

*SolteQ-SolarRoof - The Roof of the Future:  
... a Roof for Generations*

Main catalog 2021  
SolteQ-SolarRoofs 2.8



The Energy source of the Future: Your Roof

*Clean and free Energy for Electricity and Heating*

**[www.SOLTEQ.uk](http://www.SOLTEQ.uk) + [www.TheSolarroof.uk](http://www.TheSolarroof.uk)**



**SolteQ**  
Energy Concepts

The logo features a stylized house silhouette above the brand name 'SolteQ' in a large, bold, sans-serif font. Below it, the words 'Energy Concepts' are written in a smaller, clean font.



# POWER STATION SUN

There is enough energy

**100% Energy  
charging over the sun  
Electricity and heat ... completely for free !**

*The Most Beautifull Planet of the Galaxy*

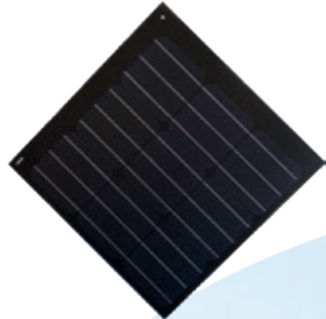
## Our Sun

Distance from earth:	150 million km
Diameter:	1,39 million km (109-times diameter of earth)
Age:	4,5 billion years
Surface Temperature:	5.800 Kelvin
Mass:	1 989 000 000 000 000 000 000 000 million kg

The Sun burns 637 million tons of hydrogen and generates 632 million tons of helium and 385 billion billion megawatts of energy. This energy equates to 1,300 W per square metre here on earth, and is 10,000 times more than the total needed by mankind. There is more than enough energy for heating and electricity available. There is no need for us to burn other less environmentally-friendly resources and increase CO2 emission's.



# Solteq



*A Roof like a Diamond*

**Building integration with style:  
classic and rustic slate-look, combined  
with modern photovoltaic technology**

## *The Exclusive Premium-Roof of the Future*

*Building Integrated Photovoltaics at its best.*

- High performance PV-module with 156x156 mm monocrystalline cells producing over 210 Wp/m<sup>2</sup>
- Easy to install on conventional laths
- Maximum and efficient use of roof area
- Up to 36% more efficiency than a conventional PV roof
- Surface with self-cleaning effect
- Safety glass
- 4 mm solar safety glass, mechanical loading up to 8500 Pa
- Anti-reflexion, prismatic glass
- 100% quality controlled product
- TPS certified
- Power tolerance +3%
- Frameless design
- 100% waterproof and storm-resistant
- UV and weatherproof
- Integrated safety system, automatic or manual safety
- Overheat protection
- Fire prevention
- Efficiency 15 years: 90% of Nominal Power
- Efficiency 25 years: 85% of Nominal Power
- Efficiency 40 years: 80% of Nominal Power
- Product warranty: 5 years, expandable up to 20 years
- **Estimated Lifetime: >50 years with >>90% power**
- Made in Germany



[www.TheSolarrof.uk](http://www.TheSolarrof.uk)

**MADE IN GERMANY**



# Dear eco lovers and homeowners,

We are very pleased that you have shown an interest in the SolteQ energy roof. Our goal is to engage with like-minded environmentally friendly individuals who not only care about the planet but also appreciate technological innovation combined with aesthetics. We want to provide you with clean energy production, a clean environment and quality of life with our energy concepts and products. We would like to show you that this improved quality of life is relatively easy to achieve and what it means to live in a beautiful environment, in a beautiful house and not having to worry about ever increasing electricity and heating costs. Quality of life is to live in a beautiful and clean environment, to own a house that you can be proud of and drive a car that does not cause emissions and make you feel good about contributing to a clean environment and a clean planet.

A house is always going to need a roof; so why not an energy roof. A roof that can make energy bills a thing of the past, a roof that not only provides shelter for your home and family but also saves you money on your energy bills. A conventional passive roof costs money to buy, this expenditure is never re-couped unlike a SolteQ energy roof which can pay for itself in under 10 years depending on the size of the roof in question and the household's energy demand.

Our vision: A roof is there to keep the house dry and look good. What if it could also generate electricity and heating energy? That would be an ideal scenario, right?

The SolteQ roof can do just that!

Roofs exist but are largely unused for any other purpose other than providing protection from the elements. EVERY house has the potential to generate energy to a greater or lesser extent. With the SolteQ concept, the roof of a typical family home will generate a surplus of energy, so it's conceivable that most houses could meet the bulk of their energy demand from that provided by their own roof. In addition: If every suitable roof surface were used at a given location, it is already possible today to build a regional power grid by means of many smaller individual energy producers.

In the medium term, all coal and nuclear power plants could be shut down and 100% clean energy delivered to the grid. A decentralised network of many small energy power plants that use the electricity generated themselves and deliver the surplus to the public grid. In this way, everyone can simultaneously use the network as a means of power storage, become an electricity supplier, be part of the future decentralized energy structure of many small and above all 100% clean "small power plants". No environment is destroyed, no open spaces need to be cleared or forests cut down to gain land for energy production, and incidentally, the aesthetics of the house and the landscape is preserved.

We would be happy to assist you in taking another step towards a clean environment and free energy from our sun by showing you how to utilise your roof as a source of green energy and make energy bills a thing of the past.

Dipl.-Ing.

and the SolteQ-Energy-Team wishes a future full of energy

## The Energy source of the Future: Your Roof

Clean and free Energy for Electricity and Heating




Sun is life,  
Sun is energy,  
Sun is SolteQ.



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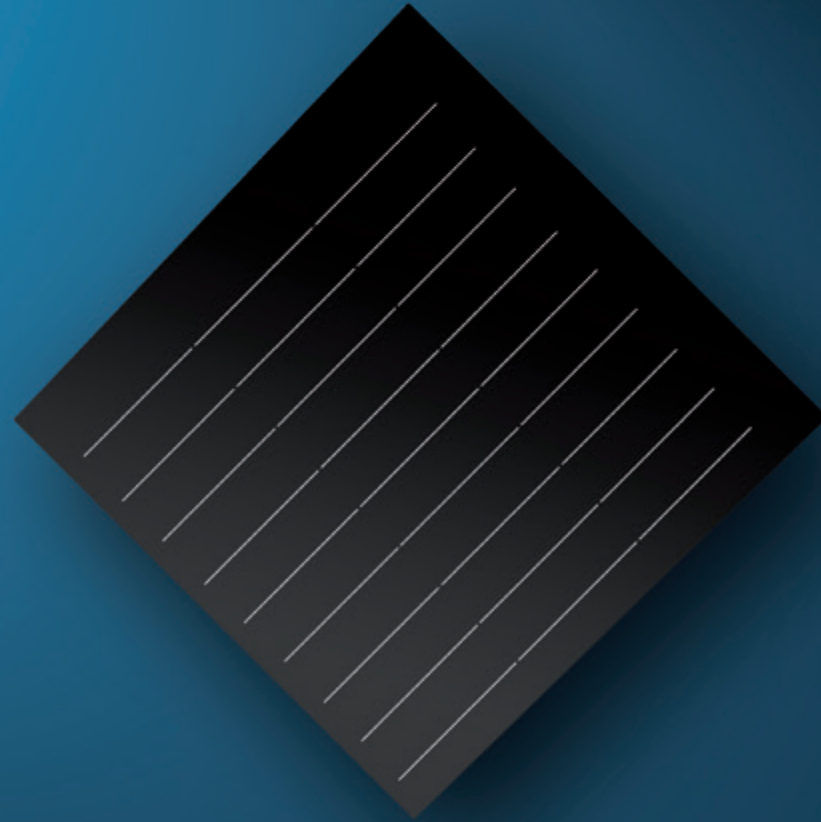


## *100% natural and clean energy generation*

*The amount of energy we get from our sun is completely sufficient to meet the energy needs of a household.*

*There is an undreamed-of amount of energy on every suitable house roof that can be used to generate electricity and heating. Supplemented by electricity storage and possibly geothermal energy, everyone can contribute to making the world a little cleaner.*



