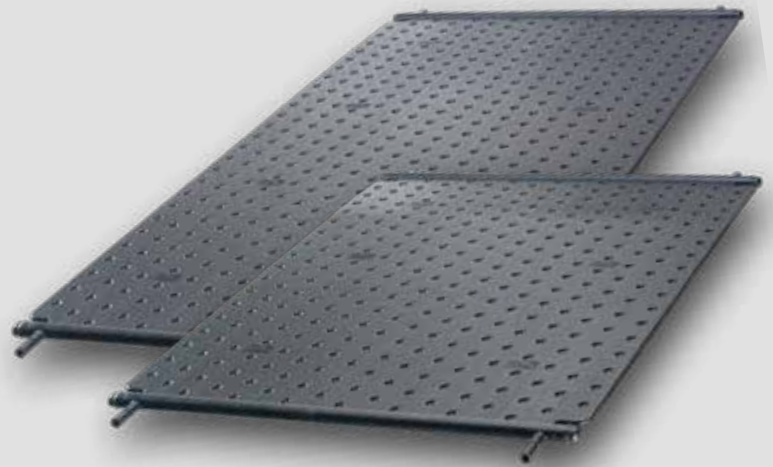
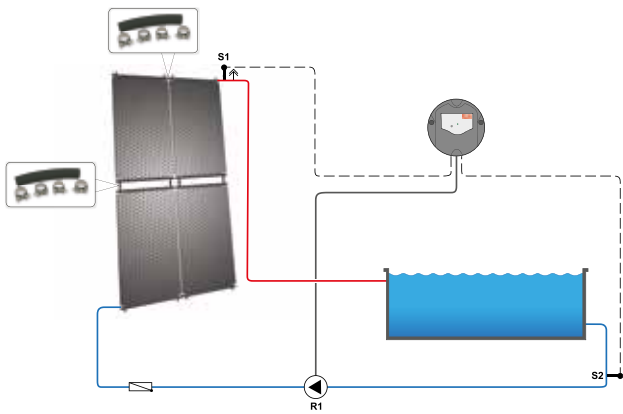


Technical information





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System description

■ System description and system benefits

Roth applied its specialist expertise in plastics processing when it developed the Roth HelioPool® swimming pool absorber from top-quality, UV-resistant High Density Polyethylene (HDPE) as an environmentally-friendly and energy-saving primary method of heating swimming pool water.

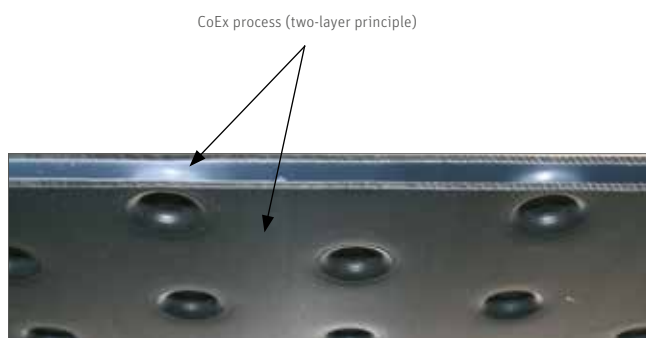
You can find other areas of application below.

Fitted with eight outlets, this single absorber is equipped to satisfy any installation requirements, guaranteeing simple assembly.

The outstanding features of the Roth HelioPool® absorber are its optimal size of 2,22 m² and its high degree of efficiency.

It boasts full-surface throughput, frost-resistance* and sufficient strength to support the weight of a person and is suitable for the direct flow-through of swimming pool water. The absorber is specially designed with the ideal thickness to guarantee low pressure loss.

The CoEx process used in the manufacture gives the absorber a two-layer material structure with different characteristics. This results in a high level of stability and weather-resistance, guaranteeing the durability of the Roth HelioPool® swimming pool absorber.



Overview of benefits:

- > one absorber type to fit all installation methods thanks to eight outlets on the absorber, making installation simple and cutting down on storage needs
- > optimal absorber size with 2,22 m² of effective surface area
- > suitable for horizontal or vertical installation
- > highly efficient
- > full-surface throughput, frost-resistant* and strong enough to walk on
- > durable, UV-resistant, high-quality absorber material made from black HDPE
- > optimal absorber thickness
- > low pressure loss due to special absorber design
- > cost-efficient swimming pool heating solution
- > suitable for direct flow-through of swimming pool water
- > complete system including attachments, connections and control unit
- > other areas of application are possible

* Frost-resistant if combined with antifreeze.
If antifreeze is not used, the Roth HelioPool® swimming pool absorber must be drained if there is a risk of frost.

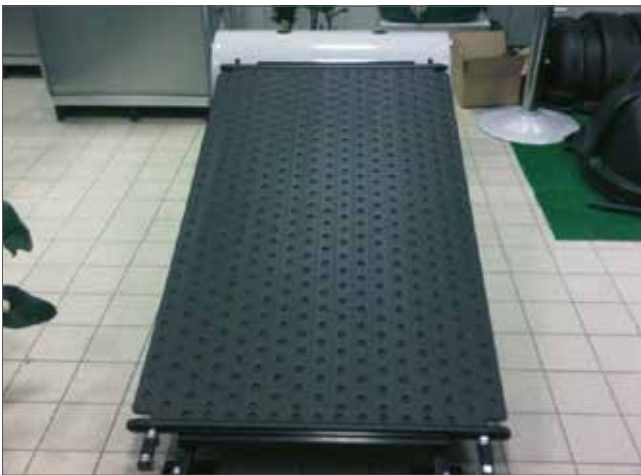
System description



■ Other possible applications

Heating domestic water

The Roth HelioPool® can be used in combination with a heat exchanger to heat domestic water in southern countries.



Thermosiphon system

It can also be used in a thermosiphon system.



Heat exchanger

In a system for emitting or extracting hot/cold air, the Roth HelioPool® can be used as a heat exchanger.

■ System components

Roth HelioPool® swimming pool absorber



Consisting of black HDPE, the Roth HelioPool® is used mainly for the direct solar heating of swimming pool water using the constant flow principle. Each absorber has eight connections (four with a diameter of 25 mm and four with a diameter of 40 mm) that can be used in different ways depending on the type of connection.

Installation type: horizontal or vertical

Area: 1,2 m²/2,22 m²

Dimensions: 1,09 x 1,11 x 0,015 m/2,0 x 1,11 x 0,015 m

Weight 8,5 kg/14 kg

Material No.: 1115010974/1135004070

Roth HelioPool® 40 mm connection set



The Roth 40 mm connection set enables the direct linking of the 40 mm absorber connections and comprises one 240 mm length of 40 x 47 mm fabric hose to be divided into pieces on site* and four 32 x 50 mm hose clamps.

Material No.: 1135004071

Roth HelioPool® 25 mm connection set



The Roth 25 mm connection set enables the direct linking of the 25 mm absorber connections and comprises one 240 mm length of 25 x 32 mm fabric hose to be divided into pieces on site* and four 20 x 32 mm hose clamps.

Material No.: 1135004073

Roth HelioPool® 25 mm end stopper set



The 25 mm Roth end stopper set closes off the 25 mm absorber connections that are not in use and comprises one 200 mm length of 25 x 32 mm fabric hose to be divided into pieces on site*, four 20 x 32 mm hose clamps and two 35 x 40 mm end stoppers.

Material No.: 1135004072

Roth hose cutters



The Roth hose cutters can be ordered on request.

* Note: The fabric hose should be divided into pieces on site during assembly.

System description



Roth SW solar control unit

Roth SW solar control unit provides a simple way of regulating differences in temperature with the following functions: fixed-speed pump control or control of the three-way valve, collector protection, function fulfils BAW guidelines, two sensor inputs, 230 V power supply including two PT1000 sensors, Assembly Instructions in six languages, max. control: two temperature sensors and one output, Dimensions: 130 x 40 mm

The Roth SW solar control unit does not have a temperature display. Settings are adjusted using a DIP switch and potentiometer. The control unit can always be used whenever only temperature difference regulation is required, e.g. for the regulation of swimming pools using Roth HelioPool® or the regulation of standard solar systems with a storage tank or return riser. Two PT1000 temperature sensors can be connected.

Material No.: 1135007886



Roth three-way switching valve

Roth three-way switching valve for 50 mm PCV pipe (DN40)
Engine resetting
Actuation time ten seconds

Material No.: 1135007932

Installation examples for the Roth HelioPool®

The Roth HelioPool® can be assembled in multiple ways, depending on the structural conditions. The absorber field should always be installed as near to the substructure as possible.

When assembling the absorber field by laying the absorbers directly onto a flat roof or an open space, the absorbers should

be protected from wind load. They can be screwed directly onto the installation area, or secured using the Roth assembly rail.

The Roth universal attachment anchor can be used horizontally or vertically for on-roof attachments with tiles or slate.



Roth horizontal and vertical universal attachment anchor

The Roth horizontal and vertical universal attachment anchors consist of two stainless steel universal attachment anchors (height-adjustable by 30 mm) including dry wall screws for mounting on the roof. (Suitable for roof tiles/S-shaped interlocking pantiles, plain tiles, slate and fibre cement corrugated sheets.)

Material No.: 1135004082 (horizontal)

Material No.: 1135004084 (vertical)

The Roth HelioPool® mounting set for on-roof attachment is recommended for roof covers in Mediterranean areas (Material No.: 1135004075 or 1135004074).



Due to the specific method of mounting the absorber, an additional substructure should be built for a larger installation area and to prevent slight sagging.



Roth HelioPool® assembly rail, long

HelioPool® universal assembly rail, long, used to fasten the HelioPool® absorbers. The HelioPool® absorbers are fastened to the aluminium rectangular pipe rails using self-tapping stainless steel screws including stainless steel washers and EPDM seal. The pre-drilled rails can be used for on-roof or floor-mounting. They are 2230 mm long, so two HelioPools® can be mounted next to each other.

