

SolarPowerPack®

Heating with the roof's energy



Dächer, die's drauf haben

NELSKAMP

Solar-technology without architectural compromises

Innovative solar technology and roof aesthetics are combined. The solution: The newly developed Solar-Roof Tile-Collector-Heat pump-System – a convincing and patented innovation.

Solar-Roof Tile-Collector

An easy principle: The collector has been designed to the exact shape of the Finkenberger concrete roof tile. The collector is a double wall aluminium-full surface-absorber with a powder coated surface which is readily fixed to the Finkenberger concrete roof tile. A special solar medium is circulating through the collectors and absorbs the thermal energy of direct sun exposition and of the ambient temperature.

This combination allows for high collector temperatures and a high system efficiency already after a short sun exposition. The bottom part of the collector and the circulating solar media is always held at a temperature which is between 6 – 10K cooler than the ambient temperature. The solar liquid therefore collects energy due to the temperature difference between the air and the roof – often a considerably higher temperature than the outside temperature.

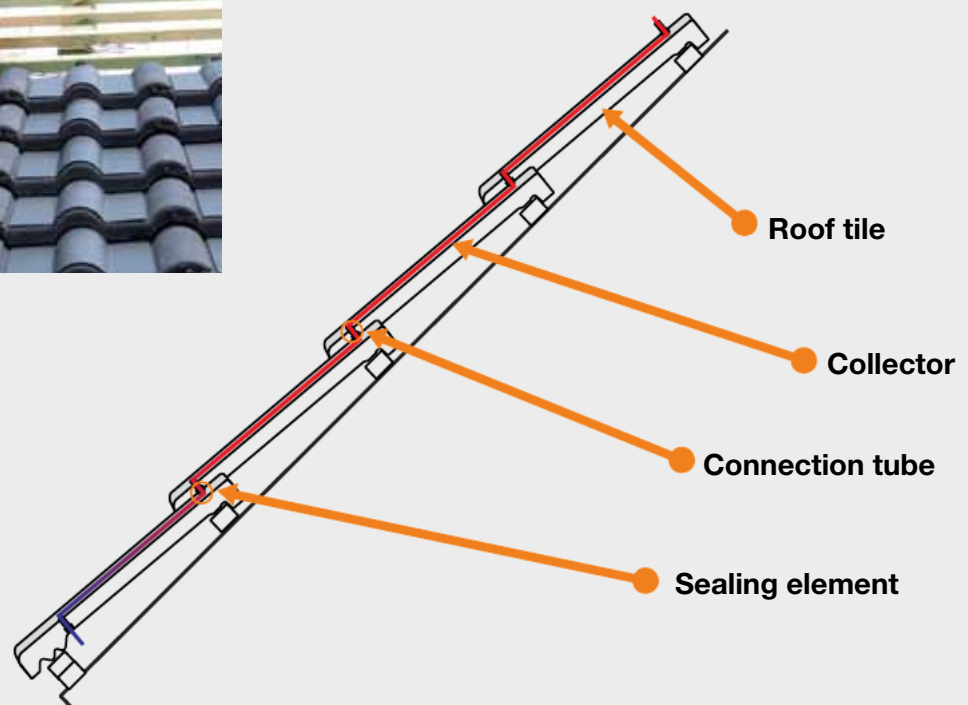


The patented Solar-Roof Tile-Collector-System

The temperature achieved from direct solar radiation in summer can directly be used for the provision of warm water for showering and washing. At indirect solar radiation or only ambient temperature the warmed up solar liquid is brought to the desired temperature level for heating and warm water with a special solar-heat pump.



The solar-roof tile-collectors are connected via a plug system. The connections provide a complete collector area on the roof which is hardly visible. The solar-roof tile-collectors are currently available in black, granite, brown and red.



Heat comfort environmentally friendly The SolarPowerPack® - Heat pump

SolarPowerPack® - Heat pump

The center piece of the new SolarPowerPack® is the connection of the solar-roof tile-collector with the heat pump which combines heat,- refrigeration and modern control technology in a unique way. Using the SolarPowerPack® - Heat pump makes the sola-roof tile-collector-system to an efficient and economic heating system. An ingenious and future oriented heating system which has not been existing on the global market yet.

The SolarPowerPack® - Heat pump has set a milestone in heating technology. The working-principle is as easy as ingenious and allows complete independence from oil and gas.