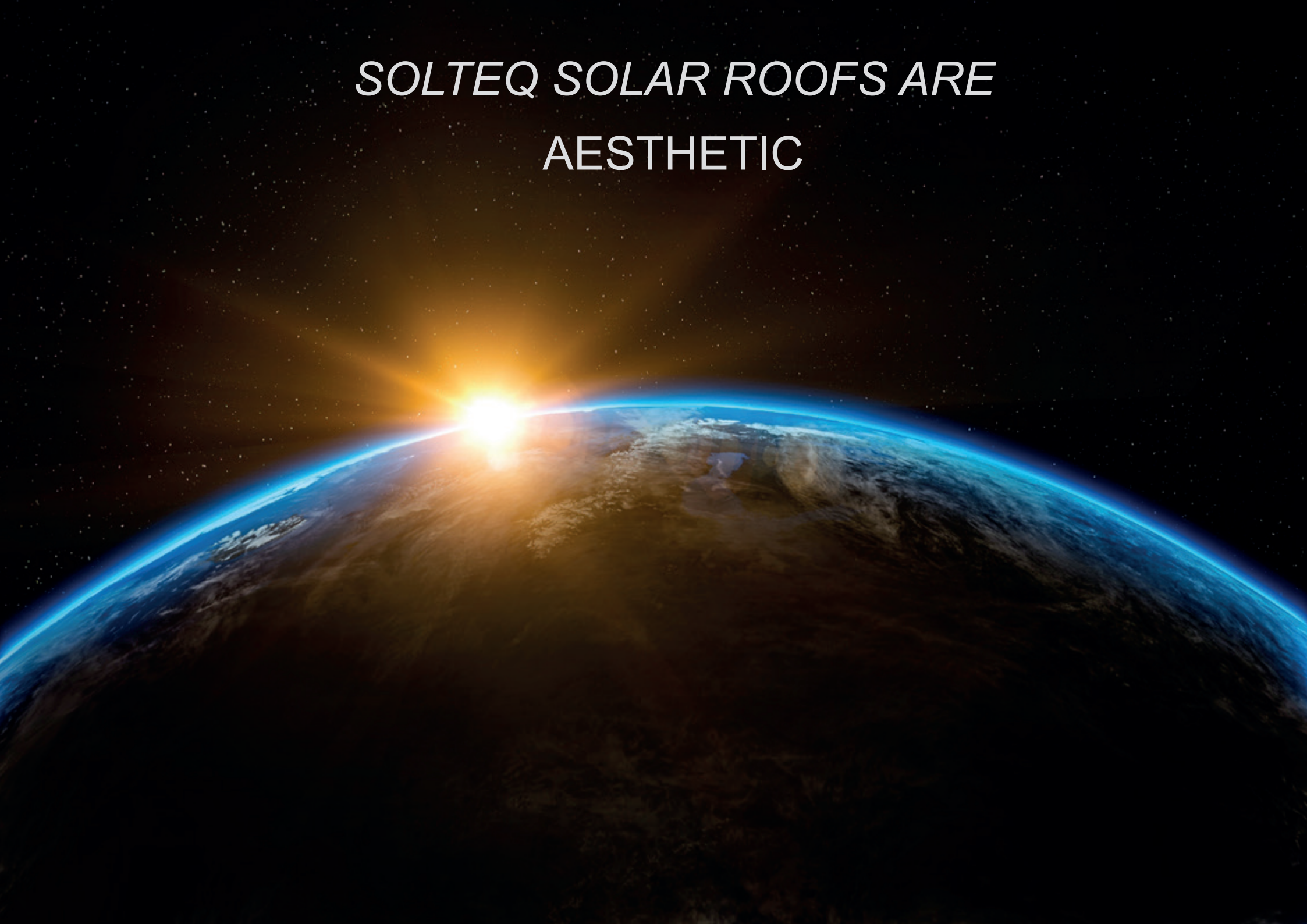


**SolteQ**  
THE ULTIMATE SOLAR SOLUTION





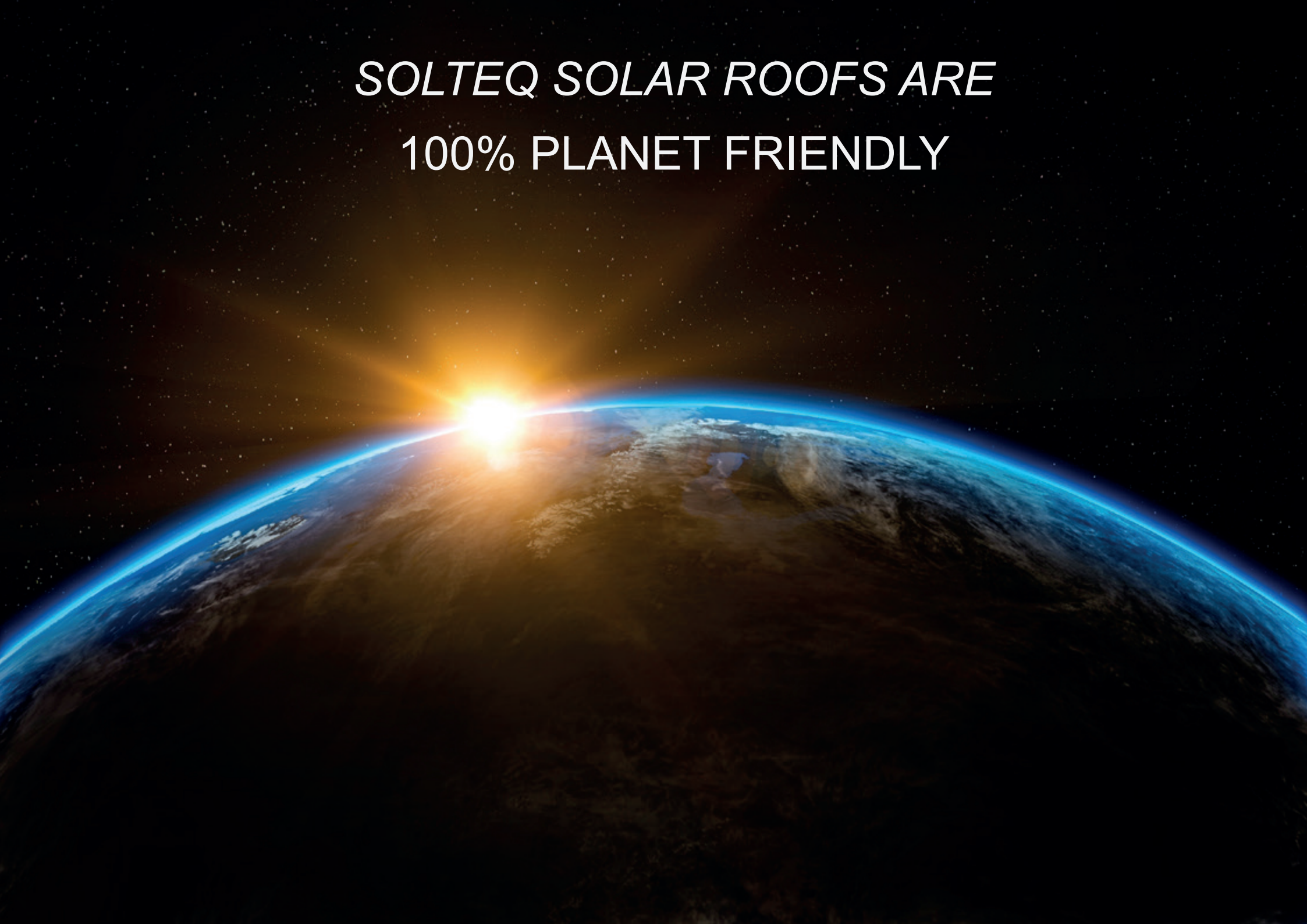
*SOLTEQ SOLAR ROOFS ARE*  
AESTHETIC







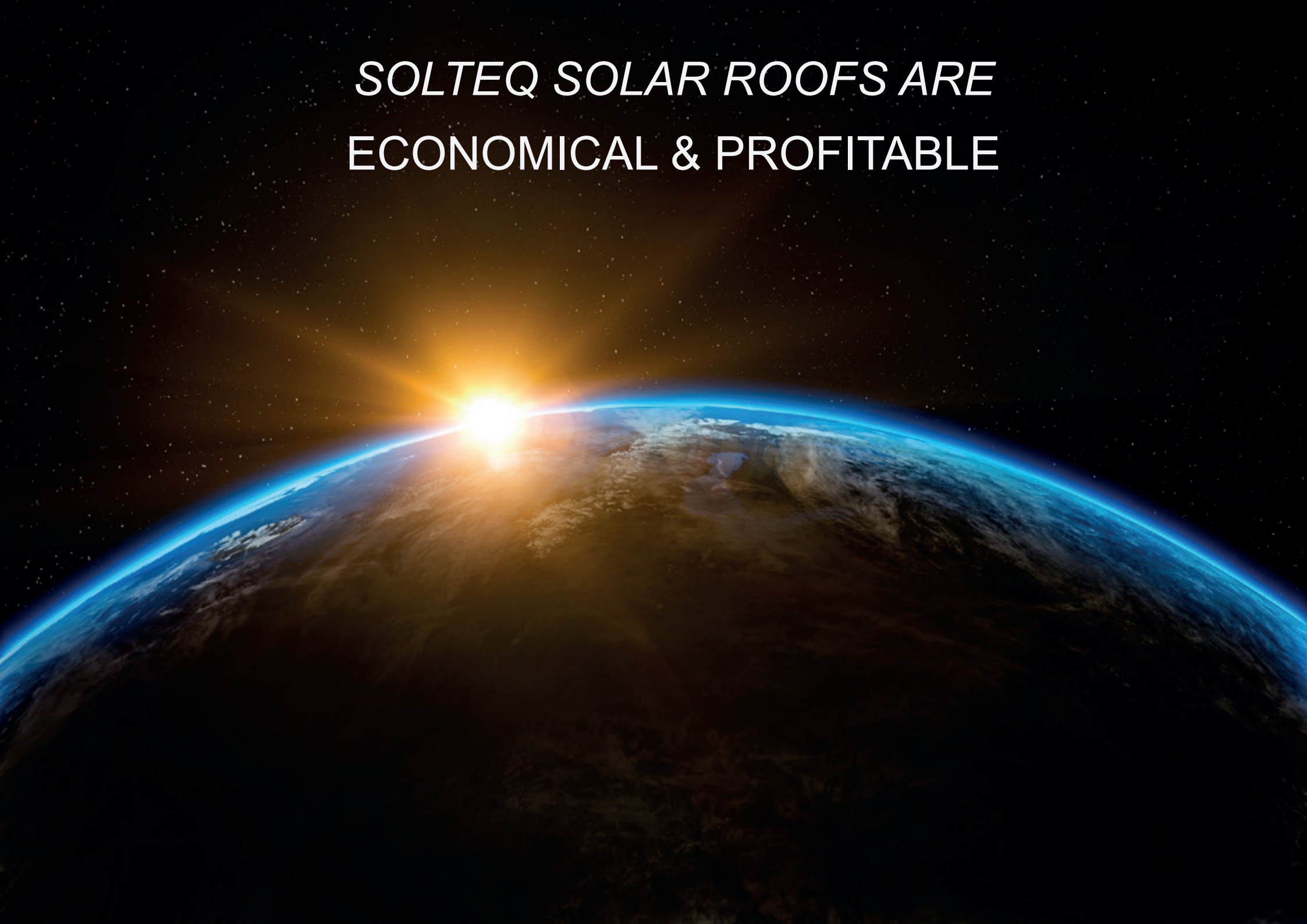
*SOLTEQ SOLAR ROOFS ARE*  
**100% PLANET FRIENDLY**







*SOLTEQ SOLAR ROOFS ARE*  
ECONOMICAL & PROFITABLE





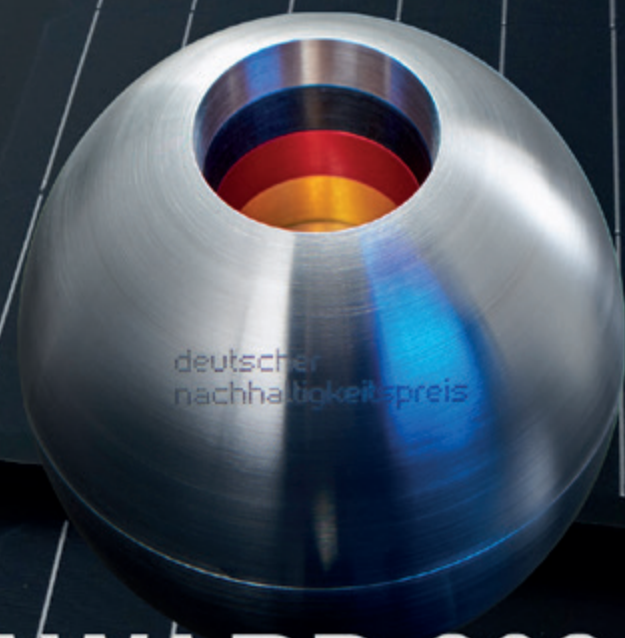




**Solteq**

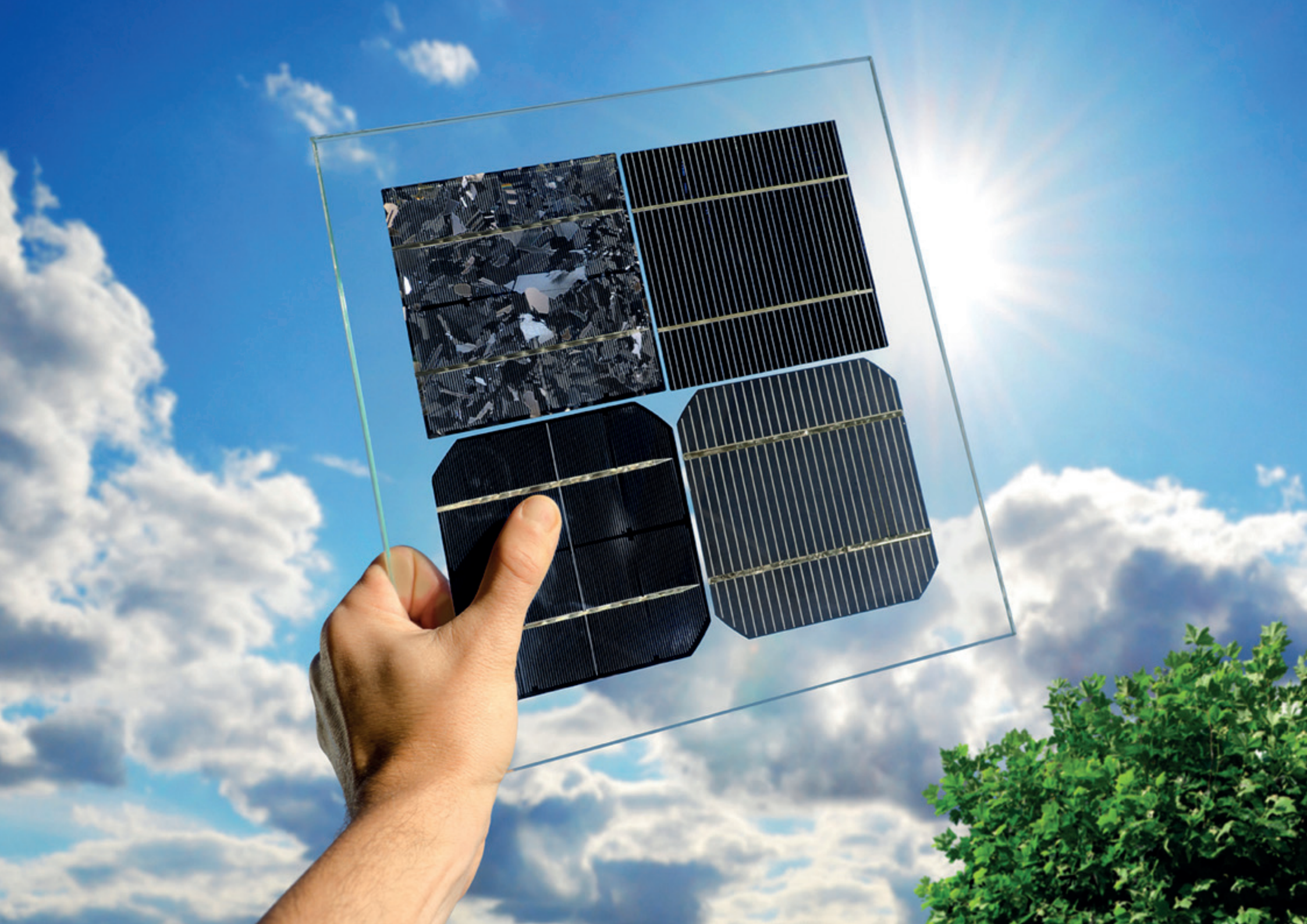
**SOLARROOFS**

The ENERGY of the FUTURE



**WINNER OF  
GERMAN SUSTAINABILITY AWARD 2021**







# SOLTEQ SOLAR ROOFS ARE SIMPLY PERFECT !

## *The SolteQ roof*

- *protects*
- *generates electricity*
- *generates thermal heat*
- *saves money*
- *earns money*

*SOLTEQ SOLAR ROOFS are no costs.  
They are an INVESTMENT - they make money for you.*

