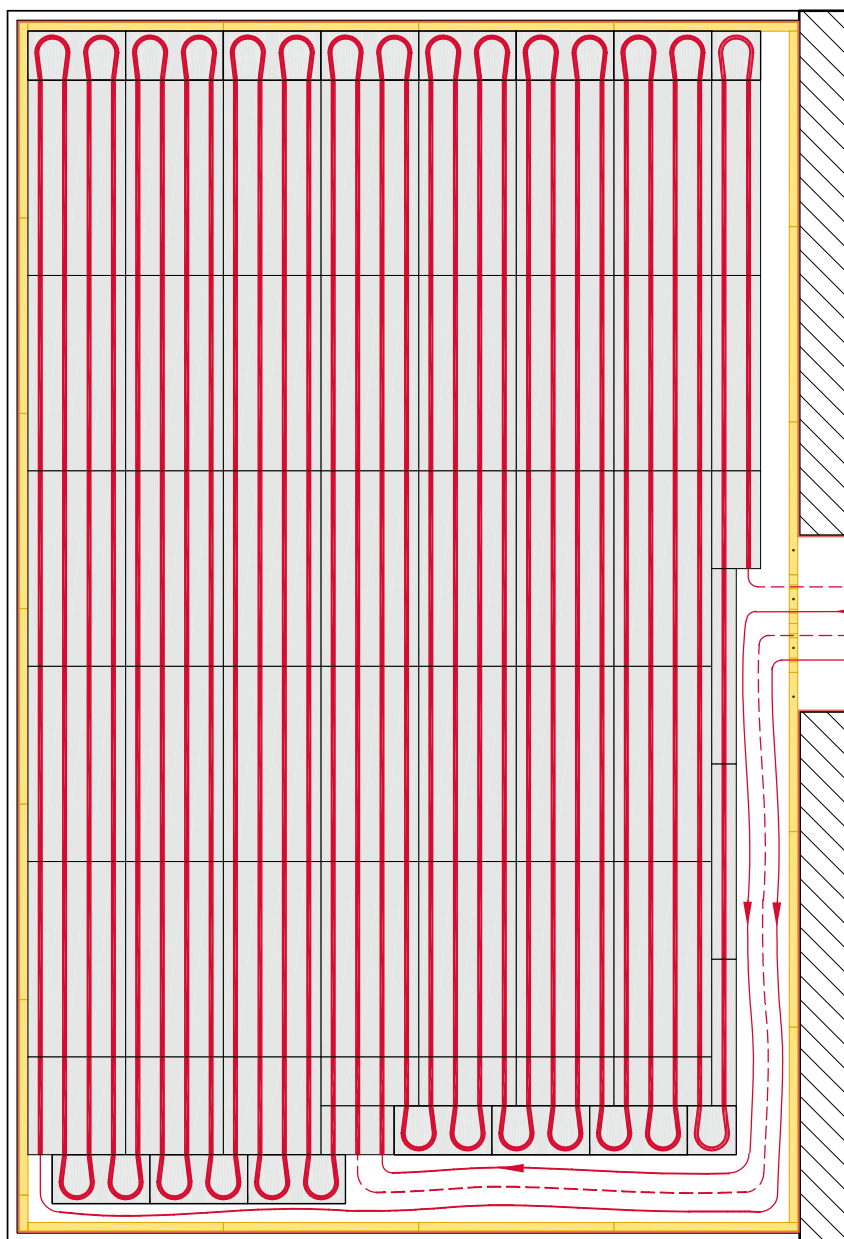
Assembly tip: If there are frequent changes of direction/short pipe distances, fix the head elements with Ultrabond ECO FIX.

Legend

| | | | | | |
|--|------------------------------------|--|-----------------------|--|--------|
| | Edge zone (RA = 125 mm) | | Edge board | | Flow |
| | Head element with aluminium RA 125 | | Door opening | | Return |
| | Compensating element | | Edge insulation strip | | |



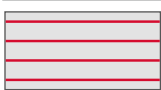


Conservatory – 2 heating circuits – 24 m²

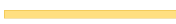






Heating circuit 1
Heating circuit 2

In the case of large exterior glazed areas, laying type RA 125 is recommended.
Inlet pipes are cut into the compensating elements in a wave pattern with the hot cutter.

Legend

-  Edge zone (RA = 125 mm)
-  Head element with aluminium RA 125
-  Compensating element

-  Edge board
-  Door opening
-  Edge insulation strip

-  Flow
-  Return

Detailed information



| | |
|--|----|
| Additional insulation | 20 |
| Requirements for the subsurface | 21 |
| Material requirements and installation times/steps | 22 |



Additional insulation in dry-wall construction

| | $\leq 1.0 \text{ kN}^*$ | | $\leq 2.0 \text{ kN/m}^2$ | | Category | | EN 1991 - | EN 1991/NA ✓ A2 A3 | SIA 261 - |
|--------------------------------------|-------------------------|--|-----------------------------|------------|------------------------------|-------------|--------------|-----------------------|--------------|
| | Load distribution layer | Separating board (tiles) | Separating board + laminate | Parquet | Floorboards on floor battens | Fermacell | Fermacell | Screed bricks | |
| Thickness | 5 mm | 5 + 8 mm | 15 mm | 20-22 mm | 20 mm | 25 mm | 20 mm | | |
| EPS DEO 200 kPa WLG 035 | max. 20 mm | max. 20 mm | max. 20 mm | max. 40 mm | max. 70 mm | max. 90 mm | max. 130 mm | | |
| max. layers | 1 | 1 | 1 | 1 | 2 | 2 | 2 | | |
| XPS DEO 300 kPa WLG 035 | max. 30 mm | max. 30 mm | max. 30 mm | max. 50 mm | max. 70 mm | max. 90 mm | max. 140 mm | | |
| max. layers | 1 | 1 | 1 | 1 | 2 | 2 | 3 | | |
| XPS DEO 500 kPa WLG 035 | max. 60 mm | max. 60 mm | max. 60 mm | max. 80 mm | max. 100 mm | max. 120 mm | max. 190 mm | | |
| max. layers | 1 | 1 | 1 | 2 | 2 | 2 | 3 | | |
| Wood fibre insulation 150 kPa | max. 20 mm | max. 20 mm | max. 20 mm | max. 60 mm | max. 40 mm | max. 50 mm | max. 100 mm | | |
| max. layers | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| plus 12.5 mm load distribution sheet | required | required | required | | | | | | |
| Levelling screed | not possible | Additional insulation/fill > 30 mm: Subtraction of fill thickness from max. insulation thickness | | | | | | | |
| plus 12.5 mm load distribution sheet | not possible | required → if no additional insulation is used | | | | | | | |

| | $\leq 2.0 \text{ kN}^*$ | | $\leq 2.0 \text{ kN/m}^2$ | | Category | | EN 1991 ✓ A | EN 1991/NA ✓ A2 A3 | EN 1991/NA ✓ B1 D1 | SIA 261 ✓ A1 |
|--------------------------------------|-------------------------|--|-----------------------------|------------|------------------------------|------------|----------------|-----------------------|-----------------------|-----------------|
| | Load distribution layer | Separating board (tiles) | Separating board + laminate | Parquet | Floorboards on floor battens | Fermacell | Fermacell | Screed bricks | | |
| Thickness | 5 mm | 5 + 8 mm | 15 mm | 20-22 mm | 20 mm | 25 mm | 20 mm | | | |
| EPS DEO 200 kPa WLG 035 | max. 20 mm | max. 20 mm | max. 20 mm | max. 40 mm | max. 50 mm | max. 70 mm | max. 130 mm | | | |
| max. layers | 1 | 1 | 1 | 1 | 1 | 2 | 2 | | | |
| XPS DEO 300 kPa WLG 035 | max. 30 mm | max. 30 mm | max. 30 mm | max. 40 mm | max. 50 mm | max. 70 mm | max. 140 mm | | | |
| max. layers | 1 | 1 | 1 | 1 | 2 | 2 | 3 | | | |
| XPS DEO 500 kPa WLG 035 | max. 60 mm | max. 60 mm | max. 60 mm | max. 60 mm | max. 70 mm | max. 90 mm | max. 190 mm | | | |
| max. layers | 1 | 1 | 1 | 2 | 1 | 2 | 3 | | | |
| Wood fibre insulation 150 kPa | - | max. 20 mm | max. 20 mm | max. 20 mm | - | max. 40 mm | max. 80 mm | | | |
| max. layers | | 1 | 1 | 1 | | 1 | 2 | | | |
| plus 12.5 mm load distribution sheet | | required | required | | | | | | | |
| Levelling screed | not possible | Additional insulation/fill > 30 mm: Subtraction of fill thickness from max. insulation thickness | | | | | | | | |
| plus 12.5 mm load distribution sheet | not possible | required → if no additional insulation is used | | | | | | | | |

*Individual load (Q_k): Supporting surface min. 20 cm², max. deformation < 3 mm; particularly heavy objects (aquariums, bathtubs) must be considered separately



Requirements for the load-bearing subsurface

Flat, smooth and load-bearing subsurface required → flatness tolerances in accordance with DIN 18202 tab. 3



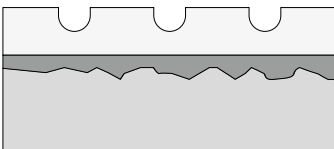
| Line | Reference | Inside micrometers as limit values in mm for measuring point intervals in m | | | | |
|------|--|---|------|------|-------|-------|
| | | 0.1 m | 1 m | 4 m | 10 m | 15 m |
| 4 | Ready-to-cover floors with higher requirements, e.g. with self-levelling fillers | 1 mm | 3 mm | 9 mm | 12 mm | 15 mm |



Wooden joist ceilings must be torsionally rigid and free of deflection

Action recommendations dependent on height of unevennesses

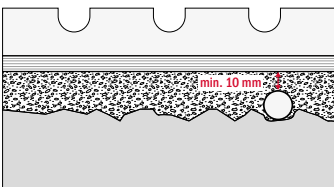
A Unevennesses from 3 - 30 mm



Universal panel UP
Levelling compound 3 - 30 mm
Raw floor

- Smooth with suitable filler or levelling compound.
- If necessary, pretreat floor in accordance with manufacturer instructions.

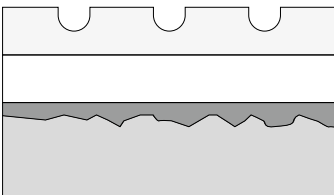
B Unevennesses from 10 - 50 mm or height adjustment



Universal panel UP
Plasterboards (min. 10 mm)
Fill
Raw floor

- Fill with cover made of 10 mm plasterboard.
- **Caution: Not suitable for direct laying with separating board and tiles.**

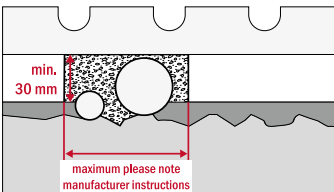
C Unevennesses as of 30 mm and height adjustment



Universal panel UP
XPS DEO board*
Levelling compound 3 - 30 mm
Raw floor

- Smooth out unevennesses filler or levelling compound.
- Height adjustment with XPS DEO boards.
- ***Caution: max. XPS construction heights see Additional insulation in dry-wall construction**

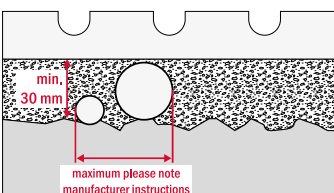
D Unevennesses as of 30 mm and height adjustment



Universal panel UP
XPS DEO board* (see **C**) with Fermacell bound fill (min. 30 mm)
Levelling compound 3 - 30 mm
Raw floor

- Smooth out unevennesses filler or levelling compound.
- Height adjustment with XPS DEO boards.
- Level pipeways with bound fill.
- Please note manufacturer instructions

E Unevennesses as of 30 mm or height adjustment



Universal panel UP
Fermacell bound fill (min. 30 mm)
Raw floor

- Fermacell bound fill
- Please note manufacturer instructions

Material requirements

| Quantities per m ² , excluding leftovers | | RA 125 | RA 250 | Mix of 20% RA 125 80% RA 250 |
|---|---|---|--------|------------------------------------|
| 7715 16 30 | TECEfloor ISO composite pipe 16 x 2, 300 m [m/m ²] | 8.00 | 4.00 | 5.00 |
| 7752 00 10 | TECEfloor universal panel UP 125 [pc./m ²] | 1.46 | | 0.30 |
| 7752 00 11 | TECEfloor universal panel UP 250 [pc./m ²] | | 1.46 | 1.26 |
| 7752 00 12 | TECEfloor head element UP 125 [pc./m ²] | 0.24 | | 0.05 |
| 7752 00 13 | TECEfloor head element UP 250 [pc./m ²] | | 0.24 | 0.19 |
| 7752 00 22 | TECEfloor head element or aluminium UP 125 alternative to 77 52 00 12 [pc./m ²] | 0.24 | | 0.05 |
| 7752 00 23 | TECEfloor head element or aluminium UP 250 alternative to 77 52 00 11 [pc./m ²] | | 0.24 | 0.19 |
| 7752 00 15 | TECEfloor compensating element UP [pc./m ²] | 0.25 | 0.25 | 0.15 |
| 7752 00 16 | TECEfloor edge board UP [pc./m ²] | 1.20 | 1.20 | 1.20 |
| 7762 00 10 | TECEfloor edge insulation strip 10/160 [m/m ²] | 1.00 | 1.00 | 1.00 |
| 7752 00 14 | TECEfloor transition element UP | Number of combined heating circuits RA 125/250 | | |
| 7752 00 17 | TECEfloor edge board door opening UP | 2 pc./door and heating circuit | | |
| 7752 00 24 | TECEfloor load distribution sheet UP, 800 x 200 mm | 0.5 pc./heating circuit on manifold | | |
| 7752 00 18 | TECEfloor separating board UP see constr. type "DA" | 1.45 pc/m ² | | |
| 7752 00 19 | TECEfloor joint adhesive strip UP 120 m see constr. "DA 01" and "DA 02" | 2.5 m/m ² | | |
| 7752 00 20 | TECEfloor Ultrabond ECO FIX UP 10 kg see constr. type "DA" and "DP" | approx. 0.125 kg/m ² per adhesive layer | | |
| 7752 00 21 | TECEfloor hot cutter UP | | | |
| 7731 00 02...12 | TECEfloor stainless steel manifold HKV 12 with flow rate display | | | |
| 7721 16 01 | TECEfloor Eurocone clamping ring connection AL/PE-RT 16 x 2 | 2 pc/m ² | | |
| 7749 00 10 | TECEfloor SLQ servomotor 230 V | 1 pc/m ² | | |
| 7741 00 12 | TECEfloor room thermostat RT 230 V | 1 pc/room | | |
| 7743 00 10 | TECEfloor terminal strip LK6 standard 230 V | per manifold and max. 6 rooms | | |

Installation times

| Practical empirical values for installation times (no guarantee can be given for these times). | 1 person |
|--|------------------------|
| Laying type "RA 125" (edge insulation strip, system elements, pipe) | 12 min/m ² |
| Laying type "RA 250" (edge insulation strip, system elements, pipe) | 8 min/m ² |
| Laying type "Mix" 20 % RA 125/80 % RA 250 (edge insulation strip, system elements, pipe) | 10 min/m ² |
| Laying of separating board | 8 min/m ² |
| Application of adhesive per layer | 0.5 min/m ² |
| Application of joint adhesive strip | 0.5 min/m ² |

Installation steps

- 1) Level unevennesses (see p. 19 Detailed information), apply seal if necessary
- 2) Calculate room geometry and possible pipe guide, if necessary lay a few head pieces and boards as a test
- 3) Apply adhesive if necessary (see Constructions)
- 4) Lay additional insulation if necessary (see Constructions)
- 5) Position edge insulation strip
- 6) Lay edge boards
- 7) Apply adhesive if necessary (see Constructions)
- 8) Lay head pieces and system elements
- 9) Lay compensating elements
- 10) Cut in pipe guides with hot cutter
- 11) Lay pipe
- 12) Lay load distribution sheets and glue if necessary
- 13) Apply adhesive if necessary (see Constructions)
- 14) Lay separating board if necessary (see Constructions)
- 15) Apply joint adhesive strip if necessary (see Constructions)
- 16) Lay surface or dry screed (see Constructions)

Constructions



TECEfloor universal panel UP

| | |
|---------------------------|----|
| Application overview | |
| TECEfloor universal panel | 24 |

Direct laying (DA)

| | | |
|-------|--|----|
| DA 01 | Separating board UP Tiles | 25 |
| DA 02 | Separating board UP Tiles (additional insulation) | 26 |
| DA 04 | Separating board UP Laminate | 27 |
| DA 05 | Separating board UP Laminate (additional insulation) | 28 |

Direct laying parquet (DP)

| | | |
|-------|--|----|
| DP 01 | Direct laying parquet | 29 |
| DP 02 | Direct laying parquet (additional insulation) | 30 |
| DP 03 | Direct laying solid floorboards on floor battens | 31 |
| DP 04 | Direct laying solid floorboards on floor battens (additional insulation) | 32 |

Dry screed 20 mm (TE20)

| | | |
|---------|--|----|
| TE20 01 | Dry screed element (Fermacell 20 mm) | 33 |
| TE20 02 | Dry screed element (Fermacell 20 mm, additional insulation) | 34 |
| TE20 03 | Dry screed element (Knauf Brio 18 mm) | 35 |
| TE20 04 | Dry screed element (Knauf Brio 18 mm, additional insulation) | 36 |

Dry screed 25 mm (TE25)

| | | |
|---------|---|----|
| TE25 01 | Dry screed element (Fermacell 25 mm) | 37 |
| TE25 02 | Dry screed element (Fermacell 25 mm, additional insulation) | 38 |
| TE25 03 | Dry screed element (Fermacell 25 mm, impact sound insulation) | 39 |
| TE25 04 | Dry screed element (Knauf Brio 23 mm) | 40 |
| TE25 05 | Dry screed element (Knauf Brio 23 mm, additional insulation) | 41 |
| TE25 06 | Dry screed element (Knauf Aquapanel 22 mm) | 42 |

Cement screed (CT)

| | | |
|-------|---|----|
| CT 01 | Cement screed CT-F5 (impact sound insulation) | 43 |
| CT 02 | Cement screed CT-F5 (additional insulation) | 44 |

Anhydrite screed (CAF)

| | | |
|--------|---|----|
| CAF 01 | Anhydrite screed CAF-F5 (impact sound insulation) | 45 |
| CAF 02 | Anhydrite screed CAF-F5 (additional insulation) | 46 |
| CAF 03 | Thin screed | 47 |

Wall heating (WA)

| | | |
|----|--------------|----|
| WA | Wall heating | 64 |
|----|--------------|----|





| Page | Type | Floor covering | Installation height without floor covering (mm) | Min. thermal resistance (m ² K/W) | Impact sound insulation calculated value (dB) or test value |
|------|----------|----------------------------------|---|--|---|
| 31 | DP 03 | Solid floorboards to 22 mm | 30 | ≥ 0.82 | No information |
| 29 | DP 01 | Parquet as of 15 mm | 32 | ≥ 0.82 | 14 |
| 25 | DA 01 | Tiles as of 8 mm + 4 mm adhesive | 35 | ≥ 0.82 | 14 |
| 27 | DA 04 | Laminate as of 8 mm | 35 | ≥ 0.82 | 19 |
| 35 | TE 20 03 | all* | 48 | ≥ 0.82 | 18 |
| 33 | TE 20 01 | all* | 50 | ≥ 0.82 | 18 |
| 42 | TE 25 06 | all* | 52 | ≥ 0.82 | 18 |
| 40 | TE 25 04 | all* | 53 | ≥ 0.82 | 18 |
| 37 | TE 25 01 | all* | 55 | ≥ 0.82 | 18 |
| 47 | CAF 03 | all* | 61 | ≥ 0.93 | 24 |
| 32 | DP 04 | Solid floorboards to 22 mm | 70 | 2.00 | No information |
| 30 | DP 02 | Parquet as of 15 mm | 72 | 2.00 | No information |
| 26 | DA 02 | Tiles as of 8 mm + 4 mm adhesive | 75 | 2.00 | No information |
| 28 | DA 05 | Laminate as of 8 mm | 75 | 2.00 | No information |
| 39 | TE 25 03 | all* | 85 | 1.44 | 28 |
| 36 | TE 20 04 | all* | 88 | 2.00 | 18 |
| 34 | TE 20 02 | all* | 90 | 2.00 | 18 |
| 45 | CAF 01 | all* | 90 | 1.32 | 26 |
| 41 | TE 25 05 | all* | 93 | 2.00 | 18 |
| 38 | TE 25 02 | all* | 95 | 2.00 | 18 |
| 43 | CT 01 | all* | 105 | 1.32 | 26 |
| 46 | CAF 02 | all* | 120 | 2.07 | No information |
| 44 | CT 02 | all* | 135 | 2.07 | No information |

* All types of carpet, tiles, parquet, laminate and plastic suitable for floor heating



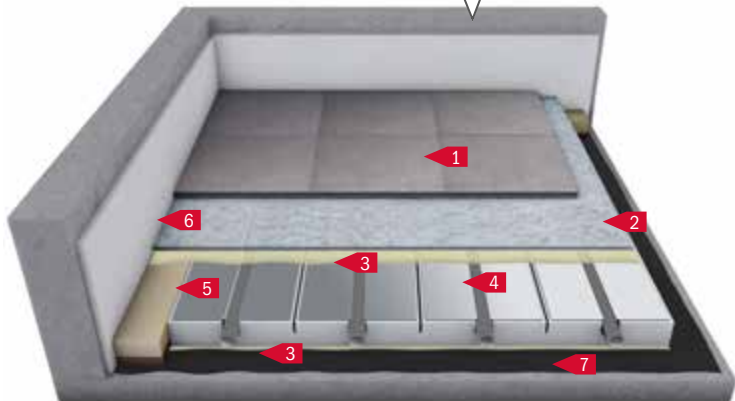
Separating board UP | Tiles

TECEfloor universal panel UP

















 Tile thickness as of 8 mm
 Format $\geq 10 \times 10 \text{ cm}$ \rightarrow
 $\leq 40 \times 60 \text{ cm}$
 Natural stone thickness
 $\geq 10 \text{ mm}$
 joint width $\geq 3 \text{ mm}$








- 1** Tiles/natural stone including adhesive (see below) $\geq 12 \text{ mm}$
- 2** Separating board UP + joint adhesive strip 5 mm
- 3** Adhesive (MAPEI ECO FIX)
- 4** Heating element EPS + system pipe 30 mm
- 5** Edge board (30 mm), mandatory
- 6** Edge insulation strip
- 7** Moisture barrier if applicable (connection to subsurface)


$\geq 47 \text{ mm}$



Ceilings between rooms of the same temperature

| | | | | | | |
|--|---|---|---|---|--|---|
|  $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met |  $\sim 37 \text{ kg/m}^2$ | Category |  EN 1991 |  EN 1991/NA |  SIA 261 |
|  $< 1.22 \text{ W/m}^2\text{K}$ | |  $\leq 2.0 \text{ kN/m}^2$ |  |  A |  A2 A3 |  A1 |
|  14 dB | Test value in accordance with DIN ISO 140-8; applies for concrete ceilings $> 12 \text{ cm}$ (DIN4109:m' $> 276 \text{ kg/m}^2$) |  $\leq 2.0 \text{ kN}$ <i>* $\geq 20 \text{ cm}^2$</i> |  | - |  B1 D1 | - |
| | | |  | - | - | - |

-  Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
-  Wooden joist ceilings must be torsionally rigid and free of deflection
-  Filling for compensation not permitted (exception: "Fermacell bound fill")
-  Glue system elements to each other and the subsurface over the complete surface, use in total MAPEI ECO FIX ca. 250 gr/m²
-  Lay tiles in combined process with MAPEI adhesive Elastorapid and joint mortar Ultracolor Plus
-  This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
-  The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp $\varnothing = 5 \text{ cm}$)