Included in scope of delivery: 1 aluminium rectangular pipe 40 x 20 x 2230 mm drilled, 6 stainless steel screws with washers and EPDM seal.

Material No.: 1115010527



Roth HelioPool® assembly rail, short

HelioPool® universal assembly rail, short, used to fasten the HelioPool® absorbers.

The HelioPool® absorbers are fastened to the aluminium rectangular pipe rails using self-tapping stainless steel screws including stainless steel washers and EPDM seal. The pre-drilled rails can be used for on-roof or floor-mounting. They are 1110 mm long, so two HelioPools® can be mounted.

Included in scope of delivery: 1 aluminium rectangular pipe 40 x 20 x 1100 mm drilled, 3 stainless steel screws with washers and EPDM seal.

Material No.: 1115010528



Roth HelioPool® connection for assembly rail

Roth HelioPool® connection for connecting two assembly rails (long or short). Included in scope of delivery: 1 aluminium connection 35 x 15 x 300 mm, 4 stainless steel screws.

Material No.: 1115010544



Roth HelioPool® mounting set for on-roof attachment*

The Roth HelioPool® mounting set is designed to mount one HelioPool® absorber on the roof and comprises two supports including mounting material, screws and a drill guide bush for exact positioning of the bore holes in the absorber area. The primary area of application for this set is in Mediterranean roof covers.

Material No.: 1135004075

* as long as available

System description

■ Installation examples for the Roth HelioPool®



Flat roof installation



Open space installation



Free-standing/special design



Sloping roof installation



Mounting on a slope

■ Technical specifications

Technical specifications Roth HelioPool®		
Length [mm]	1.090	2.000
Width [mm]	1.100	
Height [mm]	15	
Gross surface area [m ²]	1,2	2,22
Weight [kg]	8,5	14
Filling capacity [l]	8	16
Connections	Eight, four with a diameter of 40 mm and 4 with a diameter of 25 mm. These can be used freely depending on the method of connecting the collectors.	
Pressure loss from the HelioPool®	0,003 bar at 200 l/h x m ²	
Flow-through amount	120 – 180 l/h x m ²	
Maximum pressure [bar]	3	
Operating pressure [bar]	1	
Material	UV-resistant HDPE (black)	
Maximum number of collectors connected horizontally	8	
Maximum number of collectors connected vertically	4	
Use when there is a risk of frost	Frost-resistant if combined with antifreeze. If antifreeze is not used the Roth HelioPool® swimming pool absorber must be drained if there is a risk of frost.	
Pump selection	The delivery volume of the pump is the flow-through amount x the area of the HelioPool®. The delivery height required can be calculated from the height difference between the swimming pool and the absorber field.	

Performance data

Roth HelioPool® performance data

The performance values for the Roth HelioPool® Collector cannot be compared with the values for a glazed collector with heat insulation, so the application is heavily dependent on local conditions.

Air velocity 0,5 to 1,5 m/s

$\eta_0 = 81,7 \%$

$a_1 = 24,29 \text{ W/m}^2\text{K}$

As a rule of thumb, the following can be used to calculate the system dimensions:

70 % of the swimming pool surface in $\text{m}^2 = \text{absorber area in } \text{m}^2^*$

Example:

Size of swimming pool: $10 \text{ m} \times 5 \text{ m} = 50 \text{ m}^2$

Collector area: $0,7 \times 50 \text{ m}^2 = 35 \text{ m}^2$

Number of collectors: $35 \text{ m}^2 / 1,2 \text{ m}^2 = 29,17 \rightarrow 30$ collectors or $35 \text{ m}^2 / 2,22 \text{ m}^2 = 15,76 \rightarrow 16$ collectors

Since the strength of the sun's rays depends on the location, there may be differences when determining the number of Roth HelioPool® collectors required.

For special projects, simulation software can be used to determine the predicted solar yield and the resulting savings.

Heating outdoor and indoor swimming pools

Outdoor swimming pool

The amount of heating required to heat the water in an outdoor swimming pool depends on how the pool is used.

In terms of size, it can be similar to the heating needed for a house, and must be calculated separately in these cases.

The following aspects need to be considered when estimating the heating required:

- > Exposure of the pool to the wind
- > Temperature of the pool
- > Weather conditions
- > Period of use
- > whether the surface of the pool can be covered

When heating the pool for the first time to a temperature of more than 20 °C, a heat flow volume of approx. 12 kWh/m³ of the pool's contents is required. Depending on the size of the pool and the output of the heating installed, the pool will take one to three days to heat up.

Reference values for the heating requirements for outdoor swimming pools used from May to September:

Outdoor swimming pools	Water temperature		
	20 °C	24 °C	28 °C
with cover [W/m ²]	100	150	200
without cover/sheltered location [W/m ²]	200	400	600
without cover/partially sheltered location [W/m ²]	300	500	700
without cover/unsheltered location [W/m ²]	450	800	1000

* for uncovered swimming pools

Indoor swimming pool

The room is usually heated by radiators or underfloor heating and/or a heat exchanger in the dehumidification/ventilation system. In both cases, the amount of heating required needs to be calculated according to the technical solution.

The heating required to heat the water in the pool depends on the following factors:

- > Temperature of the pool
- > Difference in temperature between the pool water and the room
- > How the pool is used

Heating requirements for indoor swimming pools

Room temperature indoor swimming pool	Water temperature		
	20 °C	24 °C	28 °C
23 °C [W/m ²]	90	165	265
25 °C [W/m ²]	65	140	240
28 °C [W/m ²]	20	100	195

These values may be reduced by up to 50 % for private swimming pools with a pool cover and a maximum use of two hours per day.

Assembly Instructions

■ Installation requirements

The Roth HelioPool® swimming pool absorber can be installed on open areas and roofs with various gradients. There are different mounting options for each type of roof tile (pantiles, mixed tiles, monk and nun tiles). For natural stone roofs, the mountings must be fitted by qualified professionals.



Caution:

Additional installation materials may be required, such as ventilation tiles for feeding through the absorber field pipes (available from a building supplies shop or from roofing companies), wooden rails for various support purposes etc.



Important:

Before it is installed, the Roth HelioPool® must be stored protected against direct sunlight. The Roth HelioPool® must not heat up too much before and during installation.

- > The Roth HelioPool® is supplied with two open outlets (Ø 25). If the absorbers are stored without their packaging before installation, the outlets should be closed off to prevent foreign bodies from entering them, which could lead to damage to the absorber and/or the installation. This mainly applies when the absorbers are stored outside.
- > When used without antifreeze, the absorbers must be completely drained in winter (temperatures > 4 °C) and depressurised to avoid frost damage.

■ First use/maintenance

Please ensure the following before **using the absorber for the first time**:

- > run a thorough visual check on the Roth HelioPool® swimming pool absorber and pipe system to identify any damage or leaks
- > check that all shut-off valves in the HelioPool® absorber's inlets and outlets are open
- > make sure the installation has been rinsed before it is first used and after it has not been used for an extended period of time
- > check that the pump is protected against running dry

Maintenance:

Check the general condition of the HelioPool® installation at appropriate intervals to ensure it keeps running smoothly.

This includes:

- > inspect the HelioPool® absorber and pipe system for leaks
- > clean any filters
- > check the attachments on the HelioPool® installation (repair any loose or broken fixing screws)
- > prevent the absorber from being screened or contaminated by trees, bushes, foliage, grass, dust, etc.
- > check the values and parameters in the control system
- > check that the pump is protected against running dry
- > if antifreeze is not used, the Roth HelioPool® must be drained if there is a risk of frost

■ Safety instructions

Please read these safety instructions carefully before starting the installation. It is essential that you follow all the instructions specified here during the installation. Please also observe all relevant accident prevention regulations, particularly for working on roofs.

You can find further information on accident prevention regulations for construction work in the applicable legal provisions. You can also obtain detailed information about this from employers' liability insurance associations for construction.

Standards and directives

- > Roof installations:
 - DIN 18338 Roof covering and roof sealing work
 - DIN 18339 Sheet metal roofing and wall covering work
 - DIN 18451 Scaffolding work
- > Connecting thermal solar systems:
 - DIN EN 12976:2017 Parts 1 and 3
- > Electrical connection:
 - VDE 0100 Installing electrical equipment
 - VDE 0185 General directive on installing lightning protection systems
 - VDE 0190 Main equipotential bonding of electrical systems
 - DIN 18382 Electrical cable and wiring system in buildings

■ Tools

- > Drill with screwdriver function
- > Plugs that are suitable for the roof covering material
- > Marker, string and tape measure
- > Pen
- > Flat head and Phillips screwdrivers
- > Pipe shears/hose cutters
- > Ring spanner/SW17 open-end spanner

Proper use of ladders

Ladders should only be used for a working height below 5 m. Position the ladder at an angle of 65° to 75° and secure. The top end of the ladder must extend at least 1 m above exit point.