# SolteQ



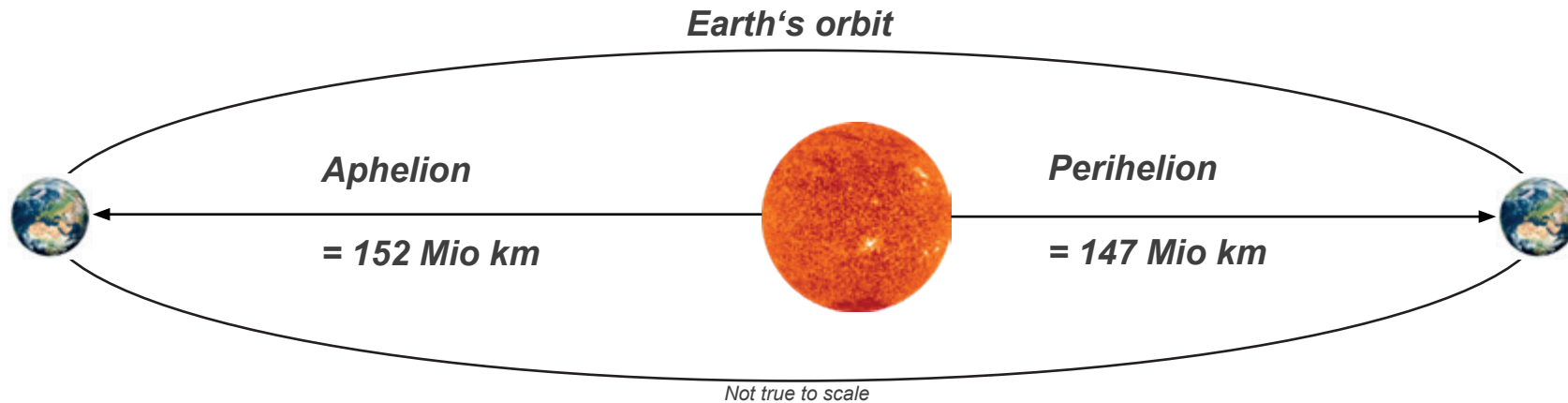
*We do not live alone on this beautiful planet.  
We should appreciate and respect the beauty of our planet.*

*Every day...  
we burn 90 million oil barrels,  
or 45 supertankers.  
Day after day...*





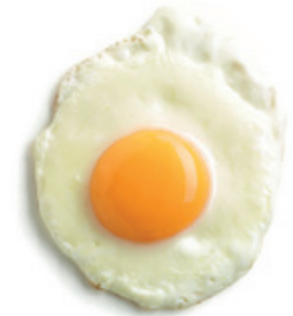
# The energy of the sun



**And yet every square meter has 1,400 watts of energy!**

**Totally free  
Free for everyone  
Zero pollution**

**... and we are still burning oil and gas?**



Quiz question:

- a) The roof surface is present
- b) The energy is there

What do we do ?

Do not use and buy oil or gas? And subsidize the oil industry?

Of course not !

Use the energy you already have on the roof anyway!

We help you!

SolteQ has set itself the goal of harnessing this energy with maximum effectiveness.

Incidentally, no jobs are lost if you do not support the oil industry. On the contrary, many more jobs are being created in a new business area: clean energy production.

**The fried egg example:**

That's so much energy that we can roast a fried egg on our bonnets.

And that from a distance of 150 million kilometers!

Let's be honest: even with this simple example, we still can not really imagine what gigantic amounts of energy our sun is producing.

For 4.6 billion years ...



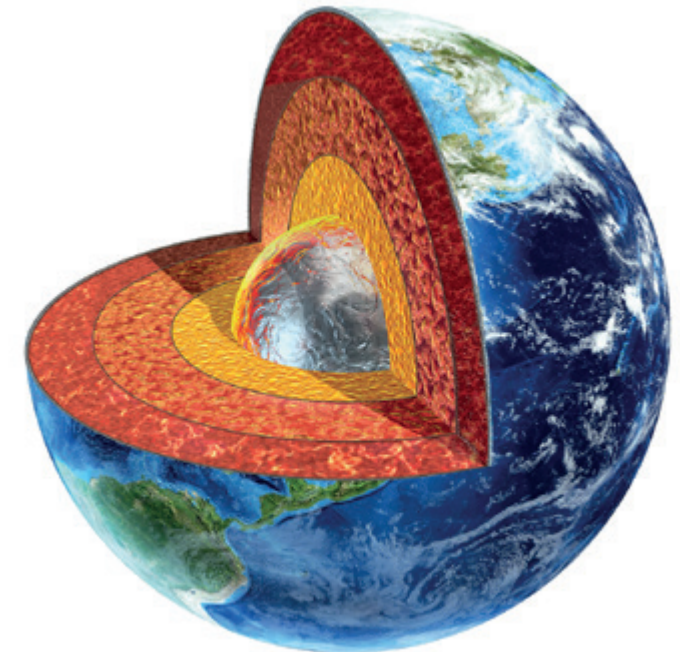
# SolteQ solar roof tiles - change the world

Unbelievable amounts of energy are also present inside our earth.

Ways to use the sun's energy:

- Solar roof for electrical power generation for household electricity
- Solar roof to charge electric cars
- Solar roof for thermal energy generation for heating and hot water
- Air / water heat pumps powered by a solar roof
- Geothermal heat pumps powered by a solar roof

The basis of all this is the use of the energy that lies on your roof. If it is not used, it fizzles. It is available in any case. In recent years, highly interesting technologies for the use of solar energy have been developed. The solar roof that generates electricity and heating energy, the heat pump that collects and concentrates the least amounts of energy from the ambient air, the geothermal heat pump, storage solutions for electricity and heat, etc. A completely new way of generating energy has been developed, which will be used in the future. At the beginning of industrialization, oil and gas have rendered good services, without which we probably would not have gotten this far. Now it is time to move on to the next gear and switch to clean power generation. No matter which of the options you choose, the goal is self-sufficiency, which is possible with the SolteQ solar roof. A ground source heat pump can also be operated free of charge via the solar roof.

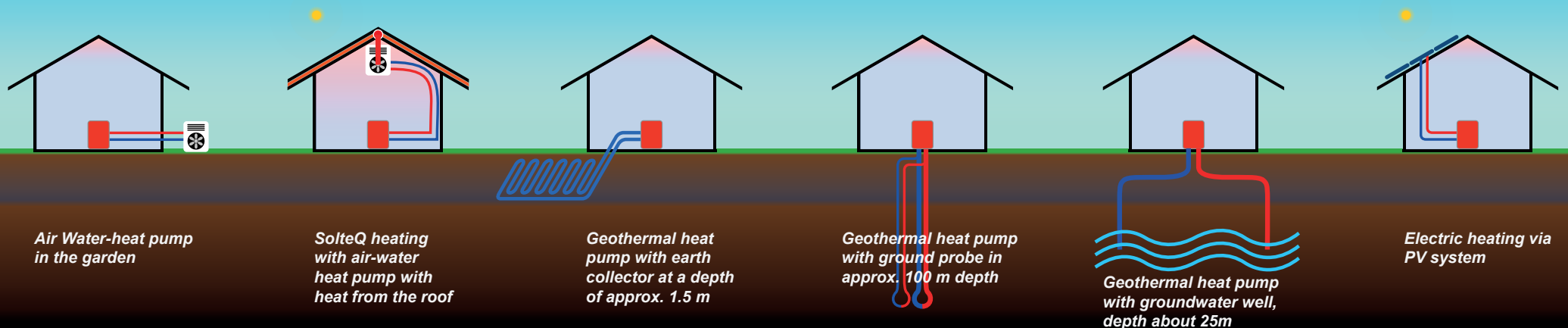


Useful information

Temperatures inside the earth:

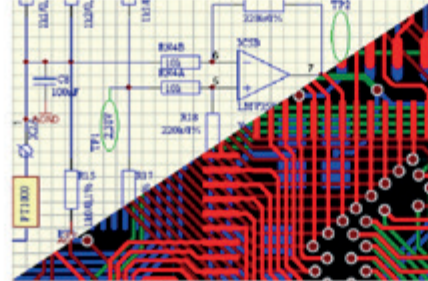
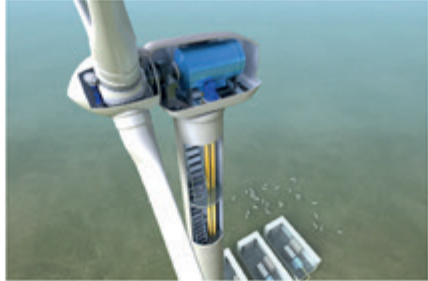
Upper crust:	0-40 km	0-900 ° C
Lower crust:	40-2,900 km	900 ° C
Outer coat (liquid):	2,900-5,100 km	
Upper coat:	900-1,400 ° C	
Lower coat:	1,400-2,500 ° C	
Outer core:	2,500-3,000 ° C	
Inner core (fixed):	5,100-6,370 km	3,000-6,000 ° C
Per 100m, the temperature rises to 3 ° C, so that you meet in already 3km on boiling water.		

## General possibilities of solar heat recovery



# WELCOME IN THE SOLTEQ GROUP

## Product areas of the SolteQ group:



### solar roofs

SolteQ Solar GmbH  
(in licence)

The roof of the **future**  
**One roof - 6 functions**

### wind power

SolteQ Energy GmbH  
with SolteQ Hydro-Drive

We didn't reinvent wind power.  
We have perfected the drive train.

### Water extraction

SolteQ Energy GmbH

Free drinking water for everyone  
SolteQ solves the worldwide drinking water problem with the SolteQ-FreshWaterMill  
Seawater desalination  
100% clean drinking water for 0.0 euros  
Drinking water through pure wind energy

### Industrial electronics

BessTeQ GmbH

Industrial electronics development and series production  
The all-round service provider with Super rapid prototyping

### SolteQ Solar Yachts

SolteQ Energy GmbH

E-mobility on the water  
Motor yachts can now sail with pure solar energy. No more gasoline, diesel or pollution.

*Founded in the 1970s as a pure, family-run company as an electronics company, the SolteQ Group exclusively develops and produces innovative technologies for clean and free energy supply from our sun and a clean planet. The SolteQ group now consists of 15 global companies, each of which develops and markets its own product area. The SolteQ Group has been in existence for over 40 years and employs over 250 people worldwide in research & development, production and sales. And therefore we are proud.*

## Technologies for a clean environment.

### Clean energies with photovoltaics and wind energy!

*Photovoltaics or solar cells produce electricity from light. Without fuels or any additives. For many years without wear and tear and also without maintenance. Wind energy generates electricity from pure wind power. Already today it is possible to generate electricity in an aesthetic and environmentally friendly way. Electricity and heating energy can be generated in an absolutely environmentally friendly way without burning anything. The components can also be produced with these energies, which is also environmentally friendly. It is no longer necessary to burn oil, gas or pellets. We show you how easy and even inexpensive this is. Cheaper than burning oil and gas.*



## *Technology, energy and clean environment ? It works and its available now from SolteQ. Its also affordable.*

*Here at SolteQ we appreciate the need to protect our beautiful planet.*

*We recognise that clearing large areas of natural forest in the name of progress and to create energy, energy that can be sourced by other environmentally friendly means is unacceptable. We recognise the need for us all to protect our natural environment and its wildlife, rather than destroying and eradicating anything that cannot protect itself against man's intervention.*

*A species that believes itself to be the most intelligent life-form should actually protect its environment and wildlife, rather than destroying and eradicating anything that can not protect itself against man's modern weapons. Oil, which has created our nature over a period of 50 or 300 million years, is simply burned in a short time. Oil is in some form in almost all products of daily life. Valuable raw materials from which plastics, pharmaceutical products, as well as medicines and cosmetics and much more, could be produced. Even in the sofa, CD, TV, cars are next to metals, mainly plastic, so petroleum. 80% of the world's oil is simply burned.*

### **Fossil fuels are no longer up-to-date!**

*We no longer need to rely on fossil fuels for energy, it is already possible to meet the total energy needs of humanity from clean energy sources. Let SolteQ show you how.*

### **The SolteQ-Vision**

*Our sun provides more than 11,000 times more energy than all humanity needs. Much of it falls on our rooftops. Roofs are readily available, every house has a roof. The sun shines on it and that energy can be harvested and used to generate electricity and to provide heat energy for household heating and domestic hot water heating. It makes sense to use this energy instead of spending money on the purchase of electricity, oil, gas or pellets! Clearly not all roofs are suitable due mainly to shading factors, but if all suitable roofs worldwide were SolteQ Energy Roofs and designed to generate energy with a little surplus, the world's entire demand for energy could be met. So it is quite feasible for the world to rid itself of all nuclear and fossil fuel based power plants and their negative environmental impact and legacy.*

*Our engineers at the SolteQ Group are committed to developing technologies that produce energy and drinking water, purely from the clean energy sources, without fuels and pollutants. The roof surfaces already exist.*

*A roof that's more durable and stable than a normal roof:*

*My solar roof,  
my SolteQ Solar Roof*



# King of the roofs and full of energy

## The SolteQ Energy Roof



A roof like a lion



## Consider the following benefits of a SolteQ Energy Roof:

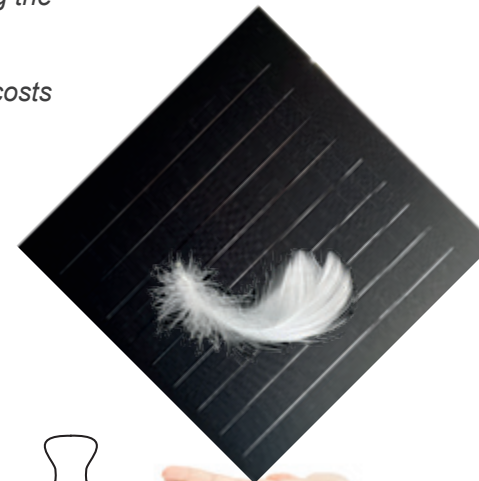
- Improved standard of living
- High product quality
- Contribution to a cleaner environment
- A Long term asset durable asset,
- Autarky
- German Quality
- Good investment
- Safe and good return on investment.
- Additional income during the retirement years.
- Independence from energy price rises.
- Active participation in the reduction of CO2 levels.

