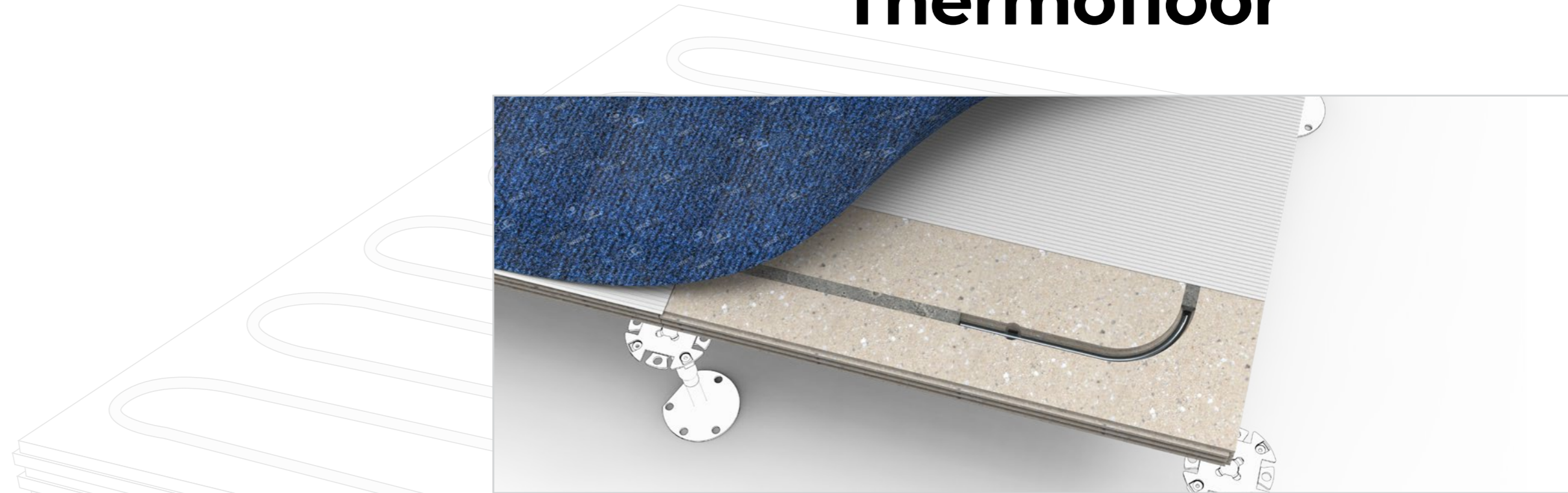


# THERMO

## FLOOR



# Thermofloor



Thermofloors can be used in almost all areas, from new constructions up to complete renovations of old objects.

On thermofloors all floor coverings, suitable for underfloorheating, can be used:

- **Stone coverings**
- **Textile coverings**
- **Elastic coverings**
- **Parquet**

At the present time, out of economic and ecological view, rooms are heated and cooled via activated surfaces and the room climate is regulated through pleasant radiant heat.

The big advantage shows in the costs, because the larger the heated surface, the less energy has to be used.

Consequently, the costs of heating and cooling are reduced and, in addition, the environment is less burdened and with the help of calcium sulfate plates an optimal heat transport is guaranteed.

The pipes for the underfloor heating are set in a special milling in the panel and then closed with putty.

The used pipes are made of highly cross-linked polyethylene, which clearly surpasses the oxygen-tightness of standard requirements.

In the substructure pedestals are used, which can be adjusted exactly in height.