Fall protection devices

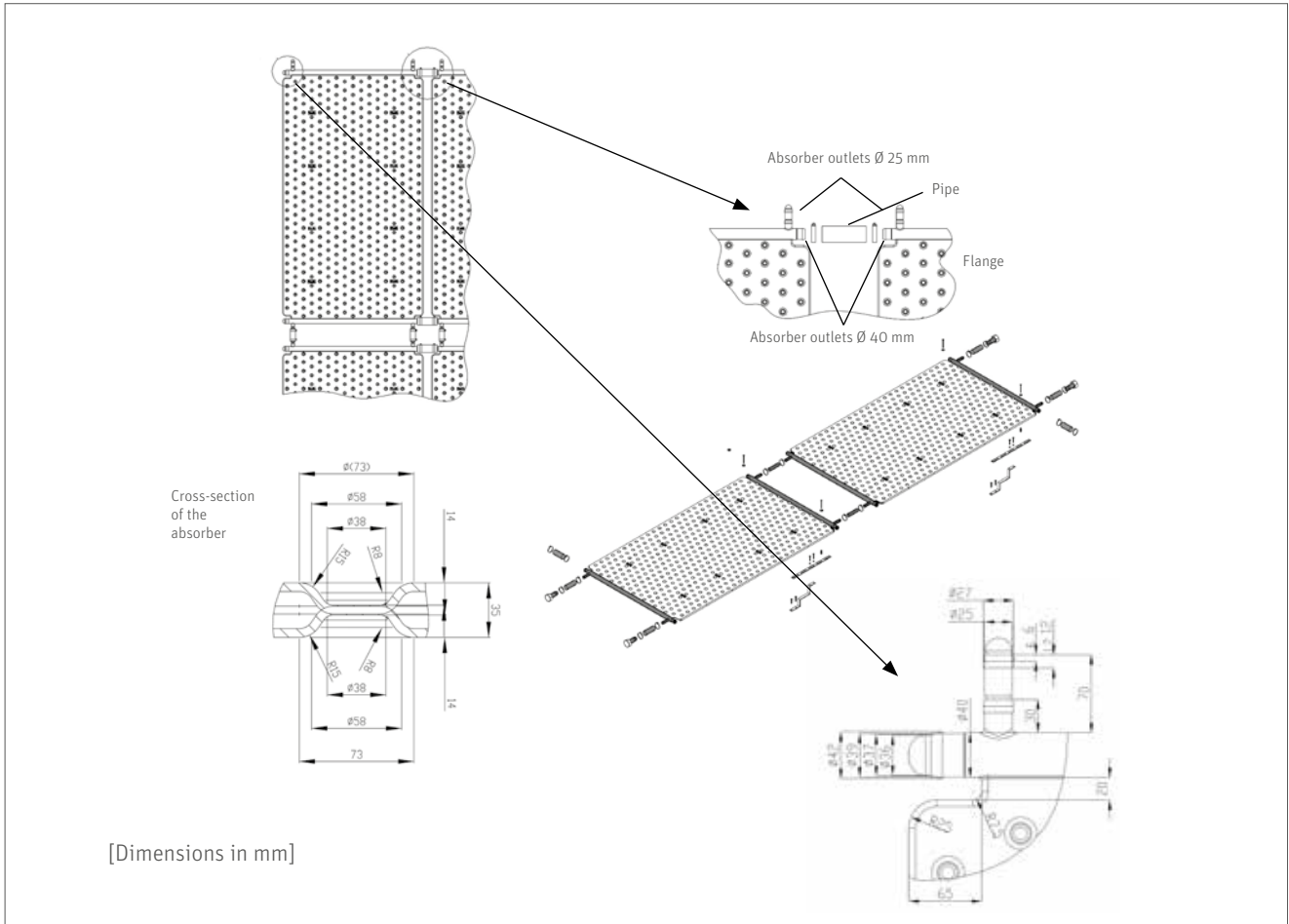
If working at a height above 3 m, always use fall protection equipment when working on sloping roofs (20° to 60°). The vertical distance for a workplace safety device (roof safety platform or other kind of protective roof barrier) is max. 5 m. A safety harness may also be used as fall protection. Secure roof safety hooks to load-bearing parts above the worker. Do not use ladder hooks!

Protection against falling objects

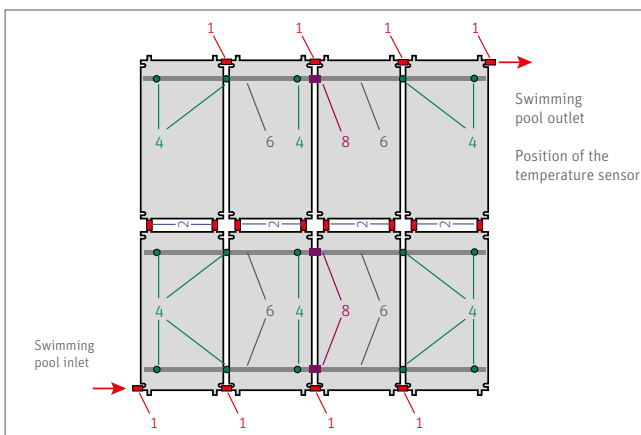
Access routes and workplaces located below the work site must be protected against falling objects. These areas must be clearly signed and cordoned off.

Assembly Instructions

Examples of assembly options

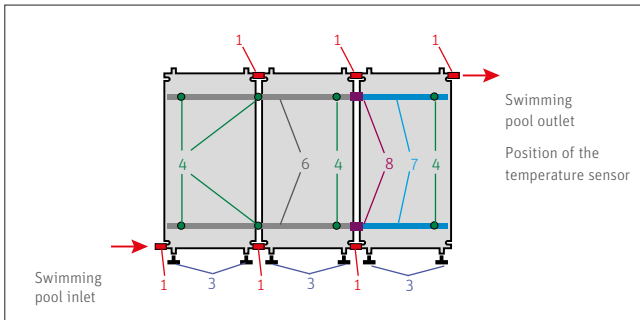


2 x 4 vertical option



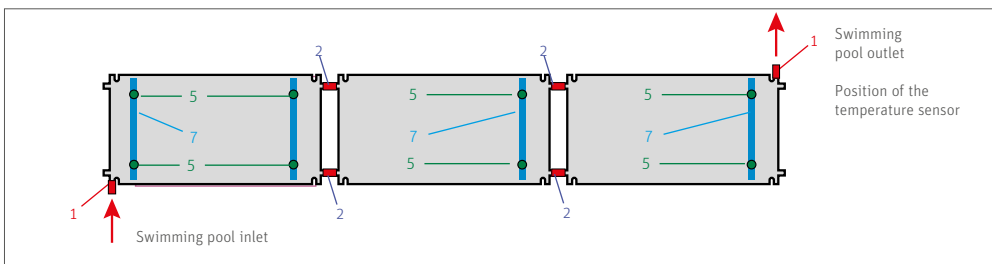
Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
2	Connection set for 25 mm connections	4 x 1135004073
4	Universal mounting set, vertical	8 x 1135004084
6	Assembly rail long	6 x 1115010527
8	Connection rail	3 x 1115010544

1 x 3 vertical option



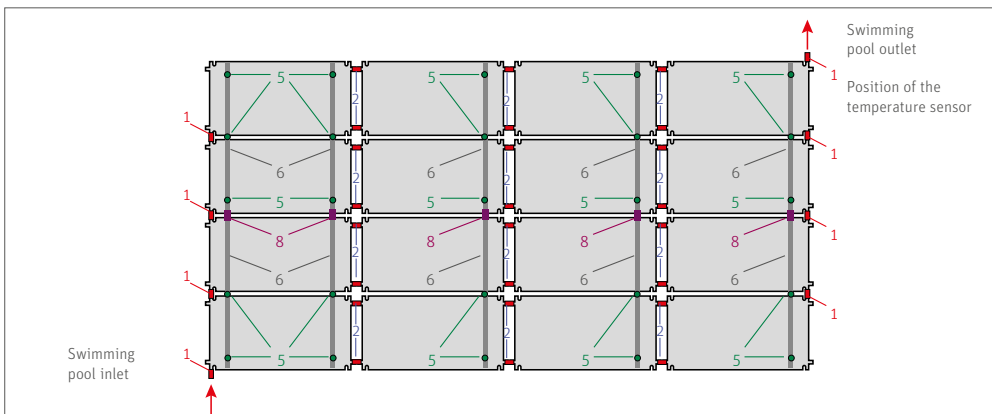
Item	Material	Example
1	Connection set for 40 mm connections	3 x 1135004071
3	End stopper set for 25 mm connections	3 x 1135004072
4	Universal mounting set, vertical	4 x 1135004084
6	Assembly rail long	2 x 1115010527
7	Assembly rail short	2 x 1115010528
8	Connection rail	2 x 1115010544

1 x 3 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	1 x 1135004071
2	Connection set for 25 mm connections	2 x 1135004073
5	Universal mounting set, horizontal	4 x 1135004082
7	Assembly rail short	4 x 1115010528

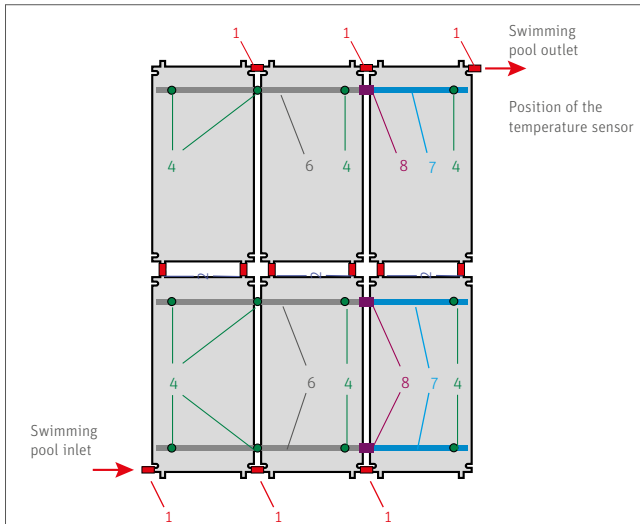
4 x 4 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
2	Connection set for 25 mm connections	12 x 1135004073
5	Universal mounting set, horizontal	13 x 1135004082
6	Assembly rail long	10 x 1115010527
8	Connection rail	5 x 1115010544