 **Thermal output: DA**
See product data sheets and detailed information

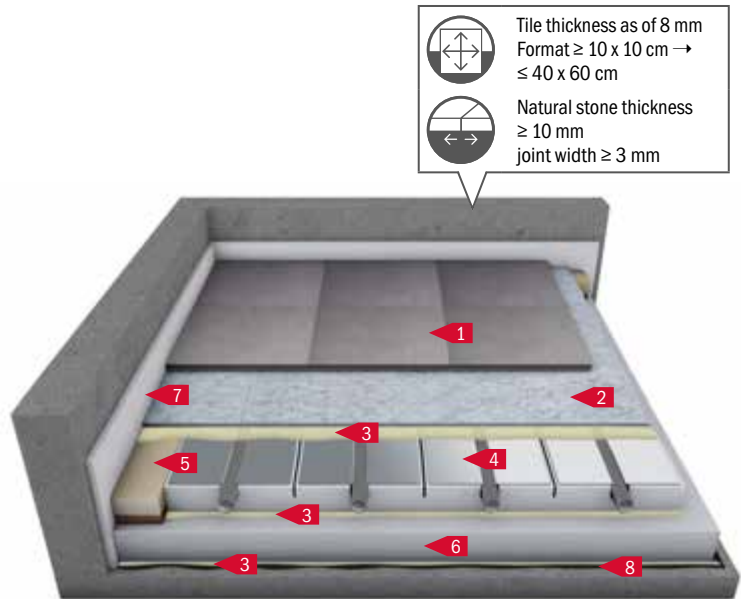


Separating board UP | Tiles with additional insulation

TECEfloor universal panel UP

- 1** Tiles/natural stone including adhesive (see below) ≥ 12 mm
- 2** Separating board UP + joint adhesive strip 5 mm
- 3** Adhesive (MAPEI ECO FIX)
- 4** Heating element EPS + system pipe 30 mm
- 5** Edge board (30 mm), mandatory
- 6** Additional insulation XPS 035 DEO, 500 kPa 40 mm
- 7** Edge insulation strip
- 8** Moisture barrier if applicable (connection to subsurface)

≥ 87 mm



Ceilings against unheated rooms/ground

| | | | | | | | | |
|--|--|---|--|------------------------------------|----------|-----|---------|------|
| | 2.0 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | ~ 38 kg/m ² | Category | | | |
| | 0.5 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm XPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm XPS 035) | | ≤ 2.0 kN/m ² | | ✓ A | ✓ A2 A3 | ✓ A1 |
| | The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | | | ≤ 2.0 kN * ≥ 20 cm ² | | - | ✓ B1 D1 | - |
| | | | | | | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- Wooden joist ceilings must be torsionally rigid and free of deflection
- Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor
- Filling for compensation not permitted (exception: "Fermacell bound fill")
- Glue the material layers to each other over the complete area (create a bond), use in total MAPEI ECO FIX ca. 375 gr/m²
- Lay tiles in combined process with MAPEI adhesive Elastorapid and joint mortar Ultracolor Plus
- New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa
Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)
- Thermal output: DA**
See product data sheets and detailed information

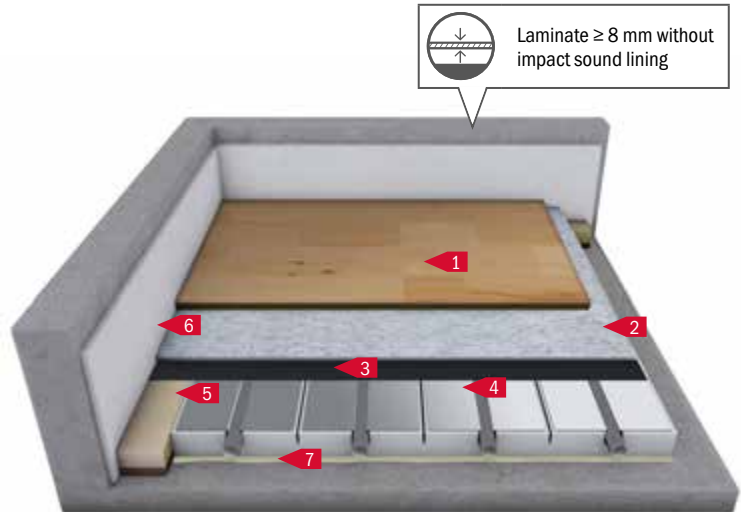


Separating board UP | Laminate

TECEfloor universal panel UP

- 1** Laminate/ready-to-lay parquet ≥ 8 mm
- 2** Separating board UP 5 mm
- 3** Moisture barrier if applicable
- 4** Heating element EPS + system pipe 30 mm
- 5** Edge board (30 mm), use recommended
- 6** Edge insulation strip
- 7** Adhesive, MAPEI ECO FIX

≥ 43 mm



Ceilings between rooms of the same temperature

| | | | | | | |
|--------------------------------|---|---|----------|---------|------------|---------|
| $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | $\sim 15 \text{ kg/m}^2$ | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.22 \text{ W/m}^2\text{K}$ | | $\leq 2.0 \text{ kN/m}^2$ | | ✓ A | ✓ A2 A3 | ✓ A1 |
| 19 dB | Test value in accordance with DIN ISO 140-8; applies for concrete ceilings $> 12 \text{ cm}$ (DIN4109: $\text{m}' > 276 \text{ kg/m}^2$) | $\leq 2.0 \text{ kN}$ <small>* $\geq 20 \text{ cm}^2$</small> | | - | ✓ B1 D1 | - |
| | | | | - | - | - |

| | |
|-------------|--|
| 1m max. 3mm | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Wooden joist ceilings must be torsionally rigid and free of deflection |
| | Glue system elements to the subsurface over the complete surface, use in particular MAPEI ECO FIX ca. 125 gr/m ² |
| | This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier) Use of separating board UP as load distribution and impact sound insulation sheet |

Thermal output: DA
See product data sheets and detailed information

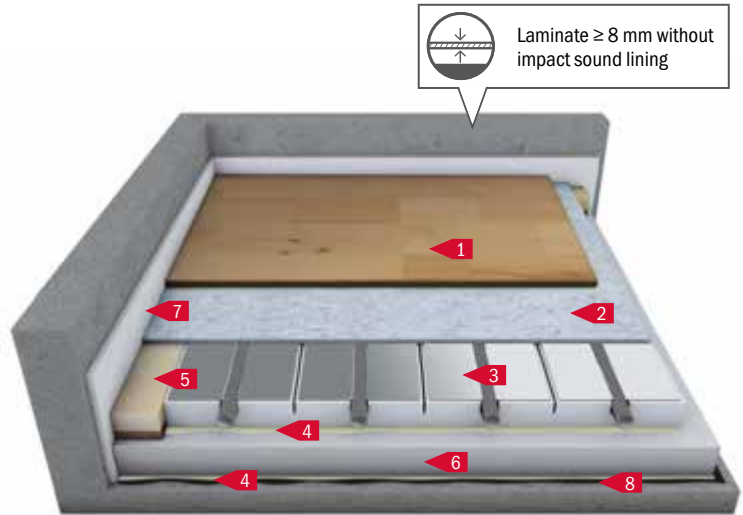


Separating board UP | Laminate with additional insulation

TECEfloor universal panel UP

- 1** Laminate/ready-to-lay parquet ≥ 8 mm
- 2** Separating board UP 5 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Adhesive
- 5** Edge board (30 mm), use recommended
- 6** Additional insulation XPS 035 DEO, 500 kPa 40 mm
- 7** Edge insulation strip
- 8** Moisture barrier if applicable (connection to subsurface)

≥ 83 mm



Ceilings against unheated rooms/ground

| | | | | |
|--|-------------------------|---|--|------------------------------------|
| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | ~ 16 kg/m ² |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm XPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm XPS 035) | | ≤ 2.0 kN/m ² |
| | | The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | | ≤ 2.0 kN * ≥ 20 cm ² |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | ✓ A | ✓ A2 A3 | ✓ A1 |
| | - | ✓ B1 D1 | - |
| | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- Wooden joist ceilings must be torsionally rigid and free of deflection
- Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor
- Glue the material layers to each other over the complete area (create a bond), use in total MAPEI ECO FIX ca. 250 gr/m²
- New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa
Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)
If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier)

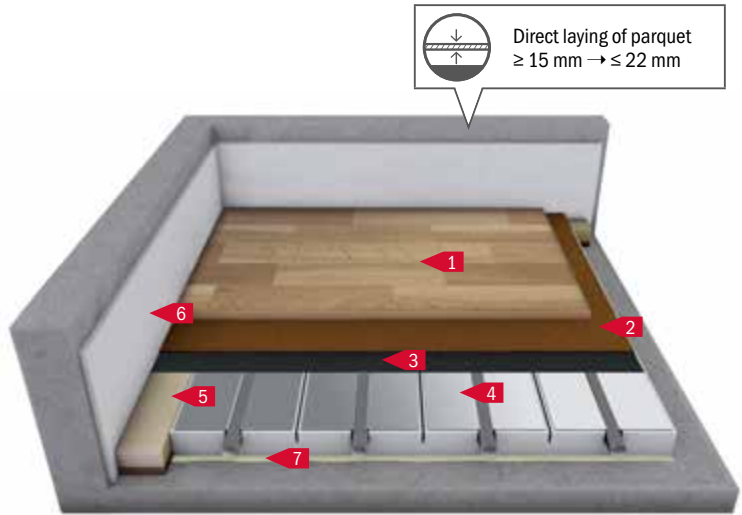
Thermal output: DA
See product data sheets and detailed information



Direct laying of parquet

TECEfloor universal panel UP

- 1** Parquet ≥ 15 mm
- 2** Impact sound insulation 2 mm
- 3** Moisture barrier if applicable
- 4** Heating element EPS + system pipe 30 mm
- 5** Edge board (30 mm), use recommended
- 6** Edge insulation strip
- 7** Adhesive ≥ 47 mm



Ceilings between rooms of the same temperature

| | | | | | | |
|---------------------------------------|--|---|---------------------------------------|---|--|---------|
| $> 0.82 \text{ m}^2\text{K}/\text{W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | $\sim 13 \text{ kg}/\text{m}^2$ | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.22 \text{ W}/\text{m}^2\text{K}$ | | $\leq 2.0 \text{ kN}/\text{m}^2$ | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3 | <input checked="" type="checkbox"/> A1 | |
| 14 dB | Test value in accordance with DIN ISO 140-8; applies for concrete ceilings $> 12 \text{ cm}$ (DIN4109:m' $> 276 \text{ kg}/\text{m}^2$) | $\leq 2.0 \text{ kN}$ <i>* $\geq 20 \text{ cm}^2$</i> | - | <input checked="" type="checkbox"/> B1 <input checked="" type="checkbox"/> D1 | - | - |
| | | | - | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- Glue system elements to the subsurface over the complete surface, use in total MAPEI ECO FIX ca. 125 gr/m²
- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- The details for the permitted individual load (Qk) relate to a load area of at least 20 cm² (pressure stamp $\varnothing = 5 \text{ cm}$)
If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier)

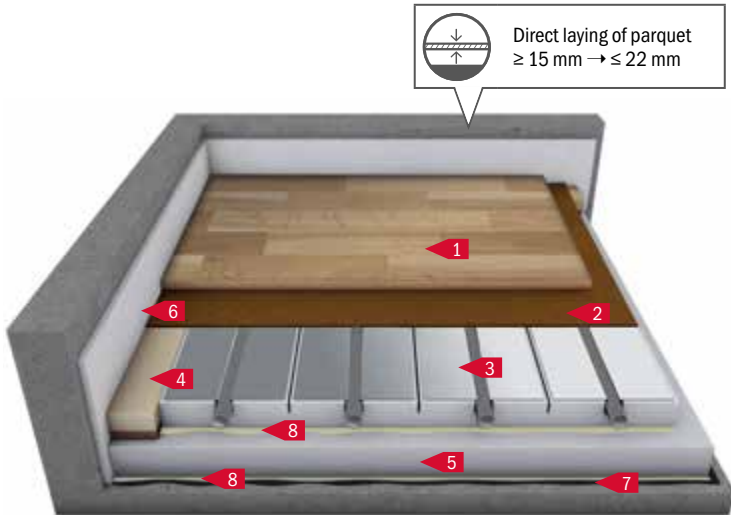


Direct laying of parquet with additional insulation

TECEfloor universal panel UP

- 1** Parquet ≥ 15 mm
- 2** Impact sound insulation 2 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Additional insulation XPS 035 DEO, 500 kPa 40 mm
- 6** Edge insulation strip
- 7** Moisture barrier if applicable (connection to subsurface)
- 8** Adhesive

≥ 87 mm



Ceilings against unheated rooms/ground

| | | | | | | | | |
|--|--|---|--|--|----------|-----|---------|------|
| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | ~ 14 kg/m ² | Category | | | |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm XPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm XPS 035) | | ≤ 2.0 kN/m ² | | ✓ A | ✓ A2 A3 | ✓ A1 |
| | The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | | | ≤ 2.0 kN <i>* ≥ 20 cm²</i> | | - | ✓ B1 D1 | - |
| | | | | | | - | - | - |

| | |
|--|---|
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor |
| | Glue the material layers to each other over the complete area (create a bond), use in particular MAPEI ECO FIX ca. 250 gr/m ² |
| | New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e) As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier) |

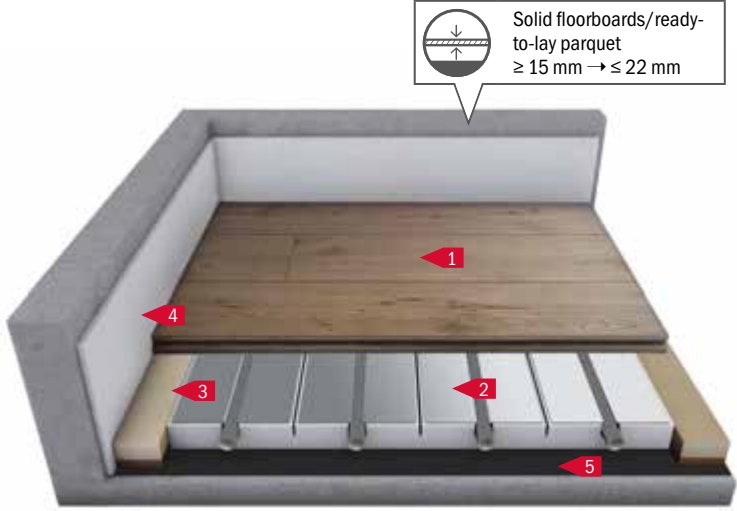
Thermal output: DP
See product data sheets and detailed information



Direct laying of solid floorboards on floor battens with additional insulation

TECEfloor universal panel UP

- 1 Floorboards ≤ 22 mm
- 2 Heating element EPS + system pipe 30 mm
- 3 Edge boards or planed squared timbers (30 mm)
- 4 Edge insulation strip
- 5 Moisture barrier if applicable ≤ 52 mm



Ceilings between rooms of the same temperature

| | | |
|--|--|---|
| | $> 0.82 \text{ m}^2\text{K}/\text{W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met |
| | $< 1.22 \text{ W}/\text{m}^2\text{K}$ | |
| | The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | |

| | |
|--|---|
| | $\sim 18 \text{ kg}/\text{m}^2$ |
| | $\leq 2.0 \text{ kN}/\text{m}^2$ |
| | $\leq 2.0 \text{ kN}$ * $\geq 20 \text{ cm}^2$ |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|-------------|----------------|-------------|
| | ✓ A | ✓ A2 A3 | ✓ A1 |
| | - | ✓ B1 D1 | - |
| | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm^2 (pressure stamp $\varnothing = 5 \text{ cm}$)

If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier)

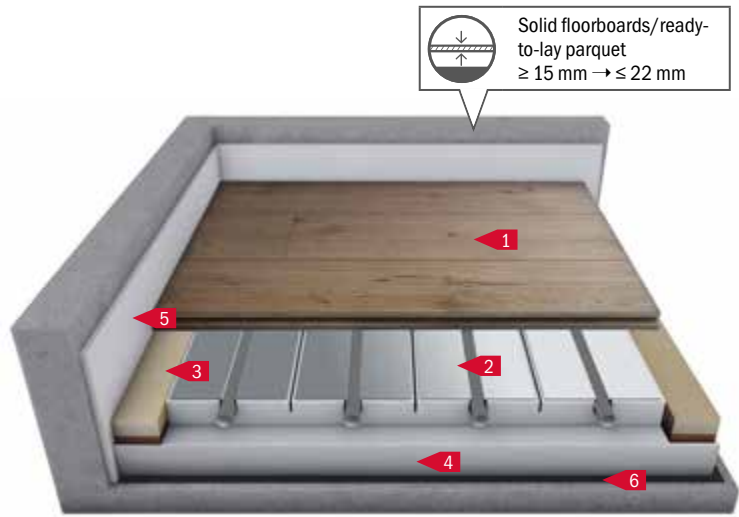
Screw edge board onto subsurface, planed squared timbers ($l > 3 \text{ m}$) can be laid floating



Direct laying of timber floorboards on floor battens with additional insulation

TECEfloor universal panel UP

- 1 Timber Floorboards ≤ 22 mm
 - 2 Heating element EPS + system pipe 30 mm
 - 3 Planed squared timbers (30 mm)
 - 4 Additional insulation EPS 035 DEO, 200 kPa 40 mm
 - 5 Edge insulation strip
 - 6 Moisture barrier if applicable
- ≤ 92 mm**



Ceilings against unheated rooms/ground

| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | ~ 20 kg/m ² | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Category</th> <th style="width: 15%;"> EN 1991</th> <th style="width: 15%;"> EN 1991/NA</th> <th style="width: 15%;"> SIA 261</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">✓ A</td> <td style="text-align: center;">✓ A2 A3</td> <td style="text-align: center;">✓ A1</td> </tr> <tr> <td></td> <td style="text-align: center;">-</td> <td style="text-align: center;">✓ B1 D1</td> <td style="text-align: center;">-</td> </tr> <tr> <td></td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> </tbody> </table> | Category | EN 1991 | EN 1991/NA | SIA 261 | | ✓ A | ✓ A2 A3 | ✓ A1 | | - | ✓ B1 D1 | - | | - | - | - |
|----------|--|---|---------|--|--|----------|---------|------------|---------|--|-----|---------|------|--|---|---------|---|--|---|---|---|
| Category | EN 1991 | EN 1991/NA | SIA 261 | | | | | | | | | | | | | | | | | | |
| | ✓ A | ✓ A2 A3 | ✓ A1 | | | | | | | | | | | | | | | | | | |
| | - | ✓ B1 D1 | - | | | | | | | | | | | | | | | | | | |
| | - | - | - | | | | | | | | | | | | | | | | | | |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm XPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm XPS 035) | | ≤ 2.0 kN/m ² | | | | | | | | | | | | | | | | | |
| | The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | | | ≤ 2.0 kN <i>* ≥ 20 cm²</i> | | | | | | | | | | | | | | | | | |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor
- New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm EPS 035 DEO > 200 kPa
Old building: EnEV 2009 → min. 40 mm EPS 035 DEO > 200 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)
- If necessary, protect surface against moisture from below in accordance with manufacturer instructions (vapour barrier)
Planed squared timbers (l > 3 m) can be laid floating

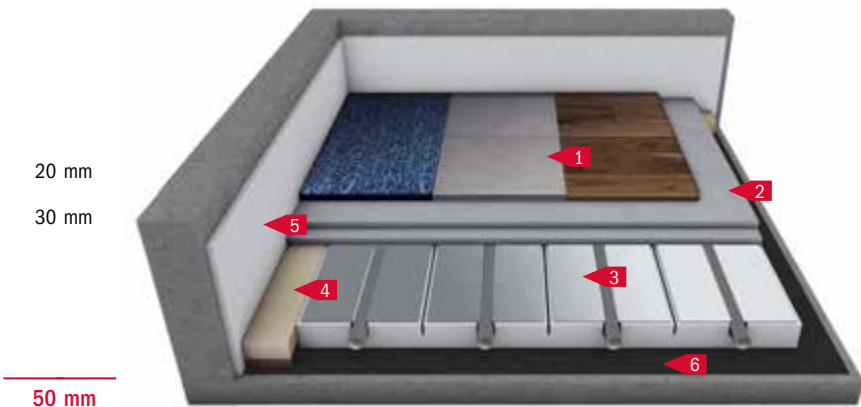
Thermal output: DP
See product data sheets and detailed information



Dry screed element (Fermacell 20 mm)

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Fermacell) 20 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Edge insulation strip
- 6** Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | | | | | |
|--------------------------------|--|---|----------|---------|------------|---------|
| $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | 33-53 kg/m ² | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.22 \text{ W/m}^2\text{K}$ | | $\leq 2.0 \text{ kN/m}^2$ | | ✓ A | ✓ A2 A3 | ✓ A1 |
| 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | $\leq 2.0 \text{ kN}$ <i>* $\geq 20 \text{ cm}^2$</i> | | - | ✓ B1 D1 | - |
| | | | | - | - | - |

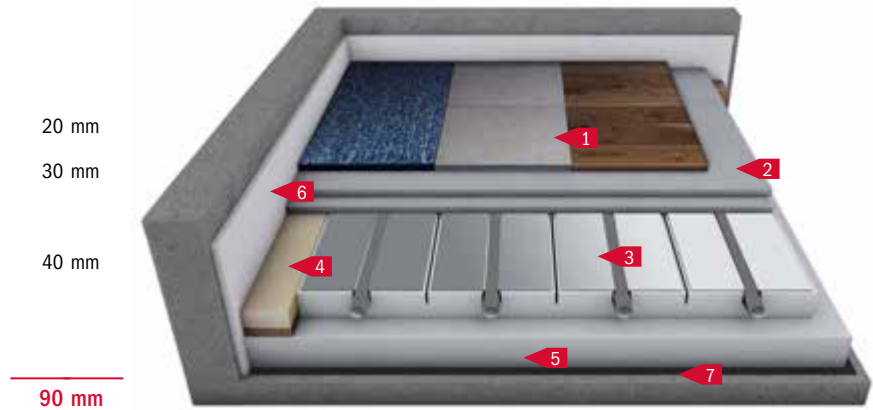
| | |
|----------------|--|
| 1m max. 3mm | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) In the case of higher imposed or individual loads, the screed thickness can be adjusted (→ TE25) |



Dry screed element (Fermacell 20 mm) with additional insulation

TECEfloor universal panel UP

- | | | |
|----------|--|-------|
| 1 | Carpet/tiles/parquet/laminate/plastic | |
| 2 | Dry screed element (Fermacell) | 20 mm |
| 3 | Heating element EPS + system pipe | 30 mm |
| 4 | Edge board (30 mm), use recommended | |
| 5 | Additional insulation EPS 035 DEO, 200 kPa | 40 mm |
| 6 | Edge insulation strip | |
| 7 | Moisture barrier if applicable | |



Ceilings against unheated rooms/ground

| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | 35-55 kg/m ² | <table border="1"> <thead> <tr> <th>Category</th> <th> EN 1991</th> <th> EN 1991/NA</th> <th> SIA 261</th> </tr> </thead> <tbody> <tr> <td></td> <td>✓ A</td> <td>✓ A2 A3</td> <td>✓ A1</td> </tr> <tr> <td></td> <td>-</td> <td>✓ B1 D1</td> <td>-</td> </tr> <tr> <td></td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | Category | EN 1991 | EN 1991/NA | SIA 261 | | ✓ A | ✓ A2 A3 | ✓ A1 | | - | ✓ B1 D1 | - | | - | - | - |
|----------|-------------------------|---|---------|------------------------------------|--|----------|---------|------------|---------|--|-----|---------|------|--|---|---------|---|--|---|---|---|
| Category | EN 1991 | EN 1991/NA | SIA 261 | | | | | | | | | | | | | | | | | | |
| | ✓ A | ✓ A2 A3 | ✓ A1 | | | | | | | | | | | | | | | | | | |
| | - | ✓ B1 D1 | - | | | | | | | | | | | | | | | | | | |
| | - | - | - | | | | | | | | | | | | | | | | | | |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm EPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm EPS 035) | | ≤ 2.0 kN/m ² | | | | | | | | | | | | | | | | | |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | | ≤ 1.5 kN * ≥ 20 cm ² | | | | | | | | | | | | | | | | | |

| | |
|--|---|
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor |
| | New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e) As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) In the case of higher imposed or individual loads, the screed thickness can be adjusted (→ TE25) |



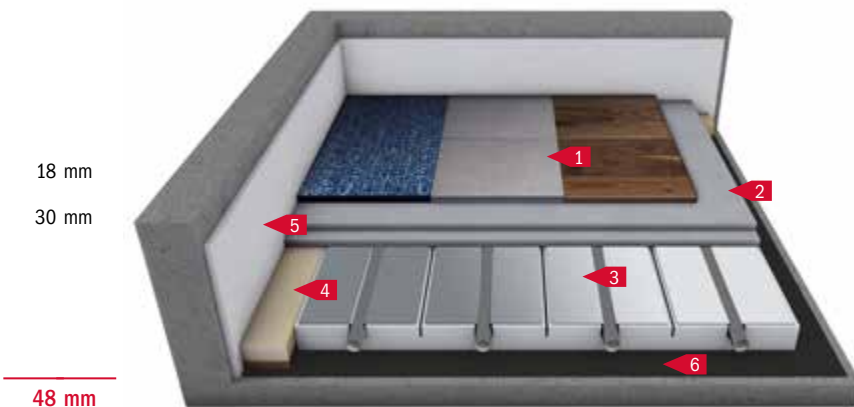
Thermal output: TE20
See product data sheets and detailed information