The heat pump supplies the collector area on the roof with the special solar liquid via an influx hose. The collector area is being perfused by the special solar liquid. The distribution of the solar liquid for the operation of the heat pump or directly to the heat reservoir is being controlled by valves in the heat pump which organise the distribution depending on the temperature level of the solar liquid.

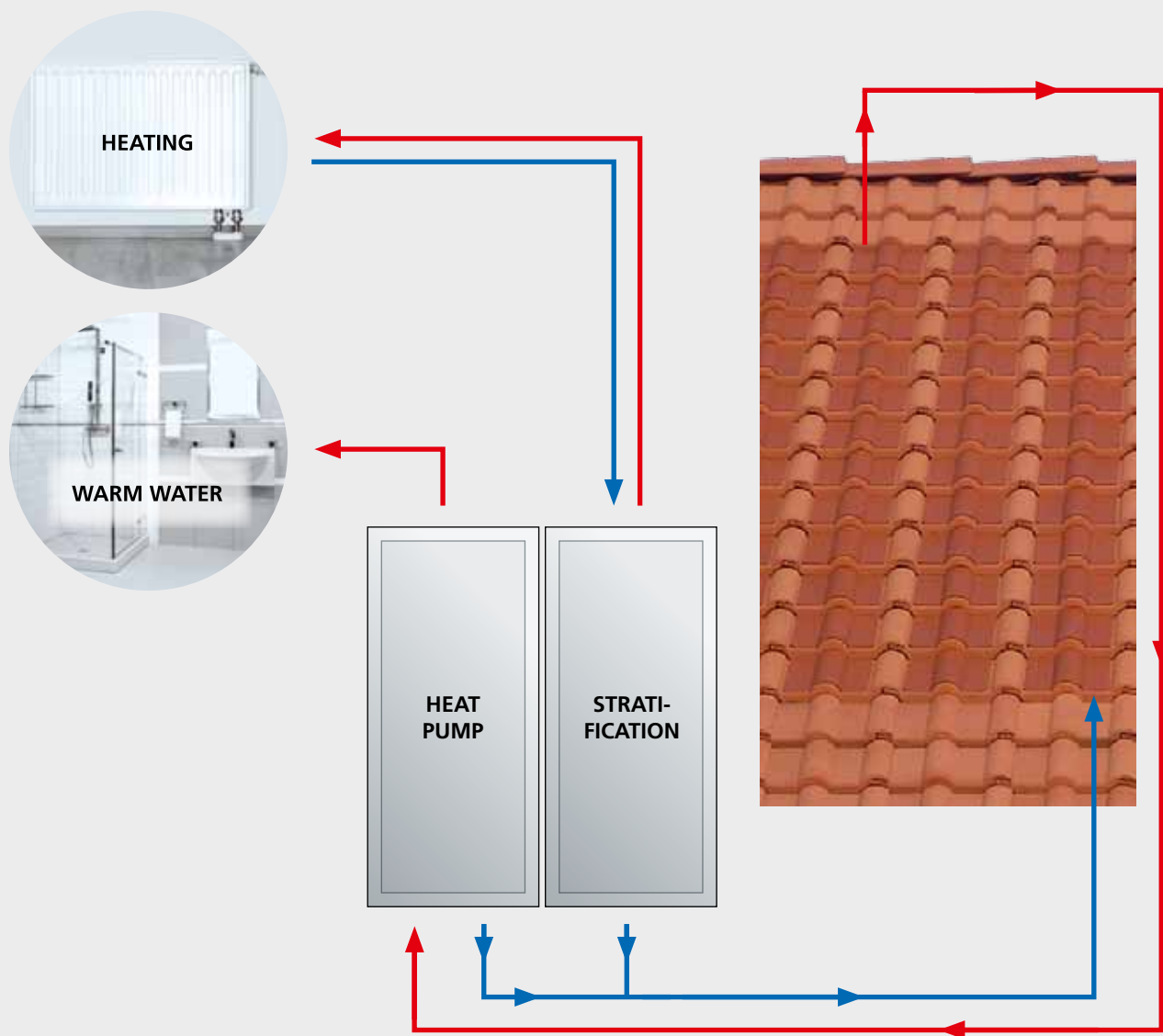
The solar-heat pump can best be compared to a medium – water heat pump. It offers apart from the proven heat pump technology also a complete solar-

thermal system. We therefore achieve a so far un-reached efficiency in the heat pump technology.