# INSTALLATION

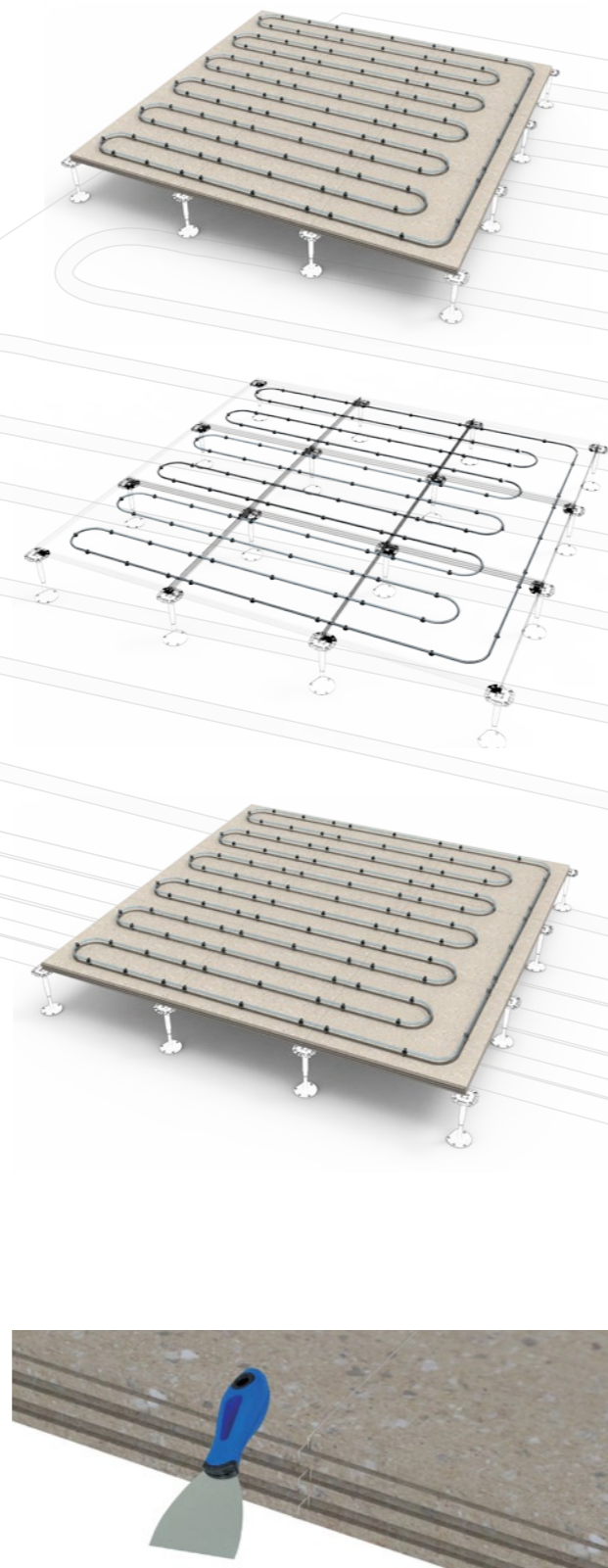
- The hollow floor with prefabricated millings for the heating medium is built up first, according to the installation plan.

- Subsequently the plastic tube is clipped into the holding grooves.
- Cutouts can be prefabricated (for example for electric floor tanks).

- After the pipes have been tested for leaks, the pipes are embedded with a special filling compound.

- After solidification, the supernatant is pushed plane with the surface, thus producing a flat surface of high quality.

- After functional heating the cover can be laid.



# TECHNICAL DATA

## Panel

Base layer	gypsum fiber board 40 mm
Support plate	600 x 600 mm with trapezoidal tooth profile and heating tube groove
Diffusion barrier	underside aluminum coating / for higher loads underside steel sheet
System weight	approx. 64 kg / m <sup>2</sup>
Laying distance	150 mm, 100 mm, edge zones possible
Heating pipe	Roth X-PERT S5 plus 14 x 2 mm, made of high-pressure-crosslinked polyethylene Alternative: Roth multi-layer composite tube Alu-Laserflex 16 x 2 mm
Fillers	Special filling compound, castor-proof, temperature-resistant

## Subconstruction

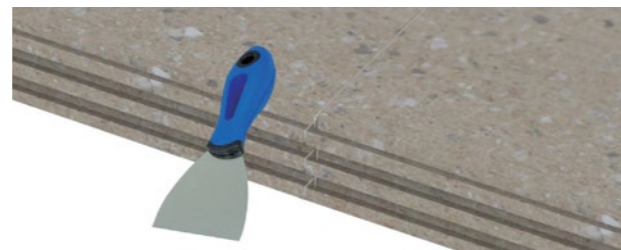
Pedestal grid	600 x 600 mm
Reinforcement border area	None, grid bar or other reinforcement measure with optional increase of rated load
Pedestal material	steel, galvanized

