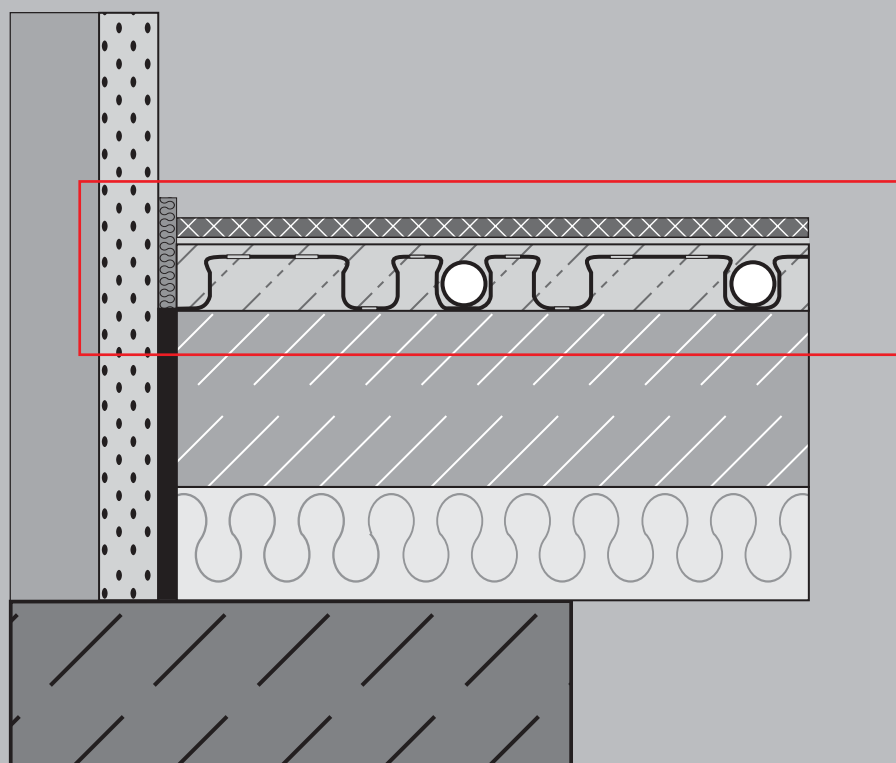


# CLIMACOMFORT SYSTEM

TECHNICAL INFORMATION &  
INSTALLATION INSTRUCTIONS



# System description

<b>System description/ system advantages</b>	The new Roth ClimaComfort system for heating and cooling via floors, walls and ceilings in refurbished or new buildings stands out for its	extremely low, 17-millimetre overall structure and its resulting high reaction speed.
<b>Areas of use and general information</b>	The Roth ClimaComfort system can be used for heating and cooling in refurbished or new buildings. It can be installed on floors, walls or ceilings. In general, the description of the system relates to the planning and construction of the Roth ClimaComfort system which is embedded in a thin layer of mineral filling and sealing compound where the thickness does not correspond to the minimum nominal thickness of DIN 18560 German industry standard regarding screed used in the construction industry.	In order to distinguish from conventional heating screed in accordance with DIN 18560-2, the term <b>"filling and sealing compound"</b> will be used below. The system is mainly used in refurbished and renovated buildings and corresponds to the latest technological developments. Nevertheless, system installers must check the suitability of the filling and sealing compound selected for the required application, taking into account the conditions on site.
<b>Standards and directives</b>	When planning and creating a heating system, the following laws, directives, guidelines and standards must be taken into account: <ul style="list-style-type: none"><li>• the law on energy efficiency (EnEG)</li><li>• the directive on energy efficiency (EnEV)</li><li>• the directive on heating costs (HeizkostenV)</li><li>• the individual administrative regulations issued by the federal states in relation to the EnEG law on energy efficiency</li></ul> <b>Standards, guidelines and contracting rules for awarding public works contracts</b> <ul style="list-style-type: none"><li>• DIN 1055 part 3 design loads for buildings</li><li>• DIN EN 1264 T 1-4 floor heating systems and their components</li><li>• DIN 1961 contracting rules for awarding public works contracts, part B</li><li>• DIN EN 1991-1-1 influences on supporting frameworks</li><li>• DIN 4102 fire protection</li><li>• DIN 4108 thermal protection</li><li>• DIN 4109 noise protection</li><li>• DIN EN 12831 rules for calculating the heating load in buildings</li><li>• DIN 4726 plastic pipe connections for hot water floor heating systems</li><li>• DIN 4751 water heating systems</li><li>• DIN 4807 expansion tanks</li><li>• DIN 16834 Polyethylene pipes of raised temperature resistance (PE-RT)</li><li>• DIN 18164 foamed plastics as insulation materials in the construction industry</li><li>• DIN 18299 contracting rules for awarding public works contracts, part C</li><li>• DIN EN 13162 to DIN EN 13171 thermal</li></ul>	insulation materials for buildings produced ex-works <ul style="list-style-type: none"><li>• DIN 18195 sealing of buildings</li><li>• DIN 18202 building construction tolerances</li><li>• DIN 18336 sealing work</li><li>• DIN 18352 tiling and panelling work</li><li>• DIN 18353 screed work</li><li>• DIN 18356 parquet work</li><li>• DIN 18365 floor covering work</li><li>• DIN 18380 heating systems and central water heating systems</li><li>• VDI 2035 part 2 prevention of damage in hot water heating systems, upstream corrosion</li><li>• technical code of practice for interface coordination for heated floor constructions</li></ul>

# System description

## Roth ClimaComfort system panel

Highly durable, transparent system panel with an installation height of 14 mm, made of semi-crystalline material. The special panel structure with undercutting ensures safe pipe fixation which is in accordance with the required standards. The system pipe ClimaComfort S5 10,50 x 1,30 mm can be laid in either a snail pattern or as a meander. In a 75 mm laying grid, diagonal laying at a distance of 105 mm is possible.

The ClimaComfort system panel has a two-sided overlap of 22 mm to bond the panels and an active adhesive back side to cover the entire area, to securely fix the panel onto the subsurface. Openings for filling and deaeration for easy insertion of the sealing compound and primer ensure a safe, stable bond with the subsurface.

- installation height: 14 mm
- dimensions: 1072 x 772 mm
- effective area: 0,785 m<sup>2</sup>
- laying grid: 75, 150, 225 mm and diagonal grid, 105 mm
- material: PET
- building material class: B2 DIN 4102
- material no.: 1115007104
- packing unit: 5 panels

## Roth system pipe ClimaComfort S5

5-layer safety pipe according to DIN 16833, 16834 and DIN 4721, with oxygen barrier in conformance with DIN 4726 which is additionally protected from an increase in mechanical stress by a PE cover. The pipe layers are bonded together in a non-detachable way using S5 CoEx technology. The system pipe ClimaComfort S5 is resistant against the formation of tension cracks and has been stabilised against the effects of thermal stress. The smallest bending radius is 3 x do, in conformance with DIN 16833, 16834 and DIN 4726.

- dimension: 10,50 mm x 1,30 mm
- maximum temperature: 70 °C, for short periods up to 100 °C
- maximum pressure: 6 bar
- permitted minimum bending radius: 3 x do
- material no.: 1135003441
- packing unit: 120 m

## Filling and sealing compound

A finished admixture as a special, self-spreading, hydraulically hardened, high-strength compound to fill the Roth ClimaComfort system panel and to create a load-bearing layer bonded to the subsurface to support the floor coverings.

For use following the appropriate pretreatment, on concrete, cement screed, calcium-sulphite bonded screeds and ceramic coverings.

Load-bearing layer for any floor covering, based on special cement and mineral aggregates (special medium grain grading curve – hardened using artificial resin) for manual and machine processing.

- consumption: approx. 25 kg/m<sup>2</sup> (3 mm system covering layer)
- form of delivery: finished admixture in sacks, according to the manufacturer
- processing time: approx. 30 min (20 °C/65% relative air humidity)
- min. processing temperature: 5 °C on the floor
- walkable: after approx. 3-4 hours
- functional heating: time depending on manufacturer
- ready for floor cover laying: after approx. 2 days – a test by the individual responsible for laying the floor covering is mandatory
- the instructions of the manufacturer must be followed

**Available from the following manufacturers:**

**Bostik**

**Glass Baustoffwerke AG**

**PCI**

**Henkel/Thomsit**

**Knauf**

## Roth ClimaComfort compression fitting

For connecting the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, to the Roth manifold with flow rate indicator.

Consisting of: brass union nut, female thread 3/4" / 10,50 mm, brass pipe adapter with euro cone and clamp ring.

- dimension: 3/4" female thread / 10,50 mm
- width across flats: 30 mm
- material no.: 1135003444
- packing unit: 2 pieces

## Roth ClimaComfort T-connection

For connecting two heating circuits of the same length of the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, to the heating circuit connection of the Roth manifold with flow rate indicator.

Consisting of: a two unit set for supply and return.

- dimension: 3/4" female thread / 2 x 10,50 mm
- material no.: 1135003444
- packing unit: 2 pieces

## System components

# System description

## System components

### **Roth ClimaComfort single sub-manifold,**

For connecting heating circuits on the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, to a regulated heating supply, as a single manifold or for a combination of several units of the same circuit lengths. Consisting of: a brass profile with one 1/2" male thread and 1/2" female thread connection each, 1 heating circuit connection for the Roth system pipe Clima-Comfort S5, 10,50 x 1,30 mm with connection screwing.

- one 1/2" male thread and one 1/2" female thread connection each
- packing unit: 2 pieces
- material no.: 1135003448

### **Roth ClimaComfort double sub-manifold**

For connecting heating circuits of the same length on the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, to a regulated heating supply, as an individual manifold or for a combination. Consisting of: a brass profile with one 1/2" male thread and one 1/2" female thread connection each, 2 heating circuit connections for the Roth system pipe Clima-Comfort S5, 10,50 x 1,30 mm with connection screwing.

- one 1/2" male thread and one 1/2" female thread connection each
- packing unit: 2 pieces
- material no.: 1135003449

### **Roth ClimaComfort coupling**

Consisting of: 1 brass double nipple and 2 connection screwings for connecting the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm (in case of repair)

- dimension: 10,50 mm
- packing unit: 1 piece
- material no.: 1135003447

### **Roth ClimaComfort transition nipple with male thread**

Brass transition piece, 1/2" male thread connection on one side, for connecting the pipe and for connection to the Roth system pipe ClimaComfort S5 10,50 x 1,30 mm, incl. connection screwing.

- dimension: 1/2" male thread – 10,50 mm
- packing unit: 1 piece
- material no.: 1135003447

### **Roth ClimaComfort transition press fitting**

For direct connection of Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, with other Roth system heating pipes.

Consisting of: a brass double nipple with a press contour and thread connection for the Roth system pipe ClimaComfort S5, 10,50 x 1,30 mm, incl. stainless steel press sleeve and connection screwing.

- dimension: 17/10,50 mm
- material no.: 1115007102
- packing unit: 1 piece
- dimension: 20/10,50 mm
- material no.: 1115007103
- packing unit: 1 piece

### **Roth ClimaComfort edge insulation strip**

For separating the filling and sealing compound from other components, 8 mm thick special foamed plastic, 80 mm high with welded PE film, rear side with adhesive strip for fixation, multiple slits on the rear side.

- dimension: 8 x 80 mm
- packing unit: 25 m
- material no.: 1135003442

### **Roth ClimaComfort expansion joint profile**

For the safe separation of the panel areas and the formation of a permanently elastic joint, consisting of a closed cell PE core with stable PET coating and 90° angled self-adhesive contact surfaces with a width of 8 mm, a height of 40 mm, and a length of 1800 mm.

- packing unit: 1 piece
- material no.: 1135003443

### **Roth ClimaComfort clip rail**

U-rail with 25 mm perforated grid to fix the pipes on uneven surfaces (walls and ceilings), adjusted to the Roth system pipe Clima-Comfort S5 10,50 mm with set separation points. The bottom side is self-adhesive.