Dry screed element (Knauf Brio 18 mm)

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Knauf Brio) 18 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Edge insulation strip
- 6** Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | |
|--|--------------------------------|--|
| | $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met |
| | $< 1.22 \text{ W/m}^2\text{K}$ | |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings |

| | |
|--|---|
| | 33-53 kg/m ² |
| | $\leq 2.0 \text{ kN/m}^2$ |
| | $\leq 1.0 \text{ kN}$ <i>* $\geq 20 \text{ cm}^2$</i> |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | - | ✓ A2 A3 | - |
| | - | - | - |
| | - | - | - |

| | |
|--|--|
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) In the case of higher imposed or individual loads, the screed thickness can be adjusted (→ TE25) |

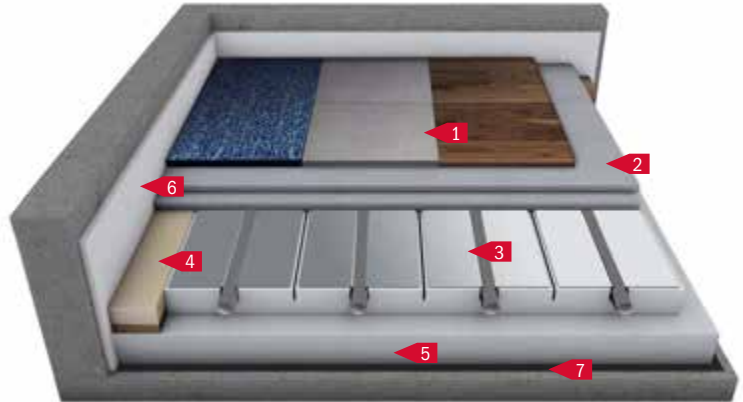


Dry screed element (Knauf Brio 18 mm) with additional insulation

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Knauf Brio) 18 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Additional insulation EPS 035 DEO, 200 kPa 40 mm
- 6** Edge insulation strip
- 7** Moisture barrier if applicable

88 mm



Ceilings against unheated rooms/ground

| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | 35-55 kg/m ² | <table border="1"> <thead> <tr> <th>Category</th> <th></th> <th></th> <th></th> </tr> <tr> <th></th> <th>EN 1991</th> <th>EN 1991/NA</th> <th>SIA 261</th> </tr> </thead> <tbody> <tr> <td></td> <td>-</td> <td>✓ A2 A3</td> <td>-</td> </tr> <tr> <td></td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | Category | | | | | EN 1991 | EN 1991/NA | SIA 261 | | - | ✓ A2 A3 | - | | - | - | - | | - | - | - |
|----------|-------------------------|---|---------|------------------------------------|---|----------|--|--|--|--|---------|------------|---------|--|---|---------|---|--|---|---|---|--|---|---|---|
| Category | | | | | | | | | | | | | | | | | | | | | | | | | |
| | EN 1991 | EN 1991/NA | SIA 261 | | | | | | | | | | | | | | | | | | | | | | |
| | - | ✓ A2 A3 | - | | | | | | | | | | | | | | | | | | | | | | |
| | - | - | - | | | | | | | | | | | | | | | | | | | | | | |
| | - | - | - | | | | | | | | | | | | | | | | | | | | | | |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm EPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm EPS 035) | | ≤ 2.0 kN/m ² | | | | | | | | | | | | | | | | | | | | | |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | | ≤ 1.0 kN * ≥ 20 cm ² | | | | | | | | | | | | | | | | | | | | | |

| | |
|--|---|
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor |
| | New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e) As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) In the case of higher imposed or individual loads, the screed thickness can be adjusted (→ TE25) |

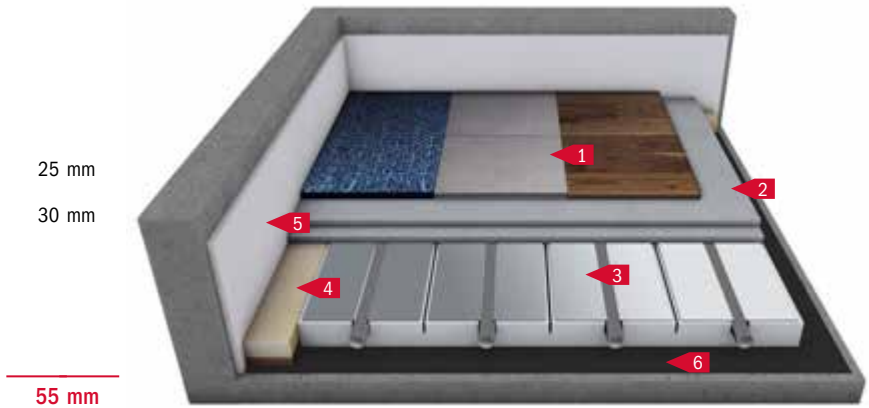
Thermal output: TE20
See product data sheets and detailed information



Dry screed element (Fermacell 25 mm)

TECEfloor universal panel UP

- 1 Carpet/tiles/parquet/laminate/plastic
- 2 Dry screed element (Fermacell) 25 mm
- 3 Heating element EPS + system pipe 30 mm
- 4 Edge board (30 mm), use recommended
- 5 Edge insulation strip
- 6 Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | | | | | |
|--------------------------------|--|---------------------------|----------|---------|------------|---------|
| $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | 38-58 kg/m ² | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.22 \text{ W/m}^2\text{K}$ | | $\leq 4.0 \text{ kN/m}^2$ | A | A | A2 A3 | A1 A2 |
| 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | $\leq 3.0 \text{ kN}$ | - | B1 D1 | B | |
| | | | - | C1* | | |

Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)

This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required

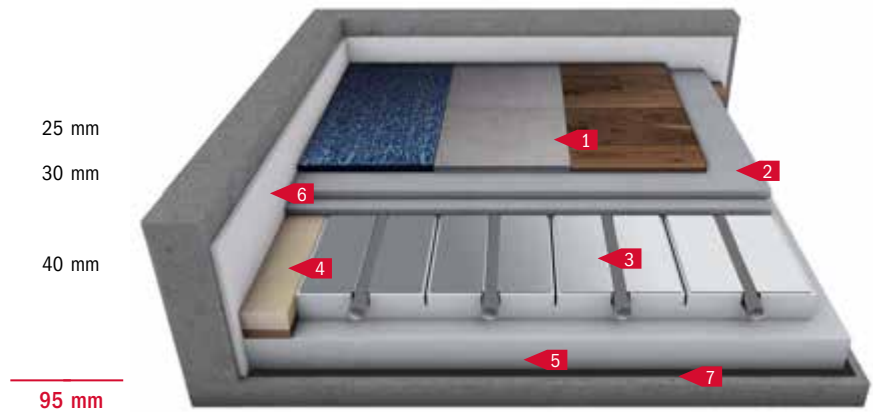
The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)
 * C1 : Structure with 25 mm Fermacell dry screed element 2E22 for application area C1 → areas with chairs, e.g. classrooms, restaurants, cafés, nursery schools with a permitted individual load of 3.0 kN and a permitted imposed load of 4.0 kN/m² (deviating from EN 1991/NA)



Dry screed element (Fermacell 25 mm) with additional insulation

TECEfloor universal panel UP

- | | | |
|----------|--|-------|
| 1 | Carpet/tiles/parquet/laminate/plastic | |
| 2 | Dry screed element (Fermacell) | 25 mm |
| 3 | Heating element EPS + system pipe | 30 mm |
| 4 | Edge board (30 mm), use recommended | |
| 5 | Additional insulation EPS 035 DEO, 200 kPa | 40 mm |
| 6 | Edge insulation strip | |
| 7 | Moisture barrier if applicable | |



Ceilings against unheated rooms/ground

| | | | | | | | | |
|--|-------------------------|---|--|-------------------------|----------|-----|---------|---------|
| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) | | 39-59 kg/m ² | Category | | | |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm EPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm EPS 035) | | ≤ 4.0 kN/m ² | | ✓ A | ✓ A2 A3 | ✓ A1 A2 |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | | ≤ 3.0 kN | | - | ✓ B1 D1 | ✓ B |
| | | | | | | - | ✓ C1* | - |

| | |
|--|---|
| | Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4) |
| | Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor |
| | New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e) As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced |
| | The details for the permitted individual load (Q _k) relate to a load area of at least 20 cm ² (pressure stamp Ø = 5 cm) * C1 : Structure with 25 mm Fermacell dry screed element 2E22 for application area C1 → areas with chairs, e.g. classrooms, restaurants, cafés, nursery schools with a permitted individual load of 3.0 kN and a permitted imposed load of 4.0 kN/m ² (deviating from EN 1991/NA) |



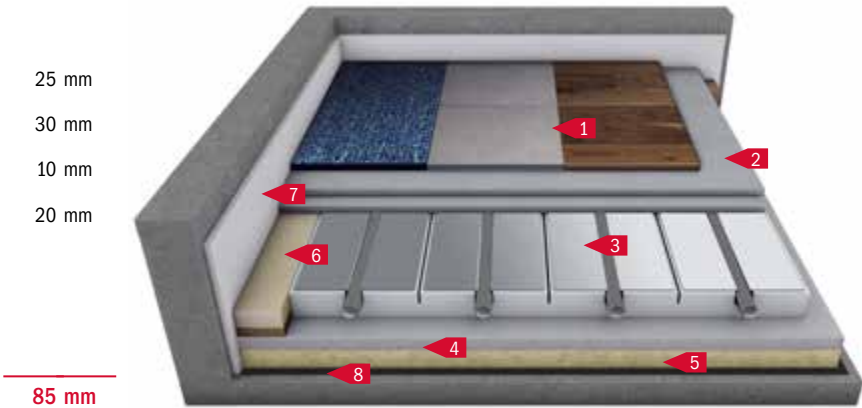
Thermal output: TE25
See product data sheets and detailed information



Dry screed element (Fermacell 25 mm)

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Fermacell) 25 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Plasterboard 10 mm
- 5** Mineral wool 20 mm
- 6** Edge board (30 mm), use recommended
- 7** Edge insulation strip
- 8** Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | |
|--|-------------------------|--|
| | 1.44 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met |
| | 0.69 W/m ² K | |
| | 28 dB | Calculated value in accordance with DIN 4109 on solid ceilings |

| | |
|--|-------------------------|
| | 51-71 kg/m ² |
| | ≤ 2.0 kN/m ² |
| | ≤ 1.0 kN |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | - | ✓ A2 A3 | - |
| | - | - | - |
| | - | - | - |

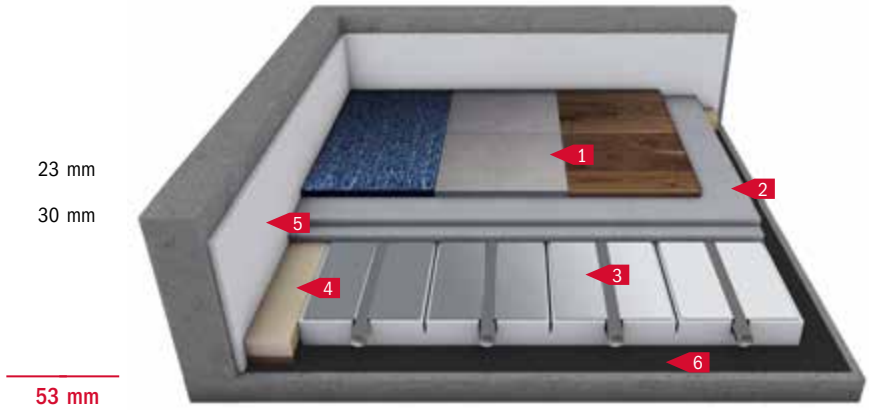
- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)
Mineral wool manufacturer: Isover EP3 or Rockwool Floorrock GP



Dry screed element (Knauf Brio 23 mm)

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Knauf Brio) 23 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Edge insulation strip
- 6** Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | | | | | |
|--------------------------------|--|---------------------------|----------|---------|------------|---------|
| $> 0.82 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | 38-58 kg/m ² | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.22 \text{ W/m}^2\text{K}$ | | $\leq 3.0 \text{ kN/m}^2$ | | ✓ A | ✓ A2 A3 | ✓ A1 |
| 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings | $\leq 2.0 \text{ kN}$ | | - | ✓ B1 D1 | - |
| | | | | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)

Thermal output: TE25
See product data sheets and detailed information

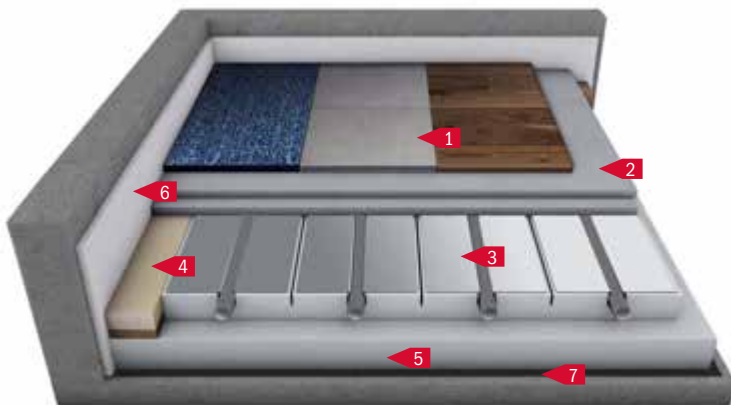


Dry screed element (Knauf Brio 23 mm) with additional insulation

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Knauf Brio) 23 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Additional insulation EPS 035 DEO, 200 kPa 40 mm
- 6** Edge insulation strip
- 7** Moisture barrier if applicable

93 mm



Ceilings against unheated rooms/ground

| | | |
|--|-------------------------|---|
| | 2.00 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met (as of 20 mm additional insulation) |
| | 0.50 W/m ² K | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 40 mm EPS 035) U _{reference} New building 0.35 W/m ² K (→ 60 mm EPS 035) |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings |

| | |
|--|------------------------------------|
| | 39-59 kg/m ² |
| | ≤ 3.0 kN/m ² |
| | ≤ 2.0 kN * ≥ 20 cm ² |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | ✓ A | ✓ A2 A3 | ✓ A1 |
| | - | ✓ B1 D1 | - |
| | - | - | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor
- New building: DIN EN 1264 → min. 20 mm EPS 035 DEO, 200 kPa; EnEV 2009 → reference: 60 mm XPS 500 kPa
Old building: EnEV 2009 → min. 40 mm XPS 035 DEO, 500 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)

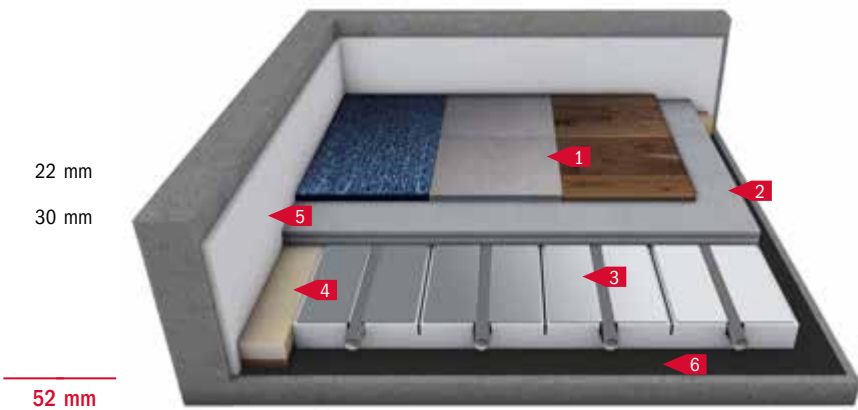
Thermal output: TE25
See product data sheets and detailed information



Dry screed element (Knauf Aquapanel 22 mm)

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Dry screed element (Knauf Aquapanel) 22 mm
- 3** Heating element EPS + system pipe 30 mm
- 4** Edge board (30 mm), use recommended
- 5** Edge insulation strip
- 6** Moisture barrier if applicable



Ceilings between rooms of the same temperature

| | | |
|--|---------------------------------------|--|
| | $> 0.82 \text{ m}^2\text{K}/\text{W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met |
| | $< 1.22 \text{ W}/\text{m}^2\text{K}$ | |
| | 18 dB | Calculated value in accordance with DIN 4109 on solid ceilings |

| | |
|--|----------------------------------|
| | 46-66 kg/m ² |
| | $\leq 3.0 \text{ kN}/\text{m}^2$ |
| | $\leq 3.0 \text{ kN}$ |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | ✓ A | ✓ A2 A3 | ✓ A1 A2 |
| | - | ✓ B1 D1 | ✓ B |
| | - | ✓ B2 | - |

- Flat, smooth and load-bearing subsurface required (higher requirements in accordance with DIN 18202 tab. 3, row 4)
- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- The details for the permitted individual load (Q_k) relate to a load area of at least 20 cm² (pressure stamp Ø = 5 cm)

Thermal output: TE25
See product data sheets and detailed information



Cement screed CT-F5 with impact sound insulation

TECEfloor universal panel UP

1 Carpet/tiles/parquet/laminate/plastic

2 Cement screed (≥ CT-F5) 55 mm

3 Separating layer

4 Heating element EPS + system pipe 30 mm

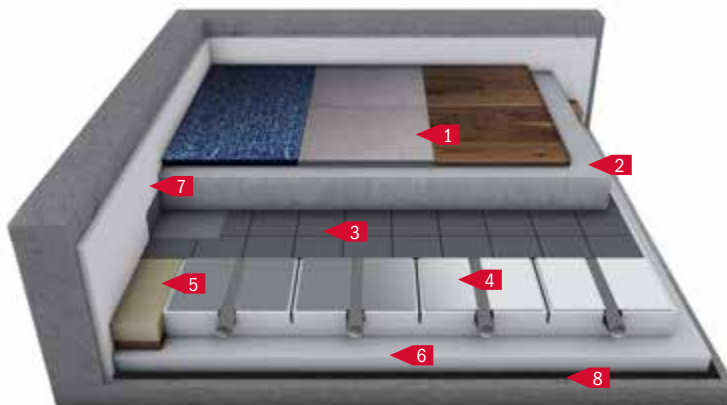
5 Optional edge board (30 mm)

6 Impact sound insulation EPS 040 DES, 20-2 20 mm

7 Edge insulation strip

8 Moisture barrier if applicable

105 mm



Ceilings between rooms of the same temperature

| | | |
|--|---------------------------|--|
| | > 1.32 m ² K/W | Minimum thermal resistance in accordance with DIN EN 1264 met |
| | < 0.76 W/m ² K | |
| | ≥ 26 dB | Calculated value in accordance with DIN 4109 on solid ceilings |

| | |
|--|---------------------------|
| | 120-140 kg/m ² |
| | ≤ 3.0 kN/m ² |
| | ≤ 2.0 kN |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|----------|---------|------------|---------|
| | ✓ A | ✓ A2 A3 | ✓ A1 |
| | - | ✓ B1 D1 | ✓ B |
| | - | - | - |

This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required

Minimum screed thickness of quality CT-F4: 65 mm
 Category **A2 A3**: Nominal thicknesses for area loads ≤ 2kN/m² and individual loads: ≤ 1kN → CT-F4: ≥ 45 mm; CT-F5: ≥ 40 mm

Thermal output: CT
 See product data sheets and detailed information

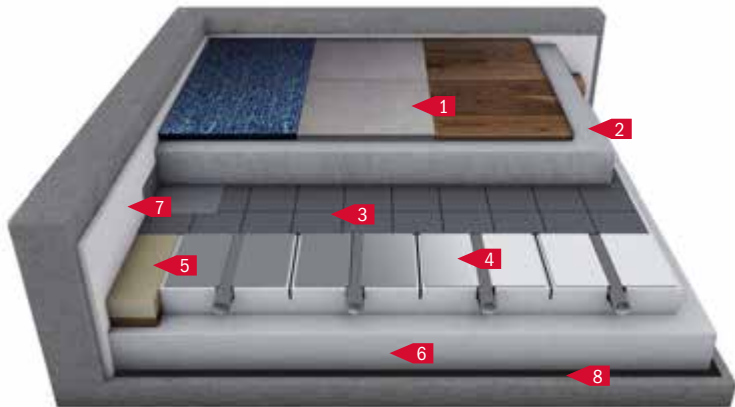


Cement screed CT-F5 with additional insulation

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Cement screed (≥ CT-F5) 55 mm
- 3** Separating layer
- 4** Heating element EPS + system pipe 30 mm
- 5** Optional edge board (30 mm)
- 6** Additional insulation EPS 040 DEO, 100 kPa 50 mm
- 7** Edge insulation strip
- 8** Moisture barrier if applicable

135 mm



Ceilings against unheated rooms/ground

| | |
|--|---|
| $> 2.07 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met |
| $< 0.48 \text{ W/m}^2\text{K}$ | EnEV 2009: U_{max} Old building $0.5 \text{ W/m}^2\text{K}$ (→ 50 mm EPS 040) $U_{\text{reference}}$ New building $0.35 \text{ W/m}^2\text{K}$ (→ 80 mm EPS 040) |
| The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | |

| |
|---------------------------|
| 121-141 kg/m ² |
| ≤ 3.0 kN/m ² |
| ≤ 2.0 kN |

| Category | EN 1991 | EN 1991/NA | SIA 261 |
|-----------------|---------|------------|---------|
| Residential | ✓ A | ✓ A2 A3 | ✓ A1 |
| Office | - | ✓ B1 D1 | ✓ B |
| Public building | - | - | - |

Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor

New building: DIN EN 1264 → min. 20 mm EPS 040 DEO, 100 kPa; EnEV 2009 → reference: 80 mm EPS 040 DEO ≥ 100 kPa
 Old building: EnEV 2009 → min. 50 mm EPS 040 DEO ≥ 100 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
 As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced

Minimum screed thickness of quality CT-F4: 65 mm
 Category **A2 A3**: Nominal thicknesses for area loads ≤ 2kN/m² and individual loads: ≤ 1kN → CT-F4: ≥ 45 mm; CT-F5: ≥ 40 mm

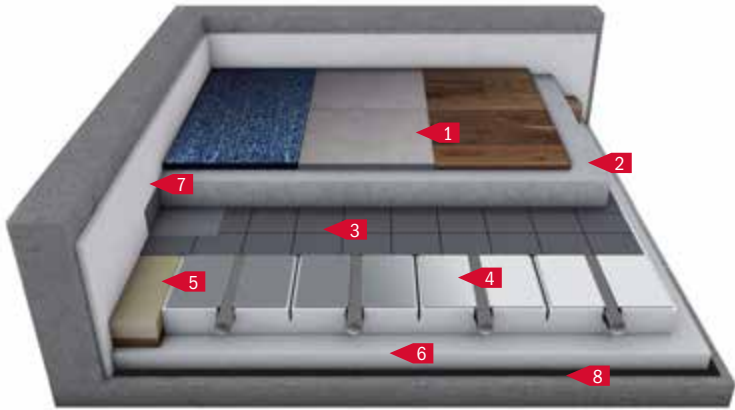
Thermal output: CT
 See product data sheets and detailed information



Anhydrite screed CAF-F5 with impact sound insulation

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
 - 2** Anhydrite screed (≥ CAF-F5) ≥ 40 mm
 - 3** Separating layer
 - 4** Heating element EPS + system pipe 30 mm
 - 5** Optional edge board (30 mm)
 - 6** Impact sound insulation EPS 040 DES, 20-2 20 mm
 - 7** Edge insulation strip
 - 8** Moisture barrier if applicable
- ≥ 90 mm**



Ceilings between rooms of the same temperature

| | | | | | | | | |
|--|---------------------------------------|--|--|----------------------------------|----------|---------|------------|---------|
| | $> 1.32 \text{ m}^2\text{K}/\text{W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | | 89-109 kg/m ² | Category | | | |
| | $< 0.76 \text{ W}/\text{m}^2\text{K}$ | | | $\leq 3.0 \text{ kN}/\text{m}^2$ | | EN 1991 | EN 1991/NA | SIA 261 |
| | $\geq 26 \text{ dB}$ | Calculated value in accordance with DIN 4109 on solid ceilings | | $\leq 2.0 \text{ kN}$ | | ✓ A | ✓ A2 A3 | ✓ A1 |
| | | | | | | - | ✓ B1 D1 | ✓ B |
| | | | | | | - | - | - |

| | | |
|--|--|--|
| | This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required | |
| | Minimum screed thickness applies for an insulation compressibility $c \leq 3 \text{ mm}$ (individual load: Supporting surface $\geq 50 \text{ mm} \times 50 \text{ mm}$) → at $c \leq 5 \text{ mm}$, the screed thickness must be increased by 5 mm | |
| | Category A2 A3 : Nominal thicknesses for area loads $\leq 2 \text{ kN}/\text{m}^2$ and individual loads: $\leq 1 \text{ kN}$ → CAF-F5: $\geq 35 \text{ mm}$ | |
| | <small>EN 1991/NA</small> | |