## Load Values

Point load	3,000 / 4,000 / 5,000 N (15,000 N in connection with 30mm stone pavement)
Element class accord. to DIN EN 13213	load class 3 / 4 / 5 / 6
Breaking load	≥ 6,000 / 8,000 / 10,000 / 30,000 N

## Cover

Material	textile and elastic floor coverings, parquet, natural stone, artificial stone, ceramics
Functional heating	from 36 hours after casting for 48 hours
The maturity of the floor structure	immediately after the functional heating and cooling



## Thermal properties

Heat output according to DIN EN 1264-2: 89 W / m<sup>2</sup> at 25.89 K heating medium overtemperature, R = 0.15 m<sup>2</sup> K / W

Specific cooling capacity according to DIN EN 1264-5: 38 W / m<sup>2</sup> at 8 K coolant low temperature, R = 0,00 m<sup>2</sup> K / W

Specific cooling capacity according to DIN EN 1264-5: 23 W / m<sup>2</sup> at 8 K coolant low temperature, R = 0.15 m<sup>2</sup> K / W

Laying distance 150 mm

Heat output according to DIN EN 1264-2: 60 W / m<sup>2</sup> at 12.39 K heating medium overtemperature, R=0.00m<sup>2</sup> K / W

Heat output according to DIN EN 1264-2: 78 W / m<sup>2</sup> at 29.54 K heating medium overtemperature, R=0.15m<sup>2</sup> K / W

Heat output according to DIN EN 1264-2 with stone covering: 38 W / m<sup>2</sup> at 8 K coolant low temperature, R=0,00m<sup>2</sup> K / W  
88 W / m<sup>2</sup> at 8 K coolant low temperature, R=0,00m<sup>2</sup> K / W

Specific cooling capacity according to DIN EN 1264-5: 23 W / m<sup>2</sup> at 8 K coolant low temperature, R=0,00m<sup>2</sup> K / W

Specific cooling capacity according to DIN EN 1264-5: 29 W / m<sup>2</sup> at 8 K coolant low temperature, R=0,15m<sup>2</sup> K / W

Specific cooling capacity according to DIN EN 1264-5 with stone covering: 19 W / m<sup>2</sup> at 8 K coolant low temperature, R=0,01m<sup>2</sup> K / W

Density: ≥ 1500 kg / m<sup>3</sup>

Surface Brinell hardness: ≥ 40 N / mm<sup>2</sup>

Adhesive tensile strength: ≥ 1.0 N / mm<sup>2</sup>

Calculated value of the thermal conductivity: R 0.44 W / (mK)  
For the design of underfloor heating is 10 0.30 W / (mK)

Water vapor transmission resistance coefficient: μ 30/50

Specific heat capacity c: > 1000 J / (kgK)

thermal expansion coefficient: 12.9 \* 10<sup>-6</sup> 1 / K

Change in length with temperature change: ≤ 0.02 mm / (mK)

Change in length when changing the rel. humidity at 20 ° C by 30%: 0.6 mm / m

Hygrothermal installation conditions (stationary): min. + 13 ° C, approx. 40 - 65% r. F.