- dimension: 4000 x 30 x 15,50 mm
- packing unit: 5 pieces
- material no.: 1135003450

# System description

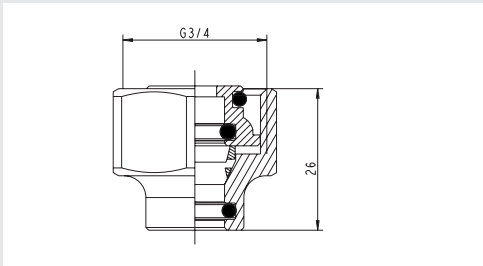
## System components



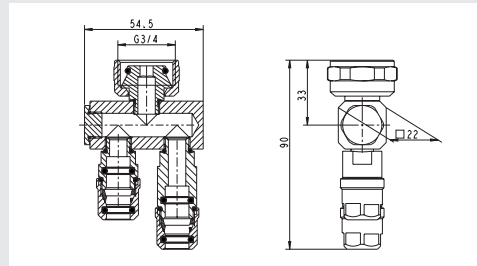
Roth Climacomfort system panel



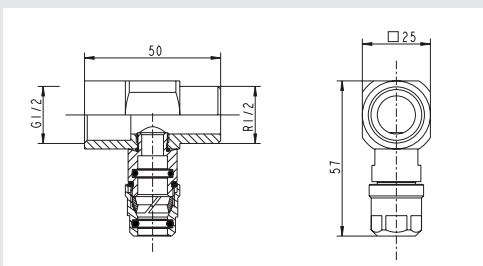
Roth system pipe Climacomfort S5



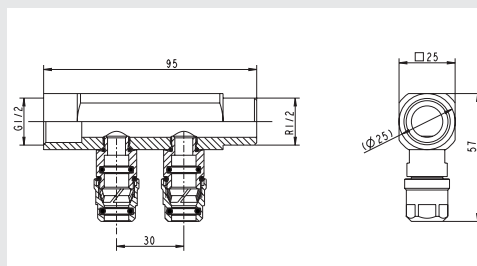
Roth Climacomfort compression fitting



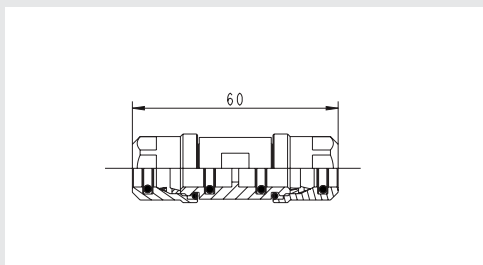
Roth Climacomfort T-connection



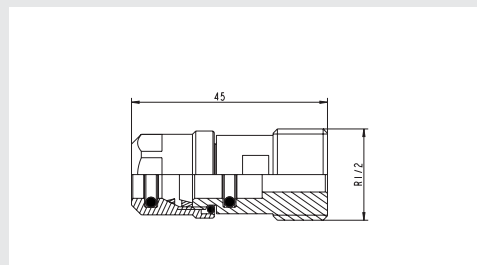
Roth Climacomfort single sub-manifold



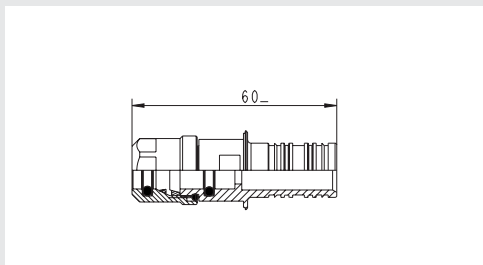
Roth Climacomfort double sub-manifold



Roth Climacomfort coupling



Roth Climacomfort transition nipple with male thread



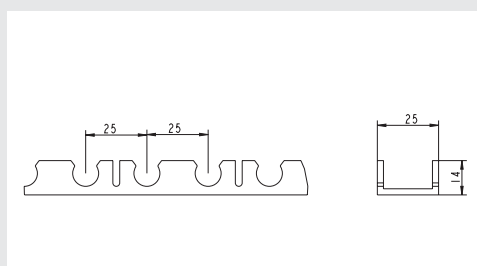
Roth Climacomfort press fitting transition



Roth edge insulation strip



Roth expansion joint profile



Roth Climacomfort clip rail for wall and ceiling installation

# Layout & project planning

## Layout & project planning

The calculation for the Roth ClimaComfort system is made on the basis of DIN EN 1264, part 2 basic characteristic curve and the DIN EN 12831 standard heating load calculation.

The system layout is based on the sizes calculated according to DIN EN 1264, taking into account the permitted limit values taken from the system performance charts.

## Insulation requirements for existing buildings

### Ceilings separating residential apartments

For ceilings separating residential apartments, the insulation requirements in accordance with the EnEV law do not apply. The insulation standard for ceilings separating residential apartments in accordance with DIN EN 1264 of  $R_{\lambda, \text{ins}} \geq 0,75 \text{ m}^2 \text{ K/W}$  should be checked. The DIN EN 1264-4 standard can only be used as a guide, however, since its requirements relate to standard systems.

### Ceilings between unheated rooms and the ground:

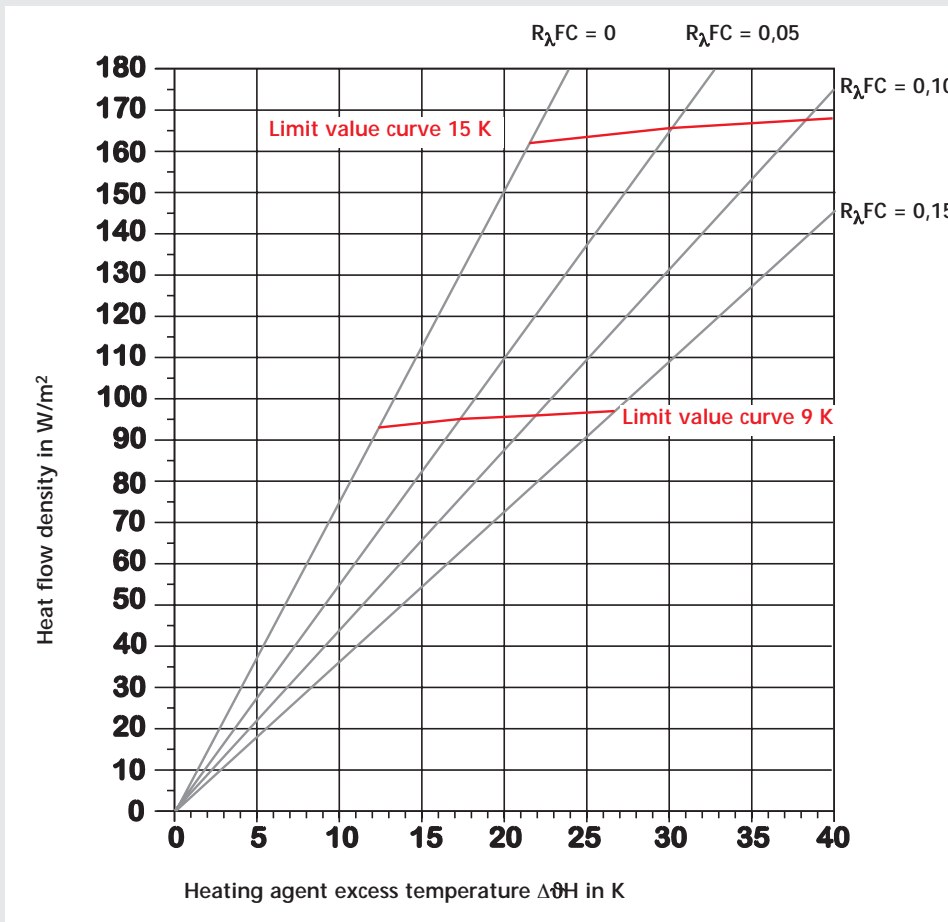
If the renovated area of the building is smaller than 20% of the entire building, there are no insulation requirements in accordance with the EnEV law, §8 section 1, item 2. For larger area sections, the insulation regulations in accordance with EnEV appendix 3, section 5, line d apply. During installation or when renewing the overall floor structure (insulation, screed, floor covering etc.) in connection with floor heating, a U-value of  $0,50 \text{ W/m}^2 \text{ K}$  for the overall building should be maintained.

It should be ensured that sufficient insulation has been provided in the existing floor structure. If this is the case, the EnEV law in accordance with appendix 3, section 5 is fulfilled. If no insulation has been provided, it must be checked if an insulation layer of at least 65 mm WLG 040 should be attached to the lower side of the cellar ceiling. If the minimum ceiling height is not achieved, the EnEV requirements cannot be met. An application for exemption can be made in accordance with EnEV §17 for ceilings which are adjacent to the ground, and on which it is not possible to apply an insulating layer retrospectively, since this is not feasible in accordance with EnEG §5, section 1.

# Layout & project planning

## System heat flow density

	System pipe ClimaComfort S5 10,50 x 1,30 mm, filling and sealing compound 17 mm $\lambda = 1,20 \text{ W/mK}$		Installation zone condition $t_{Fmax-t_i} = 9 \text{ K}$		Boundary zone condition $t_{Fmax-t_i} = 15 \text{ K}$	
	Thermal resistance, floor covering	System characteristic curve	System heat flow density limit value	System heating agent excess temperature limit value	System heat flow density limit value	System heating agent excess temperature limit value
	$R_{\lambda,FC} \text{ (m}^2\text{K/W)}$	$q \text{ (KH} \cdot \Delta t)$	$q \text{ (W/m}^2)$	$\Delta\theta \text{H (K)}$	$q \text{ (W/m}^2)$	$\Delta\theta \text{H (K)}$
Laying distance 75 mm	0,00	$7,508 \times \Delta t$	92,10	12,27	161,60	21,53
	0,05	$5,497 \times \Delta t$	93,80	17,07	164,60	29,94
	0,10	$4,335 \times \Delta t$	95,60	22,05	167,70	38,67
	0,15	$3,579 \times \Delta t$	97,40	27,22	170,90	47,74
Laying distance 150 mm	0,00	$5,636 \times \Delta t$	76,20	13,52	133,60	23,71
	0,05	$4,324 \times \Delta t$	79,70	18,42	139,70	32,31
	0,10	$3,508 \times \Delta t$	83,60	23,80	146,40	41,74
	0,15	$2,951 \times \Delta t$	87,70	29,72	153,80	52,12
Laying distance 225 mm	0,00	$4,412 \times \Delta t$	62,10	14,09	109,00	24,71
	0,05	$3,472 \times \Delta t$	65,70	18,93	115,30	33,20
	0,10	$2,862 \times \Delta t$	69,70	24,36	122,30	42,73
	0,15	$2,434 \times \Delta t$	74,20	30,50	130,20	53,49



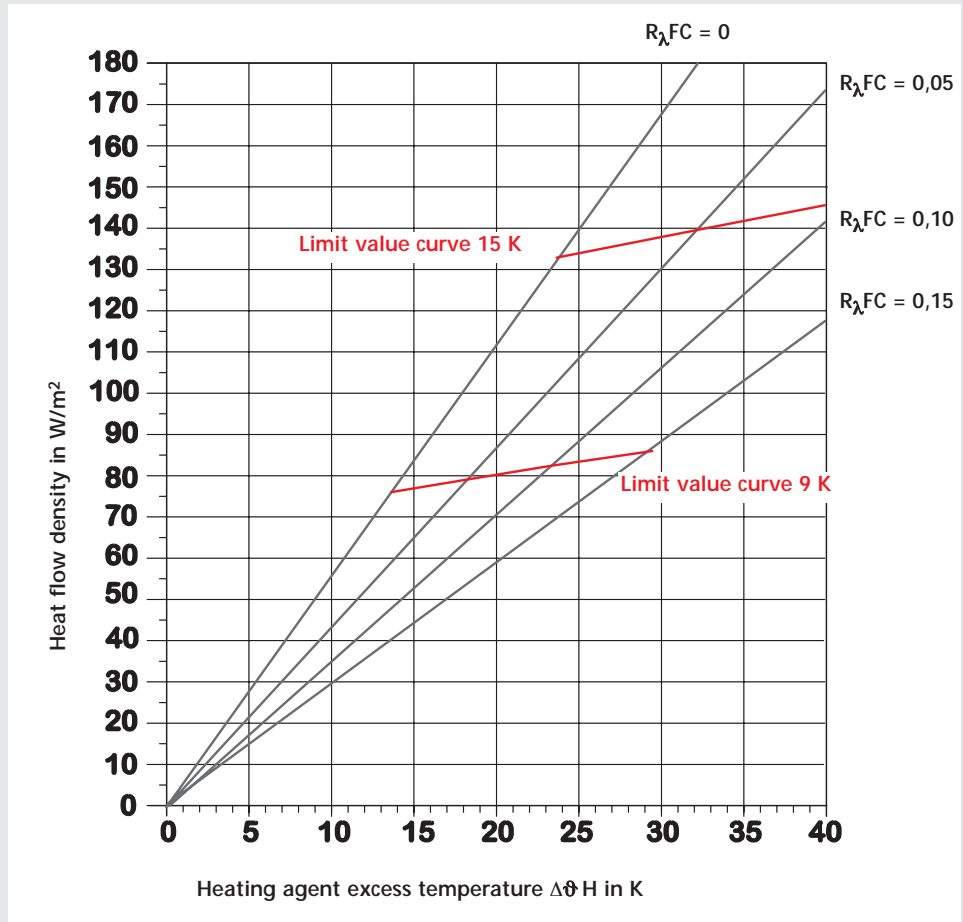
## Roth ClimaComfort system heat flow density for floor heating