Anhydrite screed CAF-F5 with additional insulation

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Anhydrite screed (≥ CAF-F5) ≥ 40 mm
- 3** Separating layer
- 4** Heating element EPS + system pipe 30 mm
- 5** Optional edge board (30 mm)
- 6** Additional insulation EPS 040 DEO, 100 kPa 50 mm
- 7** Edge insulation strip
- 8** Moisture barrier if applicable ≥ 120 mm



Ceilings against unheated rooms/ground

| | | | | | | |
|--|---|--------------------------|----------|---------|------------|---------|
| $R > 2.07 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | 90-110 kg/m ² | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $U < 0.48 \text{ W/m}^2\text{K}$ | EnEV 2009: U _{max} Old building 0.5 W/m ² K (→ 50 mm EPS 040) U _{reference} New building 0.35 W/m ² K (→ 80 mm EPS 040) | ≤ 3.0 kN/m ² | | ✓ A | ✓ A2 A3 | ✓ A1 |
| The universal panel UP (EPS DEO) is thermal insulation without defined impact sound insulation | | ≤ 2.0 kN | | - | ✓ B1 D1 | ✓ B |
| | | | | - | - | - |

Building waterproofing in accordance with DIN 18195 exists under the concrete slab in structures against the ground, otherwise must be applied on the raw floor

New building: DIN EN 1264 → min. 20 mm EPS 040 DEO, 100 kPa; EnEV 2009 → reference: 80 mm EPS 040 DEO ≥ 100 kPa
 Old building: EnEV 2009 → min. 50 mm EPS 040 DEO ≥ 100 kPa (exception: EnEV 2009 Appendix 3 No. 5e)
 As concrete bases are usually insulated, additional thermal insulation can be omitted or reduced

Minimum screed thickness applies for an insulation compressibility $c \leq 3 \text{ mm}$ (individual load: Supporting surface ≥ 50 mm x 50 mm) → at $c \leq 5 \text{ mm}$, the screed thickness must be increased by 5 mm
 Category **A2 A3**: Nominal thicknesses for area loads ≤ 2kN/m² and individual loads: ≤ 1kN → CAF-F5: ≥ 35 mm
EN 1991/NA

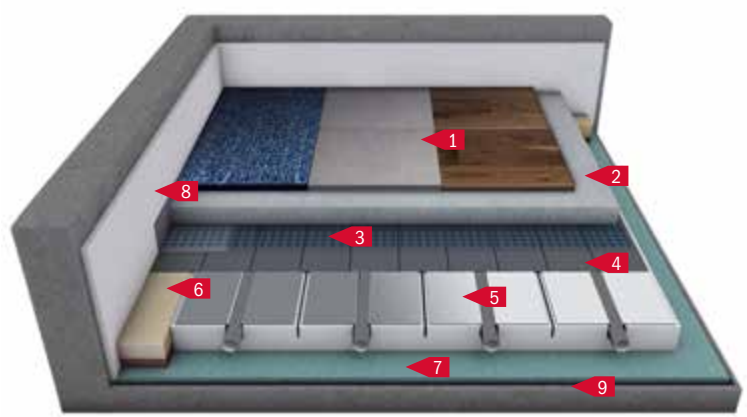
Thermal output: CAF
 See product data sheets and detailed information



Thin screed

TECEfloor universal panel UP

- 1** Carpet/tiles/parquet/laminate/plastic
- 2** Thin screed (weber.floor 4310) ≥ 25 mm
- 3** System fabric 4945
- 4** Separating layer
- 5** Heating element EPS + system pipe 30 mm
- 6** Optional edge board (30 mm)
- 7** Impact sound insulation strip 8/6 mm 6 mm
- 8** Edge insulation strip
- 9** Moisture barrier if applicable ≥ 61 mm



Ceilings between rooms of the same temperature

| | | | | | | |
|--------------------------------|--|---------------------------|----------|---------|------------|---------|
| $> 0.93 \text{ m}^2\text{K/W}$ | Minimum thermal resistance in accordance with DIN EN 1264 met | $57-77 \text{ kg/m}^2$ | Category | EN 1991 | EN 1991/NA | SIA 261 |
| $< 1.07 \text{ W/m}^2\text{K}$ | | $\leq 2.0 \text{ kN/m}^2$ | | - | ✓ A2 A3 | - |
| $\geq 24 \text{ dB}$ | Calculated value in accordance with DIN 4109 on solid ceilings | $\leq 1.0 \text{ kN}$ | | - | - | - |
| | | | | - | - | - |

- This construction applies for apartment ceilings with rooms of the same temperature, additional thermal insulation is not required
- Minimum screed thickness applies for an insulation compressibility $c \leq 3 \text{ mm}$
- The fibre-reinforced thin screed can be walked on after 24 hours and can support objects after a special heating protocol (starting after 7 days), seal the surface with weber.floor 4790 24 hours before heating, rubbing down not required
- Alternative screed: Fast-drying thin screed weber.floor 4320 (sealing after 24 hours, heating after a further 24 hours)

Performance tables



Specific heating output

Specific cooling

| | |
|---|----|
| DA = Direct laying of tiles or laminate | 50 |
| DP = Direct laying of parquet or solid floorboards | 52 |
| TE20 = Dry screed 20 mm | 54 |
| TE25 = Dry screed 25 mm | 56 |
| CT = Cement screed | 58 |
| CAF = Anhydrite screed | 60 |
| WA = Wall heating | 64 |

| | |
|--|----|
| TE20 = Dry screed 20 mm | 62 |
| CAF = Anhydrite screed | 63 |
| GK = Plasterboard ceiling | 69 |



Separating board UP | Tiles | Laminate

Thermal output TECefloor universal panel UP

| | |
|--------------------------------|----------|
| Nominal layer thickness | 5 mm |
| Thermal conductivity λ | 0.2 W/mK |
| spread σ | 5 K |

| | | Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ Tiles | | | | Floor covering $R_{\lambda,B} = 0.015 \text{ m}^2 \text{ K/W}$ Tiles | | | | Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ Laminate | | | |
|--------------------------------|------------------|--|---------------------|------------------|---------------------|---|---------------------|------------------|---------------------|---|---------------------|------------------|---------------------|
| Mean heating water temperature | Room temperature | RA = 125 mm | surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| | | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| θ_m | θ_i | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C |
| 30 | 15 | 100.6 | 24.0 | 75.6 | 22.0 | 89.9 | 23.2 | 69.1 | 21.4 | 63.5 | 21.0 | 49.9 | 19.8 |
| 30 | 18 | 80.1 | 25.3 | 60.2 | 23.7 | 71.5 | 24.6 | 55.0 | 23.2 | 50.5 | 22.8 | 39.7 | 21.9 |
| 30 | 20 | 66.3 | 26.2 | 49.8 | 24.8 | 59.2 | 25.6 | 45.5 | 24.4 | 41.8 | 24.1 | 32.9 | 23.3 |
| 30 | 22 | 52.3 | 27.0 | 39.4 | 25.9 | 46.8 | 26.5 | 36.0 | 25.6 | 33.0 | 25.3 | 26.0 | 24.6 |
| 30 | 24 | 38.1 | 27.7 | 28.7 | 26.9 | 34.1 | 27.4 | 26.2 | 26.7 | 24.1 | 26.5 | 18.9 | 26.0 |
| 35 | 15 | 134.7 | 15.0 | 101.3 | 24.1 | 120.4 | 25.6 | 92.6 | 23.4 | 85.0 | 22.8 | 66.8 | 21.2 |
| 35 | 18 | 114.3 | 28.2 | 85.9 | 25.8 | 102.1 | 27.2 | 78.5 | 25.2 | 72.1 | 24.7 | 56.7 | 23.4 |
| 35 | 20 | 100.6 | 29.0 | 75.6 | 27.0 | 89.9 | 28.2 | 69.1 | 26.4 | 63.5 | 26.0 | 49.9 | 24.8 |
| 35 | 22 | 86.9 | 29.9 | 65.3 | 28.1 | 77.7 | 29.2 | 59.7 | 27.6 | 54.8 | 27.2 | 43.1 | 26.2 |
| 35 | 24 | 73.2 | 30.8 | 55.0 | 29.2 | 65.4 | 30.1 | 50.3 | 28.8 | 46.1 | 28.5 | 36.3 | 27.6 |
| 40 | 15 | 168.7 | 29.5 | 126.8 | 26.2 | 150.7 | 28.1 | 115.9 | 25.3 | 106.4 | 24.5 | 83.7 | 22.7 |
| 40 | 18 | 148.3 | 30.9 | 111.5 | 27.9 | 132.5 | 29.6 | 101.9 | 27.2 | 93.5 | 26.5 | 73.6 | 24.8 |
| 40 | 20 | 134.7 | 31.8 | 101.3 | 29.1 | 120.4 | 30.6 | 92.6 | 28.4 | 85.0 | 27.8 | 66.8 | 26.2 |
| 40 | 22 | 121.1 | 32.7 | 91.0 | 30.3 | 108.2 | 31.7 | 83.2 | 29.6 | 76.4 | 29.0 | 60.1 | 27.7 |
| 40 | 24 | 107.4 | 33.6 | 80.8 | 31.4 | 96.0 | 32.7 | 73.8 | 30.8 | 67.8 | 30.3 | 53.3 | 29.1 |
| 45 | 15 | 202.6 | 32.1 | 152.3 | 28.2 | 181.1 | 30.4 | 139.3 | 27.2 | 127.8 | 26.2 | 100.6 | 24.0 |
| 45 | 18 | 182.3 | 33.5 | 137.0 | 30.0 | 162.9 | 32.0 | 125.3 | 29.0 | 115.0 | 28.2 | 90.5 | 26.2 |
| 45 | 20 | 168.7 | 34.5 | 126.8 | 31.2 | 150.7 | 33.1 | 115.9 | 30.3 | 106.4 | 29.5 | 83.7 | 27.7 |
| 45 | 22 | 155.1 | 35.4 | 116.6 | 32.3 | 138.6 | 34.1 | 106.6 | 31.5 | 97.8 | 30.8 | 77.0 | 29.1 |
| 45 | 24 | 141.5 | 36.3 | 106.4 | 33.5 | 126.4 | 35.1 | 97.2 | 32.8 | 89.2 | 32.1 | 70.2 | 30.5 |
| 50 | 15 | 236.5 | 34.7 | 177.8 | 30.2 | 211.4 | 32.8 | 162.6 | 29.0 | 149.2 | 27.9 | 117.4 | 25.4 |
| 50 | 18 | 216.2 | 36.1 | 162.5 | 32.0 | 193.2 | 34.4 | 148.6 | 30.9 | 136.4 | 29.9 | 107.3 | 27.6 |
| 50 | 20 | 202.6 | 37.1 | 152.3 | 33.2 | 181.1 | 35.4 | 139.3 | 32.2 | 127.8 | 31.2 | 100.6 | 29.0 |
| 50 | 22 | 189.1 | 38.1 | 142.1 | 34.4 | 168.9 | 36.5 | 129.9 | 33.4 | 119.2 | 32.6 | 93.8 | 30.5 |
| 50 | 24 | 175.5 | 39.0 | 131.9 | 35.6 | 156.8 | 37.5 | 120.6 | 34.7 | 110.7 | 33.9 | 87.1 | 31.9 |
| 55 | 15 | 270.4 | 37.2 | 203.3 | 32.2 | 241.7 | 35.1 | 185.9 | 30.8 | 170.6 | 29.6 | 134.2 | 26.8 |
| 55 | 18 | 250.1 | 38.7 | 188.0 | 34.0 | 223.5 | 36.7 | 171.9 | 32.7 | 157.7 | 31.6 | 124.1 | 29.0 |
| 55 | 20 | 236.5 | 39.7 | 177.8 | 35.2 | 211.4 | 37.8 | 162.6 | 34.0 | 149.2 | 32.9 | 117.4 | 30.4 |
| 55 | 22 | 223.0 | 40.7 | 167.6 | 36.4 | 199.3 | 38.8 | 153.3 | 35.3 | 140.6 | 34.3 | 110.7 | 31.9 |
| 55 | 24 | 209.4 | 41.6 | 157.4 | 37.6 | 187.1 | 39.9 | 143.9 | 36.5 | 132.1 | 35.6 | 103.9 | 33.3 |

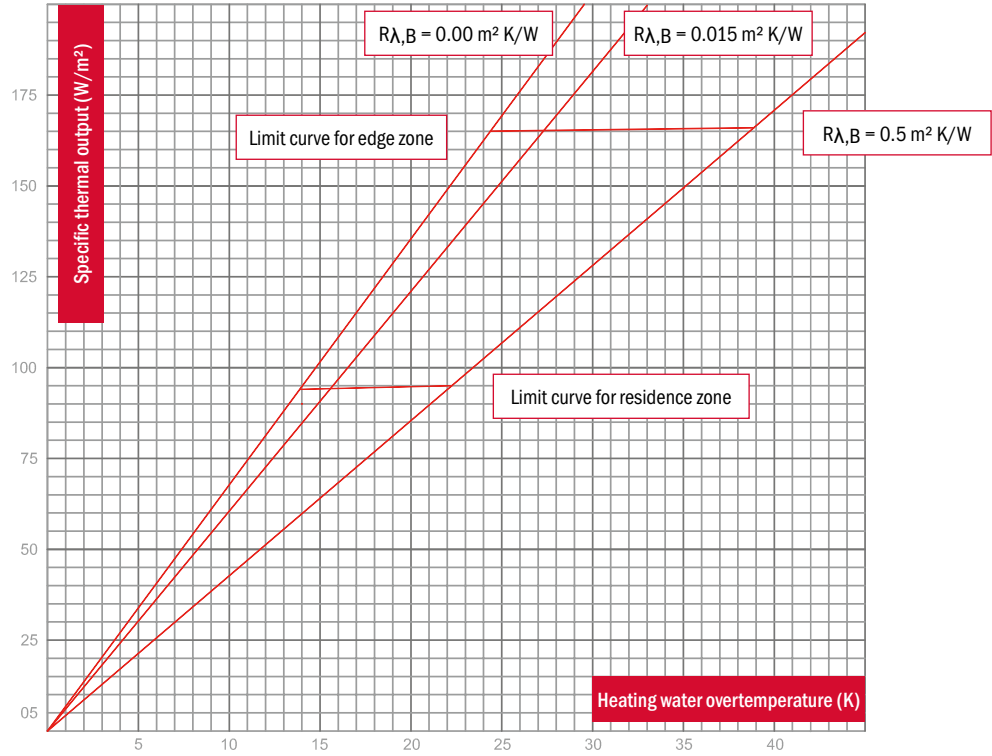
| | |
|--|---|
| | Thermal output on the basis of DIN EN 1264 |
| | Maximum surface temperatures in accordance with DIN EN 1264 Residence zone (RZ): 29 °C Bathrooms: 33 °C Edge zone (EZ, max. width 100 cm): 35 °C |

| | |
|--|--|
| | Construction: DA 01, DA 02, DA 04, DA 05 See product data sheets and detailed information |
|--|--|

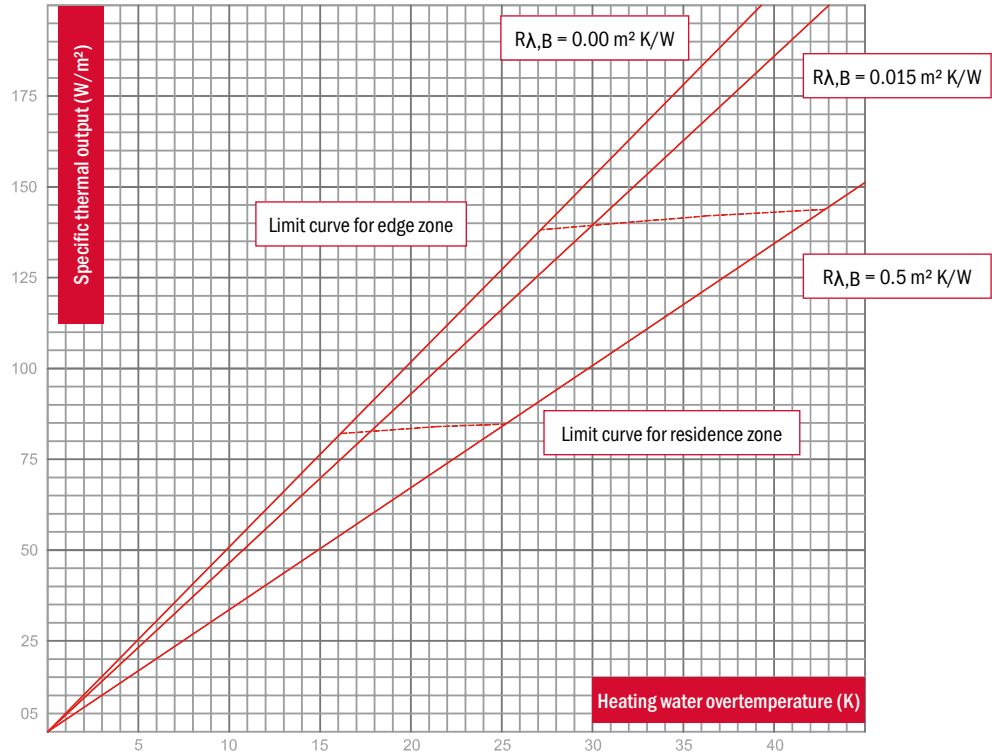
Separating board UP | Tiles | Laminate

Design chart TECEfloor universal panel UP

| | |
|--------------------------------|----------|
| Laying type | 125 mm |
| Thermal conductivity λ | 0.2 W/mK |



| | |
|--------------------------------|----------|
| Laying type | 250 mm |
| Thermal conductivity λ | 0.2 W/mK |





Direct laying of parquet | Solid floorboards on floor battens

Thermal output TECefloor universal panel UP

| | |
|--------------------------------|------------|
| Nominal layer thickness | 15 – 20 mm |
| Thermal conductivity λ | 0.13 W/mK |
| spread σ | 5 K |

Floor covering $R_{\lambda,B} = 0.13 \text{ m}^2 \text{ K/W}$
Parquet 15 mm (incl. 2 mm cork strip)

Floor covering $R_{\lambda,B} = 0.22 \text{ m}^2 \text{ K/W}$
Parquet 20 mm
($R_{\lambda,B} > R_{\lambda,Bmax}$ in accordance with DIN EN 1264)

Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$
Solid floorboards 20 mm

| Mean heating water temperature | Room temperature | $R_{\lambda,B} = 0.13 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.22 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ | | | |
|--------------------------------|------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| °C | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C |
| 30 | 15 | 50.5 | 16.6 | 40.3 | 18.9 | 42.2 | 19.1 | 34.5 | 18.4 | 45.5 | 19.4 | 36.2 | 18.6 |
| 30 | 18 | 40.2 | 19.9 | 32.0 | 21.2 | 33.6 | 21.3 | 27.4 | 20.8 | 36.2 | 21.6 | 28.8 | 20.9 |
| 30 | 20 | 33.3 | 22.1 | 26.5 | 22.7 | 27.8 | 22.8 | 22.7 | 22.3 | 30.0 | 23.0 | 23.9 | 22.4 |
| 30 | 22 | 26.3 | 24.3 | 21.0 | 24.2 | 22.0 | 24.3 | 17.9 | 23.9 | 23.7 | 24.4 | 18.9 | 24.0 |
| 30 | 24 | 19.2 | 26.5 | 15.3 | 25.6 | 16.0 | 25.7 | 13.1 | 25.4 | 17.2 | 25.8 | 13.7 | 25.5 |
| 35 | 15 | 67.6 | 16.6 | 53.9 | 20.1 | 56.5 | 20.4 | 46.2 | 19.5 | 60.9 | 20.7 | 48.5 | 19.7 |
| 35 | 18 | 57.4 | 19.9 | 45.7 | 22.4 | 47.9 | 22.6 | 39.2 | 21.8 | 51.6 | 22.9 | 41.2 | 22.0 |
| 35 | 20 | 50.5 | 22.1 | 40.3 | 23.9 | 42.2 | 24.1 | 34.5 | 23.4 | 45.5 | 24.4 | 36.2 | 23.6 |
| 35 | 22 | 43.6 | 24.3 | 34.8 | 25.4 | 36.5 | 25.6 | 29.8 | 25.0 | 39.3 | 25.8 | 31.3 | 25.1 |
| 35 | 24 | 36.7 | 26.5 | 29.3 | 26.9 | 30.7 | 27.1 | 25.1 | 26.6 | 33.1 | 27.3 | 26.4 | 26.7 |
| 40 | 15 | 84.7 | 16.6 | 67.5 | 21.3 | 70.8 | 21.6 | 57.8 | 20.5 | 76.2 | 22.0 | 60.8 | 20.7 |
| 40 | 18 | 74.5 | 19.9 | 59.4 | 23.6 | 62.2 | 23.8 | 50.8 | 22.9 | 67.0 | 24.3 | 53.4 | 23.1 |
| 40 | 20 | 67.6 | 22.1 | 53.9 | 25.1 | 56.5 | 25.4 | 46.2 | 24.5 | 60.9 | 25.7 | 48.5 | 24.7 |
| 40 | 22 | 60.8 | 24.3 | 48.5 | 26.7 | 50.8 | 26.9 | 41.5 | 26.0 | 54.7 | 27.2 | 43.6 | 26.2 |
| 40 | 24 | 54.0 | 26.5 | 43.0 | 28.2 | 45.1 | 28.4 | 36.8 | 27.6 | 48.6 | 28.7 | 38.7 | 27.8 |
| 45 | 15 | 101.8 | 16.6 | 81.1 | 22.4 | 85.0 | 22.8 | 69.4 | 21.5 | 91.6 | 23.3 | 73.0 | 21.8 |
| 45 | 18 | 91.5 | 19.9 | 73.0 | 24.8 | 76.5 | 25.0 | 62.5 | 23.9 | 82.4 | 25.5 | 65.7 | 24.1 |
| 45 | 20 | 84.7 | 22.1 | 67.5 | 26.3 | 70.8 | 26.6 | 57.8 | 25.5 | 76.2 | 27.0 | 60.8 | 25.7 |
| 45 | 22 | 77.9 | 24.3 | 62.1 | 27.8 | 65.1 | 28.1 | 53.1 | 27.1 | 70.1 | 28.5 | 55.9 | 27.3 |
| 45 | 24 | 71.1 | 26.5 | 56.6 | 29.4 | 59.4 | 29.6 | 48.5 | 28.7 | 64.0 | 30.0 | 51.0 | 28.9 |
| 50 | 15 | 118.8 | 16.6 | 94.7 | 23.6 | 99.2 | 23.9 | 81.1 | 22.4 | 106.9 | 24.6 | 85.2 | 22.8 |
| 50 | 18 | 108.6 | 19.9 | 86.5 | 25.9 | 90.7 | 26.2 | 74.1 | 24.9 | 97.7 | 26.8 | 77.9 | 25.2 |
| 50 | 20 | 101.8 | 22.1 | 81.1 | 27.4 | 85.0 | 27.8 | 69.4 | 26.5 | 91.6 | 28.3 | 73.0 | 26.8 |
| 50 | 22 | 94.9 | 24.3 | 75.7 | 29.0 | 79.3 | 29.3 | 64.8 | 28.1 | 85.5 | 29.8 | 68.1 | 28.3 |
| 50 | 24 | 88.1 | 26.5 | 70.2 | 30.5 | 73.6 | 30.8 | 60.1 | 29.7 | 79.3 | 31.3 | 63.2 | 29.9 |
| 55 | 15 | 135.8 | 16.6 | 108.3 | 24.7 | 113.5 | 25.1 | 92.7 | 23.4 | 122.2 | 25.8 | 97.4 | 23.8 |
| 55 | 18 | 125.6 | 19.9 | 100.1 | 27.0 | 104.9 | 27.4 | 85.7 | 25.8 | 113.0 | 28.1 | 90.1 | 26.2 |
| 55 | 20 | 118.8 | 22.1 | 94.7 | 28.6 | 99.2 | 28.9 | 81.1 | 27.4 | 106.9 | 29.6 | 85.2 | 27.8 |
| 55 | 22 | 112.0 | 24.3 | 89.3 | 30.1 | 93.5 | 30.5 | 76.4 | 29.0 | 100.8 | 31.1 | 80.3 | 29.4 |
| 55 | 24 | 105.2 | 26.5 | 83.8 | 31.7 | 87.8 | 32.0 | 71.8 | 30.7 | 94.7 | 32.6 | 75.4 | 31.0 |