*You not only save, you even earn money with it!*

*The SolteQ energy roof is the cheapest roofing in the world:*

- a) it does not cost you anything, because it pays for itself.*
- b) It offers a great return on investment with excellent financial benefits during the later retirement years.*

*.. A conventional roof costs money which is never recouped, the SolteQ roof costs money but then continues to generate savings for the life of the roof.*



**The low weight** makes SolteQ solar roofs particularly interesting for renovating old buildings

only  
14 kg  
per m<sup>2</sup>





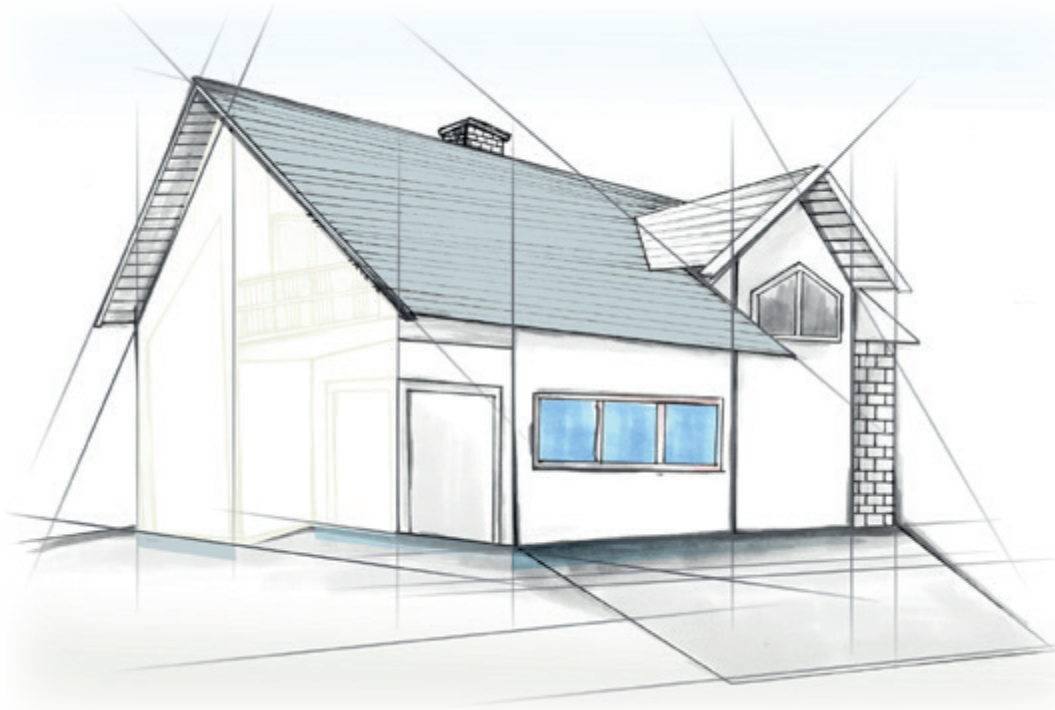


*With every square meter of SolteQ-Solar-Tile you exchange for your traditional roof tiles, you contribute to a better, cleaner and liveable environment for our children.*

*100% clean energy production - SolteQ.*



*Just imagine,  
the roof of your house would ...*



*... be weatherproof against rain and storm*

*... have a lifetime of 100 years or more*

*... earn money for you*

*... supply enough power to cover your entire electricity needs*

*... provide enough heat to cover your entire heating needs for heating and hot water*

*... insulate the house from above against cold and heat*

*... provide a surplus of electricity, which effectively generates revenue, that continues for the life of the roof and into the pensionable years.*

*... ultimately costs less than a normal roof.*

*... pay itself off and continue to earn money afterwards*

*... ensure that electricity, oil or gas costs are never incurred again*

*... give your house added value*

*... give your house a great overall look*

**The SolteQ energy roof quite  
simply offers you an  
improved quality of life.**





# What will the house of the future look like:

**It fulfills 3 main functions:**

- 1. Weatherproof roof covering**
- 2. Electricity**
- 3. Heating and hot water**

... and all of that:

climate Neutral  
Clean energy generation  
Zero CO2 emissions, zero pollutants  
Zero fossil energy costs  
Durable

## **Electricity from the roof**

Each house produces and covers its own electricity needs.

Without electricity storage approx. 80%

With electricity storage up to 100%

## **Battery storage**

With a power storage, you can enjoy the electricity you generate yourself in the evening and at night when the sun is not shining. So you can use your solar power at night.

## **Smart-Home-Controller**

Maximum self-sufficiency also requires adaptation of the consumption behavior. The large electricity consumers, washing machine, dishwasher, etc. must run during the day so that they can be supplied directly from the roof and in the evening only the necessary consumers have to be switched on. With a smart home controller, these devices can be perfectly timed so that the capacity of the power storage is optimally used.



## **Heating energy for heating and hot water completely from the roof**

Your roof is also a huge thermal surface. The roof or the air in the space becomes warm. This air can be used in addition to the electricity produced. The roof also produces thermal energy and heats the house completely independently and without external additives such as pellets, gas or oil.



## **The charger for your electric car**

Thanks to the additional use of the roof area as a solar thermal system and the use of the SolteQ heating system, almost all of the electricity generated is freely available. The SolteQ solar roof is usually always able to meet the energy needs of the electric car.

## **heat pump**

A heater should provide cozy warmth and warm water all year round.

With the SolteQ heating concept, the heat under the shingles is used. However, the heat under the shingles alone is not sufficient to heat the heating circuit to 45 or 65 ° C. Especially not in winter. However, the air under the black roof skin becomes warmer than the ambient temperature even in winter. Light means energy. So there is energy in daylight, even if the sun does not shine with full heat in winter. Now comes some physics:

There is always heat energy in the outside air, even at -30 ° C. Only in absolute zero, at -273.15 ° C (or 0 K), is there no more energy. It is not for nothing that a heat pump means „heat - pump“. It “pumps” small amounts of thermal energy together and passes it on in a concentrated form. This makes it possible to generate cozy warmth even at -30 ° C.

## **The SolteQ heating concept**

vereint sinnvolle und effizient technologies with each other. The SolteQ solar roof in combination with a good heat pump and a good electricity storage are the ideal combination for a good and satisfied future.

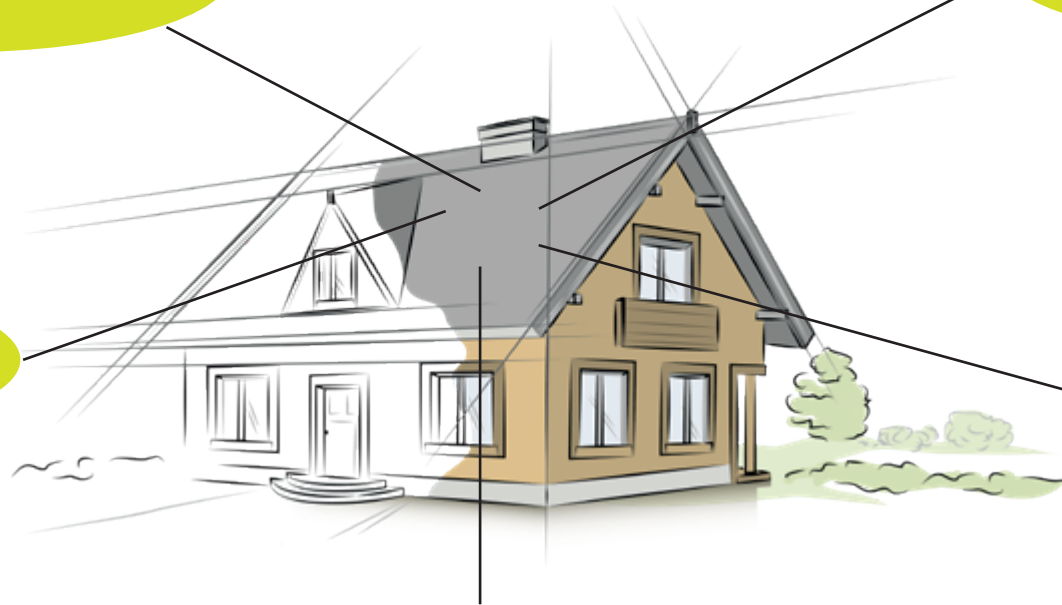
The SolteQ heating system works completely independently. During the day, the heat pump is supplied directly with the necessary electricity. In the evening, the heating draws on the large heating buffer storage, which serves as a heat storage, until late in the evening. Usually at night the heat requirement is lower. The heat pump has relatively little to do, since the heat accumulator is filled properly during the day. However, if you do have to work, it is usually enough the heating electricity storage included in the SolteQ heating package completely. The system thus forms a completely self-sufficient heating system without external energy supply.

*electricity*

*heater*

*Charge the  
electric car*

*hot water*



*Great overall look*



*Everything in-house  
Everything from your own roof  
100% self-sufficient  
Regardless of the energy supplier  
100% free  
100% environmentally conscious  
100% environmentally and climate neutral  
A relatively small investment  
but a big contribution to climate protection*

***THIS is the future.***

*We have to preserve the planet for the next generation.*



# Nature and technology in harmony - it works!

*Photovoltaic and wind energy are the two energy sources of the future.*

- **Unlimited Energy**
- **Environmentally friendly production**
- **Sustainability**
- **Long lifetime**
- **Environmentally friendly and 100% emission-free operation**
- **Construction of decentralized and clean „mini-power plants“**
- **A clean planet, without pollution**
- **and it must be fun ... that's the SolteQ vision.**

## **Photovoltaic is one of the two energy sources of the future.**

*Solar cells are a terrific technology. A solar cell lies in the sun and produces electricity. Just because. Without water and bread, without gas, without oil. No fuels, no additional „something“. No emissions, zero emissions, zero CO2. Hard to believe. The technology has no wear and is absolutely maintenance-free. And that 50 or 100 years and probably more. Because silicon does not rot. With a good manufacturing quality, this also applies to the other components, such. Copper, tin and the high quality glass from which all SolteQ energy roof tiles are made. These plates of high-purity silicon lie only in the sun and let the current flow, which we can use just like that.*

## **Silicon**

*... is the second most abundant element in the earth's crust, right after oxygen. It occurs in sand, quartz, stone, rocks, gravel, even in seawater silicon occurs in gigantic quantities. The extraction of silicon would not harm the environment and our planet in any way, as long as the production of environmentally friendly processes is also considered. And this is also possible, and the energy required for it can also be made from solar and wind energy. We just have to „want“.*



## Useful information:

The solar constant is 1367 watts per square meter. And, of course, in spite of her name is never completely constant. That would only be the case if the earth always had the same distance to the sun, that is, with an exactly circular path. Although the Earth's orbit is almost circular, it does fluctuate a bit. Their distance varies between 147 and 152 million kilometers and this leads to fluctuations in the solar constant between 1325 and 1420 watts per square meter (in the long term, however, the shape of the earth's orbit changes - sometimes it deviates more from the circular path, sometimes less). The 1367 W / m<sup>2</sup> are an officially established average.

The sun radiates its energy equally strong in all directions. If we measure 1367 watts per square meter on earth, then this also applies to every other square meter that is located on a gigantic sphere with the radius of the earth's orbit. All we have to do is multiply the area of this sphere by the solar constant. The sphere has a radius of 150 million kilometers or 150 billion meters. And in every square kilometer we measure 1367 watts / m<sup>2</sup>. Overall, this results in a value of gigantic 386 quadrillion watts for the luminosity of the sun. Every second.

A power station without equals.