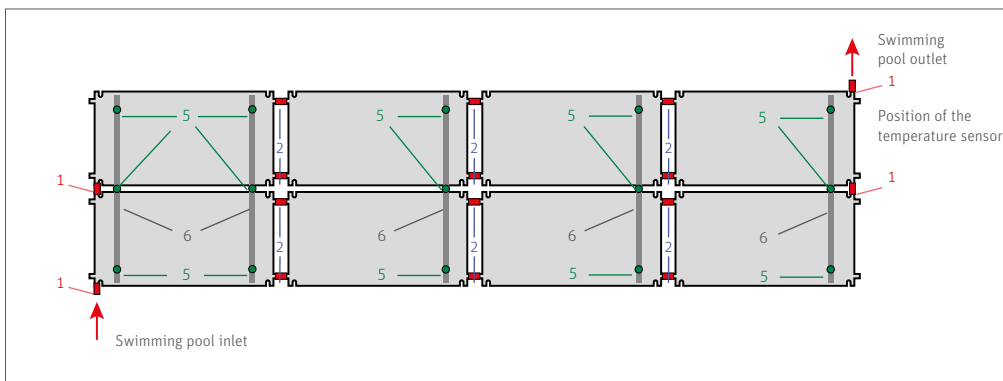
Assembly Instructions

2 x 3 vertical option



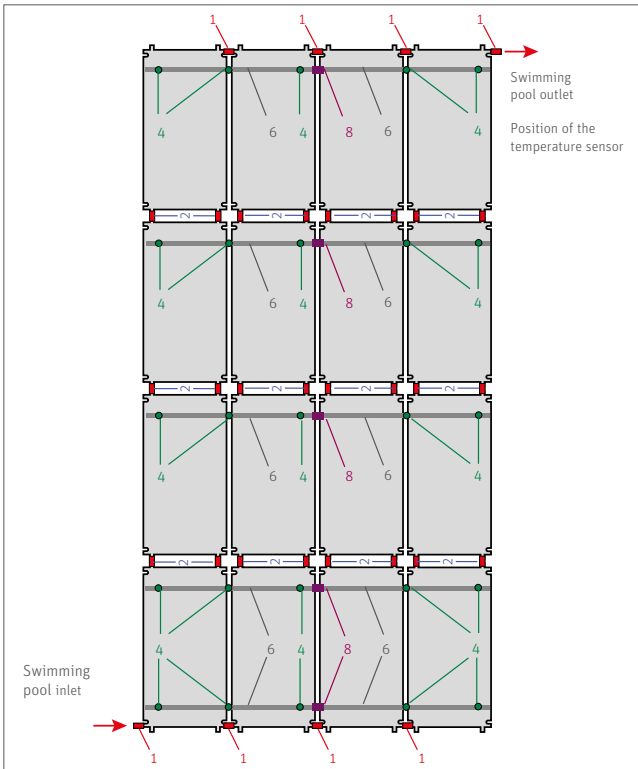
Item	Material	Example
1	Connection set for 40 mm connections	3 x 1135004071
2	Connection set for 25 mm connections	3 x 1135004073
4	Universal mounting set, vertical	6 x 1135004084
6	Assembly rail long	3 x 1115010527
7	Assembly rail short	3 x 1115010528
8	Connection rail	3 x 1115010544

2 x 4 horizontal option



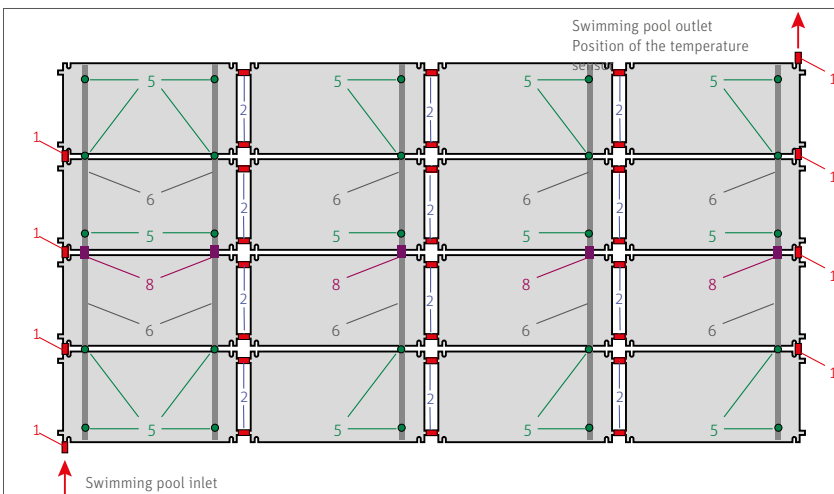
Item	Material	Example
1	Connection set for 40 mm connections	2 x 1135004071
2	Connection set for 25 mm connections	6 x 1135004073
5	Universal mounting set, horizontal	8 x 1135004082
6	Assembly rail long	5 x 1115010527

4 x 4 vertical option



Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
2	Connection set for 25 mm connections	12 x 1135004073
4	Universal mounting set, vertical	13 x 1135004084
6	Assembly rail long	10 x 1115010527
8	Connection rail	5 x 1115010544

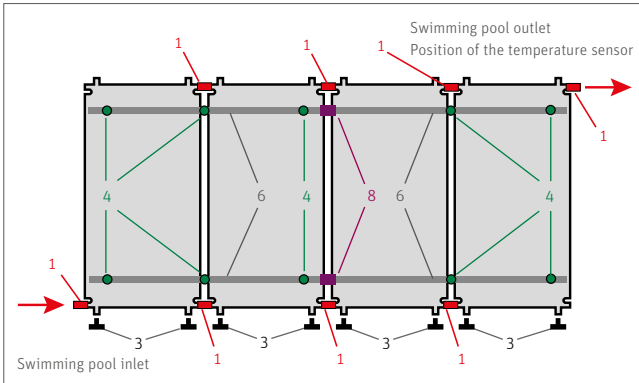
4 x 4 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
2	Connection set for 25 mm connections	12 x 1135004073
5	Universal mounting set, horizontal	13 x 1135004082
6	Assembly rail long	10 x 1115010527
8	Connection rail	5 x 1115010544

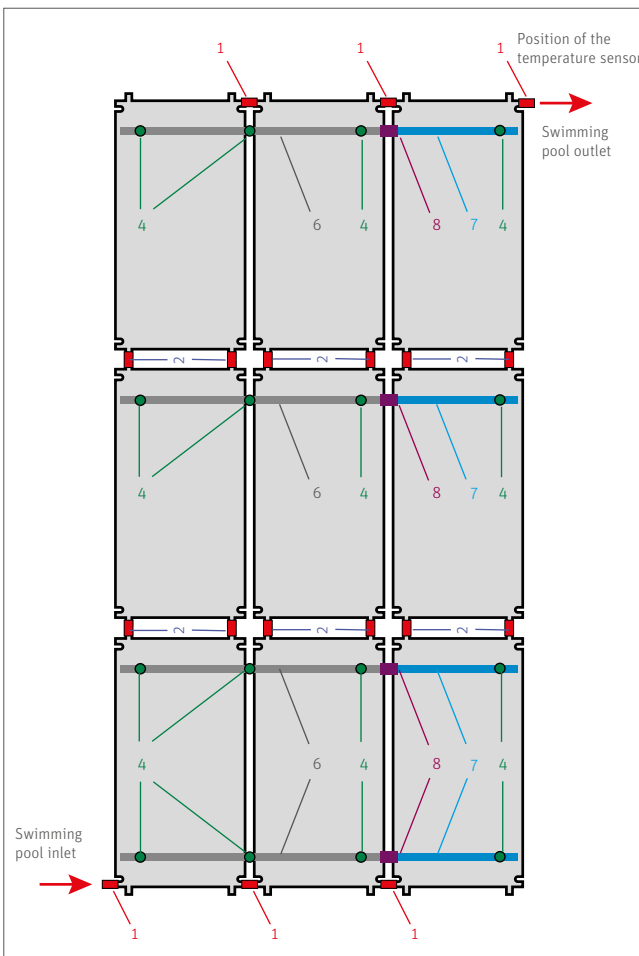
Assembly Instructions

1 x 4 vertical option



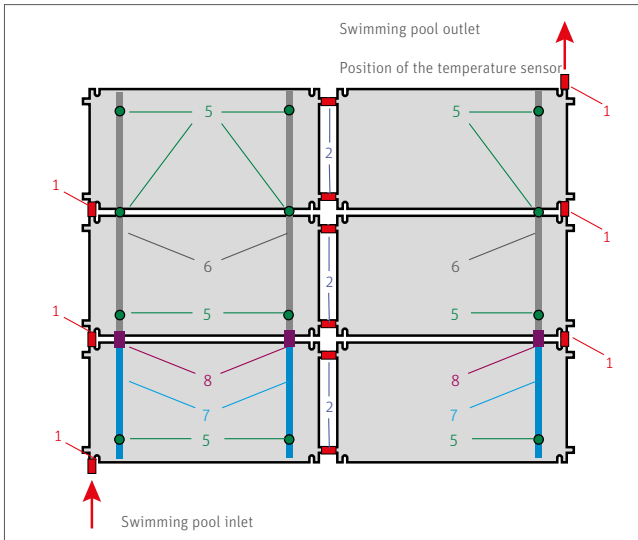
Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
3	End stopper set for 25 mm connections	4 x 1135004072
4	Universal mounting set, vertical	5 x 1135004084
6	Assembly rail long	4 x 1115010527
8	Connection rail	2 x 1115010544