Thermal output on the basis of DIN EN 1264

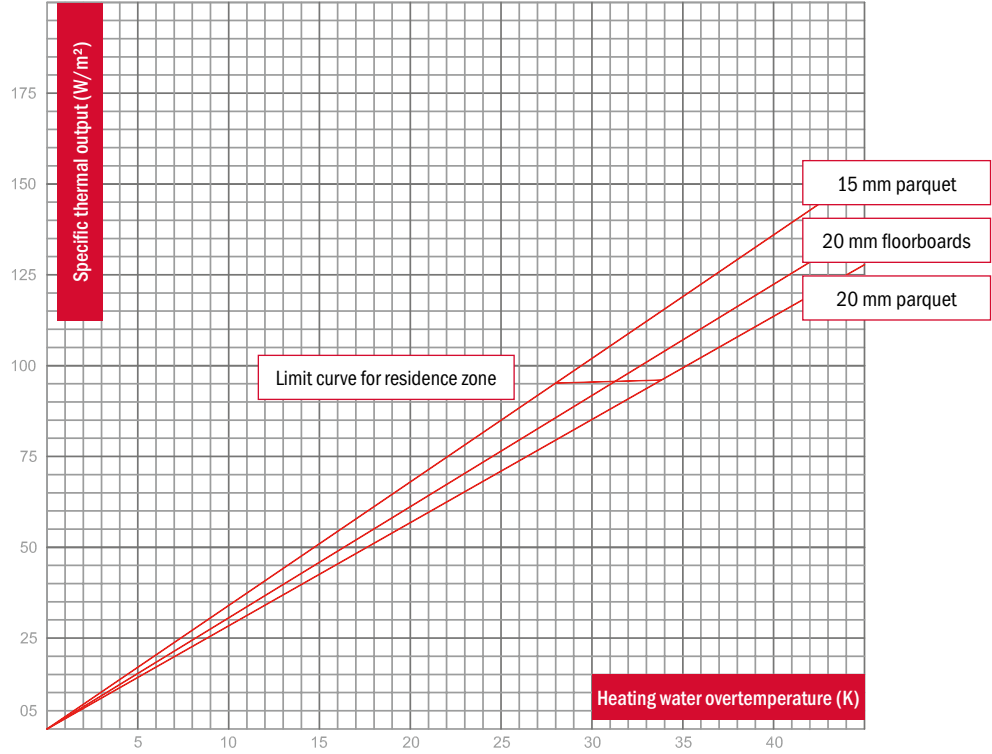
Maximum surface temperatures in accordance with DIN EN 1264
Residence zone (RZ): 29 °C | Bathrooms: 33 °C | Edge zone (EZ, max. width 100 cm): 35 °C

Construction: DP 01, DP 02, DP 03, DP 04
See product data sheets and detailed information

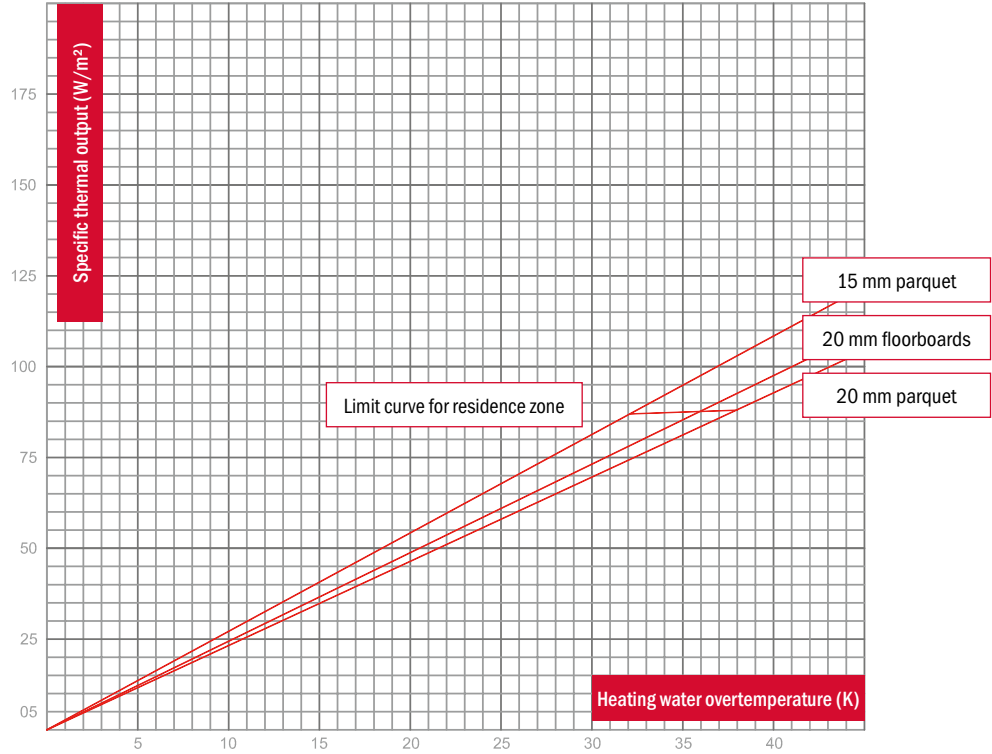
Direct laying of parquet | Solid floorboards on floor battens

Design chart TECEfloor universal panel UP

Laying type 125 mm
 Thermal conductivity λ 0.13 W/mK



Laying type 250 mm
 Thermal conductivity λ 0.13 W/mK





Dry screed element (Fermacell 20 mm)

Thermal output TECefloor universal panel UP

| | |
|--------------------------------|-----------|
| Nominal layer thickness | 20 mm |
| Thermal conductivity λ | 0.28 W/mK |
| spread σ | 5 K |

Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ Tiles
 Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ Parquet, laminate, man-made fibres
 Floor covering $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$ Carpet
 Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ Velour, ready-to-lay parquet, floorboards

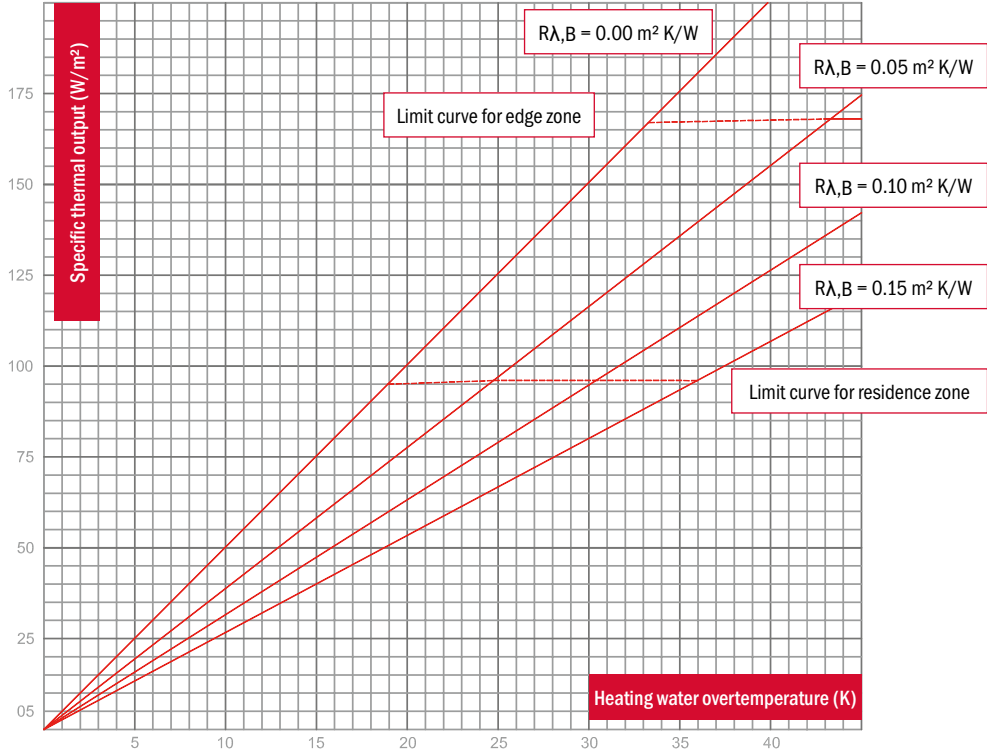
| Mean heating water temperature | Room temperature | $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ Tiles | | | | $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ Parquet, laminate, man-made fibres | | | | $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$ Carpet | | | | $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ Velour, ready-to-lay parquet, floorboards | | | |
|--------------------------------|--------------------|--|---------------------|------------------|---------------------|---|---------------------|------------------|---------------------|---|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| $^{\circ}\text{C}$ | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ |
| 30 | 15 | 74.6 | 21.9 | 57.7 | 20.5 | 57.7 | 20.5 | 46.5 | 19.5 | 47.0 | 19.5 | 38.9 | 18.8 | 39.7 | 18.9 | 33.4 | 18.3 |
| 30 | 18 | 59.4 | 23.6 | 45.9 | 22.4 | 45.9 | 22.4 | 37.0 | 21.6 | 37.4 | 21.7 | 31.0 | 21.1 | 31.6 | 21.2 | 26.6 | 20.7 |
| 30 | 20 | 49.1 | 24.7 | 38.0 | 23.7 | 38.0 | 23.7 | 30.6 | 23.1 | 30.9 | 23.1 | 25.6 | 22.6 | 26.1 | 22.7 | 22.0 | 22.3 |
| 30 | 22 | 38.8 | 25.8 | 30.0 | 25.0 | 30.0 | 25.0 | 24.2 | 24.5 | 24.4 | 24.5 | 20.3 | 24.1 | 20.6 | 24.1 | 17.4 | 23.8 |
| 30 | 24 | 28.3 | 26.9 | 21.9 | 26.3 | 21.9 | 26.3 | 17.6 | 25.9 | 17.8 | 25.9 | 14.8 | 25.6 | 15.0 | 25.6 | 12.7 | 25.4 |
| 35 | 15 | 99.9 | 24.0 | 77.2 | 22.1 | 77.2 | 22.1 | 62.3 | 20.8 | 62.9 | 20.9 | 52.1 | 20.0 | 53.1 | 20.1 | 44.8 | 19.3 |
| 35 | 18 | 84.7 | 25.7 | 65.5 | 24.1 | 65.5 | 24.1 | 52.8 | 23.0 | 53.3 | 23.1 | 44.2 | 22.3 | 45.1 | 22.4 | 38.0 | 21.7 |
| 35 | 20 | 74.6 | 26.9 | 57.7 | 25.5 | 57.7 | 25.5 | 46.5 | 24.5 | 47.0 | 24.5 | 38.9 | 23.8 | 39.7 | 23.9 | 33.4 | 23.3 |
| 35 | 22 | 64.4 | 28.0 | 49.8 | 26.8 | 49.8 | 26.8 | 40.2 | 25.9 | 40.6 | 26.0 | 33.6 | 25.3 | 34.3 | 25.4 | 28.9 | 24.9 |
| 35 | 24 | 54.3 | 29.2 | 41.9 | 28.1 | 41.9 | 28.1 | 33.8 | 27.4 | 34.2 | 27.4 | 28.3 | 26.9 | 28.9 | 26.9 | 24.3 | 26.5 |
| 40 | 15 | 125.1 | 26.0 | 96.7 | 23.7 | 96.7 | 23.7 | 78.0 | 22.2 | 78.7 | 22.2 | 65.3 | 21.1 | 66.5 | 21.2 | 56.1 | 20.3 |
| 40 | 18 | 110.0 | 27.8 | 85.0 | 25.8 | 85.0 | 25.8 | 68.6 | 24.4 | 69.2 | 24.4 | 57.4 | 23.4 | 58.5 | 23.5 | 49.3 | 22.7 |
| 40 | 20 | 99.9 | 29.0 | 77.2 | 27.1 | 77.2 | 27.1 | 62.3 | 25.8 | 62.9 | 25.9 | 52.1 | 25.0 | 53.1 | 25.1 | 44.8 | 24.3 |
| 40 | 22 | 89.8 | 30.2 | 69.4 | 28.5 | 89.8 | 30.2 | 56.0 | 27.3 | 89.8 | 30.2 | 46.9 | 26.5 | 47.7 | 26.6 | 40.2 | 25.9 |
| 40 | 24 | 79.7 | 31.3 | 61.6 | 29.8 | 79.7 | 31.3 | 49.7 | 28.8 | 79.7 | 31.3 | 41.6 | 28.1 | 42.4 | 28.1 | 35.7 | 27.5 |
| 45 | 15 | 150.3 | 28.0 | 116.1 | 25.3 | 150.3 | 28.0 | 93.7 | 23.5 | 150.3 | 28.0 | 78.4 | 22.2 | 150.3 | 28.0 | 67.3 | 21.3 |
| 45 | 18 | 135.2 | 29.8 | 104.5 | 27.4 | 135.2 | 29.8 | 84.3 | 25.7 | 135.2 | 29.8 | 70.5 | 24.6 | 135.2 | 29.8 | 60.6 | 23.7 |
| 45 | 20 | 125.1 | 31.0 | 96.7 | 28.7 | 125.1 | 31.0 | 78.0 | 27.2 | 125.1 | 31.0 | 65.3 | 26.1 | 125.1 | 31.0 | 56.1 | 25.3 |
| 45 | 22 | 115.0 | 32.2 | 88.9 | 30.1 | 115.0 | 32.2 | 71.7 | 28.6 | 115.0 | 32.2 | 60.0 | 27.7 | 115.0 | 32.2 | 51.5 | 26.9 |
| 45 | 24 | 104.9 | 33.4 | 81.1 | 31.4 | 104.9 | 33.4 | 65.4 | 30.1 | 104.9 | 33.4 | 54.8 | 29.2 | 104.9 | 33.4 | 47.0 | 28.5 |
| 50 | 15 | 175.4 | 30.0 | 135.6 | 26.9 | 175.4 | 30.0 | 109.4 | 24.8 | 175.4 | 30.0 | 91.5 | 23.3 | 175.4 | 30.0 | 78.6 | 22.2 |
| 50 | 18 | 160.3 | 31.8 | 123.9 | 28.9 | 160.3 | 31.8 | 100.0 | 27.0 | 160.3 | 31.8 | 83.7 | 25.7 | 160.3 | 31.8 | 71.9 | 24.7 |
| 50 | 20 | 150.3 | 33.0 | 116.1 | 30.3 | 150.3 | 33.0 | 93.7 | 28.5 | 150.3 | 33.0 | 78.4 | 27.2 | 150.3 | 33.0 | 67.3 | 26.3 |
| 50 | 22 | 140.2 | 34.2 | 108.4 | 31.7 | 140.2 | 34.2 | 87.4 | 30.0 | 140.2 | 34.2 | 73.2 | 28.8 | 140.2 | 34.2 | 62.8 | 27.9 |
| 50 | 24 | 130.1 | 35.4 | 100.6 | 33.0 | 130.1 | 35.4 | 81.1 | 31.4 | 130.1 | 35.4 | 67.9 | 30.3 | 130.1 | 35.4 | 58.3 | 29.5 |
| 55 | 15 | 200.5 | 31.9 | 155.0 | 28.4 | 200.5 | 31.9 | 125.0 | 26.0 | 200.5 | 31.9 | 104.7 | 24.4 | 200.5 | 31.9 | 89.9 | 23.2 |
| 55 | 18 | 185.5 | 33.8 | 143.3 | 30.5 | 185.5 | 33.8 | 115.6 | 28.3 | 185.5 | 33.8 | 96.8 | 26.7 | 185.5 | 33.8 | 83.1 | 25.6 |
| 55 | 20 | 175.4 | 35.0 | 135.6 | 31.9 | 175.4 | 35.0 | 109.4 | 29.8 | 175.4 | 35.0 | 91.5 | 28.3 | 175.4 | 35.0 | 78.6 | 27.2 |
| 55 | 22 | 165.3 | 36.2 | 127.8 | 33.2 | 165.3 | 36.2 | 103.1 | 31.2 | 165.3 | 36.2 | 86.3 | 29.9 | 165.3 | 36.2 | 74.1 | 28.9 |
| 55 | 24 | 155.3 | 37.4 | 120.0 | 34.6 | 155.3 | 37.4 | 96.8 | 32.7 | 155.3 | 37.4 | 81.0 | 31.4 | 155.3 | 37.4 | 69.6 | 30.5 |

| | |
|--|---|
| | Thermal output on the basis of DIN EN 1264 |
| | Maximum surface temperatures in accordance with DIN EN 1264 Residence zone (RZ): 29 °C Bathrooms: 33 °C Edge zone (EZ, max. width 100 cm): 35 °C |
| | Construction: TE20 01, TE20 02, TE20 03, TE20 04 See product data sheets and detailed information |

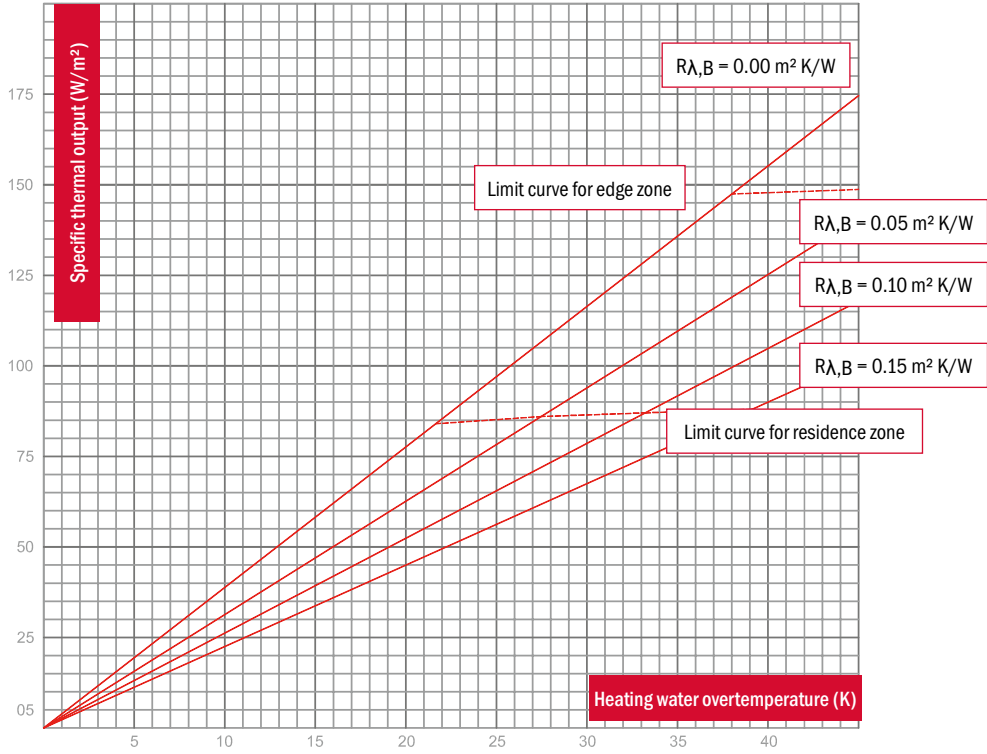
Dry screed element (Fermacell 20 mm)

Design chart TECEfloor universal panel UP

Laying type 125 mm
Thermal conductivity λ 0.28 W/mK



Laying type 250 mm
Thermal conductivity λ 0.28 W/mK





Dry screed element (Fermacell 25 mm)

Thermal output TECefloor universal panel UP

| | |
|-------------------------|-----------|
| Nominal layer thickness | 25 mm |
| Thermal conductivity λ | 0.28 W/mK |
| spread σ | 5 K |