Pipe division 75 mm  
structure 17 mm, filling  
and sealing compound

# Layout & project planning

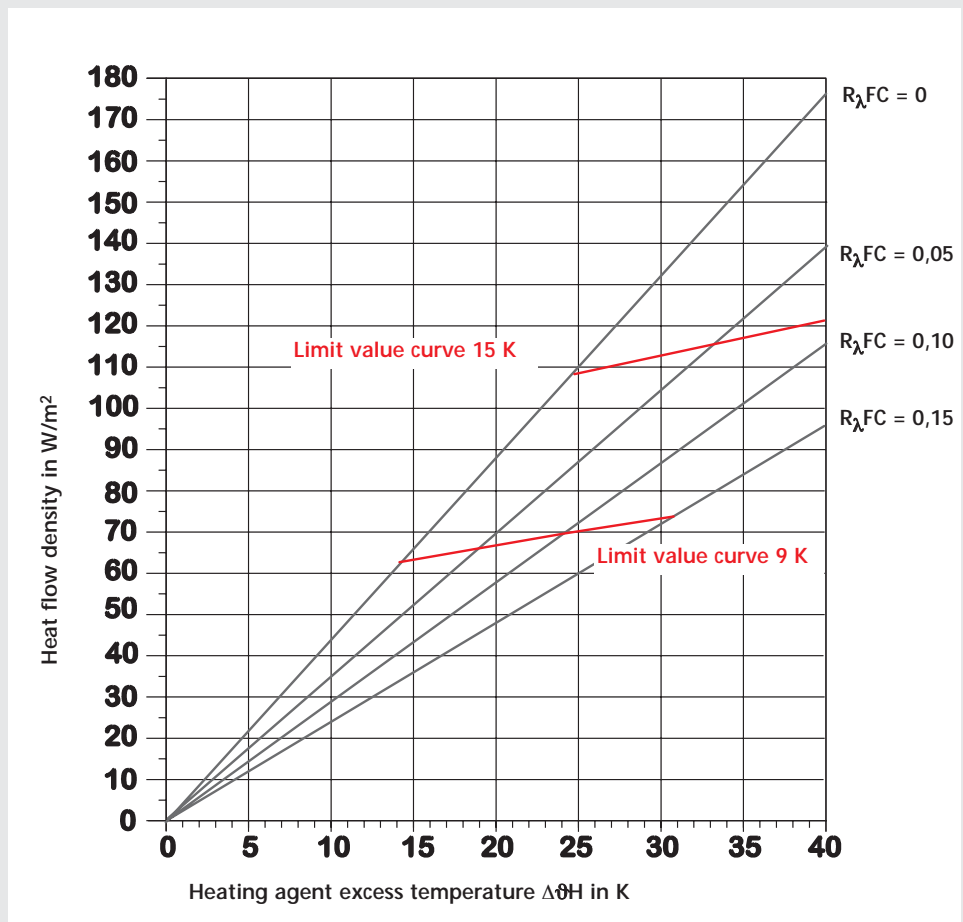
**Roth ClimaComfort system**  
heat flow density for floor heating

Pipe division 150 mm  
structure 17 mm, filling  
and sealing compound



**Roth ClimaComfort system**  
heat flow density for floor heating

Pipe division 225 mm  
structure 17 mm, filling  
and sealing compound



# Performance data for the Roth ClimaComfort system

**Thermal resistance of the floor covering  $R_{\lambda,FC} = 0,00 \text{ m}^2\text{K/W}$**

Thermal resistance of floor covering $R_{\lambda,FC} = 0,00 \text{ m}^2 \text{ K/W}$ ceramic covering Spread 5 K - max. pressure loss/ HKR 250 mbar filling and sealing compound 17 mm = 25 kg/m <sup>2</sup> - $\lambda = 1,2 \text{ W/mK}$	Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 27,50 °C    30    25					Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 30,00 °C    32,5    27,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 32,50 °C    35    30			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 35,00 °C    37,5    32,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 37,50 °C    40    35		
	Laying distance	Heating pipe requirement Roth system pipe ClimaComfort S5 10,5x1,3 mm	Heating agent excess temp. Maximum heat flow density	Average surface temp.	Max. heating circuit area	Heating agent excess temp. Maximum heat flow density	Average surface temp.	Max. heating circuit area	Heating agent excess temp. Maximum heat flow density	Average surface temp.	Max. heating circuit area	Heating agent excess temp. Maximum heat flow density	Average surface temp.	Max. heating circuit area	Heating agent excess temp. Maximum heat flow density	Average surface temp.	Max. heating circuit area
	LD (cm)	L (m/m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )
Inside temperature $\vartheta_i$ 15,00 °C	7,5 15 22,5	13,30 6,40 4,40	94 70 55	23,5 21,5 20,2	4,06 6,36 8,52	113 85 66	25,0 22,7 21,2	3,62 5,67 7,59	131 99 77	26,5 23,9 22,1	3,28 5,14 6,88	150 113 88	28,0 25,0 23,0	3,01 4,72 6,32	169 127 99	29,5 26,2 23,9	2,80 4,38 5,86
Inside temperature $\vartheta_i$ 18,00 °C	7,5 15 22,5	13,30 6,40 4,40	71 54 42	24,6 23,1 22,1	4,84 7,58 10,15	90 68 53	26,2 24,3 23,0	4,17 6,53 8,75	109 82 64	27,7 25,5 24,0	3,70 5,79 7,76	128 96 75	29,2 26,7 24,9	3,34 5,23 7,01	146 110 86	30,7 27,8 25,8	3,06 4,79 6,42
Inside temperature $\vartheta_i$ 20,00 °C	7,5 15 22,5	13,30 6,40 4,40	56 42 33	25,3 24,1 23,3	5,63 8,81 11,80	75 56 44	26,9 25,3 24,3	4,68 7,34 9,82	94 70 55	28,5 26,5 25,2	4,06 6,37 8,52	113 85 66	30,0 27,7 26,2	3,62 5,67 7,59	131 99 77	31,5 28,9 27,1	3,28 5,14 6,88
Inside temperature $\vartheta_i$ 22,00 °C	7,5 15 22,5	13,30 6,40 4,40	41 31 24	26,0 25,1 24,5	6,85 10,73 14,37	60 45 35	27,7 26,4 25,5	5,40 8,46 11,32	79 59 46	29,2 27,6 26,5	4,54 7,11 9,52	98 73 57	30,8 28,8 27,4	3,96 6,21 8,31	116 87 68	32,3 30,0 28,4	3,54 5,55 7,43
Inside temperature $\vartheta_i$ 24,00 °C	7,5 15 22,5	13,30 6,40 4,40	26 20 15	26,7 26,1 25,6	9,14 14,31 19,16	45 34 26	28,4 27,4 26,7	6,48 10,15 13,60	64 48 38	30,0 28,6 27,7	5,20 8,14 10,89	83 62 49	31,6 29,8 28,7	4,41 6,90 9,25	101 76 60	33,1 31,0 29,6	3,87 6,06 8,12

**Thermal resistance of floor covering  $R_{\lambda,FC} = 0,05 \text{ m}^2\text{K/W}$**

Thermal resistance of floor covering $R_{\lambda,FC} = 0,05 \text{ m}^2 \text{ K/W}$ ceramic covering	Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 27,50 °C    30    25					Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 30,00 °C    32,5    27,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 32,50 °C    35    30			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 35,00 °C    37,5    32,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 37,50 °C    40    35		
	Laying distance	Heating pipe requirement Roth system pipe ClimaComfort S5 10,5x1,3 mm	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area
	LD (cm)	L (m/m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )
Inside temperature $\vartheta_i$ 15,00 °C	7,5 15 22,5	13,30 6,40 4,40	69 54 43	21,4 20,1 19,2	4,96 7,53 9,93	82 65 52	22,6 21,1 20,0	4,41 6,71 8,84	96 76 61	23,7 22,0 20,7	4,00 6,08 8,01	110 86 69	24,8 22,9 21,5	3,67 5,59 7,36	124 97 78	25,9 23,8 22,2	3,41 5,18 6,83
Inside temperature $\vartheta_i$ 18,00 °C	7,5 15 22,5	13,30 6,40 4,40	52 41 33	23,0 22,0 21,3	5,90 8,97 11,82	66 52 42	24,2 23,0 22,1	5,09 7,73 10,19	80 63 50	25,3 23,9 22,8	4,51 6,86 9,03	93 74 59	26,5 24,8 23,6	4,07 6,20 8,16	107 84 68	27,6 25,7 24,3	3,73 5,68 7,48
Inside temperature $\vartheta_i$ 20,00 °C	7,5 15 22,5	13,30 6,40 4,40	41 32 26	24,0 23,2 22,6	6,86 10,43 13,74	55 43 35	25,2 24,2 23,4	5,71 8,68 11,44	69 54 43	26,4 25,1 24,2	4,96 7,53 9,93	82 65 52	27,6 26,1 25,0	4,41 6,71 8,84	96 76 61	28,7 27,0 25,7	4,00 6,08 8,01
Inside temperature $\vartheta_i$ 22,00 °C	7,5 15 22,5	13,30 6,40 4,40	30 24 19	25,0 24,4 24,0	8,36 12,70 16,74	44 35 28	26,3 25,4 24,8	6,59 10,01 13,19	58 45 36	27,5 26,4 25,6	5,54 8,42 11,09	71 56 45	28,6 27,3 26,4	4,83 7,35 9,68	85 67 54	29,8 28,3 27,1	4,32 6,57 8,66
Inside temperature $\vartheta_i$ 24,00 °C	7,5 15 22,5	13,30 6,40 4,40	19 15 12	26,0 25,6 25,3	11,14 16,94 22,32	33 26 21	27,3 26,6 26,2	7,91 12,02 15,84	47 37 30	28,5 27,6 27,0	6,34 9,63 12,69	60 48 38	29,7 28,6 27,8	5,38 8,17 10,77	74 58 47	30,9 29,5 28,5	4,72 7,17 9,45