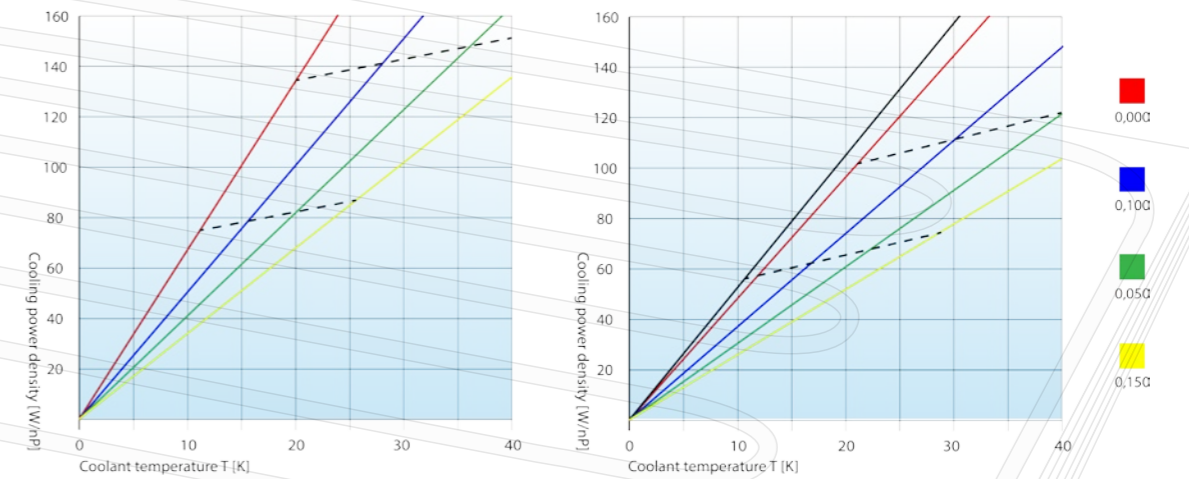
Hygrothermal conditions of use (stationary): min. + 13 ° C, approx. 40 - 65% r. F.

## Heating operation

Heat flux density qG according to DIN EN 1264-2 (without covering, R = 0,00 m<sup>2</sup> K / W) at standard heating medium excess temperature ΔθH

Heat flow density qG according to DIN EN 1264-2 (with covering, R = 0.15 m<sup>2</sup> K / W) at standard heating medium excess temperature ΔθH

pipe grid 100 mm	pipe grid 150 mm
77 W / m <sup>2</sup>	60 W / m <sup>2</sup>
11,69 K	12 K
89 W / m <sup>2</sup>	78 W / m <sup>2</sup>
25,89 K	29 K

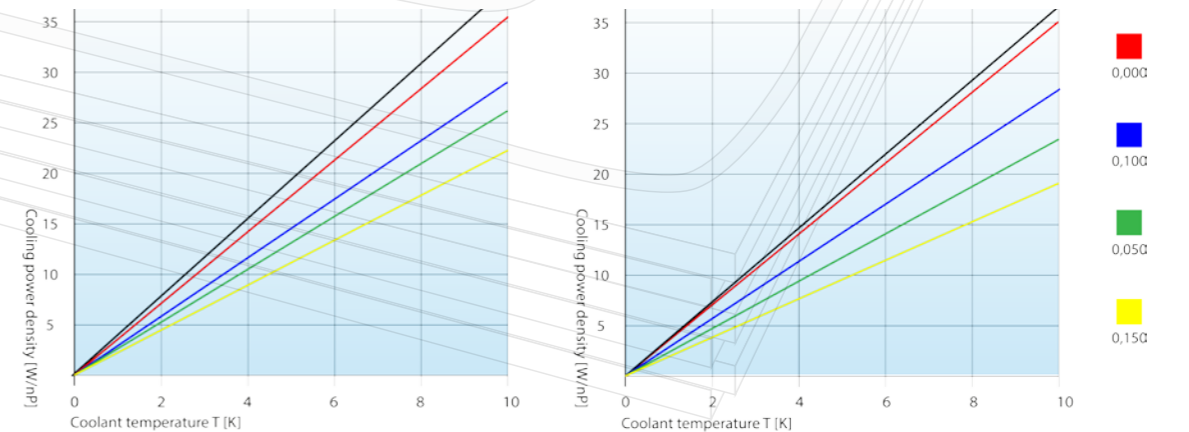


## Cooling mode

Specific cooling capacity q according to DIN EN 1264-5 3

Coolant temperature ΔθH

pipe grid 100 mm	pipe grid 150 mm
8.2 W / m <sup>2</sup>	8.7 W / m <sup>2</sup>
8 K	8 K



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