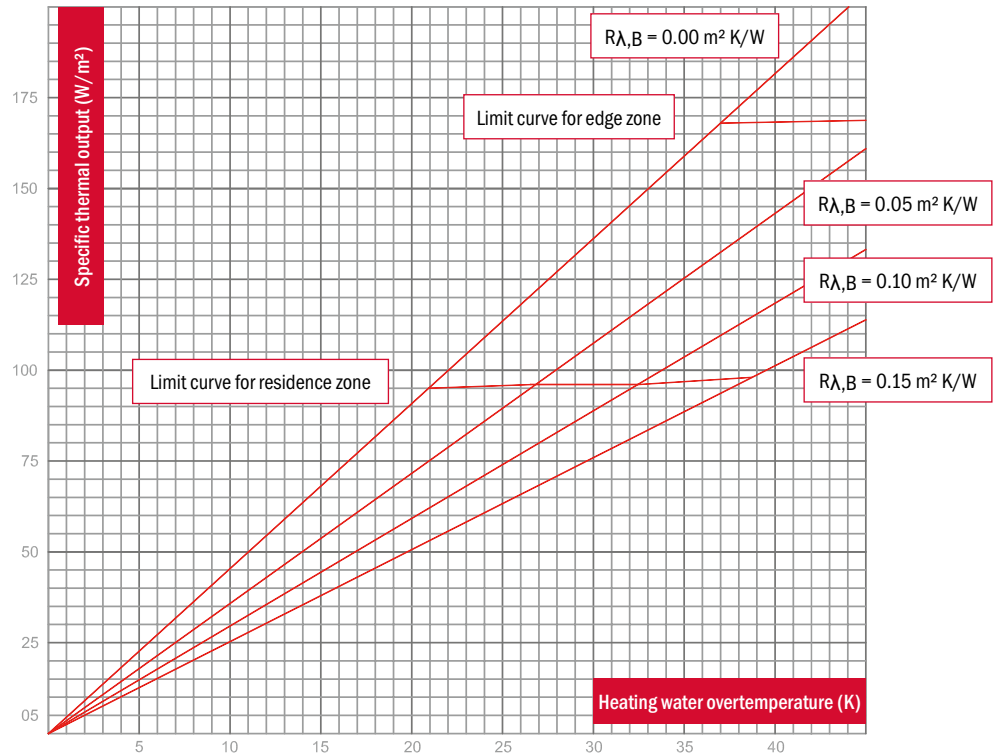
| | | Floor covering R _{λ,B} = 0.00 m ² K/W Tiles | | | | Floor covering R _{λ,B} = 0.05 m ² K/W Parquet, laminate, man-made fibres | | | | Floor covering R _{λ,B} = 0.10 m ² K/W Carpet | | | | Floor covering R _{λ,B} = 0.15 m ² K/W Velour, ready-to-lay parquet, floorboards | | | |
|--|------------------------------------|--|----------------|---------------------|----------------|---|----------------|---------------------|----------------|---|----------------|---------------------|----------------|--|----------------|---------------------|----------------|
| Mean heating water temperature θ _m | Room temperature θ _i | RA = 125 mm | | Surface temperature | | RA = 125 mm | | Surface temperature | | RA = 125 mm | | Surface temperature | | RA = 125 mm | | Surface temperature | |
| | | EZ | θ _F | RZ | θ _F | EZ | θ _F | RZ | θ _F | EZ | θ _F | RZ | θ _F | EZ | θ _F | RZ | θ _F |
| °C | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C |
| 30 | 15 | 67.5 | 21.3 | 52.6 | 20.0 | 53.2 | 20.1 | 43.1 | 19.2 | 44.0 | 19.3 | 36.6 | 18.6 | 37.6 | 18.7 | 31.7 | 18.2 |
| 30 | 18 | 53.7 | 23.1 | 41.9 | 22.1 | 42.3 | 22.1 | 34.3 | 21.4 | 35.0 | 21.5 | 29.1 | 20.9 | 29.9 | 21.0 | 25.2 | 20.6 |
| 30 | 20 | 44.4 | 24.3 | 34.6 | 23.4 | 35.0 | 23.5 | 28.4 | 22.9 | 29.0 | 22.9 | 24.1 | 22.5 | 24.8 | 22.5 | 20.8 | 22.2 |
| 30 | 22 | 35.1 | 25.5 | 27.4 | 24.8 | 34.9 | 25.5 | 22.4 | 24.3 | 22.9 | 24.4 | 19.0 | 24.0 | 19.6 | 24.0 | 16.5 | 23.7 |
| 30 | 24 | 25.6 | 26.6 | 19.9 | 26.1 | 20.2 | 26.1 | 16.3 | 25.7 | 16.7 | 25.8 | 13.9 | 25.5 | 14.3 | 25.5 | 12.0 | 25.3 |
| 35 | 15 | 90.3 | 23.2 | 70.4 | 21.5 | 71.2 | 21.6 | 57.7 | 20.5 | 58.9 | 20.6 | 48.9 | 19.7 | 50.3 | 19.8 | 42.4 | 19.1 |
| 35 | 18 | 76.6 | 25.1 | 59.7 | 23.6 | 60.4 | 23.7 | 48.9 | 22.7 | 50.0 | 22.8 | 41.5 | 22.0 | 42.7 | 22.2 | 35.9 | 21.5 |
| 35 | 20 | 67.5 | 26.3 | 52.6 | 25.0 | 53.2 | 25.1 | 43.1 | 24.2 | 44.0 | 24.3 | 36.6 | 23.6 | 37.6 | 23.7 | 31.7 | 23.2 |
| 35 | 22 | 58.3 | 27.5 | 45.4 | 26.4 | 46.0 | 26.4 | 37.2 | 25.7 | 38.0 | 25.7 | 31.6 | 25.2 | 32.5 | 25.2 | 27.3 | 24.8 |
| 35 | 24 | 49.1 | 28.7 | 38.3 | 27.8 | 38.7 | 27.8 | 31.3 | 27.1 | 32.0 | 27.2 | 26.6 | 26.7 | 27.3 | 26.8 | 23.0 | 26.4 |
| 40 | 15 | 113.1 | 25.1 | 88.2 | 23.0 | 89.2 | 23.1 | 72.3 | 21.7 | 73.8 | 21.8 | 61.3 | 20.8 | 63.0 | 20.9 | 53.1 | 20.1 |
| 40 | 18 | 99.4 | 27.0 | 77.5 | 25.1 | 78.4 | 25.2 | 63.5 | 24.0 | 64.8 | 24.1 | 53.9 | 23.1 | 55.4 | 23.3 | 46.7 | 22.5 |
| 40 | 20 | 90.3 | 28.2 | 70.4 | 26.5 | 71.2 | 26.6 | 57.7 | 25.5 | 58.9 | 25.6 | 48.9 | 24.7 | 50.3 | 24.8 | 42.4 | 24.1 |
| 40 | 22 | 81.2 | 29.4 | 63.3 | 27.9 | 64.0 | 28.0 | 51.9 | 27.0 | 52.9 | 27.0 | 44.0 | 26.3 | 45.2 | 26.4 | 38.1 | 25.7 |
| 40 | 24 | 72.0 | 30.7 | 56.2 | 29.3 | 56.8 | 29.4 | 46.0 | 28.4 | 47.0 | 28.5 | 39.0 | 27.8 | 40.1 | 27.9 | 33.8 | 27.4 |
| 45 | 15 | 135.9 | 26.9 | 106.0 | 24.5 | 107.2 | 24.6 | 86.8 | 22.9 | 88.6 | 23.1 | 73.6 | 21.8 | 75.7 | 22.0 | 63.8 | 21.0 |
| 45 | 18 | 122.2 | 28.8 | 95.3 | 26.6 | 96.4 | 26.7 | 78.1 | 25.2 | 79.7 | 25.3 | 66.2 | 24.2 | 68.1 | 24.3 | 57.3 | 23.4 |
| 45 | 20 | 113.1 | 30.1 | 88.2 | 28.0 | 89.2 | 28.1 | 72.3 | 26.7 | 73.8 | 26.8 | 61.3 | 25.8 | 63.0 | 25.9 | 53.1 | 25.1 |
| 45 | 22 | 104.0 | 31.3 | 81.1 | 29.4 | 82.0 | 29.5 | 66.4 | 28.2 | 67.8 | 28.3 | 56.4 | 27.3 | 58.0 | 27.5 | 48.8 | 26.7 |
| 45 | 24 | 94.9 | 32.6 | 74.0 | 30.8 | 74.8 | 30.9 | 60.6 | 29.7 | 61.9 | 29.8 | 51.4 | 28.9 | 52.9 | 29.0 | 44.5 | 28.3 |
| 50 | 15 | 158.6 | 28.7 | 123.7 | 25.9 | 125.1 | 26.0 | 101.3 | 24.1 | 103.4 | 24.3 | 86.0 | 22.8 | 88.4 | 23.0 | 74.4 | 21.9 |
| 50 | 18 | 145.0 | 30.6 | 113.0 | 28.1 | 114.3 | 28.2 | 92.6 | 26.4 | 94.5 | 26.5 | 78.6 | 25.2 | 80.8 | 25.4 | 68.0 | 24.3 |
| 50 | 20 | 135.9 | 31.9 | 106.0 | 29.5 | 107.2 | 29.6 | 86.8 | 27.9 | 88.6 | 28.1 | 73.6 | 26.8 | 75.7 | 27.0 | 63.8 | 26.0 |
| 50 | 22 | 126.8 | 33.2 | 98.9 | 30.9 | 100.0 | 31.0 | 81.0 | 29.4 | 82.7 | 29.6 | 68.7 | 28.4 | 70.7 | 28.6 | 59.5 | 27.6 |
| 50 | 24 | 117.7 | 34.4 | 91.8 | 32.3 | 92.8 | 32.4 | 75.2 | 30.9 | 76.7 | 31.1 | 63.8 | 30.0 | 65.6 | 30.1 | 55.2 | 29.2 |
| 55 | 15 | 181.4 | 30.5 | 141.4 | 27.3 | 143.0 | 27.5 | 115.8 | 25.3 | 118.2 | 25.5 | 98.3 | 23.9 | 101.1 | 24.1 | 85.1 | 22.8 |
| 55 | 18 | 167.7 | 32.4 | 130.8 | 29.5 | 132.3 | 29.6 | 107.1 | 27.6 | 109.4 | 27.8 | 90.9 | 26.2 | 93.5 | 26.5 | 78.7 | 25.2 |
| 55 | 20 | 158.6 | 33.7 | 123.7 | 30.9 | 125.1 | 31.0 | 101.3 | 29.1 | 103.4 | 29.3 | 86.0 | 27.8 | 88.4 | 28.0 | 74.4 | 26.9 |
| 55 | 22 | 149.5 | 35.0 | 116.6 | 32.3 | 117.9 | 32.5 | 95.5 | 30.6 | 97.5 | 30.8 | 81.0 | 29.4 | 83.3 | 29.6 | 70.2 | 28.5 |
| 55 | 24 | 140.4 | 36.3 | 109.5 | 33.8 | 110.7 | 33.9 | 89.7 | 32.2 | 91.6 | 32.3 | 76.1 | 31.0 | 78.3 | 31.2 | 65.9 | 30.2 |

| | |
|--|---|
| | Thermal output on the basis of DIN EN 1264 |
| | Maximum surface temperatures in accordance with DIN EN 1264 Residence zone (RZ): 29 °C Bathrooms: 33 °C Edge zone (EZ, max. width 100 cm): 35 °C |
| | Construction: TE25 01, TE25 02, TE25 03, TE25 04, TE25 05, TE25 06 See product data sheets and detailed information |

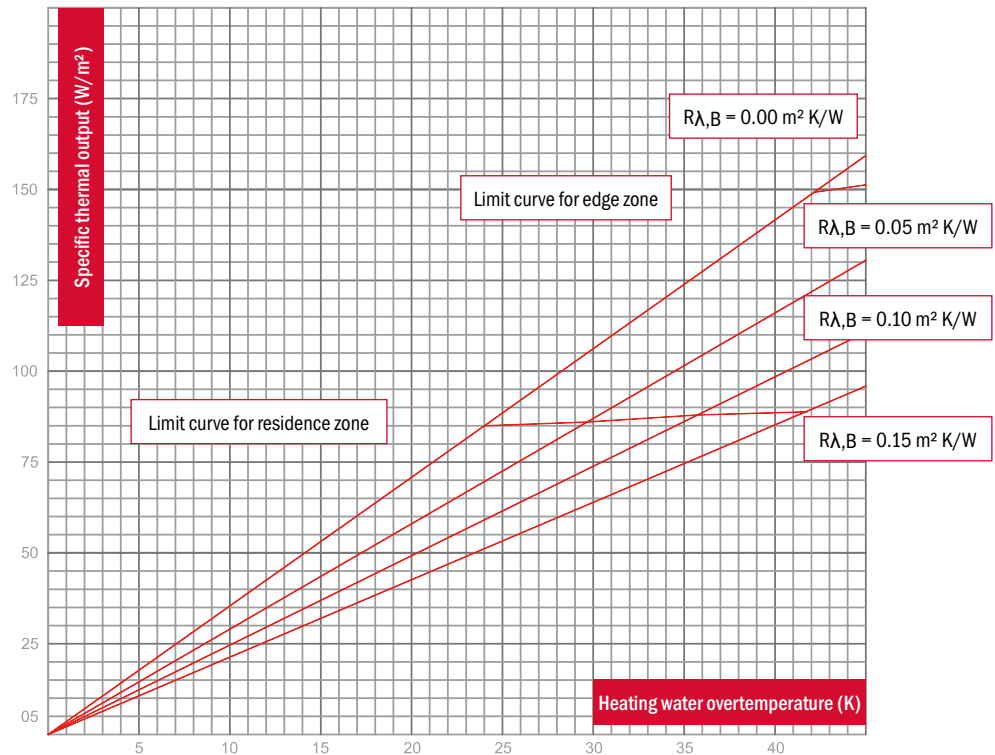
Dry screed element (Fermacell 25 mm)

Design chart TECEfloor universal panel UP

Laying type 125 mm
Thermal conductivity λ 0.28 W/mK



Laying type 250 mm
Thermal conductivity λ 0.28 W/mK



Construction: TE25 01, TE25 02, TE25 03, TE25 04, TE25 05, TE25 06
See product data sheets and detailed information



Cement screed CT

Thermal output TECefloor universal panel UP

| | |
|--------------------------------|----------|
| Nominal layer thickness | 45 mm |
| Thermal conductivity λ | 1.2 W/mK |
| spread σ | 5 K |

Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$
Tiles

Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$
Parquet, laminate, man-made fibres

Floor covering $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$
Carpet

Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$
Velour, ready-to-lay parquet, floorboards

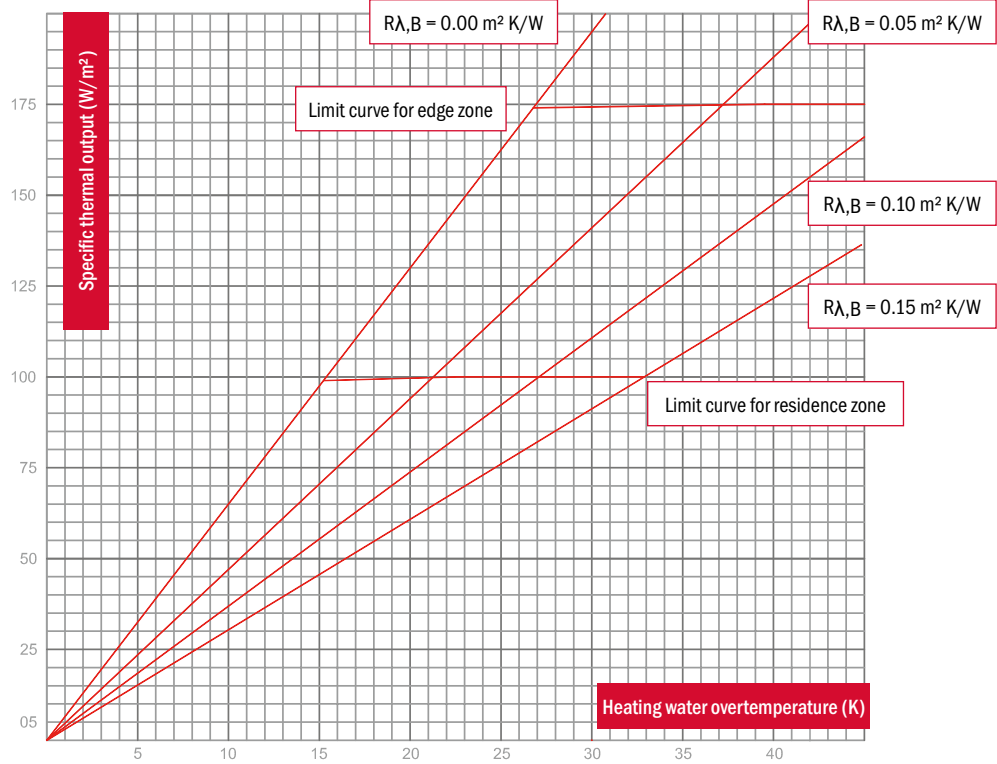
| Mean heating water temperature | Room temperature | $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ | | | |
|--------------------------------|--------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| $^{\circ}\text{C}$ | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ |
| 30 | 15 | 96.6 | 23.7 | 74.6 | 21.9 | 69.8 | 21.5 | 56.8 | 20.4 | 54.8 | 20.2 | 45.8 | 19.4 | 45.2 | 19.4 | 38.5 | 18.8 |
| 30 | 18 | 76.9 | 25.1 | 59.4 | 23.6 | 55.6 | 23.3 | 45.2 | 22.4 | 43.6 | 22.2 | 36.4 | 21.6 | 35.9 | 21.5 | 30.6 | 21.1 |
| 30 | 20 | 63.6 | 26.0 | 49.1 | 24.7 | 46.0 | 24.4 | 37.4 | 23.7 | 36.1 | 23.6 | 30.1 | 23.0 | 29.8 | 23.0 | 25.4 | 22.6 |
| 30 | 22 | 50.3 | 26.8 | 38.8 | 25.8 | 34.9 | 25.5 | 29.5 | 25.0 | 28.5 | 24.9 | 23.8 | 24.4 | 23.5 | 24.4 | 20.0 | 24.1 |
| 30 | 24 | 36.6 | 27.6 | 28.3 | 26.9 | 26.5 | 26.7 | 21.5 | 26.2 | 20.8 | 26.2 | 17.4 | 25.8 | 17.1 | 25.8 | 14.6 | 25.6 |
| 35 | 15 | 129.3 | 26.4 | 99.9 | 24.0 | 93.5 | 23.5 | 76.0 | 22.0 | 73.4 | 21.8 | 61.3 | 20.8 | 60.5 | 20.7 | 51.5 | 19.9 |
| 35 | 18 | 109.7 | 27.8 | 84.7 | 25.7 | 79.3 | 25.3 | 64.5 | 24.0 | 62.3 | 23.8 | 52.0 | 23.0 | 51.3 | 22.9 | 43.7 | 22.2 |
| 35 | 20 | 96.6 | 28.7 | 74.6 | 26.9 | 69.8 | 26.5 | 56.8 | 25.4 | 54.8 | 25.2 | 45.8 | 24.4 | 45.2 | 24.4 | 38.5 | 23.8 |
| 35 | 22 | 83.4 | 29.6 | 64.4 | 28.0 | 60.3 | 27.7 | 49.0 | 26.7 | 47.4 | 26.6 | 39.5 | 25.9 | 39.0 | 25.8 | 33.3 | 25.3 |
| 35 | 24 | 70.3 | 30.5 | 54.3 | 29.2 | 50.8 | 28.9 | 41.3 | 28.0 | 39.9 | 27.9 | 33.3 | 27.3 | 32.9 | 27.3 | 28.0 | 26.8 |
| 40 | 15 | 162.0 | 28.9 | 125.1 | 26.0 | 117.1 | 25.4 | 95.2 | 23.6 | 91.9 | 23.3 | 76.7 | 22.1 | 75.7 | 22.0 | 64.5 | 21.0 |
| 40 | 18 | 142.4 | 30.4 | 110.0 | 27.8 | 103.0 | 27.2 | 83.7 | 25.7 | 80.8 | 25.4 | 67.5 | 24.3 | 66.6 | 24.2 | 56.7 | 23.4 |
| 40 | 20 | 129.3 | 31.4 | 99.9 | 29.0 | 93.5 | 28.5 | 76.0 | 27.0 | 73.4 | 26.8 | 61.3 | 25.8 | 60.5 | 25.7 | 51.5 | 24.9 |
| 40 | 22 | 116.2 | 32.3 | 89.8 | 30.2 | 84.1 | 29.7 | 68.3 | 28.4 | 66.0 | 28.2 | 55.1 | 27.2 | 54.4 | 27.2 | 46.3 | 26.5 |
| 40 | 24 | 103.1 | 33.3 | 79.7 | 31.3 | 74.6 | 30.9 | 60.6 | 29.7 | 58.6 | 29.5 | 48.9 | 28.7 | 48.2 | 28.6 | 41.1 | 28.0 |
| 45 | 15 | 194.5 | 31.5 | 150.3 | 28.0 | 140.7 | 27.3 | 114.3 | 25.2 | 110.4 | 24.8 | 92.2 | 23.4 | 91.0 | 23.3 | 77.5 | 22.1 |
| 45 | 18 | 175.0 | 33.0 | 135.2 | 29.8 | 126.5 | 29.1 | 102.8 | 27.2 | 99.3 | 26.9 | 82.9 | 25.6 | 81.8 | 25.5 | 69.7 | 24.5 |
| 45 | 20 | 162.0 | 33.9 | 125.1 | 31.0 | 117.1 | 30.4 | 95.2 | 28.6 | 91.9 | 28.3 | 76.7 | 27.1 | 75.7 | 27.0 | 64.5 | 26.0 |
| 45 | 22 | 148.9 | 34.9 | 115.0 | 32.2 | 107.7 | 31.6 | 87.5 | 30.0 | 84.5 | 29.7 | 70.6 | 28.6 | 69.6 | 28.5 | 59.3 | 27.6 |
| 45 | 24 | 135.9 | 35.9 | 104.9 | 33.4 | 98.2 | 32.9 | 79.8 | 31.3 | 77.1 | 31.1 | 64.4 | 30.0 | 63.5 | 30.0 | 54.1 | 29.2 |
| 50 | 15 | 227.1 | 34.0 | 175.4 | 30.0 | 164.2 | 29.1 | 133.5 | 26.7 | 128.9 | 26.3 | 107.6 | 24.6 | 106.2 | 24.5 | 90.5 | 23.2 |
| 50 | 18 | 207.6 | 35.5 | 160.3 | 31.8 | 150.1 | 31.0 | 122.0 | 28.8 | 117.8 | 28.4 | 98.4 | 26.9 | 97.1 | 26.8 | 82.7 | 25.6 |
| 50 | 20 | 194.5 | 36.5 | 150.3 | 33.0 | 140.7 | 32.3 | 114.3 | 30.2 | 110.4 | 29.8 | 92.2 | 28.4 | 91.0 | 28.3 | 77.5 | 27.1 |
| 50 | 22 | 181.5 | 37.5 | 140.2 | 34.2 | 131.2 | 33.5 | 106.7 | 31.5 | 103.0 | 31.2 | 86.0 | 29.8 | 84.9 | 29.8 | 72.3 | 28.7 |
| 50 | 24 | 168.5 | 38.5 | 130.1 | 35.4 | 121.8 | 34.8 | 99.0 | 32.9 | 95.6 | 32.6 | 79.8 | 31.3 | 78.8 | 31.2 | 67.1 | 30.3 |
| 55 | 15 | 259.7 | 36.4 | 200.5 | 31.9 | 187.8 | 31.0 | 152.6 | 28.2 | 147.4 | 27.8 | 123.0 | 25.9 | 121.4 | 25.7 | 103.5 | 24.3 |
| 55 | 18 | 240.1 | 38.0 | 185.5 | 33.8 | 173.6 | 32.9 | 141.1 | 30.3 | 136.3 | 29.9 | 113.8 | 28.1 | 112.3 | 28.0 | 95.7 | 26.6 |
| 55 | 20 | 227.1 | 39.0 | 175.4 | 35.0 | 164.2 | 34.1 | 133.5 | 31.7 | 128.9 | 31.3 | 107.6 | 29.6 | 106.2 | 29.5 | 90.5 | 28.2 |
| 55 | 22 | 214.1 | 40.0 | 165.3 | 36.2 | 154.8 | 35.4 | 125.8 | 33.1 | 121.5 | 32.7 | 101.4 | 31.1 | 100.1 | 31.0 | 85.3 | 29.8 |
| 55 | 24 | 201.1 | 41.0 | 155.3 | 37.4 | 145.4 | 36.6 | 118.2 | 34.5 | 114.1 | 34.1 | 95.3 | 32.6 | 94.0 | 32.5 | 80.1 | 31.4 |

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|--|---|
| | Thermal output on the basis of DIN EN 1264 |
| | Maximum surface temperatures in accordance with DIN EN 1264 Residence zone (RZ): 29 °C Bathrooms: 33 °C Edge zone (EZ, max. width 100 cm): 35 °C |
| | Construction: CT 01, CT 02 See product data sheets and detailed information |

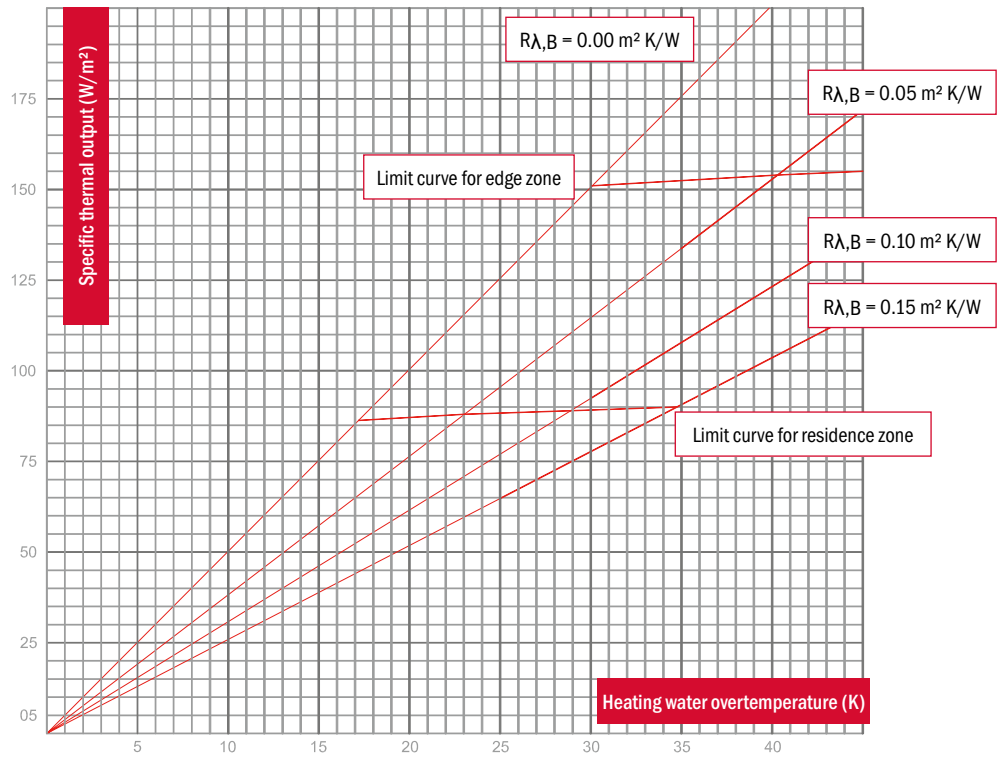
Cement screed CT

Design chart TECEfloor universal panel UP

| | |
|--------------------------------|----------|
| Laying type | 125 mm |
| Thermal conductivity λ | 1.2 W/mK |



| | |
|--------------------------------|----------|
| Laying type | 250 mm |
| Thermal conductivity λ | 1.2 W/mK |





Anhydrite screed CAF-F5

Thermal output TECefloor universal panel UP

| | |
|--------------------------------|----------|
| Nominal layer thickness | 35 mm |
| Thermal conductivity λ | 1.6 W/mK |
| spread σ | 5 K |

Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$
Tiles

Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$
Parquet, laminate, man-made fibres

Floor covering $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$
Carpet

Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$
Velour, ready-to-lay parquet, floorboards