3 x 3 vertical option



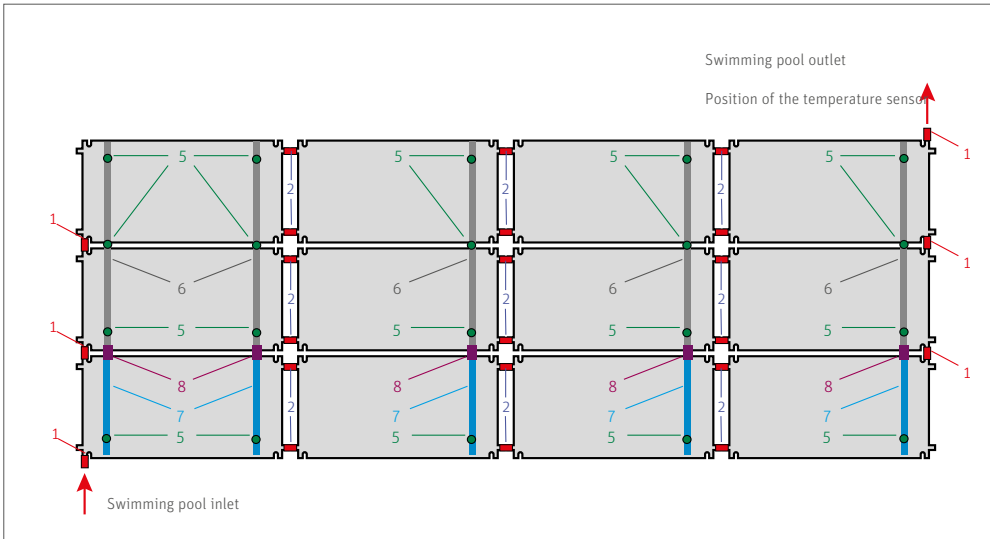
Item	Material	Example
1	Connection set for 40 mm connections	3 x 1135004071
2	Connection set for 25 mm connections	6 x 1135004073
4	Universal mounting set, vertical	8 x 1135004084
6	Assembly rail long	4 x 1115010527
7	Assembly rail short	4 x 1115010528
8	Connection rail	4 x 1115010544

3 x 2 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	3 x 1135004071
2	Connection set for 25 mm connections	3 x 1135004073
5	Universal mounting set, horizontal	6 x 1135004082
6	Assembly rail long	3 x 1115010527
7	Assembly rail short	3 x 1115010528
8	Connection rail	3 x 1115010544

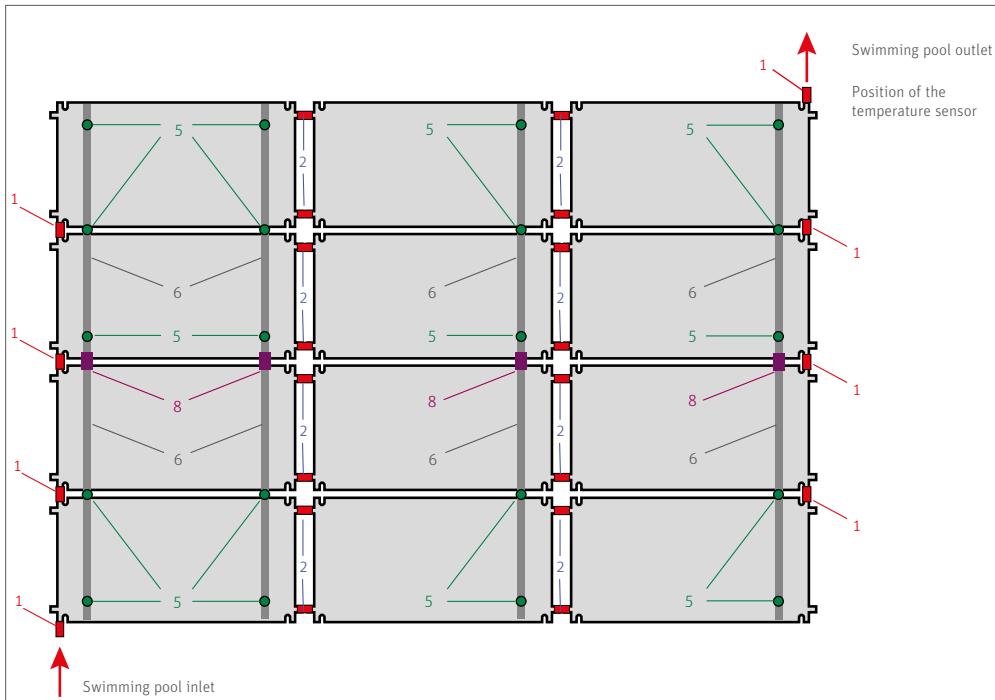
3 x 4 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	3 x 1135004071
2	Connection set for 25 mm connections	9 x 1135004073
5	Universal mounting set, horizontal	10 x 1135004082
6	Assembly rail long	5 x 1115010527
7	Assembly rail short	5 x 1115010528
8	Connection rail	5 x 1115010544

Assembly Instructions

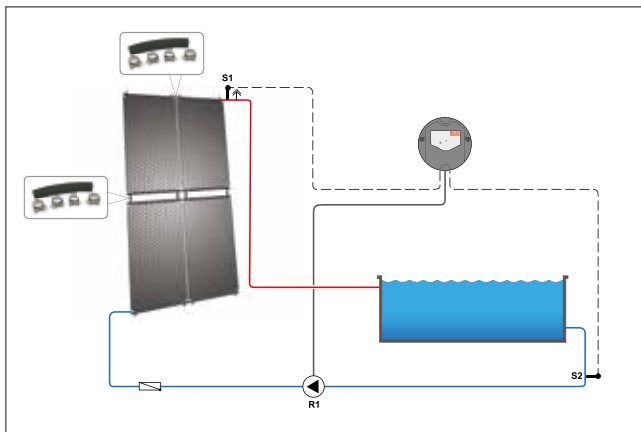
4 x 3 horizontal option



Item	Material	Example
1	Connection set for 40 mm connections	4 x 1135004071
2	Connection set for 25 mm connections	8 x 1135004073
5	Universal mounting set, horizontal	10 x 1135004082
6	Assembly rail long	8 x 1115010527
8	Connection rail	4 x 1115010544

■ System hydraulics

The swimming pool water flows directly through the Roth HelioPool®; it is not necessary to separate the system.

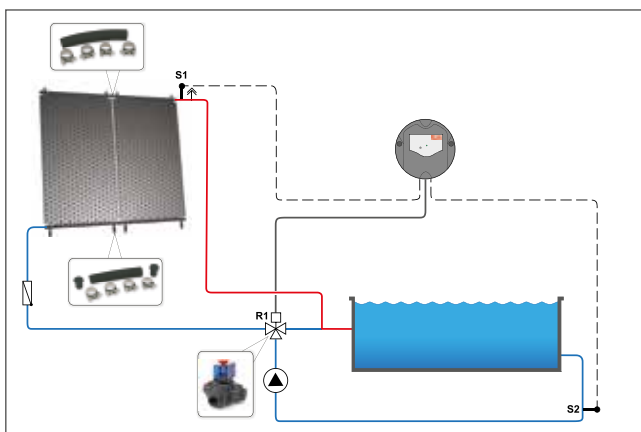


Three different connection options are explained below:

Operation with its own pump and the Roth SW solar control unit; piping separate from the filter system

This option is appropriate when the filter piping is difficult to access. Water is drawn from the swimming pool by a submerged pipe and pumped through the Roth HelioPool®. The heated water is then fed back into the swimming pool.

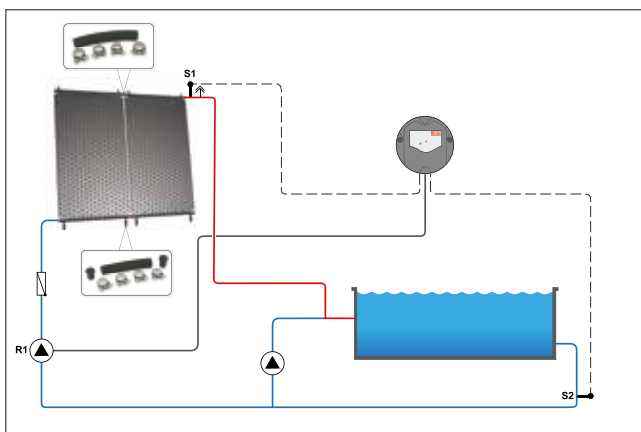
The Roth SW solar control unit ensures that the pump only operates when the solar yield is sufficient. Depending on the structural conditions, a non-return valve may be required.



Operation with its own pump and the Roth three-way switching valve in combination with the Roth SW solar control unit

This connection option can usually always be chosen, as long as the absorbers are not mounted higher than 6 m above the surface of the water. A three-way switching valve is installed in the pressure pipe after the filter.

This valve is triggered by the Roth SW solar control unit as soon as the absorber temperature is higher than the temperature of the swimming pool water. The water flowing through the filter is then pumped through the absorber. The heated water flows back into the filter system via a T connector. Depending on the structural conditions, a non-return valve may be required.