# Performance data for the Roth ClimaComfort system

## Thermal resistance of floor covering $R_{\lambda,FC} = 0,10 \text{ m}^2\text{K/W}$

Thermal resistance of floor covering $R_{\lambda,FC} = 0,10 \text{ m}^2 \text{ K/W}$ plastic	Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 27,50 °C    30    25			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 30,00 °C    32,5    27,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 32,50 °C    35    30			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 35,00 °C    37,5    32,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 37,50 °C    40    35				
	Laying distance	Heating pipe requirement Roth system pipe ClimaComfort S5 10,5x1,3 mm	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area
	LD (cm)	L (m/m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )
Inside temperature $\vartheta_i$ 15,00 °C	7,5 15 22,5	13,30 6,40 4,40	54 44 36	20,2 19,3 18,5	5,77 8,61 11,23	65 53 43	21,1 20,0 19,2	5,13 7,66 10,00	76 61 50	22,0 20,8 19,8	4,65 6,95 9,06	87 70 57	22,9 21,5 20,4	4,27 6,38 8,32	98 79 64	23,8 22,3 21,0	3,96 5,92 7,72
Inside temperature $\vartheta_i$ 18,00 °C	7,5 15 22,5	13,30 6,40 4,40	41 33 27	22,0 21,3 20,8	6,87 10,25 13,37	52 42 34	23,0 22,1 21,4	5,92 8,83 11,52	63 51 41	23,9 22,9 22,0	5,25 7,83 10,21	74 60 49	24,8 23,6 22,7	4,74 7,08 9,23	85 68 56	25,7 24,4 23,3	4,34 6,49 8,46
Inside temperature $\vartheta_i$ 20,00 °C	7,5 15 22,5	13,30 6,40 4,40	33 26 21	23,2 22,7 22,2	7,98 11,91 15,54	43 35 29	24,2 23,5 22,9	6,65 9,92 10,94	54 44 36	25,2 24,3 23,5	5,77 8,61 11,23	65 53 43	26,1 25,0 24,2	5,13 7,66 10,00	76 61 50	27,0 25,8 24,8	4,65 6,95 9,06
Inside temperature $\vartheta_i$ 22,00 °C	7,5 15 22,5	13,30 6,40 4,40	24 19 16	24,4 24,0 23,7	9,72 14,51 18,93	35 28 23	25,4 24,8 24,4	7,66 11,43 14,91	46 37 30	26,4 25,6 25,0	6,44 9,62 12,54	56 46 37	27,3 26,4 25,7	5,62 8,39 10,95	67 54 44	28,3 27,2 26,3	5,03 7,51 9,79
Inside temperature $\vartheta_i$ 24,00 °C	7,5 15 22,5	13,30 6,40 4,40	15 12 10	25,6 25,3 25,1	12,96 19,35 25,24	26 21 17	26,6 26,2 25,8	9,20 13,73 17,91	37 27 24	27,6 27,0 26,5	7,37 11,00 14,35	48 39 31	28,6 27,8 27,1	6,25 9,34 12,18	59 47 39	29,5 28,6 27,8	5,49 8,20 10,69

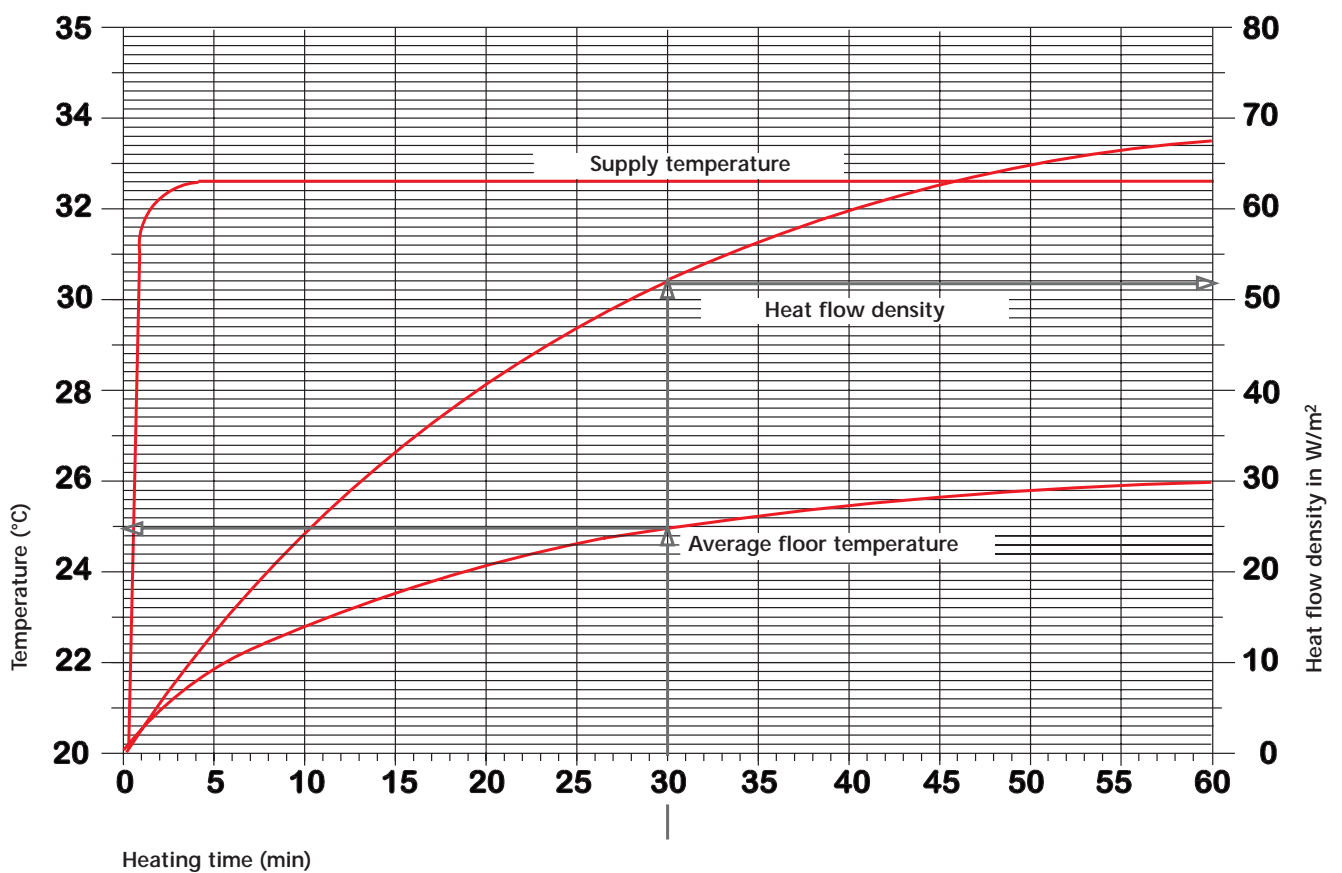
## Thermal resistance of floor covering $R_{\lambda,FC} = 0,15 \text{ m}^2\text{K/W}$

Thermal resistance of floor covering $R_{\lambda,FC} = 0,15 \text{ m}^2 \text{ K/W}$ plastic	Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 27,50 °C    30    25			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 30,00 °C    32,5    27,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 32,50 °C    35    30			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 35,00 °C    37,5    32,5			Heating agent temperature $\vartheta_H$ $t_s$ $t_r$ 37,50 °C    40    35				
	Laying distance	Heating pipe requirement Roth system pipe ClimaComfort S5 10,5x1,3 mm	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area	Maximum heat flow density	Average surface temp.	Max. heating circuit area
	LD (cm)	L (m/m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )	$\dot{q}$ (W/m <sup>2</sup> )	$\vartheta_s$ (°C)	HC (m <sup>2</sup> )
Inside temperature $\vartheta_i$ 15,00 °C	7,5 15 22,5	13,30 6,40 4,40	45 37 30	19,3 18,6 18,1	6,51 9,61 12,44	54 44 37	20,1 19,3 18,6	5,80 8,56 11,08	63 52 43	20,9 19,9 19,1	5,26 7,76 10,05	72 59 49	21,6 20,6 19,7	4,83 7,12 9,23	81 66 55	22,4 21,2 20,2	4,48 6,61 8,56
Inside temperature $\vartheta_i$ 18,00 °C	7,5 15 22,5	13,30 6,40 4,40	34 28 23	21,4 20,8 20,4	7,76 11,44 14,82	43 35 29	22,2 21,5 20,9	6,68 9,86 12,77	52 43 35	23,0 22,2 21,5	5,93 8,74 11,32	61 50 41	23,7 22,8 22,0	5,36 7,90 10,23	70 58 47	24,5 23,4 22,6	4,91 7,24 9,38
Inside temperature $\vartheta_i$ 20,00 °C	7,5 15 22,5	13,30 6,40 4,40	27 22 18	22,7 22,3 21,9	9,02 13,30 17,22	36 30 24	23,5 23,0 22,5	7,51 11,07 14,34	45 37 30	24,3 23,6 23,1	6,51 9,61 12,44	54 44 37	25,1 24,3 23,6	5,80 8,56 11,08	63 52 43	25,9 24,9 24,1	5,26 7,76 10,05
Inside temperature $\vartheta_i$ 22,00 °C	7,5 15 22,5	13,30 6,40 4,40	20 16 13	24,1 23,7 23,4	10,98 16,20 20,98	29 24 19	24,9 24,4 24,0	8,65 12,76 16,53	38 31 26	25,7 25,1 24,6	7,28 10,73 13,90	47 38 32	26,5 25,8 25,2	6,35 9,37 12,14	55 46 38	27,3 26,4 25,7	5,68 8,38 10,85
Inside temperature $\vartheta_i$ 24,00 °C	7,5 15 22,5	13,30 6,40 4,40	13 10 9	25,4 25,1 25,0	14,29 21,60 27,98	21 18 15	26,2 25,9 25,6	10,39 15,33 19,85	30 25 21	27,1 26,6 26,1	8,33 12,28 15,91	39 32 27	27,9 27,2 26,7	7,07 10,42 13,50	48 40 33	28,6 27,9 27,3	6,20 9,15 11,85

# Layout & project planning

**Roth ClimaComfort**  
system heating curve

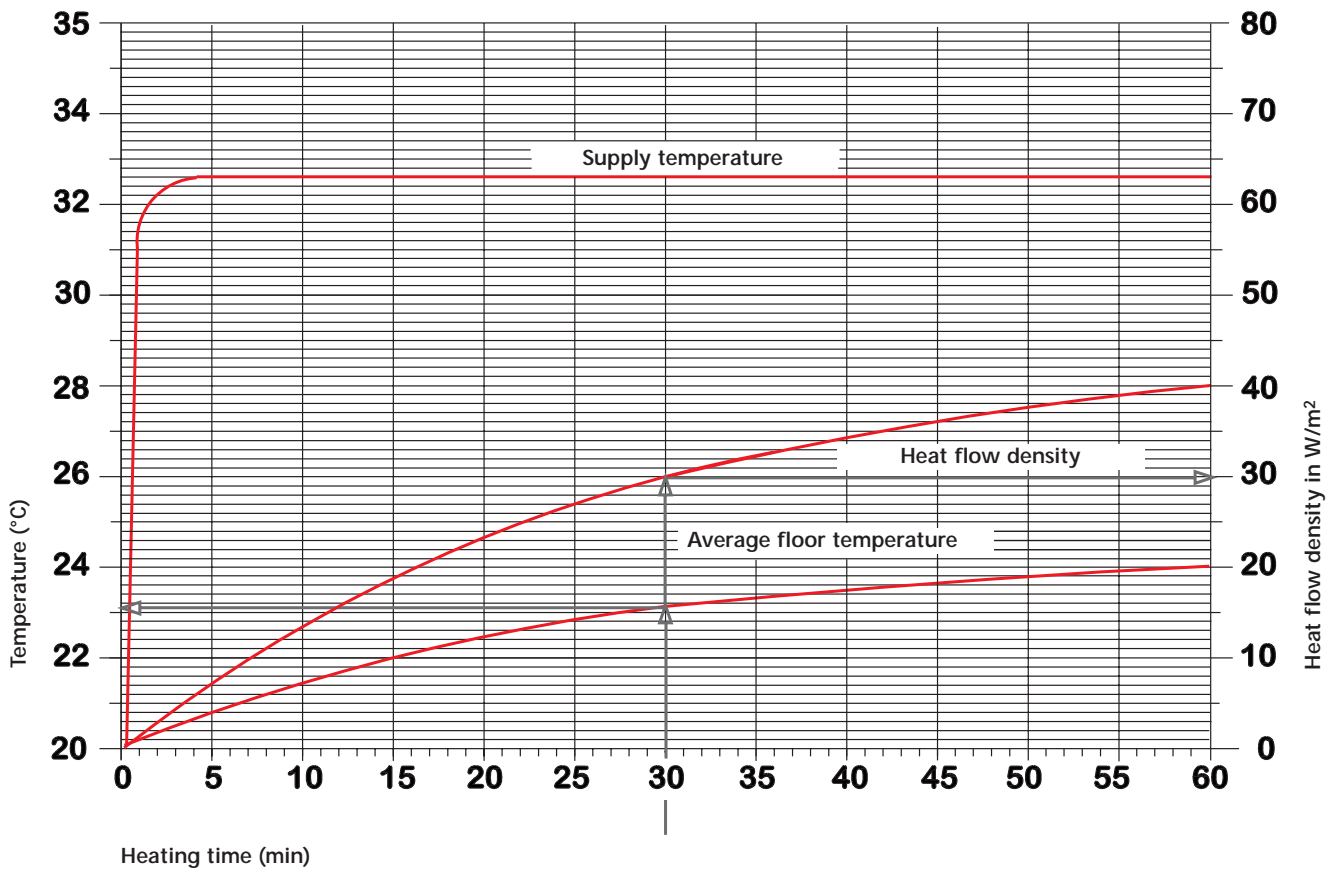
pipe division 75 mm  
floor structure: 17 mm  
filling and sealing  
compound + tiles  
( $R_{\lambda,FC} = 0,01 \text{ m}^2\text{K/W}$ )  
change in flow temperature:  
from 20 °C to 32,7 °C (constant)  
room temperature: 20 °C