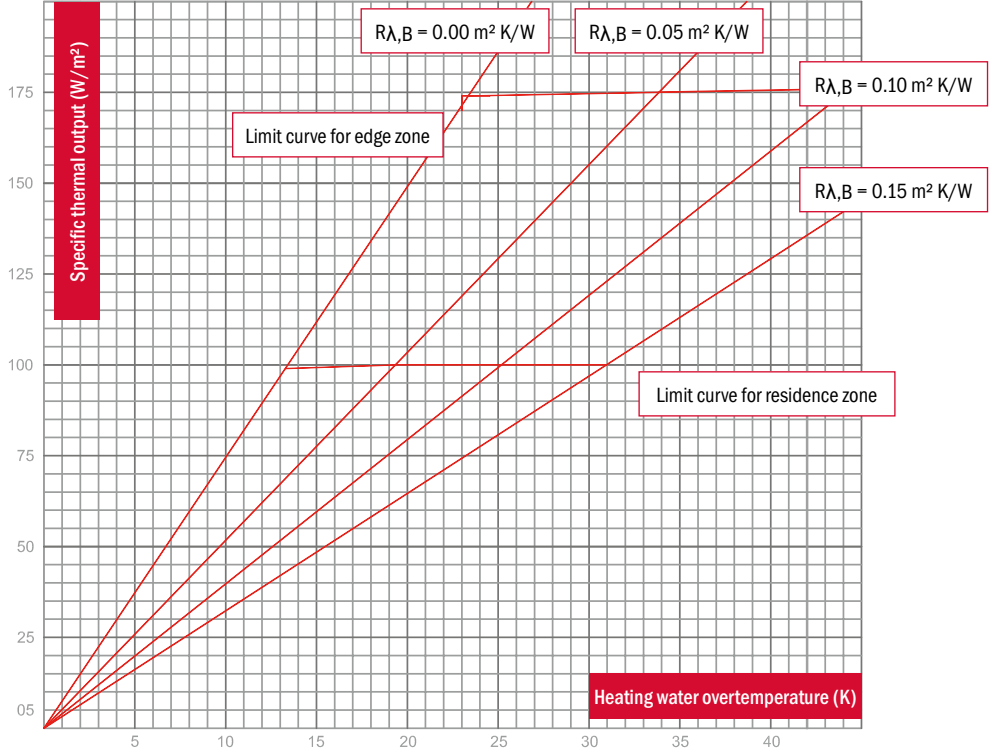
| Mean heating water temperature | Room temperature | $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ | | | |
|--------------------------------|------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| °C | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C |
| 30 | 15 | 110.7 | 24.9 | 85.1 | 22.8 | 76.8 | 22.1 | 62.6 | 20.9 | 59.0 | 20.6 | 49.5 | 19.7 | 48.0 | 19.6 | 41.0 | 19.0 |
| 30 | 18 | 88.1 | 26.0 | 67.8 | 24.3 | 61.1 | 23.8 | 49.8 | 22.8 | 46.9 | 22.5 | 39.4 | 21.9 | 38.2 | 21.8 | 32.6 | 21.3 |
| 30 | 20 | 72.9 | 26.8 | 56.1 | 25.3 | 50.6 | 24.8 | 41.2 | 24.0 | 38.9 | 23.8 | 32.6 | 23.2 | 31.6 | 23.2 | 27.0 | 22.7 |
| 30 | 22 | 57.6 | 27.4 | 44.3 | 26.3 | 34.9 | 25.5 | 32.6 | 25.2 | 30.7 | 25.1 | 25.7 | 24.6 | 25.0 | 24.5 | 21.3 | 24.2 |
| 30 | 24 | 42.0 | 28.1 | 32.3 | 27.2 | 29.1 | 26.9 | 23.7 | 26.4 | 22.4 | 26.3 | 18.8 | 26.0 | 18.2 | 25.9 | 15.6 | 25.7 |
| 35 | 15 | 148.2 | 27.9 | 114.0 | 25.1 | 102.9 | 24.2 | 83.8 | 22.7 | 79.0 | 22.3 | 66.3 | 21.2 | 64.3 | 21.0 | 54.9 | 20.2 |
| 35 | 18 | 125.7 | 29.1 | 96.7 | 26.7 | 87.3 | 25.9 | 71.1 | 24.6 | 67.0 | 24.3 | 56.2 | 23.3 | 54.5 | 23.2 | 46.6 | 22.5 |
| 35 | 20 | 110.7 | 29.9 | 85.1 | 27.8 | 76.8 | 27.1 | 62.6 | 25.9 | 59.0 | 25.6 | 49.5 | 24.7 | 48.0 | 24.6 | 41.0 | 24.0 |
| 35 | 22 | 95.6 | 30.6 | 73.6 | 28.8 | 66.4 | 28.2 | 54.0 | 27.1 | 51.0 | 26.9 | 42.8 | 26.2 | 41.5 | 26.0 | 35.4 | 25.5 |
| 35 | 24 | 80.5 | 31.4 | 61.9 | 29.8 | 55.9 | 29.3 | 45.5 | 28.4 | 42.9 | 28.2 | 36.0 | 27.6 | 34.9 | 27.5 | 29.8 | 27.0 |
| 40 | 15 | 185.6 | 30.8 | 142.8 | 27.4 | 128.8 | 26.3 | 104.9 | 24.4 | 98.9 | 23.9 | 83.0 | 22.6 | 80.5 | 22.4 | 68.8 | 21.4 |
| 40 | 18 | 163.2 | 32.0 | 125.5 | 29.1 | 113.2 | 28.1 | 92.2 | 26.4 | 87.0 | 25.9 | 72.9 | 24.8 | 70.8 | 24.6 | 60.5 | 23.7 |
| 40 | 20 | 148.2 | 32.9 | 114.0 | 30.1 | 102.9 | 29.2 | 83.8 | 27.7 | 79.0 | 27.3 | 66.3 | 26.2 | 64.3 | 26.0 | 54.9 | 25.2 |
| 40 | 22 | 133.2 | 33.7 | 102.5 | 31.2 | 92.5 | 30.4 | 75.3 | 29.0 | 71.0 | 28.6 | 59.6 | 27.6 | 57.8 | 27.5 | 49.4 | 26.7 |
| 40 | 24 | 118.2 | 34.5 | 90.9 | 32.3 | 82.0 | 31.5 | 66.8 | 30.2 | 63.0 | 29.9 | 52.8 | 29.0 | 51.3 | 28.9 | 43.8 | 28.2 |
| 45 | 15 | 223.0 | 33.7 | 171.5 | 29.7 | 154.7 | 28.4 | 126.0 | 26.1 | 118.8 | 25.5 | 99.7 | 24.0 | 96.7 | 23.7 | 82.6 | 22.6 |
| 45 | 18 | 200.6 | 34.9 | 154.3 | 31.3 | 139.2 | 30.2 | 113.3 | 28.1 | 106.9 | 27.6 | 89.7 | 26.1 | 87.0 | 25.9 | 74.3 | 24.9 |
| 45 | 20 | 185.6 | 35.8 | 142.8 | 32.4 | 128.8 | 31.3 | 104.9 | 29.4 | 98.9 | 28.9 | 83.0 | 27.6 | 80.5 | 27.4 | 68.8 | 26.4 |
| 45 | 22 | 170.7 | 36.6 | 131.3 | 33.5 | 118.4 | 32.5 | 96.4 | 30.7 | 90.9 | 30.3 | 76.3 | 29.0 | 74.0 | 28.8 | 63.2 | 27.9 |
| 45 | 24 | 155.7 | 37.5 | 119.8 | 34.6 | 108.1 | 33.7 | 88.0 | 32.0 | 83.0 | 31.6 | 69.6 | 30.5 | 67.5 | 30.3 | 57.7 | 29.5 |
| 50 | 15 | 260.3 | 36.5 | 200.2 | 31.9 | 180.6 | 30.4 | 147.1 | 27.8 | 138.7 | 27.1 | 116.4 | 25.3 | 112.9 | 25.0 | 96.4 | 23.7 |
| 50 | 18 | 237.9 | 37.8 | 183.0 | 33.6 | 165.1 | 32.2 | 134.4 | 29.8 | 126.8 | 29.2 | 106.3 | 27.5 | 103.1 | 27.3 | 88.1 | 26.0 |
| 50 | 20 | 223.0 | 38.7 | 171.5 | 34.7 | 154.7 | 33.4 | 126.0 | 31.1 | 118.8 | 30.5 | 99.7 | 29.0 | 96.7 | 28.7 | 82.6 | 27.6 |
| 50 | 22 | 208.0 | 39.5 | 160.0 | 35.8 | 144.4 | 34.6 | 117.6 | 32.4 | 110.9 | 31.9 | 93.0 | 30.4 | 90.2 | 30.2 | 77.1 | 29.1 |
| 50 | 24 | 193.1 | 40.4 | 148.5 | 36.9 | 134.0 | 35.7 | 109.1 | 33.7 | 102.9 | 33.2 | 86.3 | 31.9 | 83.7 | 31.7 | 71.5 | 30.6 |
| 55 | 15 | 297.6 | 39.2 | 228.9 | 34.1 | 206.5 | 32.4 | 168.2 | 29.4 | 158.6 | 28.7 | 133.0 | 26.7 | 129.0 | 26.3 | 110.3 | 24.8 |
| 55 | 18 | 275.2 | 40.6 | 211.7 | 35.8 | 191.0 | 34.2 | 155.5 | 31.4 | 146.7 | 30.7 | 123.0 | 28.9 | 119.3 | 28.6 | 102.0 | 27.2 |
| 55 | 20 | 260.3 | 41.5 | 200.2 | 36.9 | 180.6 | 35.4 | 147.1 | 32.8 | 138.7 | 32.1 | 116.4 | 30.3 | 112.9 | 30.0 | 96.4 | 28.7 |
| 55 | 22 | 245.4 | 42.3 | 188.7 | 38.0 | 170.3 | 36.6 | 138.7 | 34.1 | 130.8 | 33.5 | 109.7 | 31.8 | 106.4 | 31.5 | 90.9 | 30.3 |
| 55 | 24 | 230.4 | 43.2 | 177.2 | 39.1 | 159.9 | 37.8 | 130.2 | 35.4 | 122.8 | 34.8 | 103.0 | 33.2 | 99.9 | 33.0 | 85.4 | 31.8 |

| | |
|--|---|
| | Thermal output on the basis of DIN EN 1264 |
| | Maximum surface temperatures in accordance with DIN EN 1264 Residence zone (RZ): 29 °C Bathrooms: 33 °C Edge zone (EZ, max. width 100 cm): 35 °C |
| | Construction: CAF 01, CAF 02, CAF 03 See production data sheets and detailed information |

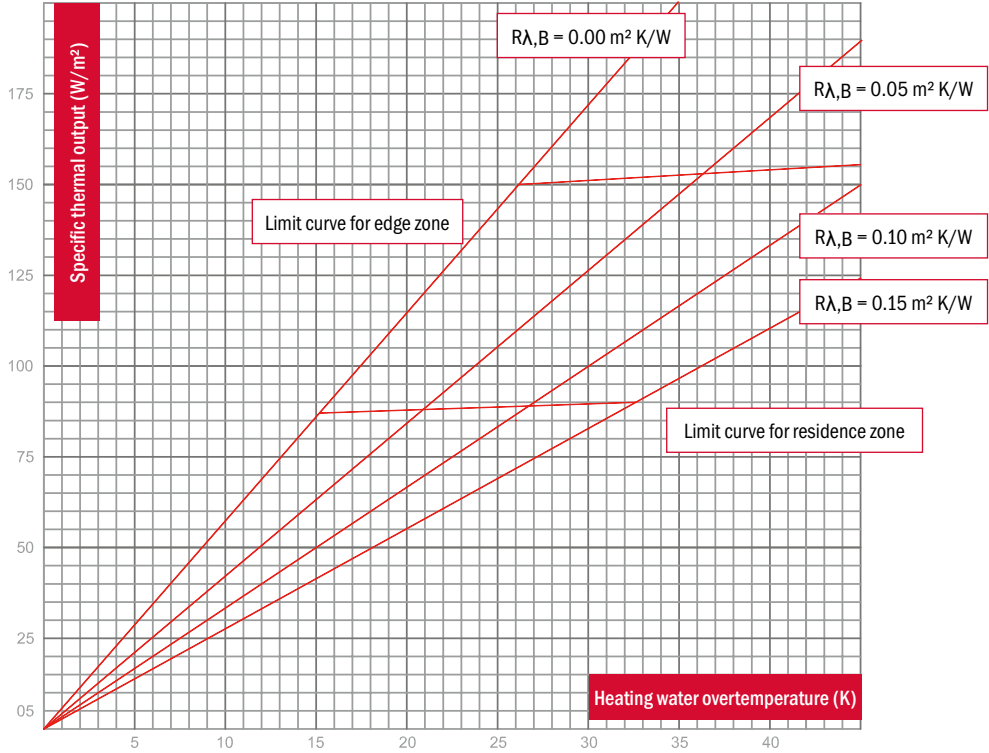
Anhydrite screed CAF-F5

Design chart TECEfloor universal panel UP

| | |
|--------------------------------|----------|
| Laying type | 125 mm |
| Thermal conductivity λ | 1.6 W/mK |



| | |
|--------------------------------|----------|
| Laying type | 250 mm |
| Thermal conductivity λ | 1.6 W/mK |





Dry screed element (Fermacell 20 mm)

Cooling capacity TECEfloor universal panel UP

| | |
|--------------------------------|-----------|
| Nominal layer thickness | 20 mm |
| Thermal conductivity λ | 0.28 W/mK |


Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$
Tiles

Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$
Parquet, laminate, man-made fibres

Floor covering $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$
Carpet

Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$
Velour, ready-to-lay parquet, floorboards

| Mean cooling water temperature | Room temperature | Tiles | | | | Parquet, laminate, man-made fibres | | | | Carpet | | | | Velour, ready-to-lay parquet, floorboards | | | |
|--------------------------------|------------------|------------------|---------------------|------------------|---------------------|------------------------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|---|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| °C | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C | W/m ² | °C |
| 24 | 28 | 14.8 | 25.7 | 12.0 | 26.2 | 12.2 | 26.1 | 10.1 | 26.4 | 10.3 | 26.4 | 8.7 | 26.7 | 9.0 | 26.6 | 7.7 | 26.8 |
| 24 | 27 | 11.1 | 25.3 | 9.0 | 25.6 | 9.1 | 25.6 | 7.6 | 25.8 | 7.7 | 25.8 | 6.5 | 26.0 | 6.7 | 26.0 | 5.8 | 26.1 |
| 24 | 26 | 7.4 | 24.9 | 6.0 | 25.1 | 6.1 | 25.1 | 5.0 | 25.2 | 5.2 | 25.2 | 4.4 | 25.3 | 4.5 | 25.3 | 3.8 | 25.4 |
| 24 | 25 | 3.7 | 24.4 | 3.0 | 24.5 | 3.0 | 24.5 | 2.5 | 24.6 | 2.6 | 24.6 | 2.2 | 24.7 | 2.2 | 24.7 | 1.9 | 24.7 |
| 22 | 29 | 25.8 | 25.0 | 20.9 | 25.8 | 21.3 | 25.7 | 17.6 | 26.3 | 18.1 | 26.2 | 15.3 | 26.7 | 15.7 | 26.6 | 13.4 | 26.9 |
| 22 | 28 | 22.1 | 24.6 | 17.9 | 25.2 | 18.2 | 25.2 | 15.1 | 25.7 | 15.5 | 25.6 | 13.1 | 26.0 | 13.4 | 25.9 | 11.5 | 26.2 |
| 22 | 27 | 18.5 | 24.2 | 15.0 | 24.7 | 15.2 | 24.7 | 12.6 | 25.1 | 12.9 | 25.0 | 10.9 | 25.3 | 11.2 | 25.3 | 9.6 | 25.5 |
| 22 | 26 | 14.8 | 23.7 | 12.0 | 24.2 | 12.2 | 24.1 | 10.1 | 24.4 | 10.3 | 24.4 | 8.7 | 24.7 | 9.0 | 24.6 | 7.7 | 24.8 |
| 22 | 24 | 7.4 | 22.9 | 6.0 | 23.1 | 6.1 | 23.1 | 5.0 | 23.2 | 5.2 | 23.2 | 4.4 | 23.3 | 4.5 | 23.3 | 3.8 | 23.4 |
| 22 | 22 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 |
| 20 | 28 | 29.5 | 23.5 | 23.9 | 24.3 | 24.3 | 24.3 | 20.2 | 24.9 | 20.6 | 24.8 | 17.4 | 25.3 | 17.9 | 25.2 | 15.4 | 25.6 |
| 20 | 27 | 25.8 | 23.0 | 20.9 | 23.8 | 21.3 | 23.7 | 17.6 | 24.3 | 18.1 | 24.2 | 15.3 | 24.7 | 15.7 | 24.6 | 13.4 | 24.9 |
| 20 | 26 | 22.1 | 22.6 | 17.9 | 23.2 | 18.2 | 23.2 | 15.1 | 23.7 | 15.5 | 23.6 | 13.1 | 24.0 | 13.4 | 23.9 | 11.5 | 24.2 |
| 20 | 24 | 14.8 | 21.7 | 12.0 | 22.2 | 12.2 | 22.1 | 10.1 | 22.4 | 10.3 | 22.4 | 8.7 | 22.7 | 9.0 | 22.6 | 7.7 | 22.8 |
| 20 | 22 | 7.4 | 20.9 | 6.0 | 21.1 | 6.1 | 21.1 | 5.0 | 21.2 | 5.2 | 21.2 | 4.4 | 21.3 | 4.5 | 21.3 | 3.8 | 21.4 |
| 18 | 28 | 36.9 | 22.3 | 29.9 | 23.4 | 30.4 | 23.3 | 25.2 | 24.1 | 25.8 | 24.0 | 21.8 | 24.6 | 22.4 | 24.6 | 19.2 | 25.0 |
| 18 | 27 | 33.2 | 21.9 | 26.9 | 22.9 | 27.4 | 22.8 | 22.7 | 23.5 | 23.2 | 23.4 | 19.6 | 24.0 | 20.2 | 23.9 | 17.3 | 24.3 |
| 18 | 26 | 29.5 | 21.5 | 23.9 | 22.3 | 24.3 | 22.3 | 20.2 | 22.9 | 20.6 | 22.8 | 17.4 | 23.3 | 17.9 | 23.2 | 15.4 | 23.6 |
| 18 | 24 | 22.1 | 20.6 | 17.9 | 21.2 | 18.2 | 21.2 | 15.1 | 21.7 | 15.5 | 21.6 | 13.1 | 22.0 | 13.4 | 21.9 | 11.5 | 22.2 |
| 18 | 22 | 14.8 | 19.7 | 12.0 | 20.2 | 12.2 | 20.1 | 10.1 | 20.4 | 10.3 | 20.4 | 8.7 | 20.7 | 9.0 | 20.6 | 7.7 | 20.8 |
| 16 | 28 | 44.3 | 21.2 | 35.9 | 22.5 | 36.5 | 22.4 | 30.2 | 23.3 | 31.0 | 23.2 | 26.2 | 24.0 | 26.9 | 23.9 | 23.0 | 24.5 |
| 16 | 27 | 40.6 | 20.8 | 32.9 | 21.9 | 33.4 | 21.9 | 27.7 | 22.7 | 28.4 | 22.6 | 24.0 | 23.3 | 24.6 | 23.2 | 21.1 | 23.8 |
| 16 | 26 | 36.9 | 20.3 | 29.9 | 21.4 | 30.4 | 21.3 | 25.2 | 22.1 | 25.8 | 22.0 | 21.8 | 22.6 | 22.4 | 22.6 | 19.2 | 23.0 |
| 16 | 24 | 29.5 | 19.5 | 23.9 | 20.3 | 24.3 | 20.3 | 20.2 | 20.9 | 20.6 | 20.8 | 17.4 | 21.3 | 17.9 | 21.2 | 15.4 | 21.6 |
| 16 | 22 | 22.1 | 18.6 | 17.9 | 19.2 | 18.2 | 19.2 | 15.1 | 19.7 | 15.5 | 19.6 | 13.1 | 20.0 | 13.4 | 19.9 | 11.5 | 20.2 |
| 14 | 28 | 51.7 | 20.1 | 41.9 | 21.6 | 42.6 | 21.5 | 35.3 | 22.6 | 36.1 | 22.4 | 30.5 | 23.3 | 31.4 | 23.2 | 26.9 | 23.9 |
| 14 | 27 | 48.0 | 19.6 | 38.9 | 21.0 | 39.5 | 20.9 | 32.8 | 22.0 | 33.5 | 21.8 | 28.3 | 22.6 | 29.1 | 22.5 | 25.0 | 23.2 |
| 14 | 26 | 44.3 | 19.2 | 35.9 | 20.5 | 36.5 | 20.4 | 30.2 | 21.3 | 31.0 | 21.2 | 26.2 | 22.0 | 26.9 | 21.9 | 23.0 | 22.5 |
| 14 | 24 | 36.9 | 18.3 | 29.9 | 19.4 | 30.4 | 19.3 | 25.2 | 20.1 | 25.8 | 20.0 | 21.8 | 20.6 | 22.4 | 20.6 | 19.2 | 21.0 |
| 14 | 22 | 29.5 | 17.5 | 23.9 | 18.3 | 24.3 | 18.3 | 20.2 | 18.9 | 20.6 | 18.8 | 17.4 | 19.3 | 17.9 | 19.2 | 15.4 | 19.6 |

 Cooling capacity on the basis of DIN EN 1264 part 5



Anhydrite screed CAF-F5

Cooling capacity TECEfloor universal panel UP

| | |
|--------------------------------|----------|
| Nominal layer thickness | 35 mm |
| Thermal conductivity λ | 1.6 W/mK |

Floor covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$
Tiles

Floor covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$
Parquet, laminate, man-made fibres

Floor covering $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$
Carpet

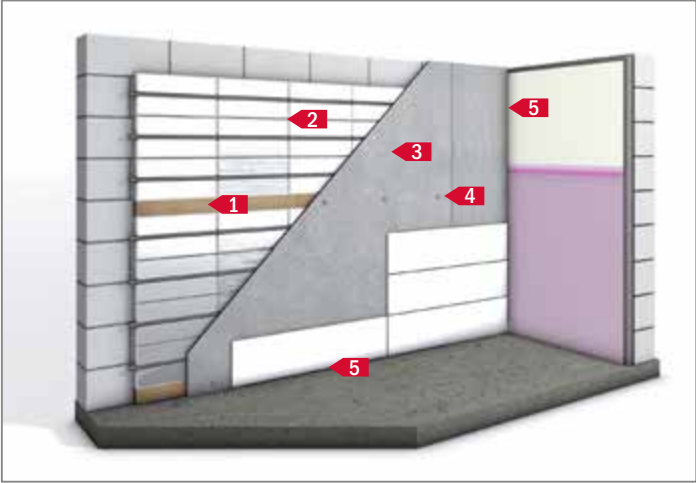
Floor covering $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$
Velour, ready-to-lay parquet, floorboards