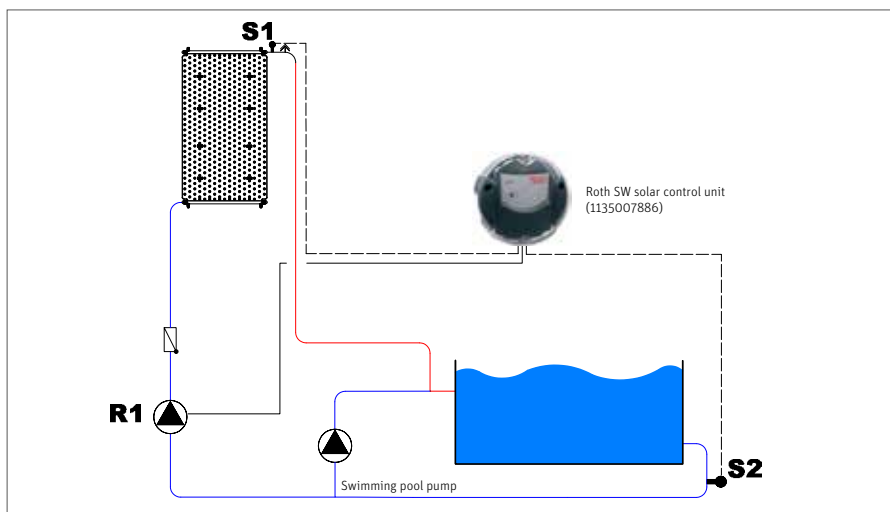
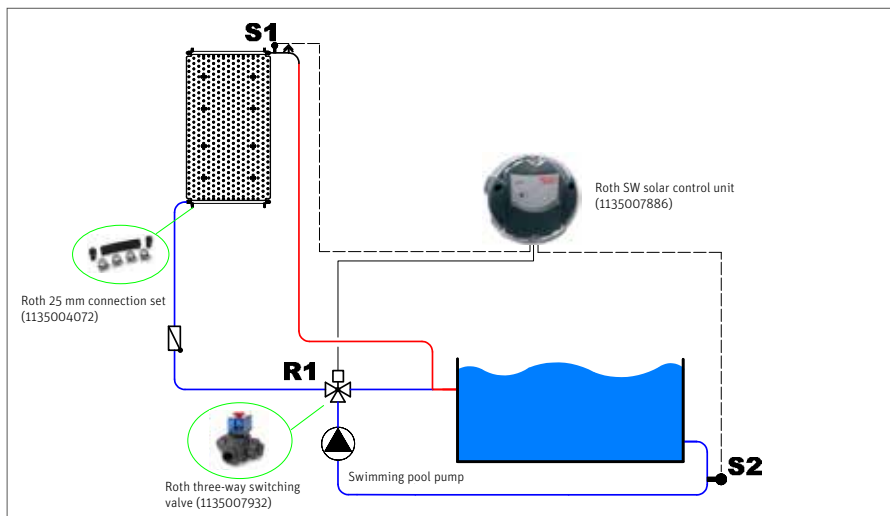
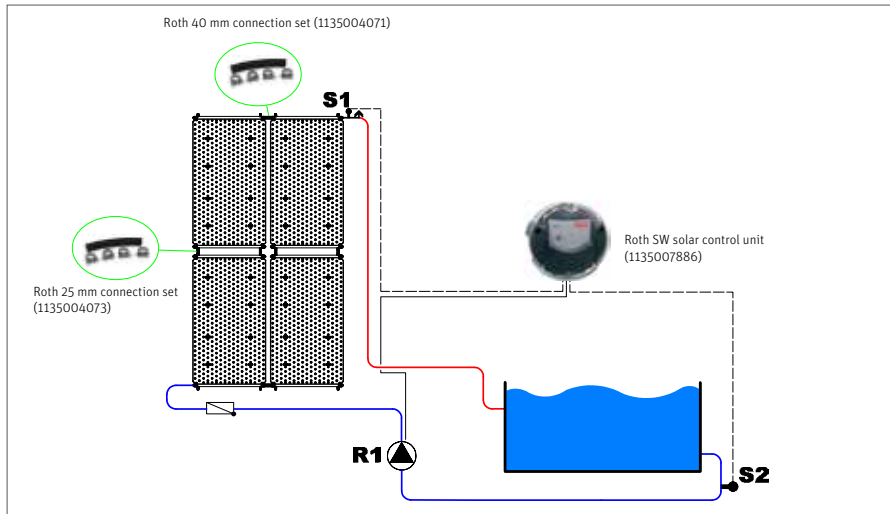


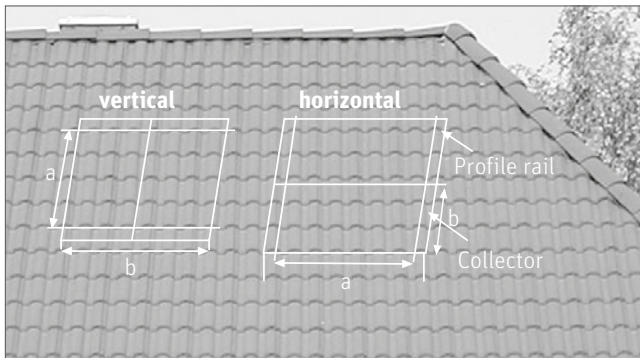
Operation with its own pump and the Roth SW solar control unit integrated into the filter system

In some cases, it is advisable or necessary to install a separate pump for the solar heating, such as when the delivery height from the surface of the water to the absorber field is more than 6 m. The water is diverted via a T connector before the filter system and pumped through the absorbers by the additional pump. This pump is controlled by the Roth SW solar control unit, which ensures that the pump only operates when the yield is sufficient. The filter pump and solar pump are controlled separately. Depending on the structural conditions, a non-return valve may be required.

Assembly Instructions

System hydraulics with system components





■ Assembly instructions for assembly rail and attachment components

Roof positioning:

1. Determining the position of the absorber field and accordingly that of the universal attachment anchors
 - > **for vertical and horizontal assembly:**
 - Measurement a: 2000 mm
 - Measurement b: 2250 mm
2. Removing roof tiles to fit universal attachment anchors (two to three tiles per universal attachment anchor).

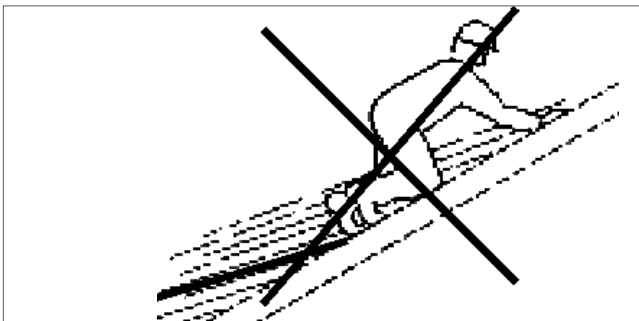


Roof attachment with Roth universal attachment anchor



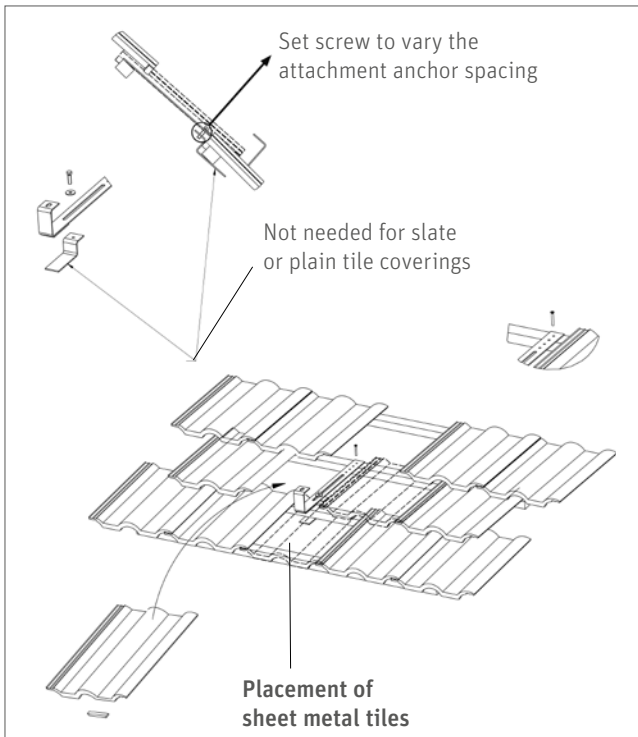
Safety instruction:

For your safety: Fall arresters must be worn for all tasks where there is a risk of falling.

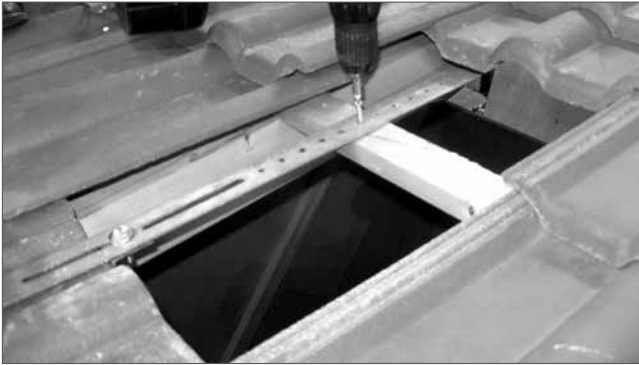


3. Do not step onto the installation rail.

Assembly Instructions



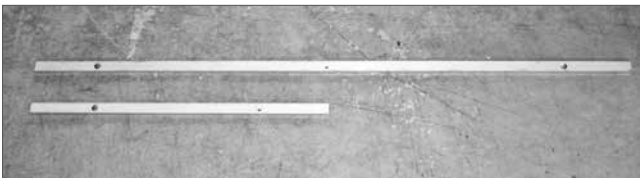
Sheet metal tiles are strongly recommended for use as the substructure when installing Roth universal attachment anchors!



Fix the universal attachment anchor to the roof beam using the dry wall screws provided. Universal attachment anchor must sit in the recess above the tiles.

Important:

The universal attachment anchor must not exert any pressure on the roof tiles!