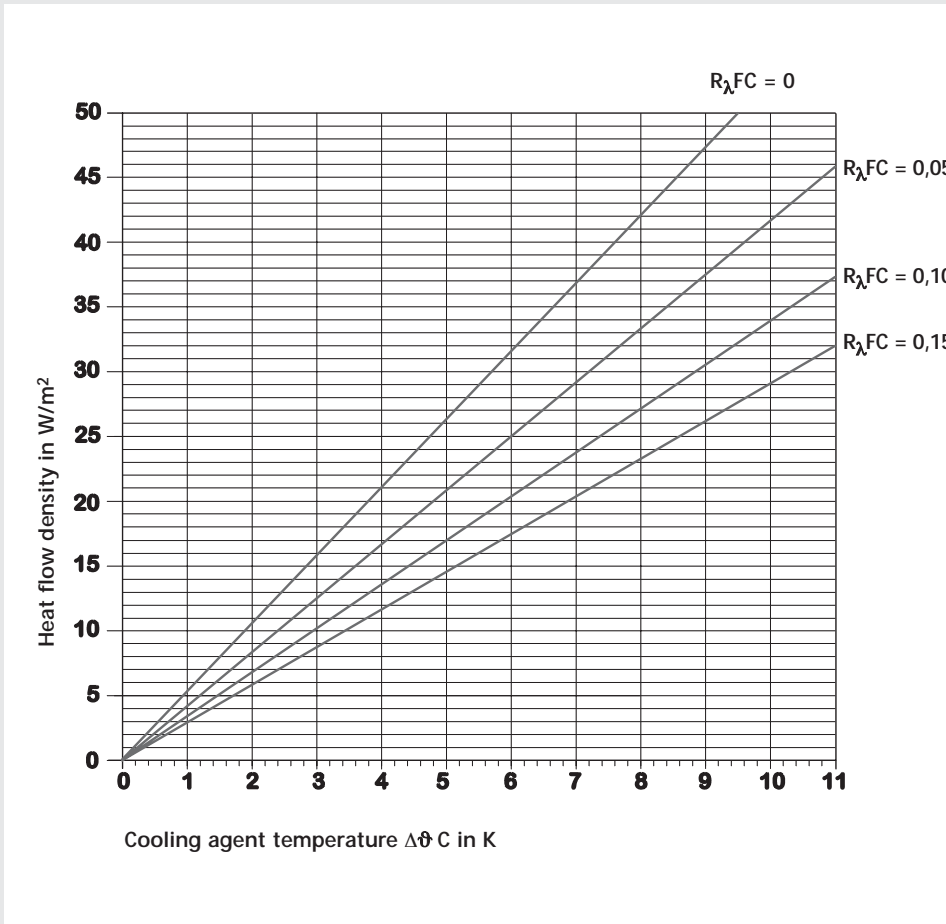
# Layout & project planning

## Roth ClimaComfort system heating curve

pipe division 150 mm  
floor structure: 17 mm  
filling and sealing  
compound + tiles  
( $R_{\lambda FC} = 0,01 \text{ m}^2\text{K/W}$ )  
change in flow temperature:  
from 20 °C to  
32,7 °C (constant)  
room temperature: 20 °C



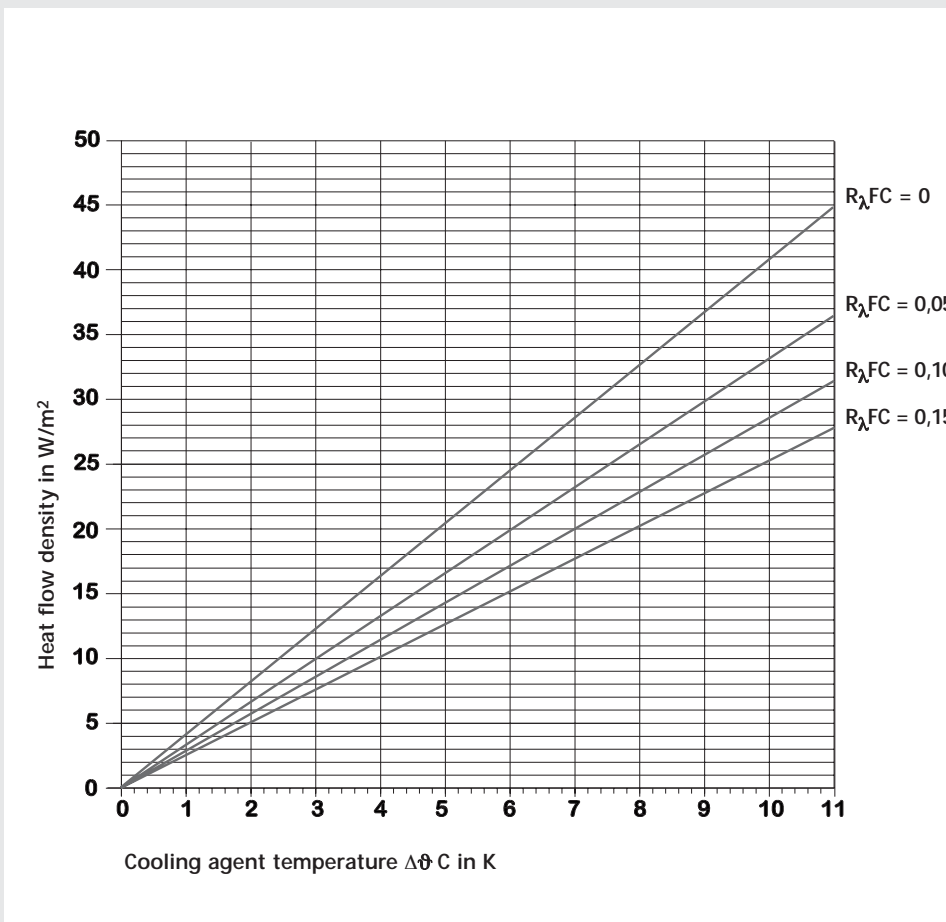
# Layout & project planning



## Cooling

**Roth Climacomfort system**  
cooling flow density usage  
for floor

pipe division 75 mm  
structure: filling and sealing  
compound 17 mm  
structure: floor covering  
 $R_{\lambda FC} = 0$  to  $R_{\lambda FC} = 0,15$   $m^2 K/W$



## Cooling

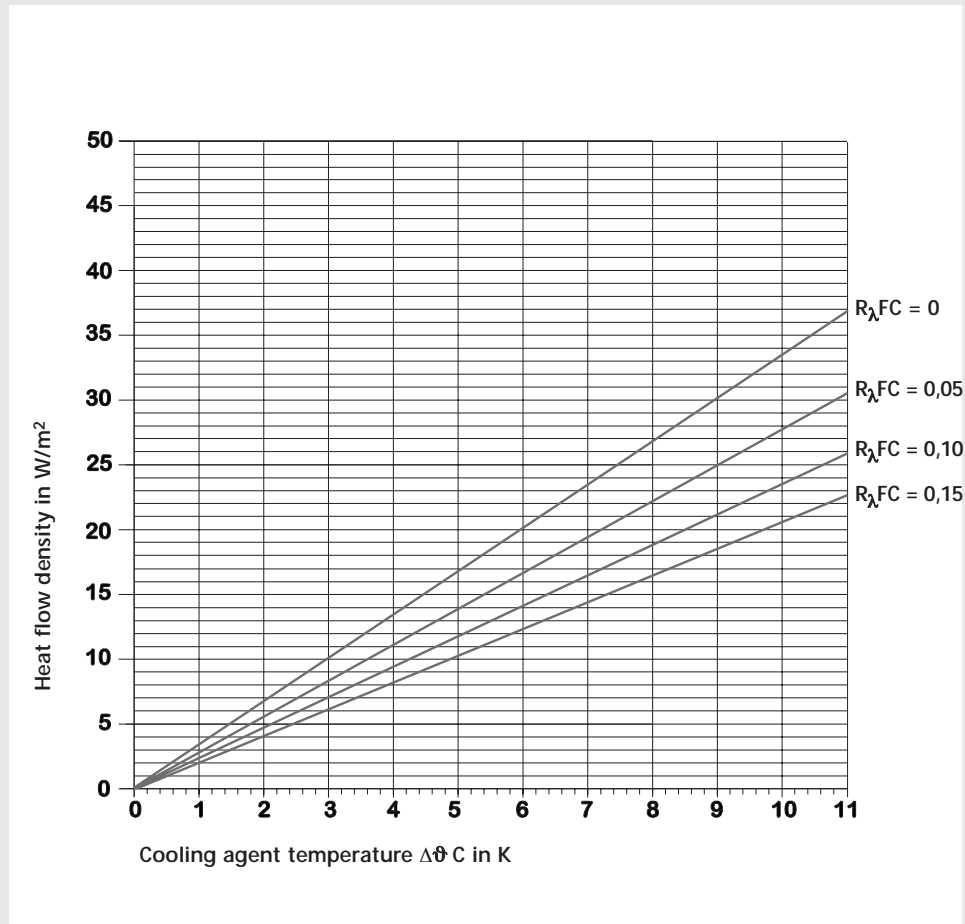
**Roth Climacomfort system**  
cooling flow density usage  
for floor

pipe division 150 mm  
structure: filling and sealing  
compound 17 mm  
structure: floor covering  
 $R_{\lambda FC} = 0$  to  $R_{\lambda FC} = 0,15$   $m^2 K/W$

# Layout & project planning

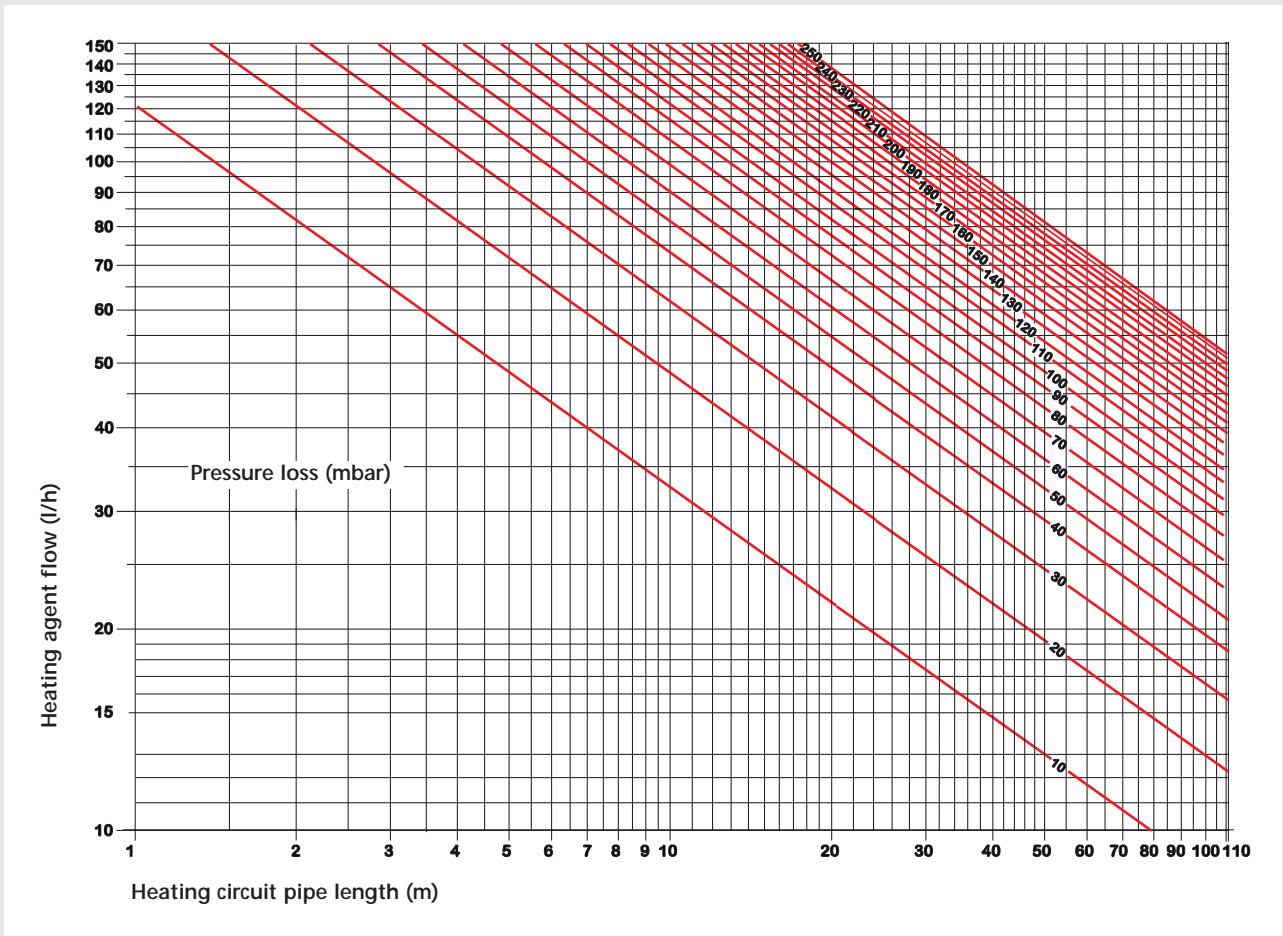
**Roth ClimaComfort system**  
cooling flow density usage  
for floor