| Mean cooling water temperature | Room temperature | $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.10 \text{ m}^2 \text{ K/W}$ | | | | $R_{\lambda,B} = 0.15 \text{ m}^2 \text{ K/W}$ | | | |
|--------------------------------|--------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|--|---------------------|------------------|---------------------|
| | | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature | RA = 125 mm | Surface temperature | RA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| $^{\circ}\text{C}$ | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ |
| 24 | 28 | 19.4 | 25.0 | 15.9 | 25.6 | 15.1 | 25.7 | 12.7 | 26.0 | 12.4 | 26.1 | 10.6 | 26.4 | 10.5 | 26.4 | 9.1 | 26.6 |
| 24 | 27 | 14.6 | 24.8 | 11.9 | 25.2 | 11.3 | 25.3 | 9.6 | 25.5 | 9.3 | 25.6 | 8.0 | 25.8 | 7.9 | 25.8 | 6.8 | 25.9 |
| 24 | 26 | 9.7 | 24.5 | 8.0 | 24.8 | 7.6 | 24.8 | 6.4 | 25.0 | 6.2 | 25.0 | 5.3 | 25.2 | 5.2 | 25.2 | 4.6 | 25.3 |
| 24 | 25 | 4.9 | 24.3 | 4.0 | 24.4 | 3.8 | 24.4 | 3.2 | 24.5 | 3.1 | 24.5 | 2.7 | 24.6 | 2.6 | 24.6 | 2.3 | 24.6 |
| 22 | 29 | 34.0 | 23.8 | 27.9 | 24.7 | 26.5 | 24.9 | 22.3 | 25.6 | 21.7 | 25.7 | 18.6 | 26.1 | 18.4 | 26.2 | 15.9 | 26.5 |
| 22 | 28 | 29.1 | 23.5 | 23.9 | 24.3 | 22.7 | 24.5 | 19.1 | 25.1 | 18.6 | 25.1 | 15.9 | 25.5 | 15.7 | 25.6 | 13.7 | 25.9 |
| 22 | 27 | 24.3 | 23.3 | 19.9 | 23.9 | 18.9 | 24.1 | 15.9 | 24.5 | 15.5 | 24.6 | 13.3 | 25.0 | 13.1 | 25.0 | 11.4 | 25.2 |
| 22 | 26 | 19.4 | 23.0 | 15.9 | 23.6 | 15.1 | 23.7 | 12.7 | 24.0 | 12.4 | 24.1 | 10.6 | 24.4 | 10.5 | 24.4 | 9.1 | 24.6 |
| 22 | 24 | 9.7 | 22.5 | 8.0 | 22.8 | 7.6 | 22.8 | 6.4 | 23.0 | 6.2 | 23.0 | 5.3 | 23.2 | 5.2 | 23.2 | 4.6 | 23.3 |
| 22 | 22 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 | 0.0 | 22.0 |
| 20 | 28 | 38.9 | 22.0 | 31.8 | 23.1 | 30.3 | 23.3 | 25.5 | 24.1 | 24.8 | 24.2 | 21.3 | 24.7 | 21.0 | 24.8 | 18.2 | 25.2 |
| 20 | 27 | 34.0 | 21.8 | 27.9 | 22.7 | 26.5 | 22.9 | 22.3 | 23.6 | 21.7 | 23.7 | 18.6 | 24.1 | 18.4 | 24.2 | 15.9 | 24.5 |
| 20 | 26 | 29.1 | 21.5 | 23.9 | 22.3 | 22.7 | 22.5 | 19.1 | 23.1 | 18.6 | 23.1 | 15.9 | 23.5 | 15.7 | 23.6 | 13.7 | 23.9 |
| 20 | 24 | 19.4 | 21.0 | 15.9 | 21.6 | 15.1 | 21.7 | 12.7 | 22.0 | 12.4 | 22.1 | 10.6 | 22.4 | 10.5 | 22.4 | 9.1 | 22.6 |
| 20 | 22 | 9.7 | 20.5 | 8.0 | 20.8 | 7.6 | 20.8 | 6.4 | 21.0 | 6.2 | 21.0 | 5.3 | 21.2 | 5.2 | 21.2 | 4.6 | 21.3 |
| 18 | 28 | 48.6 | 20.5 | 39.8 | 21.9 | 37.8 | 22.2 | 31.9 | 23.1 | 31.0 | 23.2 | 26.6 | 23.9 | 26.2 | 24.0 | 22.8 | 24.5 |
| 18 | 27 | 43.7 | 20.3 | 35.8 | 21.5 | 34.0 | 21.8 | 28.7 | 22.6 | 27.9 | 22.7 | 23.9 | 23.3 | 23.6 | 23.4 | 20.5 | 23.8 |
| 18 | 26 | 38.9 | 20.0 | 31.8 | 21.1 | 30.3 | 21.3 | 25.5 | 22.1 | 24.8 | 22.2 | 21.3 | 22.7 | 21.0 | 22.8 | 18.2 | 23.2 |
| 18 | 24 | 29.1 | 19.5 | 23.9 | 20.3 | 22.7 | 20.5 | 19.1 | 21.1 | 18.6 | 21.1 | 15.9 | 21.5 | 15.7 | 21.6 | 13.7 | 21.9 |
| 18 | 22 | 19.4 | 19.0 | 15.9 | 19.6 | 15.1 | 19.7 | 12.7 | 20.0 | 12.4 | 20.1 | 10.6 | 20.4 | 10.5 | 20.4 | 9.1 | 20.6 |
| 16 | 28 | 58.3 | 19.0 | 47.8 | 20.7 | 45.4 | 21.0 | 38.2 | 22.1 | 37.2 | 22.3 | 31.9 | 23.1 | 31.5 | 23.2 | 27.3 | 23.8 |
| 16 | 27 | 53.4 | 18.8 | 43.8 | 20.3 | 41.6 | 20.6 | 35.0 | 21.6 | 34.1 | 21.8 | 29.2 | 22.5 | 28.9 | 22.6 | 25.1 | 23.1 |
| 16 | 26 | 48.6 | 18.5 | 39.8 | 19.9 | 37.8 | 20.2 | 31.9 | 21.1 | 31.0 | 21.2 | 26.6 | 21.9 | 26.2 | 22.0 | 22.8 | 22.5 |
| 16 | 24 | 38.9 | 18.0 | 31.8 | 19.1 | 30.3 | 19.3 | 25.5 | 20.1 | 24.8 | 20.2 | 21.3 | 20.7 | 21.0 | 20.8 | 18.2 | 21.2 |
| 16 | 22 | 29.1 | 17.5 | 23.9 | 18.3 | 22.7 | 18.5 | 19.1 | 19.1 | 18.6 | 19.1 | 15.9 | 19.5 | 15.7 | 19.6 | 13.7 | 19.9 |
| 14 | 28 | 68.0 | 17.5 | 55.7 | 19.4 | 53.0 | 19.9 | 44.6 | 21.1 | 43.4 | 21.3 | 37.2 | 22.3 | 36.7 | 22.4 | 31.9 | 23.1 |
| 14 | 27 | 63.1 | 17.3 | 51.7 | 19.0 | 49.2 | 19.4 | 41.4 | 20.6 | 40.3 | 20.8 | 34.5 | 21.7 | 34.1 | 21.8 | 29.6 | 22.4 |
| 14 | 26 | 58.3 | 17.0 | 47.8 | 18.7 | 45.4 | 19.0 | 38.2 | 20.1 | 37.2 | 20.3 | 31.9 | 21.1 | 31.5 | 21.2 | 27.3 | 21.8 |
| 14 | 24 | 48.6 | 16.5 | 39.8 | 17.9 | 37.8 | 18.2 | 31.9 | 19.1 | 31.0 | 19.2 | 26.6 | 19.9 | 26.2 | 20.0 | 22.8 | 20.5 |
| 14 | 22 | 38.9 | 16.0 | 31.8 | 17.1 | 30.3 | 17.3 | 25.5 | 18.1 | 24.8 | 18.2 | 21.3 | 18.7 | 21.0 | 18.8 | 18.2 | 19.2 |



Wall heating dry-wall construction

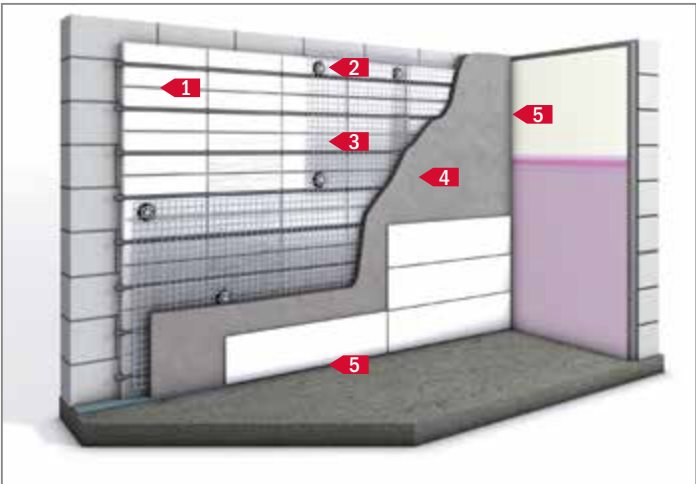
TECEfloor universal panel



- 1 Wooden slatting, 30 mm
 - 2 TECEfloor universal panel 30.0 mm
 - 3 Plasterboard 12.5 mm
 - 4 Dry-wall construction screws
 - 5 Movement joints, surrounding
-
- 42.5 mm

Wall heating plaster construction

TECEfloor universal panel



- 1 TECEfloor universal panel 30.0 mm
 - 2 Plate anchor or plaster base anchor, 70.0 mm
 - 3 Plaster base/plaster reinforcement
 - 4 suitable heating plaster e.g. 15.0 mm
 - 5 Edge insulation strip, surrounding
-
- 45.0 mm



Gypsum cardboard | Gypsum plaster | Lime cement

Thermal output | Wall TECEfloor universal panel UP

| | |
|--------------------------------|-----------|
| Nominal layer thickness | 12.5 mm |
| Thermal conductivity λ | 0.28 W/mK |
| spread σ | 5 K |

| | |
|--------------------------------|-----------|
| Nominal layer thickness | 15 mm |
| Thermal conductivity λ | 0.58 W/mK |
| spread σ | 5 K |

| | |
|--------------------------------|-----------|
| Nominal layer thickness | 15 mm |
| Thermal conductivity λ | 0.75 W/mK |
| spread σ | 5 K |

Covering $R_{\lambda,B} = 0.0 \text{ m}^2 \text{ K/W}$
Plasterboard 12.5 mm

Covering $R_{\lambda,B} = 0.0 \text{ m}^2 \text{ K/W}$
Gypsum plaster 15 mm

Covering $R_{\lambda,B} = 0.0 \text{ m}^2 \text{ K/W}$
Lime cement 15 mm

| Mean heating water temperature | Room temperature | Plasterboard 12.5 mm | | | | Gypsum plaster 15 mm | | | | Lime cement 15 mm | | | |
|--------------------------------|--------------------|----------------------|---------------------|------------------|---------------------|----------------------|---------------------|------------------|---------------------|-------------------|---------------------|------------------|---------------------|
| | | VA = 125 mm | Surface temperature | VA = 250 mm | Surface temperature | VA = 125 mm | Surface temperature | VA = 250 mm | Surface temperature | VA = 125 mm | Surface temperature | VA = 250 mm | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| $^{\circ}\text{C}$ | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ | W/m ² | $^{\circ}\text{C}$ |
| 27.5 | 15 | 59.1 | 21.9 | 46.4 | 20.5 | 66.6 | 22.8 | 52.0 | 21.1 | 69.4 | 23.2 | 54.3 | 21.4 |
| 27.5 | 18 | 44.4 | 23.2 | 34.9 | 22.1 | 50.1 | 23.9 | 39.1 | 22.6 | 52.2 | 24.1 | 40.8 | 22.8 |
| 27.5 | 20 | 34.6 | 24.1 | 27.1 | 23.2 | 39.0 | 24.6 | 30.4 | 23.6 | 40.6 | 24.8 | 31.7 | 23.7 |
| 27.5 | 22 | 24.4 | 24.9 | 19.2 | 24.3 | 27.5 | 25.2 | 21.5 | 24.5 | 28.7 | 25.4 | 22.4 | 24.6 |
| 27.5 | 24 | 13.4 | 25.6 | 10.5 | 25.2 | 15.1 | 25.8 | 11.8 | 25.4 | 15.7 | 25.8 | 12.3 | 25.4 |
| 30 | 15 | 71.2 | 23.4 | 55.9 | 21.6 | 80.2 | 24.4 | 62.7 | 22.4 | 83.6 | 24.8 | 65.4 | 22.7 |
| 30 | 18 | 56.6 | 24.7 | 44.5 | 23.2 | 63.9 | 25.5 | 49.9 | 23.9 | 66.5 | 25.8 | 52.0 | 24.1 |
| 30 | 20 | 46.9 | 25.5 | 36.8 | 24.3 | 52.9 | 26.2 | 41.3 | 24.9 | 55.1 | 26.5 | 43.1 | 25.1 |
| 30 | 22 | 37.0 | 26.4 | 29.1 | 25.4 | 41.8 | 26.9 | 32.6 | 25.8 | 43.5 | 27.1 | 34.0 | 26.0 |
| 30 | 24 | 27.0 | 27.2 | 21.2 | 26.5 | 30.4 | 27.6 | 23.8 | 26.8 | 31.7 | 27.7 | 24.8 | 26.9 |
| 35 | 15 | 95.3 | 26.2 | 74.8 | 23.8 | 107.4 | 27.6 | 84.0 | 24.9 | 112.0 | 28.2 | 87.5 | 25.3 |
| 35 | 18 | 80.8 | 27.5 | 63.5 | 25.5 | 91.1 | 28.7 | 71.2 | 26.4 | 95.0 | 29.2 | 74.3 | 26.7 |
| 35 | 20 | 71.2 | 28.4 | 55.9 | 26.6 | 80.2 | 29.4 | 62.7 | 27.4 | 83.6 | 29.8 | 65.4 | 27.7 |
| 35 | 22 | 61.5 | 29.2 | 48.3 | 27.7 | 69.3 | 30.2 | 54.2 | 28.4 | 72.3 | 30.5 | 56.5 | 28.6 |
| 35 | 24 | 51.8 | 30.1 | 40.6 | 28.8 | 58.4 | 30.9 | 45.6 | 29.4 | 60.8 | 31.2 | 47.6 | 29.6 |
| 40 | 15 | 119.3 | 29.0 | 93.7 | 26.0 | 134.5 | 30.8 | 105.1 | 27.4 | 140.2 | 31.5 | 109.6 | 27.9 |
| 40 | 18 | 104.9 | 30.3 | 82.4 | 27.7 | 118.3 | 31.9 | 92.4 | 28.9 | 123.3 | 32.5 | 96.4 | 29.3 |
| 40 | 20 | 95.3 | 31.2 | 74.8 | 28.8 | 107.4 | 32.6 | 84.0 | 29.9 | 112.0 | 33.2 | 87.5 | 30.3 |
| 40 | 22 | 85.7 | 32.1 | 67.2 | 29.9 | 96.6 | 33.4 | 75.5 | 30.9 | 100.6 | 33.8 | 78.7 | 31.3 |
| 40 | 24 | 76.0 | 32.9 | 59.7 | 31.0 | 85.7 | 34.1 | 67.0 | 31.9 | 89.3 | 34.5 | 69.8 | 32.2 |
| 45 | 15 | 143.4 | 31.9 | 112.5 | 28.2 | 161.6 | 34.0 | 126.3 | 29.9 | 168.4 | 34.8 | 131.7 | 30.5 |
| 45 | 18 | 129.0 | 33.2 | 101.2 | 29.9 | 145.4 | 35.1 | 113.6 | 31.4 | 151.5 | 35.8 | 118.5 | 31.9 |
| 45 | 20 | 119.3 | 34.0 | 93.7 | 31.0 | 134.5 | 35.8 | 105.1 | 32.4 | 140.2 | 36.5 | 109.6 | 32.9 |
| 45 | 22 | 109.7 | 34.9 | 86.1 | 32.1 | 123.7 | 36.6 | 96.7 | 33.4 | 128.9 | 37.2 | 100.8 | 33.9 |
| 45 | 24 | 100.1 | 35.8 | 78.6 | 33.2 | 112.9 | 37.3 | 88.2 | 34.4 | 117.6 | 37.8 | 92.0 | 34.8 |
| 50 | 15 | 167.4 | 34.7 | 131.4 | 30.5 | 188.7 | 37.2 | 147.4 | 32.3 | 196.6 | 38.1 | 153.7 | 33.1 |
| 50 | 18 | 153.0 | 36.0 | 120.1 | 32.1 | 172.4 | 38.3 | 134.8 | 33.9 | 179.7 | 39.1 | 140.5 | 34.5 |
| 50 | 20 | 143.4 | 36.9 | 112.5 | 33.2 | 161.6 | 39.0 | 126.3 | 34.9 | 168.4 | 39.8 | 131.7 | 35.5 |
| 50 | 22 | 133.8 | 37.7 | 105.0 | 34.4 | 150.8 | 39.7 | 117.8 | 35.9 | 157.2 | 40.5 | 122.9 | 36.5 |
| 50 | 24 | 124.2 | 38.6 | 97.5 | 35.5 | 140.0 | 40.5 | 109.4 | 36.9 | 145.9 | 41.2 | 114.0 | 37.4 |

Thermal output on the basis of DIN EN 1264 - 5

Recommended maximum surface temperature wall $\leq 40^{\circ}\text{C}$

See product data sheets and detailed information

TECEfloor universal panel UP

Wall heating | Wall cooling



If the flow is designed to start at the bottom, the system can be well filled on operational start-up via the rising meander.



In the event of high temperatures, such as those that can arise e.g. during complete re-heating after a very long period of non-operation, expansion noises may occur.

TECEfloor universal panel UP

Wall heating | Wall cooling



Wall statics and load bearing capacity must be sufficient for installation of wall heating. In addition, the angle and flatness tolerances must comply with DIN 18202.

Existing construction joints must be adopted when realising the wall heating.

Standards and guidelines

- DIN EN 1264
- EnEV
- VOB/C
- DIN 18202
- DIN 18350
- DIN 18550
- DIN 18180
- DIN 18181
- DIN 1168



The interfaces between structural analysis, electrical, heating, plastering and dry construction work should be clarified in the planning phase.

| Material | max. flow temperature |
|---|-----------------------|
| Gypsum/lime plaster | 50°C |
| Loam rendering | 50°C |
| Lime-cement plaster | 70°C |
| Dry-wall construction plasterboard | 50°C |
| Dry-wall construction gypsum fibres (Fermacell) | 55°C |



The construction physics parameters regarding U-value and dew point on outside walls, in particular, must be taken when realising the wall heating.

It is also advisable to clarify the construction plan with subsequent trades, e.g. with regard to keying surface, plaster reinforcement, movement joints and fixing points.

Depending on the material, manufacturer and contractor, different requirements may need to be met here; this must be clarified in advance.

From a physiological point of view, it is advisable to select system temperatures in such a way that a mean surface temperature of 40°C is not exceeded. In addition, the material-dependent, permitted flow temperatures (usually max. 50°C, lime-cement plaster max. 70°C) must be reliably observed.

TECEfloor universal panel UP

Ceiling heating | Ceiling cooling





Gypsum cardboard (Fermacell 12.5 mm)

Ceiling cooling capacity TECEfloor universal panel UP

Covering $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$
Gypsum fibre 12.5 mm

Covering $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$
Gypsum fibre 12.5 mm

| Mean cooling water temperature | Room temperature | $R_{\lambda,B} = 0.00 \text{ m}^2 \text{ K/W}$ Gypsum fibre 12.5 mm | | | | $R_{\lambda,B} = 0.05 \text{ m}^2 \text{ K/W}$ Gypsum fibre 12.5 mm | | | |
|--------------------------------|--------------------|--|---------------------|--------------------------------|---------------------|--|---------------------|--------------------------------|---------------------|
| | | $R_{\lambda} = 12.5 \text{ mm}$ | Surface temperature | $R_{\lambda} = 250 \text{ mm}$ | Surface temperature | $R_{\lambda} = 12.5 \text{ mm}$ | Surface temperature | $R_{\lambda} = 250 \text{ mm}$ | Surface temperature |
| θ_m | θ_i | EZ | θ_F | RZ | θ_F | EZ | θ_F | RZ | θ_F |
| $^{\circ}\text{C}$ | $^{\circ}\text{C}$ | W/m^2 | $^{\circ}\text{C}$ | W/m^2 | $^{\circ}\text{C}$ | W/m^2 | $^{\circ}\text{C}$ | W/m^2 | $^{\circ}\text{C}$ |
| 24 | 28 | 22.1 | 26.0 | 16.4 | 20.6 | 16.7 | 26.5 | 13.1 | 26.8 |
| 24 | 27 | 16.6 | 25.5 | 12.3 | 15.4 | 12.5 | 25.8 | 9.8 | 26.1 |
| 24 | 26 | 11.0 | 25.0 | 8.2 | 10.3 | 8.4 | 25.2 | 6.5 | 25.4 |
| 22 | 28 | 33.1 | 24.9 | 24.6 | 30.5 | 25.1 | 25.7 | 19.6 | 26.2 |
| 22 | 27 | 27.6 | 24.4 | 20.5 | 29.1 | 20.9 | 25.1 | 16.4 | 25.5 |
| 22 | 26 | 22.1 | 24.0 | 16.4 | 27.7 | 16.7 | 24.5 | 13.1 | 24.8 |
| 22 | 24 | 11.0 | 23.0 | 8.2 | 24.9 | 8.4 | 23.2 | 6.5 | 23.4 |
| 20 | 28 | 44.2 | 23.9 | 32.8 | 31.3 | 33.5 | 24.9 | 26.2 | 25.6 |
| 20 | 27 | 38.6 | 23.4 | 28.7 | 29.9 | 29.3 | 24.3 | 22.9 | 24.9 |
| 20 | 26 | 33.1 | 22.9 | 24.6 | 28.5 | 25.1 | 23.7 | 19.6 | 24.2 |
| 20 | 24 | 22.1 | 22.0 | 16.4 | 25.7 | 16.7 | 22.5 | 13.1 | 22.8 |
| 20 | 22 | 11.0 | 21.0 | 8.2 | 22.9 | 8.4 | 21.2 | 6.5 | 21.4 |
| 18 | 28 | 55.2 | 22.9 | 40.9 | 32.0 | 41.8 | 24.1 | 32.7 | 25.0 |
| 18 | 27 | 49.7 | 22.4 | 36.8 | 30.6 | 37.6 | 23.5 | 29.4 | 24.3 |
| 18 | 26 | 44.2 | 21.9 | 32.8 | 29.3 | 33.5 | 22.9 | 26.2 | 23.6 |
| 18 | 24 | 33.1 | 20.9 | 24.6 | 26.5 | 25.1 | 21.7 | 19.6 | 22.2 |
| 18 | 22 | 22.1 | 20.0 | 16.4 | 23.7 | 16.7 | 20.5 | 13.1 | 20.8 |
| 16 | 28 | 66.2 | 21.9 | 49.1 | 32.7 | 50.2 | 23.4 | 39.2 | 24.4 |
| 16 | 27 | 60.7 | 21.4 | 45.0 | 31.4 | 46.0 | 22.7 | 36.0 | 23.7 |
| 16 | 26 | 55.2 | 20.9 | 40.9 | 30.0 | 41.8 | 22.1 | 32.7 | 23.0 |
| 16 | 24 | 44.2 | 19.9 | 32.8 | 27.3 | 33.5 | 20.9 | 26.2 | 21.6 |
| 16 | 22 | 33.1 | 18.9 | 24.6 | 18.2 | 25.1 | 18.1 | 19.6 | 19.0 |
| 14 | 28 | 77.3 | 20.8 | 57.3 | 33.4 | 58.5 | 22.6 | 45.8 | 23.8 |
| 14 | 27 | 71.8 | 20.4 | 53.2 | 32.1 | 54.4 | 22.0 | 42.5 | 23.1 |
| 14 | 26 | 66.2 | 19.9 | 49.1 | 30.7 | 50.2 | 21.4 | 39.2 | 22.4 |
| 14 | 24 | 55.2 | 18.9 | 40.9 | 28.0 | 41.8 | 20.1 | 32.7 | 21.0 |
| 14 | 22 | 44.2 | 17.9 | 32.8 | 25.3 | 33.5 | 18.9 | 26.2 | 19.6 |

NEW! TECEfloor manifolds for push-fitting

The new generation of TECEfloor manifolds uses the tried-and-tested TECElogo push-fitting system and is a practical alternative to manifolds with the conventional clamping ring connections:

- No annoying handling with the open-jaw wrench
- No pipe distortion, twist-free fitting of the connection
- No insertion depth mistakes can be made
- With a special key, the push-fitting connection can be subsequently undone and the fitting can be used again

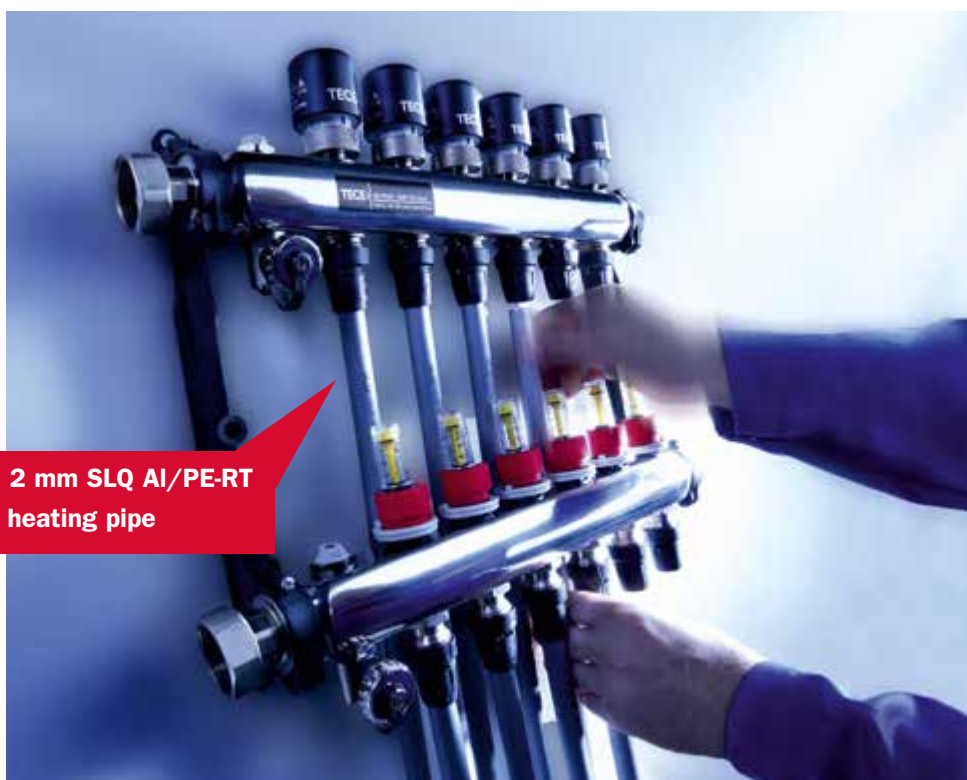
In addition to easy assembly through push-fitting, the manifold offers technical advantages:

- Manifold with large chamber volume
- Sound-insulated plastic retainer with quick-assembly function
Union nut 1" flat-sealing
- Integrated return valves with double O-ring seal on valve tappet
- Valve disk with O-ring seal for the permanently reliable closing of the heating circuits
- Flow metre with shut-off 0.5 to 4 litres with locking in accordance with DIN EN 1264-4
- The viewing glass can be replaced even under system pressure
- SLQ quality-monitored and tested for compatibility – every manifold is tested for tightness and functioning

TECEfloor manifold type Logo – it couldn't be easier!

The new stainless steel manifold from TECE is designed for use with preassembled push-fittings. That makes connecting pipes significantly easier. In addition to a twist-free connection technology that also prevents the pipes from being pulled out, the new stainless steel manifold provides a large chamber volume and therefore low pressure loss in the manifold system.

**16 x 2 mm SLQ Al/PE-RT
floor heating pipe**





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