Assembly rail long

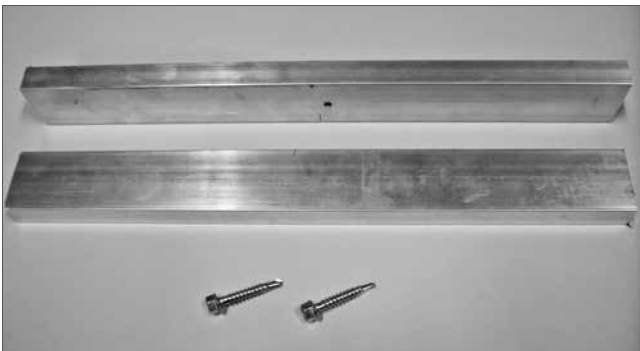
for two Roth HelioPool®

(Material No.: 1115010527)

Assembly rail short

for one Roth HelioPool®

(Material No.: 1115010528)

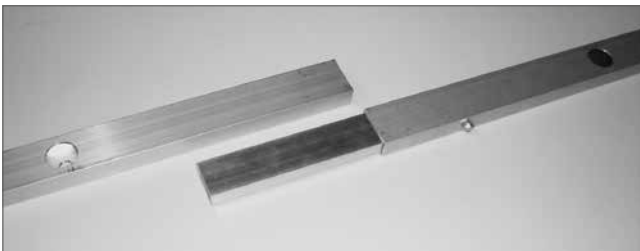


Connection for assembly rail

(Material No.: 1115010544)

Where there are more than two HelioPool® absorbers in a row, please use the 1110-mm-long assembly rail short (Material No.: 1115010528)

When there are three HelioPool® absorbers and the 2230-mm-long assembly rail long (Material No.: 1115010527) when there are four HelioPool® absorbers along with the relevant rectangular connecting pipe.

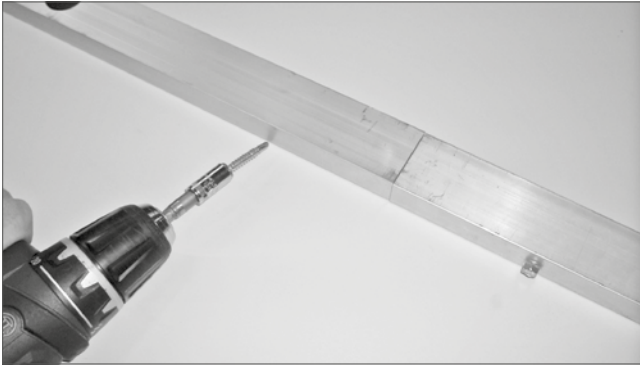


To stabilise the extension assembly rail, each rectangular connecting pipe (300 mm long) must be pushed halfway into the assembly rail (2 x 150 mm).

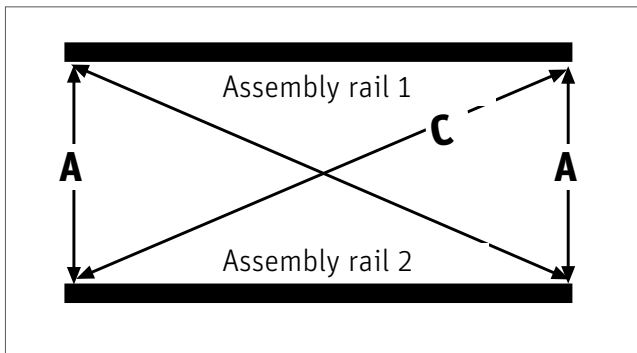


Screw the assembly rail with the rectangular connecting pipe that is pushed 150 mm in once onto the flat side of the first assembly rail around 100 mm from the profile head using the drilling screws provided.

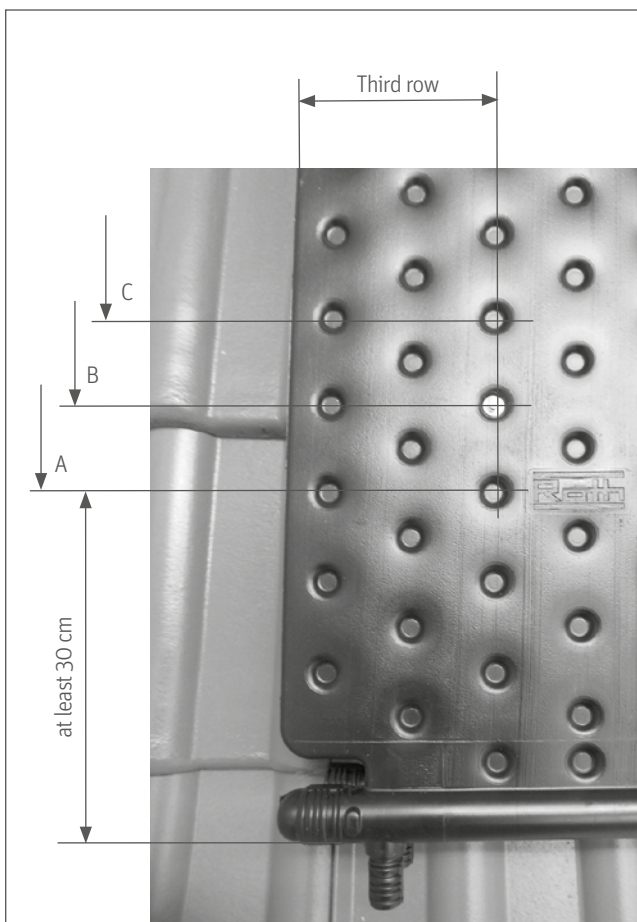
Assembly Instructions



Now slide the extension assembly flush over the rectangular connecting pipe and screw it onto the flat side around 100 mm from the profile head with a drilling screw.



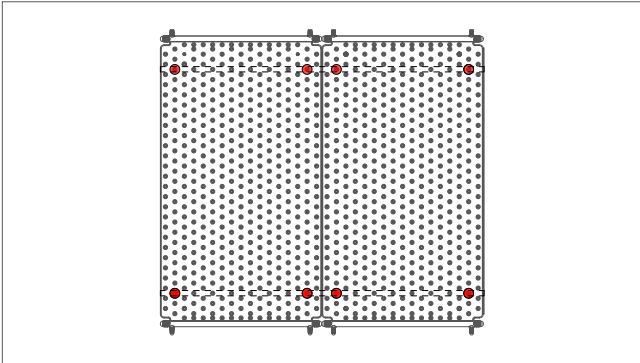
Use a uniform A measurement to ensure profiles are parallel. Use a piece of string to check the diagonals of the assembly rails and readjust differences in length, if necessary. If measurement B = measurement C, the assembly rails are flush and can be screwed. Ensure that measurement A does not change again during readjustment. If necessary, you should mark the position of the rail on the universal attachment anchor for this purpose.



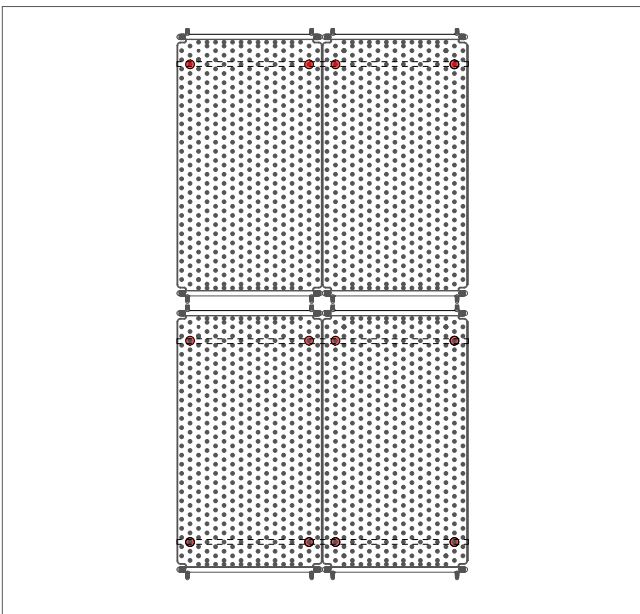
Positioning the fixing screws:

It is best to use the third row to attach the universal attachment anchor to the HelioPool®: see picture.

There should be a distance of at least 30 cm to the bottom, i.e. either the fourth (A), fifth (B), or sixth (C) hole should be used.

**Single-row installation:**

For each absorber, fasten two fixing screws to both the upper and lower attachment anchors.

**Multiple-row installation:**

In each row, fasten the absorber to the upper assembly rail anchors with two fixing screws. The final bottom row of absorbers must also be fastened to the lower assembly rail with two screws per absorber.

Assembly Instructions



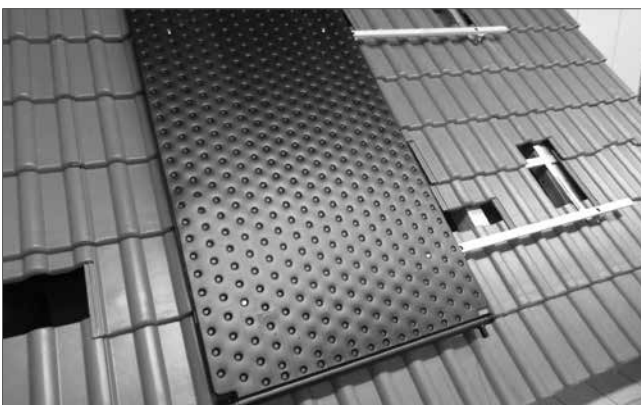
Attach the rail to the universal attachment anchor with the M10 x 30 mm hexagon bolts, washer and nuts provided.



Check the measurements before closing the roof tiles!



Use a 5,5 x 30 mm stainless steel drilling screw with a rubber-lined washer to attach the Roth HelioPool® to the assembly rail.



Place the first Roth HelioPool® flush on the assembly rails.



Insert the rubber-lined stainless steel washer in the middle of the round hollow in the Roth HelioPool®.



Screw the stainless steel drilling screw through the rubber-lined stainless steel washer onto the assembly rail using a standard cordless screwdriver and a holder for a SW8 hexagon socket.



Make sure that the stainless steel drilling screw is only tightened until the rubber on the washer has been pushed out slightly.



Cut the required connection pieces to size with pipe shears/hose cutters.