## Silicon

We firmly believe in generating energy without emissions and pollutants, and even completely for free. Each house has to cover its own energy needs 100% and also produce surplus, which is fed into the public grid. So many small and clean „power plants“ can be created, which not only meet their own energy needs, but also supply the industry with electricity.

How to do that?

Quite simply: The energy is already on your roof!

## From the perspective of a roof:

1367 watts or 1.367 kW per square meter are the basis of calculation. An average per year. If we look at a roof with an area of 100m<sup>2</sup>, 13,67kWh of energy per day fall on every m<sup>2</sup> with 10 hours of sunshine. In total, this roof has a total energy of 1,367 kWh per day, of course in the annual average.

Composition of solar radiation

The composition of solar radiation is given in the following overview. It is the physical nature of electromagnetic waves of different wavelengths.

- long-wave radiation 6%
- infrared radiation 38%
- visible light 48%
- ultraviolet radiation 7%
- Shortwave radiation 1%

Considering the usable fraction of the sunlight spectrum and the efficiency of a solar cell, a SolteQ solar roof generates from the solar constant an output of 212 Wp / m<sup>2</sup> or 93 kWh per day.

With an assumed power consumption of 5,000 kWh per year, the daily demand is 13.7 kWh. So we generate surplus, which would not be bad.

Energy balance of a detached house with 4 persons			
Total roof area	160 m <sup>2</sup>		
roof performance	34 kWh		
requirement	Year	Day	Roof performance
	kWh	kWh	kWh/Day
household electricity	5.000	14	
heater	10.000	27	
	<b>15.000</b>	<b>41</b>	
With addition:			
E-Car	8.000	22	
<b>Total:</b>		<b>63</b>	<b>93</b>

In this example, we see that a normal roof with two roof halves, e.g. East / West orientation, able to fully cover its entire energy needs for electricity and heating, even with charge of an electric car. The surplus can be used for the sauna or simply fed in.

We are happy to make an energy design tailored to your personal needs. No project is with us, like the other. We calculate each object individually.

### ATTENTION: SOLTEQ PROMOTION

Especially for this we offer a very detailed energy design consultation. This is subsidized by us, so that we can offer you a perfect energy design for your house for only a small fee, which you get completely reimbursed in case of order.

Instead of 3.000, - Euro, you get the energy design calculation for only 300, - Euro!

Even these you get back completely in the case of an order.

Thus, this costs nothing for you.

Ask us - we are happy to help!



## *Photovoltaic technology - with style!*

*Photovoltaic technology - with style!  
Energy production without emissions,  
without pollution and without the need  
for oil or gas.*

*Utilise your roof as a clean source of energy.  
There is more energy on your roof  
than you think.*

*SolteQ makes this energy usable.  
Please don't hesitate to contact us.*

TECHNOLOGY. ENERGY AND  
NATURE IN HARMONY.  
IT WORKS !

**SolteQ.**

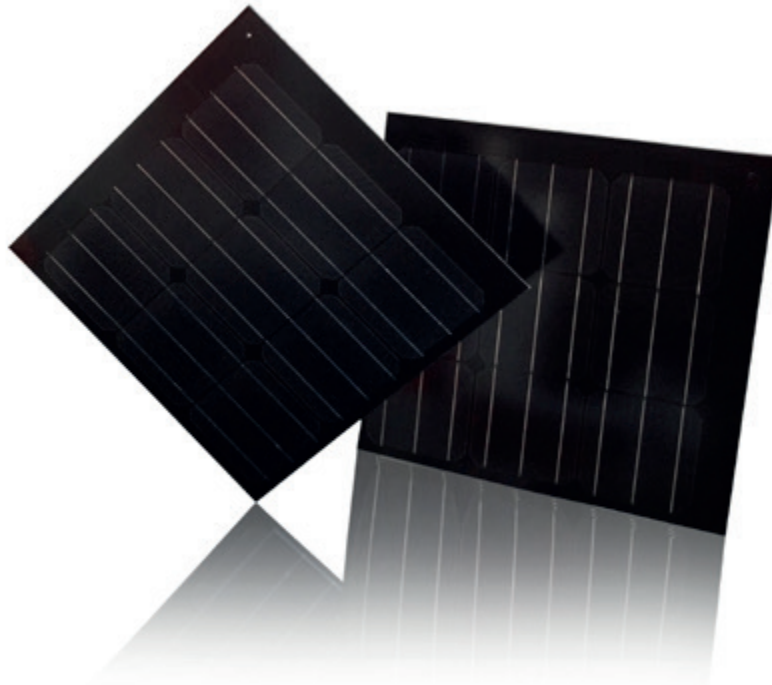


# SolteQ Solar Tile

Roof + Photovoltaics + Ästhetics = SolteQ.



Sun is life,  
Sun is energy,  
Sun is SolteQ.



**The revolution under construction:  
The SolteQ solar roof**



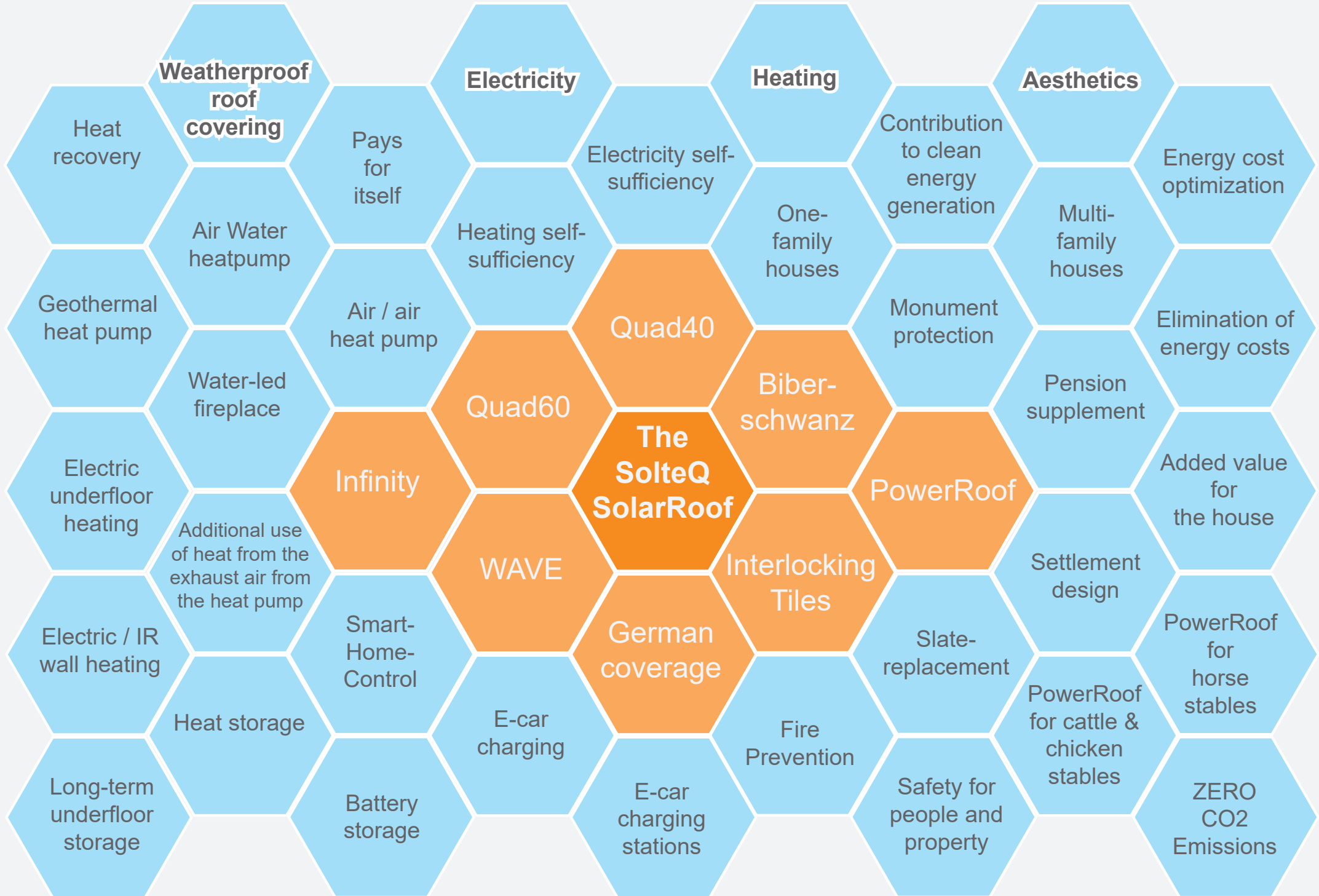
Patents pending



# SolteQ



# The SolteQ SolarRoof



**Cover your energy needs completely from your roof!**

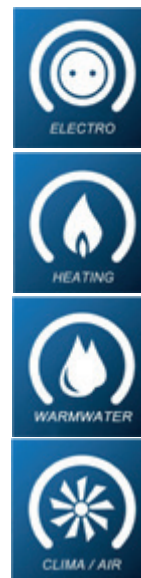
*There is more than enough energy on your roof to meet your entire energy needs for electricity and heating.  
This energy is free, why waste it.  
Make oil or gas costs a thing of the past.*



## The 5 star roof

*The house roof of the future:*

**Electricity + heat from your own roof**



We help you to make energy bills a thing of the past !

### One roof - 5 functions:

1. Great look for the house
2. Weatherproof covering
3. Electricity
4. Heating
5. Heat and cold insulation ... all from the roof!





# 5 Functions - 5 Stars

## The SolteQ-ENERGY Roof

### 1. A Great Look

*The best roof in the world is the one that suits your individual taste. With a number of styles and colours, SolteQ offers an unrivaled range of options. With its clean looking, prismatic anti-reflection finish, the SolteQ Energy Roof gives your home a unique overall look that you can be proud of now and for years to come.*

### 2. Weatherproof roof covering - 100% rainproof!

*The safest way to make a roof weatherproof and rainproof is to overlap the roof tiles. Roof tiles have been laid this way, overlapping from top to bottom, for centuries. Water flows from top to bottom, from one tile to the next. This is also the basis on which SolteQ roof tiles are designed: 100% safe, 100% watertight.*

### 3. Electricity

*You see a nice house with a beautiful looking roof. But what you probably don't see is that in addition to its great looks it is also a real powerhouse, thanks to the highly efficient solar cells that have been integrated into the roof tiles. The SolteQ Energy Roof, the roof that generates electricity without the need for unsightly solar panels.*

SolteQ solar roofs  
... financed by the sun.

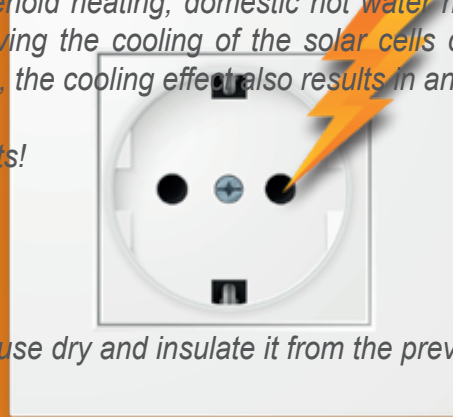




## 4. Heating

The SolteQ energy roof not only generates electricity, but also heating energy. That's why it's an "energy roof". The entire roof area is used as a large thermal collector with the heat energy being extracted from under the tiles and utilised for household heating, domestic hot water heating or both. This process has the added benefit of improving the cooling of the solar cells contained within the tiles, which increases their efficiency. Thus, the cooling effect also results in an increase in electricity generation.

100% self-sufficient heating – no more gas or oil costs!



## 5. Heat and cold insulation

SolteQ energy roof and façade systems keep the house dry and insulate it from the prevailing external temperatures.