pipe division 225 mm  
structure: filling and sealing  
compound 17 mm  
structure: floor covering  
 $R_{\lambda FC} = 0$  to  $R_{\lambda FC} = 0,15 \text{ m}^2 \text{ K/W}$

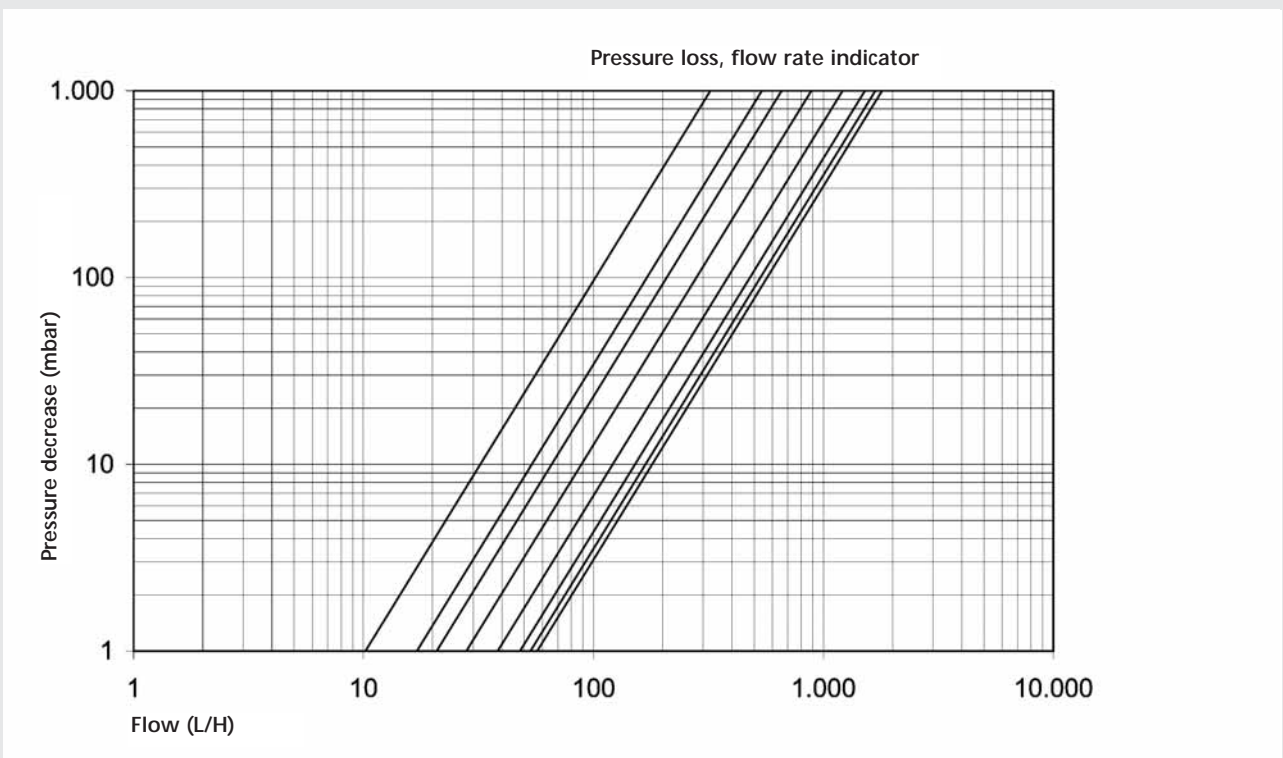


# Layout & project planning

**Roth ClimaComfort system**  
pressure loss  $\Delta p$  in mbar  
(1 mbar = 0,1 kPa)



**Pressure loss, Roth manifold**  
with flow rate indicator



# Installation

## Installation requirements

Test the building requirements and preparative measures

### Evaluation of the load bearing capacity of the subsurface

The evaluation of the subsurface or the evaluation of the measures to be taken in order to ensure the suitability of the substructure for supporting the Roth ClimaComfort system, particularly the creation of a permanently secure bond with the filling and sealing compound, should in principle be conducted by a specialist screed layer or floorer. Aside from this, several evaluation criteria should be observed: Floating constructions are not suitable as subsurface (e.g. insulation panels)!

### Floor heating with Roth ClimaComfort system on mineral subsurfaces

In principle, a self-contained building site is required before the overall construction installation is conducted. Any subsequent damp (including excessive air humidity from outside) must be prevented, and minimum temperature of 10 °C must be maintained.

The subsurfaces must be resistant to pressure and extension, be free of dirt and separating layers, and be permanently dry. Any loose elements which may reduce adhesiveness, such as oil, dust, wax, old coatings or other substances such as cement and plaster coverings, adhesive residues, layers of paint etc. must be removed using suitable mechanical processes such as sanding, sandblasting, milling and vacuuming. Any cracks must be repaired in the correct manner. Areas which may be prone to increasing damp must be sealed using suitable agents provided by the manufacturer.

### Cement-based compound screeds and cement screeds on a separating layer

must conform to the standards set out in DIN 18560 and sit firmly on the concrete subsurface. The residual humidity of the cement screed may not exceed 2 CM-%.

Floating cement-based screeds must be at least 45 mm thick and be manufactured in conformance with DIN 18560. The residual humidity of the cement screed may not exceed 2 CM-%. The area should be limited to 40 m<sup>2</sup>.

**The calcium-sulphate self-levelling screed (anhydrite self-levelling screed) on a separation layer or insulating layer** must be at least 35 mm thick and conform to DIN 18560. The residual humidity of the

calcium-sulphate self-levelling screed may not exceed 0,5 CM-%. The surface must be checked for separation layers/sintered layers, and these must be removed using a suitable mechanical process, such as sanding, sandblasting or milling. In principle, the surface must be sanded using grain size 16, and the residues must be removed using a powerful industrial vacuum cleaner.

**Concrete/finished concrete parts** in accordance with DIN 1045 must be at least 3 months old, and their residual humidity may not exceed 3%. Movement joints must be retained.

### Floor heating with the Roth ClimaComfort system on wood, dry construction elements and poured asphalt

The stability of **wooden floorboards** on their supporting beams should be checked, and their screw fittings should be tightened if necessary.

If the entire wooden floor surface has been putty filled, a check should be made to ensure that sufficient rear ventilation is available.

**Particle boards V 100 E 1 and OSB boards** must be installed in accordance with DIN 68771 (CEN/TC 112) "Particle board underfloors".

Over all areas, the damp protection for the building must be sufficient to prevent the formation of condensation water within the floor. A heating insulation layer must therefore be provided in conformance with DIN 4108 "Thermal insulation in building constructions".

When laying wooden particle boards and OSB boards on new, bare floors, a vapour barrier layer (PVC film at least 0,5 mm thick) must be installed. This film is overlapping and should be pulled up on adjacent components so that the edges of the panels are also protected. In general the panels must be glued in line and tightly screwed to the subsurface.

**Gypsum plaster boards** must be installed in conformance with DIN 68771 (CEN/TC 112) "Particle board underfloors" (see the section on particle boards, V 100 E 1).

The **poured asphalt screed** is subject to the requirements set out in DIN 18560 and DIN 18533. The poured asphalt screed must be treated with a suitable primer and sanded using quartz sand. Any excess quartz sand must then be removed.

# Installation

The subsurfaces described before are subject to a special construction procedure, using Ardal thermal insulation tile boards, for example.

**The existing movement joints should be retained. Expansion joints should also be used to the wall connection and in the door areas.**

Any interior plastering work must have been completed, and the plaster must be dry.

## Preparing the subsurface

Check the evenness according to DIN 18202 table 3, line 3/4, and if necessary, level out very uneven areas.

## Determining the adhesive coat

The type of adhesive coat to be used depends on the material used for the old subsurface. Dispersion-bonded primers were proven for calcium sulphate and cement screeds. The latest development for magnesium or stone-wood screeds and poured asphalt screeds is to use synthetic resin-bonded adhesive coats. Wooden and ceramic subsurfaces, depending on their quality and pretreatment, can be treated either with dispersion-bonded or synthetic resin-bonded adhesive coats. When selecting and applying the adhesive coat, the instructions issued by the manufacturer should be observed.

- Concrete or cement screed surfaces must be primed using dispersion primers (depending on the absorbency of the subsurface, dilute with water between 1:1 and 1:3). In order to close the pores, the primer must be reapplied if necessary.
- Anhydrite screeds must be primed using suitable synthetic resin primers.
- Any poured asphalt screeds which have not been sanded, ceramic or natural stone surfaces, should be pretreated with epoxy resin primers.

To install the Roth ClimaComfort system, we recommend the following tools:

- Roth scissors for pipe
- Roth pipe cutter
- Roth ripping knife
- toothed roll

- For bend-resistant, stable wooden floorboards, a separation panel should be applied before the system is laid (according to the procedural instructions issued by the manufacturer). In exceptional cases, a layer of fibre-reinforced filler (layer thickness 10 mm) may be used. In order to do so, the subsurface must be thoroughly sanded and cleaned.
- Self-contained building components (windows/doors provided, building component and room air temperatures not below +5 °C).
- Function of the movement joints.
- Any existing joints must be retained and if necessary, more joints should be added in the existing self-levelling screed.

## Manifold connection

As manifold the Roth manifold with flow rate indicator is used. Depending on the requirements, up to 12 heating circuit connections are available, which can be doubled using the T-connections.

In buildings where a larger number of heating circuits are installed, it should be ensured that the manifolds are kept separately from each other, and that too many connection pipes are avoided.

## Installation requirements

## Tools

# Installation instructions

## Installation steps



1. Check the installation requirements.
2. Lay out the Roth edge insulation strip.
3. Install the system panels. Remove the silicone papers from the adhesive side of the ClimaComfort system panel.
4. Lay the first ClimaComfort system panel in a corner of the room. The PE film of the edge insulation strip is laid underneath the system panel.
5. The Roth ClimaComfort system panels have a special edge pattern so that each subsequent panel can be joined with the one which has already been laid so that the two panels overlap.

# Installation instructions

6. Laying of pipe.



**Installation steps**

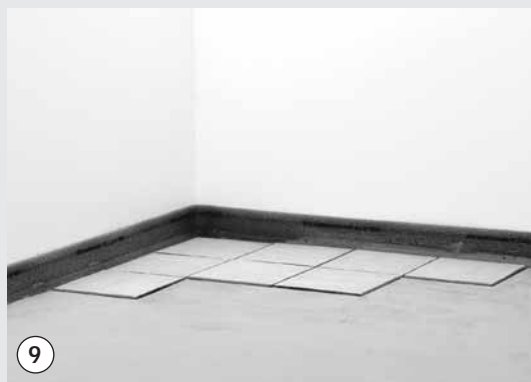
7. Add the filling and sealing compound.