Assembly Instructions



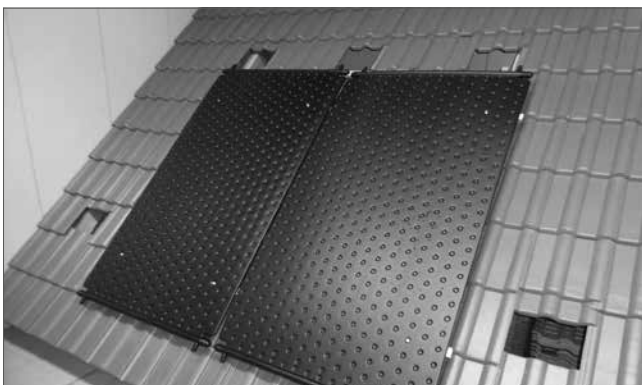
Cut the 40 mm hose that connects to the next absorber to at least 12 cm using the pipe shears/hose cutters.



Slide the 40 mm connecting hose onto the connecting pieces of the first absorber as far as it will go.



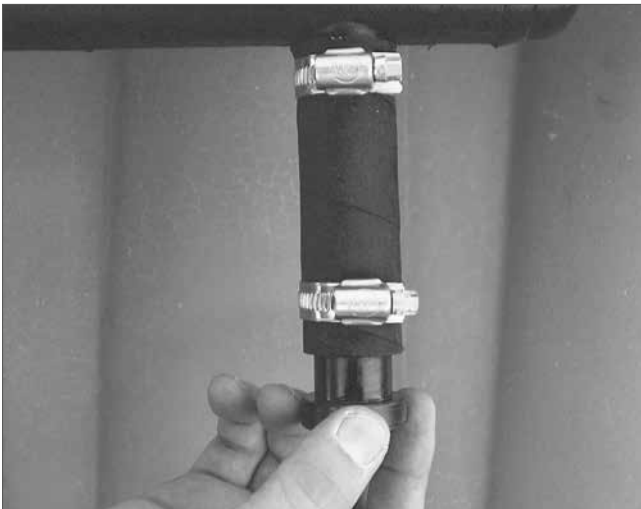
Place the 40 mm clamps provided around 10 mm from the end of the hose and screw in with a SW10 Allen key.



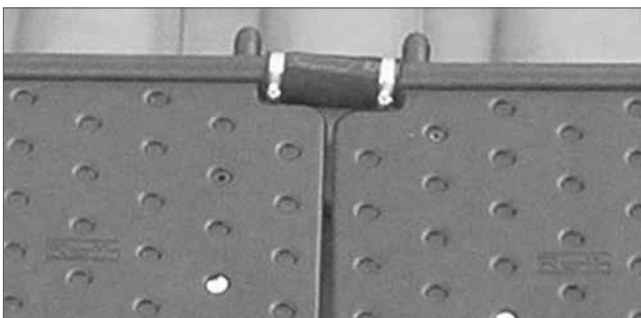
Slide the second Roth HelioPool® swimming pool absorber with the right side showing into the 25 mm/40 mm hose (depending on the type of installation) until it reaches a stop against the first absorber. Then screw it onto the assembly rail through the four pre-selected hollows (as with the first HelioPool®) using the stainless steel drilling screws.



To shut off unused connections ($\varnothing 25$) using the end stopper set, first fasten the fabric hose with hose clamps.



The open end of the hose must be closed with an end stopper and also secured with the hose clamp.



For the hydraulic connection of the absorbers to each other, depending on the required diameter (25 mm or 40 mm), the outlets, which are closed in the delivery state, must be cut open by means of a pipe/hose cutter.

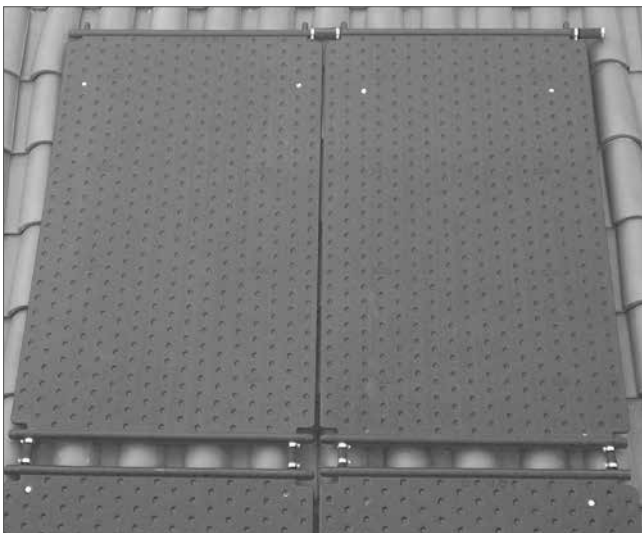
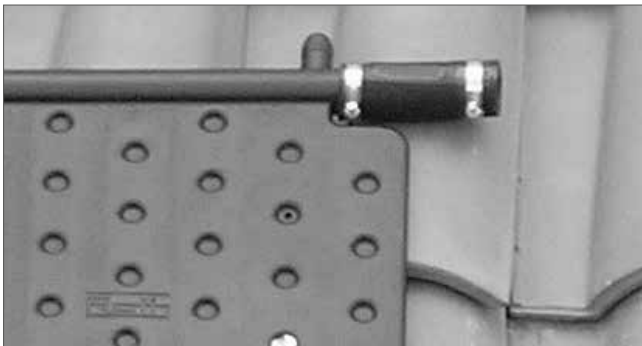
The outlets, which are closed when delivered, must be cut open using pipe/hose scissors.

The open ends are connected to the fabric hoses and fixed with a hose clamp.

Assembly Instructions



After completing the previously mentioned steps, make the connections between the absorber field and the swimming pool circulation system.



The temperature sensor must be attached to the **outside** of the last absorber of the absorber field (in the direction of the swimming pool). For this purpose, the temperature sensor can be fixed on site using a Roth pipe contact adapter or inserted directly into the medium using an immersion sleeve provided by the customer.

Note:

Up to a sensor cable length of 50 m, a cable cross-section of 2 x 0.75 mm² is sufficient. For longer cables, a cable cross-section of 2 x 1.5 mm² is required.

References



Open space installation at the Niedereisenhausen swimming pool



Open space installation at the Wehrheim swimming pool



Small system in Nordhorn



Roof installation at the Gramming swimming pool



Roof installation at the Knüllwald-Remsfeld swimming pool



Roof installation at the Mühldorf am Inn swimming pool



Roof installation at the Holzhausen swimming pool



Roof installation at the Arnstorf swimming pool

Warranty

The warranty services and conditions apply to the Roth HelioPool® in accordance with the warranty certificates enclosed with the products.

WARRANTY CERTIFICATE

Roth Solar Systems HelioPool® swimming pool absorber

1. Within five years of the date of manufacture, at our discretion, we provide free product replacement or carry out an appropriate repair if damage occurs to the swimming pool absorbers manufactured by us, which can be attributed to material or manufacturing defects and which significantly limits the performance of the solar heating system and jeopardises the leak-tightness of the roof in a concrete way.
2. The requirements for this warranty are:
 - a. The exclusive use and fitting of all the system components belonging to the respective Roth solar heating system;
 - b. Documented compliance with the planning, installation and operating instructions valid at the time of installation;
 - c. That the effects of frost are not responsible for the damage that has occurred (the installation must be drained in winter if antifreeze is not used);
 - d. Compliance with the standards and directives valid for these works and the applicable adjoining works in connection with the relevant Roth solar heating system;
 - e. That the installation company is a recognised and authorised specialist company and this company has provided confirmation on this certificate with their name and signature;
 - f. The immediate return of a copy of the fully completed warranty certificate to us;
 - g. immediate reporting of damage and simultaneous dispatch of the warranty certificate to us and
 - h. That the claim is made within the warranty period.

Accessories such as collector connectors, end stops and attachment materials are excluded from the warranty service.

The statutory consumer protection regulations remain unaffected by this warranty.
This warranty is subject to German substantive law.

The above warranty concerns:

Building _____
Client _____
Date of manufacture _____

In each case, the system components belonging to the relevant Roth solar heating system on the day of the installation were delivered and installed in full.

Specialised company _____
Signature Stamp Date of installation

Commissioning _____
Signature Stamp Date of the commissioning



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E-Mail service@roth-werke.de · www.roth-werke.de

11/21 Subject to technical modifications.

Our strengths

Your benefits

Innovation

- > Early identification of market requirements
- > In-house materials research and development
- > In-house engineering
- > The company is certified in accordance with ISO 9001

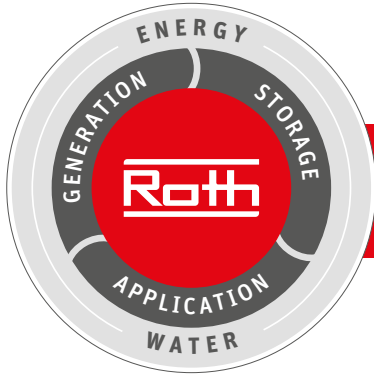
Service

- > Extensive field network of qualified sales professionals
- > Hotline and project planning service
- > Factory training courses, planning and product seminars
- > Fast availability of all Roth brand product ranges throughout Europe
- > Comprehensive warranty

Products

- > Complete range of easy-to-install product systems
- > Manufacturing expertise for the complete product range within the Roth Industries group of companies

A large, white, stylized version of the Roth logo is centered on the page. The logo consists of the word "Roth" in a bold, sans-serif font, with horizontal lines above and below the text. The background is a dark, textured grey.



Roth energy and sanitary systems

Generation

- Solar energy systems <
- Heat pump systems <

Storage

- Storage systems for
- Drinking and heating water <
- Combustibles and biofuels <
- Rainwater and waste water <

Use

- > Radiant heating and cooling systems
- > Apartment stations
- > Pipe installation systems
- > Shower systems



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