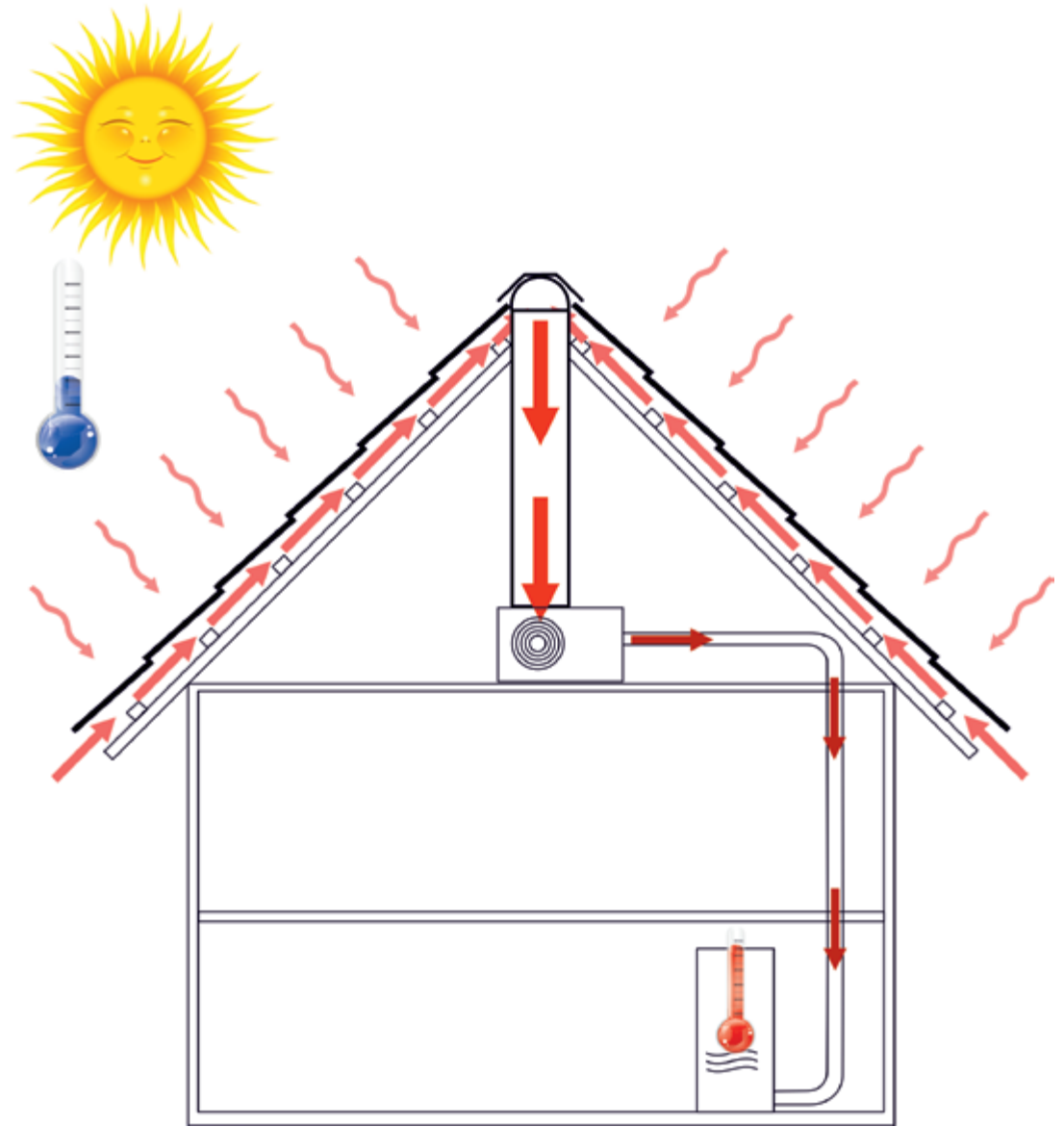
## 6. Charge your electric car completely free of charge and cleanly

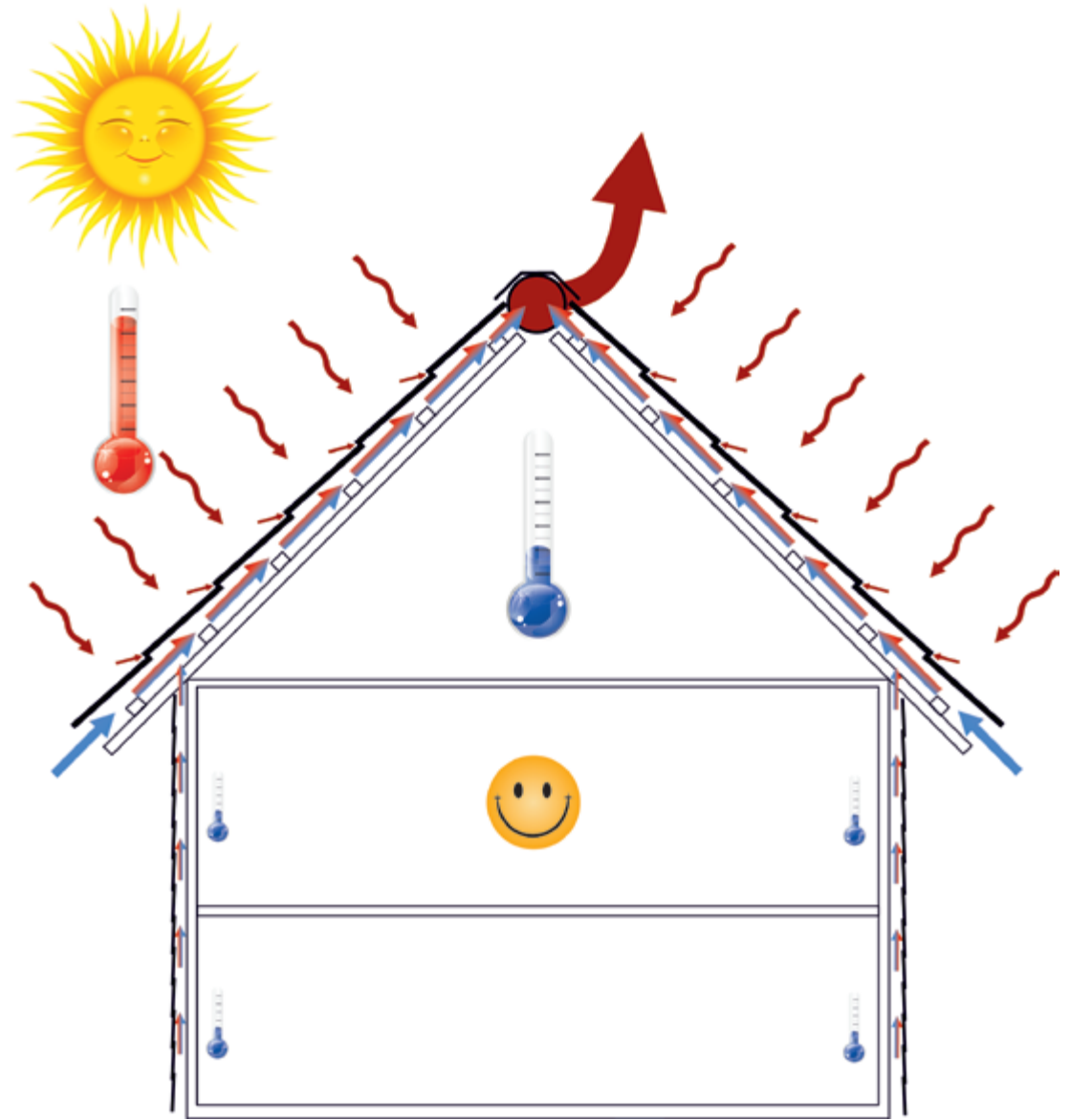
With a suitable roof size, the SolteQ solar roof generates plenty of excess.

With the surplus you can "fill up" your electric car during the day or with electricity storage overnight.











## The energy of the future lies on your roof!

*Use the energy that lies on your rooftop for free.  
SolteQ energy roofs make it possible.*

### The SolteQ vision:

**An Energy Roof for every house.  
Every home becoming self-sufficient in energy.**

1. *Perfect weather protection.*
2. *Affordable for everyone.*
3. *Meets all of your energy needs.*
4. *A great look for your house*
5. *Adds value to the house*
6. *A roof that pays for itself in the short term then continues to save money in the longer term.*
7. *Makes energy bills a thing of the past.*
8. *A very good old-age provision.*
9. *Maintenance free.*
10. *Has a significant impact on a cleaner environment*
11. *Very long life with at least 50 years and more*

*The roof of the future generating clean energy - that's the SolteQ energy roof.  
The roof that generates both electricity and solar thermal energy for heating and hot water.  
Invest your money in your own roof. There is no better return on your investment in these  
days of ever increasing energy prices.*

**The safest investment ever, because  
the more that energy bills increase year on year the greater the increase  
in your savings. A roof that not only pays for itself but saves you money**

*... and everybody is happy, what more could you ask for?*



OUR  
GUARANTEE  
★★★★★

# Premium Energy Roof with Quad40-Roof-Tiles

## Architecturally and Aesthetically Pure!



SolteQ

**The SolteQ Energy Roof combines style with technology to produce energy.**

*Why compromise the look of your house by fitting solar panels to your roof when you can have a stylish looking roof that's full of energy and looks fantastic.*

### Why is this the Roof of the Future?

- ▶ Stylish and functional - Aesthetically pleasing with the power of a hidden photovoltaic system
- ▶ Simple Construction - Can be built in the same timescales as a conventional roof
- ▶ 100% waterproof and storm proof
- ▶ Provides ecological and aesthetic added value to the house
- ▶ Can be used for east/west-roof orientations
- ▶ Suitable for new build and renovation projects
- ▶ Includes safety system SolteQ-BFA
- ▶ Energy storage options
- ▶ Utilisation of the thermal energy from the roof for heating and hot water
- ▶ The potential to make energy bills a thing of the past
- ▶ Long lifespan, low maintenance
- ▶ Cost effective solution for the provision of energy

### This is the SolteQ-Quad-Energy-Roof !

#### SolteQ-Quad-Energy-Roof - The Power Package

Use PV-roof-tiles directly on to your building to keep your home warm and dry, produce energy, and look stylish and attractive. Each SolteQ-Quad 40 Premium Black PV-Tile has a power output of approximately 43.25 Wp, this equates to 173 Wp per m<sup>2</sup> which turns your roof into a huge power package. The efficiency of one m<sup>2</sup> is over **212 Wp per m<sup>2</sup>**.

#### Let Your Roof Pay for Itself !

The new SolteQ-Quad-PV Roof-Tiles consist of anti reflective, prismatic, toughened safety glass with integrated high efficiency monocrystalline cells. They are stylish and produce a huge amount of energy (173 Wp/m<sup>2</sup>) which turn your home into a modern, energy producing house. Because the tiles reduce/eliminate your electricity bills, the roof essentially pays for itself and you will end up with a roof for free. The tiles can be laid in a diamond pattern or the more conventional horizontal pattern, either of which works in harmony with your house, making it both attractive and full of energy. Black ,sleek looking roof tiles comprising of high quality glass with integrated high efficiency solar cells. Perfect for new builds and roof renovations. Free energy from our Sun! – why not use it!

**A roof like a diamond**  
*It sparkles like a diamond,  
even after years still like new.*



*SolteQ... always in harmony with your home*





# SolteQ PV roof tiles for direct roofing - the advantages

**Theft-proof !**

## The lotus flower effect = lifelong as new!

Due to the high-quality non-stick surface and frameless design, moss and lichens have no opportunity to form. Thanks to the integrated switch-off option, it is possible to make the roof look as good as new thanks to regular care and cleaning - even after many years. Always clean, always beautiful, always high yields.

## Weather protection & rainproof

Optimal weather protection through high quality materials

1. 100% waterproof
2. high resistance against storm and hail
3. 100% frost resistance
4. Very long life

## Thermal insulation

The (low) natural heat of the energy roof provides very good thermal protection against the elements.

## Soundproofing

The roof tiles also form a sound barrier with an attenuation of about 38..42dB

## Cost savings

Only one roof skin, simple roof construction with well-trying wooden battens, which result in easy and quick installation. Photovoltaic roof tiles used as direct roofing material, Building-integrated photovoltaics that look great for almost at the same price as a conventional roof.

## Resistant to moss and lichen

Resistant to moss and lichen. With the passage of time moss gets into the fabric of clay tiles which results in cracking. Glass has the advantage of having no open pores. Thus, SolteQ roof shingles and tiles are resistant to mosses and still look like new year's later.

## Frost-proof

High quality glass is not hygroscopic, the glass does not absorb moisture or even water. So our roofs are impervious to cracking as a result of frost damage.

## Optimizer feature incorporated in every tile

Each roof tile is equipped with its own optimizer function, to ensure that the effect of any shading on the system is minimised. Each tile has its own bypass diode, which simply bridges the failed tile in the event of a defect or shading, thus avoiding a voltage drop in the entire string. Shadows? No problem for SolteQ!

## High area performance with up to 240 Wp / m<sup>2</sup>

Our tiles can produce very high outputs per square metre of roof area, comparable to a standard rectangular module (1.0 x 1.6 m) with a power of 320Wp. The advantage with our tiles is that they can be installed on a greater surface area of a roof and therefore can produce more power than a panel system.

## Snow freeze and defrost function

Due to the frameless construction and the non-stick surface of the tiles, roofs with a pitch of 25 ° or greater will be very resistant to snow settling on the roof. Should our tiles be used on roofs with pitches of less than 25 ° then they will still benefit from the non-stick surface of our tiles but to a lesser extent. e.g. If there are small amounts of snow on the lower part of the roof, the snow will have a tendency slip off once the sun shines. In addition as soon as light falls on any snow free roof tiles, they start to work and electricity flows through the whole system generating heat causing the snow to melt and slip from the roof.