8. Post-treatment.

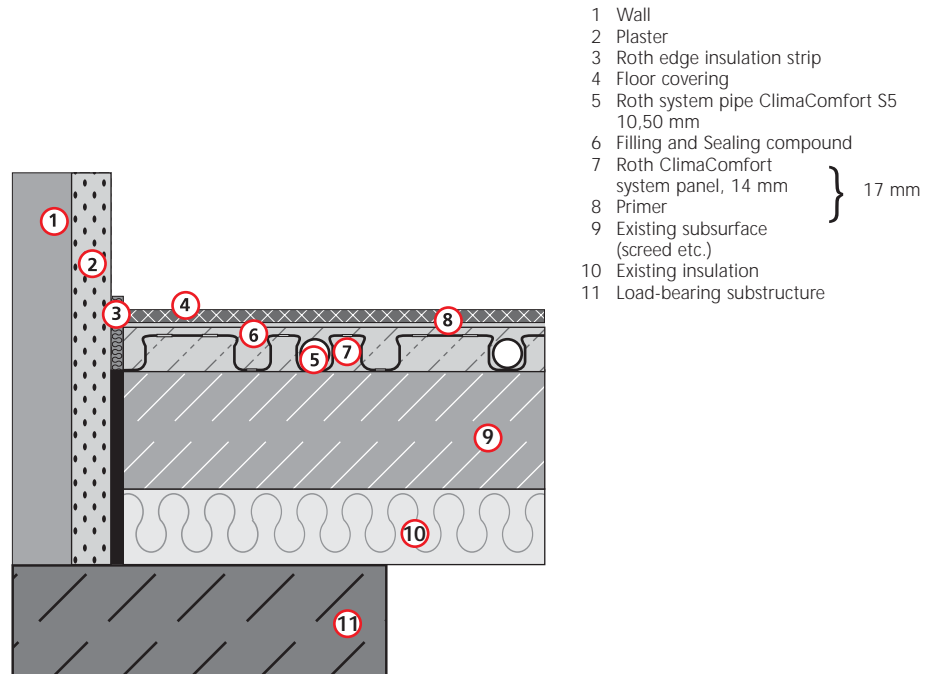


9. Add the floor covering.



# Structure

## Roth KlimaComfort system



# Installation instructions / commissioning

## Pressure test (see leak test) report:

Depending on the filling and sealing compound, functional heating is started after the appropriate setting time is over. If the manufacture does not state any other time, functional heating can be started 3 days after the compound has been applied. **In a first step the supply temperature should not be more than 15 K higher than the room temperature.** The procedure for functional heating should be completed in accordance with the procedural instructions set out in the heating record. The manufacturers'

Due to the thin filling and sealing compound layers, heating to make the floor ready for cover laying is usually not necessary. Due to the small spaces between the heating pipes, it is rarely possible to use the calcium carbide measuring method to check the readiness of the floor for cover laying. The "film test" has proven to be a practical way of doing so. The level of dryness is checked during heating operation at the maximum permitted supply temperature/heating capacity according to

Applying the top floor: after functional heating has been completed and the floor is ready for cover laying, the filling and sealing compound is suitable for use as a supporting layer for floor coverings. Due to the self-levelling properties of the materials, smoothing out is generally not required. The decision as to whether other measures should be taken before the top floor is applied should be made by the person responsible for laying the floor covering.

**Before applying the filling and sealing compound, a water pressure test should be conducted in accordance with DIN EN 1264 and a written report should be completed**

instructions should also be observed.

**The supply temperature should not exceed 45 °C during the procedure.**

A record should be made of the functional heating. The use of combined functional heating and heating to make the floor ready for cover laying should be checked in accordance with the guideline on the coordination of interfaces for heated floor structures.

the instructions issued by the manufacturer of the filling and sealing compound by applying a film of approx.

50 x 50 cm onto the filling and sealing compound over the heating register. The edges are attached using adhesive tape.

The rooms should continue to be well ventilated.

If no traces of humidity are visible underneath the film within 24 hours, the floor is ready for cover laying.

When applying the top floor, DIN 18352 contracting rules for awarding public works contracts, part C ATV tiling and panelling, DIN 18365 contracting rules for awarding public works contracts, part C ATV laying floor coverings, and DIN 18356 contracting rules for awarding public works contracts, part C, ATV laying parquet as well as the instructions issued by the manufacturer, should be observed.

## ■ Commissioning

## ■ Functional heating

## ■ Heating to make the floor ready for cover laying

## ■ Floor coverings



# Heating record

**for the Roth ClimaComfort system**

**(to be filled out by the heating construction company and included in the contract documents)**

Contracting party/  
construction project: .....

Construction supervisor/  
architect: .....

Heating company: .....

Floorer: .....

ClimaComfort system ..... m<sup>2</sup> installed on: .....

Filling and sealing compound applied on: .....

## Manufacturer

**Bostik   Glass   ARDEX   Henkel   PCI   Knauf**

Planned thickness of the selected levelling layer min. mm .....

Primer applied on: .....

Levelling layer applied on: .....

External temperature at start of heating approx. .... °C

Start of functional heating on, at ..... °C (for at least 1 day)

Max. layout temperature from, at ..... °C (for at least 1 day)

The max. layout temperature was maintained for ..... days without temperature reduction during the night

The heated surface was free of coverings or construction materials    yes    no

System transferred on ..... supply temperature ..... °C external temperature ..... °C

Confirmation of functional heating according to the code of practice on the reverse of this sheet:

Place/date

.....  
Building owner/contracting party  
stamp/signature

.....  
Construction supervisor/architect  
stamp/signature

.....  
Heating construction company  
stamp/signature



# Record for leak test ClimaComfort

**for the completion of a leak test for surface heating systems in conformance with DIN EN 1264, part 4**

Construction project: .....

Contracting party: .....

Construction stage: .....

In the construction project described above, a Roth floor heating and cooling system of type ..... was installed.

Ø Roth system pipe ClimaComfort S5 10,5 mm

### Procedure:

The heating circuits of the Roth ClimaComfort System must be checked for leakages on completion of the laying work on anhydrite and cement screed using a water compression test. It must be ensured that no leakages are present immediately before, and during the application of the filling and potting compound. The test pressure must be double that of the operating pressure, with at least 6 bar, however.

If there is a risk of freezing, suitable measures such as the use of antifreeze agents and temperature control of the building must be taken. If antifreeze agents are used which are not intended for use with the specified operation, they must be removed by emptying and rinsing the system with at least 3 times the water pressure.

- Roth ClimaComfort installation completed on: .....
- Start of pressure test on: ..... with a test pressure of: ..... bar
- End of pressure test on: ..... with a test pressure of: ..... bar
- Filling and sealing compound on: .....
- System pressure during application was ..... bar
- Antifreeze agents were added to the system water and the procedure was completed as described. (Yes/no)
- The system was tested for leakages on: ..... approved.

Confirmation:

.....  
Building owner/contracting party  
stamp/signature

.....  
Construction supervisor/architect  
stamp/signature

.....  
Heating construction company/installation company  
stamp/signature

Roth ClimaComfort system on mineral subsurface				
Subsurface	Cement screed	Anhydrite (self-levelling) screed/old tile covering	Dry concrete floors*	
1. Preparing the sub-surface (following check)	Sand/vacuum			
2. Priming the subsurface	<b>Bostik Nibogrund G 17</b> 2 hours drying time	<b>Bostik Nibogrund E 30</b> 24 hours drying time		
3. Laying the ClimaComfort system	Laying the ClimaComfort system			
4. ClimaComfort system filling and sealing compound	<b>Bostik Niboplan DE</b> At least 3 mm above the upper edge of the pipe, Max. 40 mm total height			
* Concrete subsurfaces: for the following parquet coverings, the Bostik Nibogrund E 30 epoxy resin primer must be applied twice to block any humidity rising through the capillaries.				
The floor covers should be laid after functional heating/heating to make the floor ready for cover laying as follows:				
A Parquet (suitable for floor heating)	<b>NIBOFLOOR PK ELASTIC</b> Mosaic and short elements, B 3 toothing/finished parquet and long floor boards, B 5 toothing			
B Ceramic covers	Toothing must be adapted to the tile format. Fill the joints after 24 hours using <b>ARDAL FLEXFUGE</b> (in damp rooms, the compound must be sealed before the ceramic is laid)			
C Textile covers	<b>BOSTIK POWER TEX</b> Min. toothing B1 (ensure that the rear side of the cover is sufficiently moist. If necessary, use larger toothing). Tufted floor covers should in principle have B 2 toothing			

Bostik<sup>1</sup>

Roth ClimaComfort system on wooden and dry construction elements and poured asphalt				
Subsurface	Poured asphalt	Particle boards V 100 E 1 OSB boards bolted onto long timbers	Wooden floor boards	Gypsum plaster boards
1. Preparing the sub-surface (following check)	Sand/vacuum			
2. Priming the sub-surface	<b>Bostik Nibogrund E 30</b> (only for refurbishment)	<b>Bostik Nibogrund Elasto Fill</b>		
3. Creating an even surface	<b>Bostik Niboplan 300</b> Max. total thickness 5 mm	<b>Bostik Niboplan FA 600</b> Min. 3; Max. 15 mm thickness		
4. Gluing the Ardal insulation plates (decoupling)	Ardal flex mortar and tile insulation panel			
5. Laying the ClimaComfort system	Laying the ClimaComfort system			
6. ClimaComfort system filling and sealing compound	<b>Bostik Niboplan DE</b> At least 3 mm over the upper edge of the pipe, Max. 20 mm total height			
After heating, the floor covers in the Roth ClimaComfort system on wooden and dry construction elements and poured asphalt should be laid as follows:				
A Parquet (suitable for underfloor heating)	<b>NIBOFLOOR PK ELASTIC</b> Mosaic and short elements, B 3 toothing/finished parquet and long floor boards, B 5 toothing			
B Ceramic covers	Toothing must be adapted to the tile format. Fill the joints after 24 hours using <b>ARDAL FLEXFUGE</b> (in damp rooms, the compound must be sealed before the ceramic is laid)			
C Textile covers	<b>BOSTIK POWER TEX</b> Min. toothing B1 (ensure that the rear side of the cover is sufficiently moist. If necessary, use larger toothing). Tufted floor covers should in principle have B 2 toothing			

Bostik<sup>1</sup>

<sup>1</sup> The current instructions of the manufacturer are primarily to be followed and have priority in case of variances. We do not assume for liability correctness and up-to-dateness of these indications.