During the operation as a solar heat pump it utilizes the solar liquid in order to produce heat and stores it directly in the reservoir. Furthermore the solar-roof tile-collectors act as an absorber for the ambient temperature and give that energy to the solar-heat pump. Also in winter the energy collection from the roof is secured. With this technology it is ensured that you always have the sufficient amount of heat energy for warm water provision and heating operation available, independent from the season and weather influences.



The SolarPowerPack[®] functional principle



The Solar-Stratification-Reservoir and its' technical data

Solar-Heat Reservoir

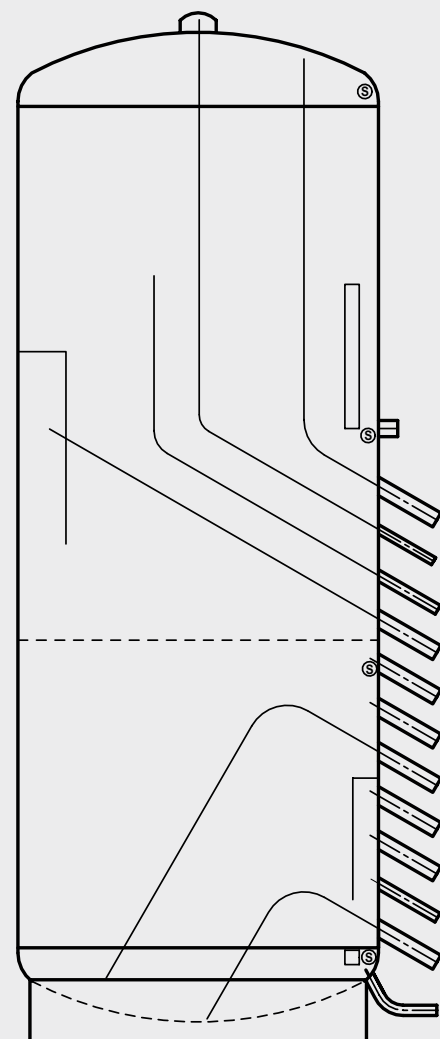
The solar-stratification-reservoir offers standard volumes from 60l to 1000l. In there the heating water is stored. The fresh-water-station, which is placed in the upper part of the storage reservoir, provides the warm usage water hygienically impeccable.

For that the upper part of the reservoir is heated to the warm drinking water temperature (i.e. 50°C) and the lower part to the temperature needed to heat the building (i.e. 35°C). Therefore a permanent availability of fresh water at a comfortable temperature is ensured.

Technical Data

Solar-roof heat pump type:		KSEA 07 T10	KSEA 10 T10	KSEA 13 T10	KSEA 17 T10
B0/W35 (5K) According to EN14511	Heating Power Efficiency (COP)	7,6 4,8	10,3 4,9	13,5 5,0	17,5 4,9
B5/W35 According to EN14511	Heating Power Efficiency (COP)	8,9 5,6	12,1 5,7	15,8 5,8	20,5 5,6
B0/W55 According to EN14511	Heating Power Efficiency (COP)	7,4 3,0	10,0 3,1	13,0 3,1	16,8 3,1
B5/W55 According to EN14511	Heating Power Efficiency (COP)	8,2 3,3	11,0 3,4	14,4 3,4	18,6 3,3
B-12/W35 (5K) According to EN14511	Heating Power Efficiency (COP)	5,1 3,1	7,0 3,2	9,1 3,3	11,8 3,3
Measures W x D x H		1.200x1.500x2.200			

30.05.2013, technical data is subject to change



Roofs which got it – and that in four great colours!

Works all year round – with any weather.
Looks like a pantile and is available in black,
red, brown and granite.





THE ADVANTAGES OF THE SOLAR-ROOF TILE-COLLECTORS:

- Optimal roof aesthetics
- Collectors harvest energy throughout the year
- Energy harvest also at darkness, during rain and winter
- Easy installation of the solar-roof tile-collectors
- No risk of overheating
- Economic, alternative energy provision
- Fully automated controls for summer and winter operation

You do have a suitable roof area?
Please ask for further information!

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QVSD
Qualitätsverband Solar-
und Dachtechnik