## Full roof surface utilisation = maximum energy yield.

Up to 36% higher yield than conventional PV systems

The SolteQ roof tiles covers the total roof area unlike conventional solar panels. Because the entire roof surface is used much higher performance is achieved than is possible with conventional on roof systems. In addition the performance of our roofs is improved by the overlapping of our tiles which results in an increase in cell density per m<sup>2</sup> thereby maximizing the yield from the roof.

## Great value for money

The system costs are comparable to that of a slate roof with the addition of an on-roof PV system. But with the SolteQ roof you not only get a high-tech energy roof, that saves you money on your energy bills but it also enhances the look of your property and adds value to your biggest asset, your home.

... top products, fair prices - SolteQ.

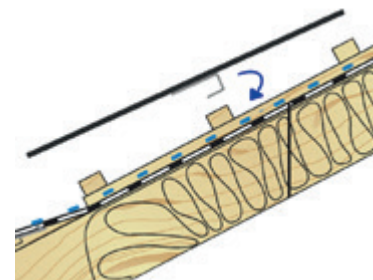
... always in harmony with the house and nature.  
SolteQ.



**NEW !**

## The Exclusive Premium Roof of the future

The SolteQ-energy roof is the perfect solution for future energy and building integration of photovoltaics. Roof-mounted PV systems as a secondary roof layer look ugly, and even in-roof PV systems tend to be unattractive. The SolteQ-energy roof however is a completely new roof concept, offering a great look while offering maximum energy.



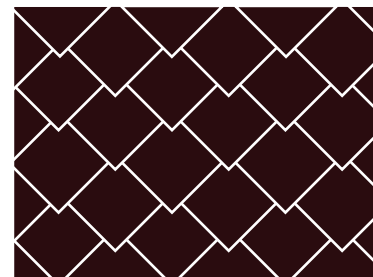
## Easy installation

The Quad 40 PV-tiles hang directly onto the wooden laths and do not need any further under-construction. On the back of the tiles are two aluminium hooks. Hang it, fix it in place - ready!

## Maximum roof area utilisation

Fantastic look and maximum roof utilisation!

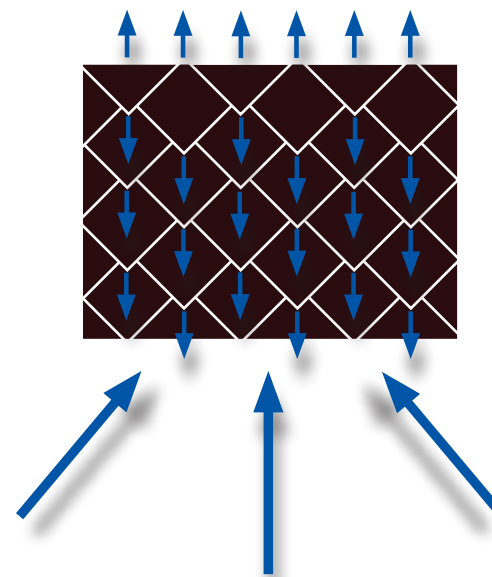
The new SolteQ-Quad 40 PV-Roof-Tile can be laid in a diamond (fish scale) or a horizontal pattern, either of which result in an attractive modern looking roof that's full of energy. Your new roof is a high-class photovoltaic system, that keeps your home dry and earns money at the same time. With the overlapping layout, the PV cells per m<sup>2</sup> are maximised thereby ensuring maximum power generation for a given roof area.



## Optimal cooling

PV-modules become warm in normal operation. Conventional tiles in the sun certainly become warm too. The "fish scale" design of the SolteQ-Quad-PV-Tiles makes your home not only look stylish, the design also has single-module-cooling by natural convection. Cool air flows under-neath the tiles at the lower border of the roof, cools the tiles and comes out at the lower corners of each one and at the roof ridge. This cooling works much better than on-roof-PV-systems and other roof integrated PV-systems which come without cooling.

Perfect single-module-cooling and more efficiency!





***We should appreciate honey and  
enjoy every drop ...***

*A bee has to produce 1 kg of honey  
... collect approx. 3kg of nectar  
... visit 1-6 million flowers  
... fly 50-100,000 km*



***The SolteQ solar roof is just as busy ...***

*It consists of many, small cells that have been generating large amounts of electricity and heating energy for decades, day after day, without grumbling or growling.  
Without burning oil, gas or wood.  
ZERO CO2.*

## Highest quality materials

With a lot of effort, love for the product and numerous material tests, SolteQ engineers have selected the best ingredients for SolteQ solar roof tiles.

### Purest white glass

- Free of iron oxide
- Low in oxygen
- Quartz glass
- Safety glass, shatterproof, extremely pre-hardened
- Special, prismatic surface for more efficiency
- Round ground edges

### EVA film

- Maximum composite properties
- Durable

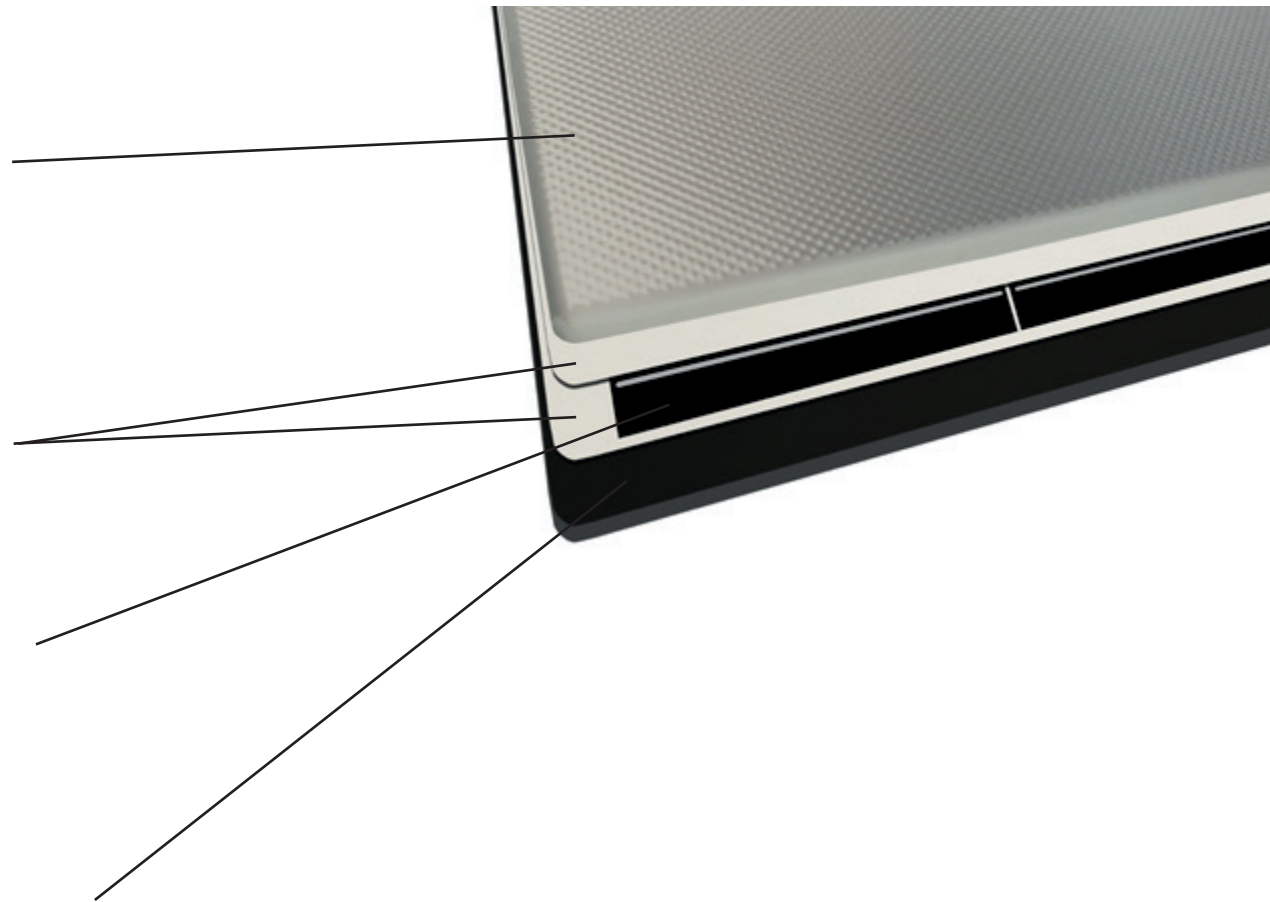
### Solar cells

- High quality solar cells with very little degradation
- No aging,
- UV-resistant
- No color change even over years

### Backsheet-Foil

- Cast material, not conventional foil
- Extra thick with a layer thickness of approx. 0.8 mm (comparison with normal film: approx. 0.1 mm)
- Consists of 4 layers, including two 100% waterproof layers
- No aging
- UV-resistant
- No color change, even over years

This particularly high-quality backsheet film makes a significant contribution to the fact that SolteQ solar tiles have a very long life time and are highly fail-safe. The usual problems with conventional photovoltaic modules, such as Hot spots (internal short circuits) or creeping snail traces (internal reaction due to electrical creepage distances) arise after a few years due to moisture penetration from the rear through inferior backsheet films. SolteQ does not have any of these causes of errors.





### **Storm and weatherproof Storm clip on each tile!**

Rain protection is guaranteed even in driving rain and stronger storms. The hooks on the back of each tile also act as storm clips that hold the tiles firmly under control. Further measures, such as additional storm clips are not necessary.

### **Hailproof**

The SolteQ PV roof tile is resistant to larger hailstones and even meet the increased Swiss re-quirements for hail protection class 3.

### **Waterproof and special seal**

The SolteQ energy roof with PV roof tiles is 100% waterproof, weatherproof and stable. The PV tiles provide rain protection and mechanical protection

### **100% rainproof**

Each quad tile has a patented special seal on the side with multiple sealing lips, which reliably prevents the ingress of water at these points.

However, the actual function zone is located on the back of the seal, protected against weather and UV radiation. There are two drainage channels, which safely conducts even the least penetrating water to the next shingle, thus ensuring 100% rainproofness. The material of the special seal is the high-quality and UV-resistant EPDM with a minimum lifespan of more than 70 years.

The only area that is open to the elements is the small rear ventilation opening at the lower round edge of the tile. Only in extreme stormy conditions is there a small possibility that water is pushed up through the vent. This also happens with a normal tile roof, and is even good for the roof, because some moisture is good for the battens. These small amounts are absorbed by the underlay.

So the roof is 100% rainproof and 95% waterproof.

Overall, the SolteQ quad energy roof is as waterproof as a traditional clay tile roof.

### **100% waterproof**

Where 100% water resistance is desired, it can be achieved very easily and conveniently by means of a vapor-permeable, water-resistant underlay.

This ensures 100% rain protection and 100% waterproofness.

### **The SolteQ energy roof is both more stable and stronger than a normal roof, capable of with-standing loads of up to 850kg per m<sup>2</sup>.**

One of the fundamental design elements that enables the roof to be stable and able to withstand such loads is the rubber seal fitted to the back of the tile, that not only seal's the roof against water ingress but provides stability to the whole roof skin as well as acting as an expansion joint. This patented seal is designed to act as a mechanical spring that constantly adjusts to the horizontal and vertical movements of the tiles, improving their stability in all prevailing weather conditions for the life of the roof.

### **Highest wind suction safety performance**

Current standards prescribe a wind load or tensile force of 15kg per tile. The SolteQ roof tile is tested and certified with 50kg suction load per tile. The SolteQ solar roof is resistant up to 1 to per m<sup>2</sup>. Comparable to a category 4 hurricane.

## **New:**

- **Optimiser function  
Incorporated in every tile**
- **storm hooks included with  
all Beaver, Infinity and Inter-  
locking tiles.**

*The SolteQ energy roof is  
more stable than a normal  
roofing!*

*A roof as strong and majestic as a lion*





## Guarantees

... there you can be sure!



### Up to 20 years

#### **Product warranty guarantee**

SolteQ gives a 5-year warranty on the solar tiles and shingles, which can be extended by up to 20 years for an additional cost. The warranty for the BFA-System is 2 Years.



### 40 years

#### **Performance Warranty**

SolteQ warrants the performance of the tiles on the basis that their output in 40year's time will still be 80% of their output today.



### 80 years lifespan and more

Here at SolteQ we use only carefully selected, top quality materials In the production of our roof tiles. We use high-quality glass, silicon, and premium PV cells which ensure we have a product that can withstand the test of time, does not deteriorate and is resistant to harsh environment's extreme temperature changes for the lifetime of the product. The SolteQ Energy Roof is best roof money can buy.



### 30 years

#### **Spare Parts Guarantee**

SolteQ guarantees to support your roof purchase by ensuring that replacement parts will be available for at least 30 years from the date of purchase.