Roth ClimaComfort-System on existing subsurface*						
Preparation				Other indications		
Create plane level		PCI Periplan fine	HSP 32	DIN 18202, table 3, row 3		
Height adjustment with PCI Pecidur plate		To level out the subsurface and as supporting panel the PCI Pecidur plate – in different layer thicknesses – can be used.		Priming of: • Screed: PCI Gisogrund. • Timber floor board/flake board: PCI Wadian. PCI Pecidur plates are installed with PCI Nanoflott flex on clean, dry and stable subsurface.		
Subsurface	Preparation	Upper layer				
			Ceramic covering	Natural stone	Parquet	Textile/ plastic
Screed		Priming	PCI Gisogrund		Special precoat VG 2	
		Compound	PCI Periplan extra		Wooden floor smoothing cement HSP 34 or PCI Periplan extra	
		Glue	PCI Flexmörtel/ PCI Nanolight	PCI Carraflex	Pouder parquet glue PAR 362/ 1K-PU-parquet glue PAR 364	Textile cover glue TKL 315/ PVC-cover glue PKL 324
		Mortar	PCI Flexfug	PCI Carrafug	-	-
Timber floor board	<ul style="list-style-type: none"> <li>Loose floor boards must be tightly screwed to the subsurface.</li> <li>Gaps and joints between the boards must be sealed with suitable compounds e. g. Acryl-Dichtstoff PCI Adaptol.</li> <li>To level out subsurface: PCI Periplan extra resp. wooden floor smoothing cement HSP 34.</li> </ul>	Priming	PCI Gisogrund 404		Special precoat VG 2 or PCI Giso-grund 404	
		Compound	PCI Periplan extra		Wooden floor smothing cement HSP 34 or PCI Periplan extra	
		Glue	PCI Nanolight	PCI Carraflex	Pouder parquet glue PAR 362/ 1K-PU-parquet glue PAR 364	Textile cover glue TKL 315/ PVC-cover glue PKL 324
		Mortar	PCI Flexfug/ PCI Nanofug	PCI Carrafug	-	-
Flake board	<ul style="list-style-type: none"> <li>When laying on new floor a vapor barrier layer (foil) must be applied.</li> <li>The panels must be jointly glued and screwed in a raster of 40 cm to 40 cm to the stable subsurface.</li> <li>To avoid changes of the form due to humidity a moisture barrier must be applied.</li> </ul>	Priming	PCI Gisogrund 404		Special precoat VG 2 or PCI Giso-grund 404	
		Compound	PCI Periplan extra		Wooden floor smothing cement HSP 34 or PCI Periplan extra	
		Glue	PCI Nanolight	PCI Carraflex	Pouder parquet glue PAR 362/ 1K-PU-parquet glue PAR 364	Textile cover glue TKL 315/ PVC-cover glue PKL 324
		Mortar	PCI Flexfug	PCI Carrafug	-	-
Dry sreed panels		Priming	PCI Gisogrund		Special precoat VG 2 or PCI Giso-grund 404	
		Compound	PCI Periplan extra		Wooden floor smothing cement HSP 34 or PCI Periplan extra	
		Glue	PCI Flexmörtel/ PCI Nanolight	PCI Carraflex	Pouder parquet glue PAR 362/ 1K-PU-parquet glue PAR 364	Textile cover glue TKL 315/ PVC-cover glue PKL 324
		Mortar	PCI Flexfug/ PCI Nanofug	PCI Carrafug	-	-
Tiles		Priming	PCI Gisogrund 404		Special precoat VG 2 or PCI Giso-grund 404	
		Compound	PCI Periplan extra		Wooden floor smothing cement HSP 34 or PCI Periplan extra	
		Glue	PCI Flexmörtel/ PCI Nanolight	PCI Carraflex	Pouder parquet glue PAR 362/ 1K-PU-parquet glue PAR 364	Textile cover glue TKL 315/ PVC-cover glue PKL 324
		Mortar	PCI Flexfug/ PCI Nanofug	PCI Carrafug	-	-

Beginning of function heating after 24 hours.

**\* Information for installation of ClimaComfort system with PCI products**

Before installing the ClimaComfort system the corresponding subsurface must be clean, solid, even and free of loose particles such as e. g. remains of paint. It could be necessary to grind and vacuum the subsurface. Uneven subsurfaces, cracks or crevices must be filled with suitable smoothing cement. The interior plastering work must be finished and dry. Existing expansion joints must be kept. In special or unclear requirements of the subsurface we can give advise in connection with the manufacturer.

<sup>1</sup> The current instructions of the manufacturer are primarily to be followed and have priority in case of variances. We do not assume for liability correctness and up-to-dateness of these indications.

Roth ClimaComfort system on existing subsurface				
Henkel <sup>1</sup>	Subsurface	Screed	Tiles	Wooden floor boards/panels
	1. Preparing the subsurface (following check)	Sand/vacuum	Thomsit PRO 40	Sand/vacuum
	2. Priming the subsurface	Ceretec CT (for B and C) Thomsit R 777 (for A and D)	Cereflor CF 41 (for B and C) Thomsit R 755/Epoxi-Priming (for A and D)	Cereplan CT 17 (for B) Thomsit R 777 (for A and D)
	3. Post-treatment	—	Sand/vacuum	—
	4. Laying the ClimaComfort system	Laying the ClimaComfort system	Laying the ClimaComfort system	Laying the ClimaComfort system
	5. ClimaComfort system filling and sealing compound	Ceresit CN 73 (for B and C) Thomsit SL 85/DE 95 (for A and D)	Cereplan CN 73 (for B and C) Thomsit SL 85/DE 95 (for A and D)	Ceresit CN 73 (for B and C) Thomsit SL 85 (for A and D)
	Laying the floor covers following functional heating/heating to make the floor ready for cover laying:			
A Parquet (suitable for floor heating)	Adhesive: Thomsit P 618/P 625	Adhesive: Thomsit P 618/P 626	Adhesive: Thomsit P 618/P 627	
B Ceramic covers	Adhesive: Ceramit CM 18/CM 12 + Ceroc CC 83 Joint mortar: Cerement CE 37	Adhesive: Ceramit CM 18/CM 12 + Ceroc CC 83 Joint mortar: Cerement CE 37	Adhesive: Ceramit CM 18/CM 12 + Ceroc CC 83 Joint mortar: Cerement CE 37	
C Natural stone	Adhesive: Ceramit CM 15 + Ceroc CC 83 Joint mortar: (adapted to cover)	Adhesive: Ceramit CM 15 + Ceroc CC 83 Joint mortar: (adapted to cover)	Adhesive: Manufacturers' instructions  Joint mortar: Manufacturers' instructions	
D Textile/plastic covers (suitable for underfloor heating)	Adhesive: Thomsit T 410/TK 199	Adhesive: Thomsit T 410/TK 199	Adhesive: Thomsit T 410/TK 199	

Roth ClimaComfort system on existing subsurface					
Knauf <sup>1</sup>	Subsurface	Screed	Tiles	Wooden floor boards	
	1. Preparing the subsurface (following check)	The subsurface must be stable and even (no cracks) and must have a solid, clean surface. Cracks must be sealed.			
	2. Priming the subsurface	Cement screed: Knauf screed 1:1 Calcium sulphate screed: 2 x Knauf FE impregnation	2 x Knauf FE impregnation	Coat subsurface with Knauf special primer + 2 mm Knauf Faserflex 15, coat 2 x with Knauf screed basis 1:1	
	3. Post-treatment	—	Sand/vacuum	—	
	4. Laying the ClimaComfort system	Laying of ClimaComfort system			
	5. ClimaComfort system filling and sealing compound	Apply Knauf leveling screed 425 Layer thickness: min. 8 mm above ClimaComfort system panel			
Laying of floor covering after function heating					

<sup>1</sup> The current instructions of the manufacturer are primarily to be followed and have priority in case of variances. We do not assume for liability correctness and up-to-dateness of these indications.

Roth ClimaComfort system on existing subsurface				
Ardex <sup>1</sup>	Subsurface	Screed	Tiles	Wooden floor boards/panels
	1. Preparing the subsurface (following check)	Sand/vacuum	Sand/vacuum	
	2. Priming the subsurface	Ardex P 51 (for A to D)	2xArdex EP 2000 (for A to D)	
	3. Post-treatment	—	Sand/vacuum	
	4. Laying the ClimaComfort system	Laying the ClimaComfort system	Laying the ClimaComfort system	
	5. ClimaComfort system filling and sealing compound	Ardex FA 20 (for A to D)	Ardex FA 20 (for A to D)	
	Laying floor covers following functional heating/heating to make the floor ready for cover laying:			
A Parquet (suitable for floor heating)	Adhesive: Ardex P 410	Adhesive: Ardex P 410		
B Ceramic covers	Adhesive: Ardex FB 9 Joint mortar: Ardex BS Flex	Adhesive: Ardex FB 9 Joint mortar: Ardex BS Flex		
C Natural stone	Adhesive: Ardex S 16 + Ardex E 90 Joint mortar: Ardex MG	Adhesive: Ardex S 16 + Ardex E 90 Joint mortar: Ardex MG		
D Textile/plastic covers (suitable for floor heating)	Adhesive: Ardex Premium U 2200	Adhesive: Ardex Premium U 2200		

### Roth ClimaComfort system on existing subsurface

Roth ClimaComfort system on existing subsurface				
Glass <sup>1</sup>	Subsurface	Screed	Tiles	Wooden floor boards/panels
	1. Preparing the subsurface (following check)	In conformance with the BEB work and information sheets	Sand/vacuum	
	2. Priming the subsurface	Glasconal Primer	Glascopox Universal resin	
	3. Post-treatment	—	Sand/vacuum	
	4. Laying the ClimaComfort system	Laying the ClimaComfort system	Laying the ClimaComfort system	
	5. ClimaComfort system filling and sealing compound	Glasconal NSM At least 3 mm above the upper edge of the pipe	Glasconal NSM At least 3 mm above the upper edge of the pipe	
Laying floor covers following functional heating/heating to make the floor ready for cover laying:				

<sup>1</sup> The current instructions of the manufacturer are primarily to be followed and have priority in case of variances. We do not assume for liability correctness and up-to-dateness of these indications.

# Guarantee

## Terms of guarantee

For the Roth ClimaComfort system, the provisions and conditions of guarantee apply in

accordance with the certificate of warranty supplied with the products.

## CERTIFICATE OF GUARANTEE

### Roth Floor Heating and Cooling Systems Roth Pipe Installation Systems

1. Within a 10 years following installation, although no longer than 10 1/2 years following delivery of the system components, we will provide, in accordance with our preference, either free-of-charge product replacement or repair and damage replacement in the event that damage appears in the system components which we have supplied which were caused by faults in materials or production.  
Excluded from this are mechanical moving parts and products as well as electrical and electrically-powered parts and products for which we have provided the guarantee services in the event of faults in materials or production listed above within a time period of 12 months following installation.

2. Prerequisites for this guarantee are:

- a. exclusive use and installation of all system components belonging to the respective Roth floor heating system/pipe installation system,
- b. documented adherence to the planning, installation and operating instructions respectively valid at the time of the installation,
- c. adherence to the standards and regulations valid for this work type and for the relevant adjacent work types in connection with the respective Roth floor heating system/Roth pipe installation system,
- d. that the installation company and the companies carrying out the construction/finishing work types are respectively recognised and authorised specialist companies and that these companies have verified their confirmations with names and signatures on this certification document,
- e. that a completely filled out copy of this guarantee certificate is sent back to us without delay,
- f. that damages are immediately reported to us with simultaneous forwarding of the guarantee certificate,
- g. that claims are made within the guarantee period.

We are insured against claims made in this agreement under an extended company and product liability insurance policy with a coverage amount of **5.000.000 €uros** per occurrence for personal and property injuries.

The stipulations contained in consumer protection laws are unaffected by this guarantee.  
The preceding guarantee bond affects the following:

Object of construction: \_\_\_\_\_  
Building contractor: \_\_\_\_\_

The following have been installed:

Roth industrial floor heating system	<input type="checkbox"/>	Roth sport and sprung floor heating system	<input type="checkbox"/>	Roth original Tacker system	<input type="checkbox"/>
Roth open area floor heating system	<input type="checkbox"/>	Roth knob system	<input type="checkbox"/>	Roth wall heating system	<input type="checkbox"/>
Roth dry construction system	<input type="checkbox"/>				

Roth Pipe installation systems:

Roth radiator connection system  Roth domestic hot water system

The system components belonging to the respective Roth floor heating system and/or the respective Roth pipe installation system were delivered and installed completely on the respective date of installation.

Floor heating system: Area laid \_\_\_\_\_ m<sup>2</sup>  
Radiator connection system: Number of radiator connections \_\_\_\_\_ pieces  
Domestic hot water system: Number of borrow area connections \_\_\_\_\_ pieces  
Specialist heating company: \_\_\_\_\_

Construction/ finishing work types:	Signature: _____	Stamp: _____	Date of installation: _____
	Signature: _____	Stamp: _____	Date of completion: _____
Commissioning:	Signature: _____	Stamp: _____	Date of completion: _____
	Signature: _____	Stamp: _____	Date of the commissioning: _____

**ROTH WERKE BUCHENAU**  
Am Seerain 2, 35232 Dautphetal  
www.roth-werke.de

Phone +49 (0) 64 66/9 22-0  
Fax +49 (0) 64 66/9 22-1 00  
E-Mail service@roth-werke.de



ROTH WERKE GMBH  
Am Seerain 2 • 35232 Dautphetal  
Telefon 0 64 66/9 22-0 • Telefax 0 64 66/9 22-1 00  
Hotline 0 64 66/9 22-2 66  
E-Mail: service@roth-werke.de • www.roth-werke.de