### 20 years warranty

#### **on the sealing rubbers**

Some product variants have sealing rubbers for waterproofing and to absorb mechanical movements and shock loadings. SolteQ provides a 20-year warranty on the sealing function of rubber seals.



### 50 years

#### **Rain Safety Guarantee**

We guarantee that our roofs will be rainproof for 50 years, provided that no mechanical damage has taken place. In reality the rain protection and durability of our roofs will be well in excess of 50 years. The glass we use is very high quality, low in iron oxide, low in oxygen, does not absorb moisture and is therefore frost-proof. The glass is also toughened to ensure that our roofs are both strong and robust for the lifetime of the product.



**MADE  
IN  
GERMANY**

SolteQ



## Glass - the material of the future!

Glass is a sustainable and ecological material. Today's glass can withstand incredible loads. The once brittle and fragile material becomes extremely stable and flexible with new formulations. And that makes it a material of the future, also for the roof. Glass even replaces steel and concrete today.

„Take 60 pieces of quartz sand, 180 pieces of seaweed ash and five pieces of chalk, put everything in the fire, and make glass.“  
This is reported by the oldest surviving instructions for making glass, imprinted on about 2600 years old clay tablets from the time of the Assyrian ruler Assurbanipal from Nineveh. To date, the ingredients form the principle of the basic recipe for glass production.

Glass is also used more and more in architecture, in some cases it even takes over supporting functions.

Glass is a cycle product. It is remelted after use and 100% reused.

High quality glass has many advantages:

- Very stable, more stable than a clay tile
- Very hard and still flexible, not brittle
- Frostproof
- UV resistant
- Resistant to lightning
- Resistant to hail
- Weatherproof
- Temperature resistant
- Self-cleaning
- No aging
- 100% translucent
- Durable, 100 years of life and much more
- Waterproof
- Easy to clean when dirty

... and always looks good.

All this makes glass the perfect material for our roof



### SolteQ solar tiles are 100% recyclable

All components (glass, copper, silicon, tin, plastic) are completely recyclable. Even the production of a SolteQ roof shingle is done with 100% clean energy.



SolteQ energy roofs have been awarded the environmental seal for energy-saving and environmentally conscious technology "The green tree award".

SolteQ PV roof tiles and shingles are

- 100% recyclable
- 100% sustainable
- 100% environmentally friendly production
- 100% made in Germany



### Award for green products that contribute to increased quality of life

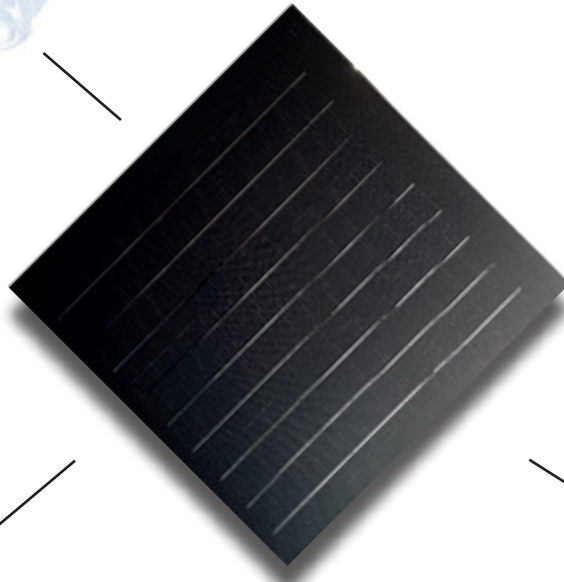
Awarded by the Technical Testing Laboratory for Solar Technology - TPS



Extra white glass



Silicon



**High quality white glass**  
100% recyclable

**High purity silicon**  
Silicon has existed for millennia in the earth's crust, in the rock and in the sand. During use as a „photovoltaic cell“, the silicon is not consumed. It comes only to a so-called „Degradation“, a reduction in electricity production. After a period of 50, 80 or more years, fresh silicon can be produced from the silicide with a renewed doping with relatively little expenditure of energy. 100% recyclable

**Copper & tin**  
are the components of cell connectors. 100% recyclable

**High quality plastics**  
Rotting resistant plastics, back side 100% recyclable

**DID YOU KNOW THAT,**  
... only 15% of the energy required for mining is to be used to recycle copper materials?  
Copper can be 100% recycled as often as you like. The same applies to glass and silicon.

**DID YOU KNOW THAT,**  
... only 5% of the energy required for mining is to be used to recycle aluminium?  
Aluminium can be 100% recycled as often as you like.

Aluminium



Plastic

Copper





## Diamond surface Tempered glass with prismatic surface

### Harder and more stable than normal clay pans

Harder and more stable than normal clay tiles

- Suitable for new buildings and the renovation of old buildings.
- Safety glass with ESG properties.
- Maximum energy output from monocrystalline cells
- Lighter roof frame, thereby reducing costs already in the substructure
- Available in different colors
- A choice of tile to suit every building.

### Maximum personal protection:

- Already integrated: the proven SolteQ BFA safety shutdown
- Preventive fire protection, expandable with numerous sensors and accessories
- Maximum protection against high voltages
- 100% waterproof

### Low Iron Oxide Glass with Unique Design

By using glass with a very low amount of iron oxide, the absorption of the radiation energy in the glass is close to zero. The prismatic surface provides a special aesthetic aspect.

### Anti-Glare and Satin-Like Surface

The satin-like surface of the Quad-PV-Tile makes sure that the roof prevents reflection and gives it a smooth look.

### Light-Trap-Effect

The structures have a „trap-effect“ for incoming light beams. Once the light hits the glass, it remains there. The light will drop directly onto the cells. This is why the SolteQ-PV-Tiles also work in twilight, much better than conventional photovoltaic modules.

### Raising Efficiency

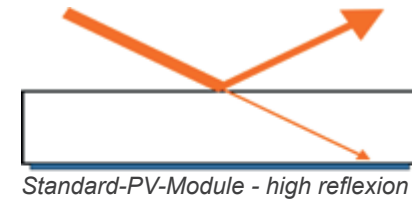
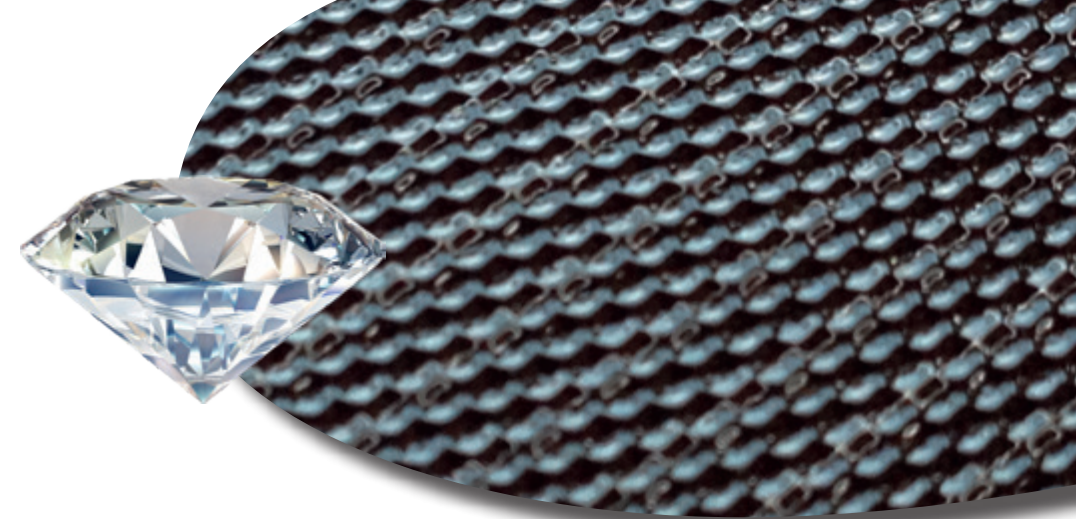
Because of the light-trap-effect, the SolteQ-PV-Tiles have between 2% and 10% more efficiency compared to standard PV-tiles (depending on light angle and cell type, under standard test conditions IEC 61215).

### Remains dirt and debris free

Because of the rounded structures of the surface, dust and pollution will be washed away by rainwater. The frameless design makes sure that the roof gets cleaned in the long term.

### East / West-Roofs

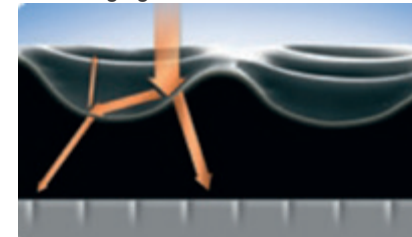
The sophisticated use of light in the prismatic glass makes it possible to raise the power and efficiency by up to 3.5% in normal light, and by up to 20% more in twilight times and with slanting incoming light. The effect will be amplified in unfavourable lighting conditions, for example in morning or evening hours, or on a roof facing an east or west direction. This makes it possible to use east and west roofs with effective and maximum power generation. The long term availability and safety is confirmed by the international standards IEC61215 and IEC61730.



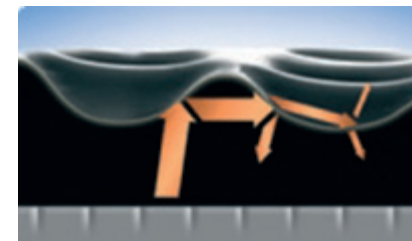
Standard-PV-Module - high reflexion



SolteQ-Surface - 100% use of the incoming light



Low reflexion at the air/glass barrier



Light-Trap-Effect

# Triple cooling

## 1. Cooling by convection

The perfect ventilation of each individual roof shingle ensures that on the one hand the house is not warmed up and on the other hand the efficiency of the cells is increased, in contrast to conventional photovoltaic systems, and thus the yield increases. Cooling by natural convection makes for a good cooling of the shingles and reduces the heating of the house.

## 2. Cooling by prismatic surface

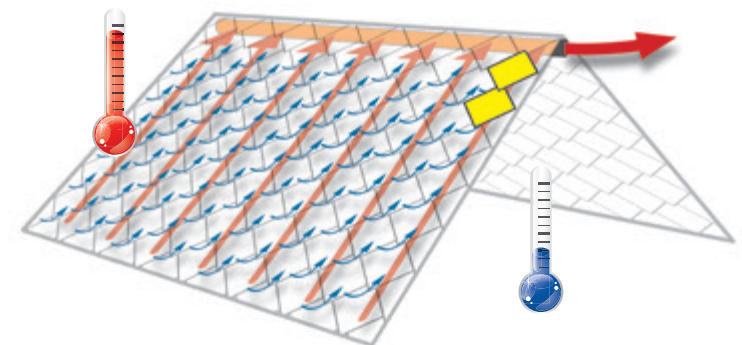
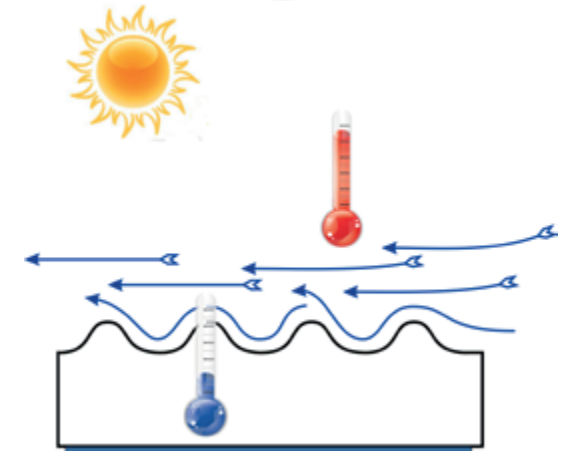
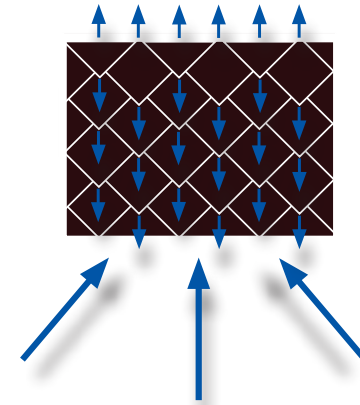
In addition to the ventilation function by convection, the prismatic glass surface offers an additional cooling effect. The surface is enlarged by the prismatic structure and offers more possibility for cooling the wind to cool the glass. This also cools the integrated cells and works with increased efficiency. So it is possible that even on hot summer days 5-10% more yield can be generated compared to conventional photovoltaic systems.

## 3. Active ventilation through active ventilation (option)

If a standard ventilation by natural convection can be supported if necessary by an active ventilation of the sub-roof. An integrated, electric fan in the ridge suction pipe actively heats the heated air, thus venting the roof. The fan is thereby removed from, e.g. 2-3 solar tiles directly operated. Thus, the system works completely self-sufficient or energy-neutral and fully automatic.

1. Cooling of the roof and thus avoiding the warming of the attic rooms
2. Increase in cell efficiency

... always stay cool !

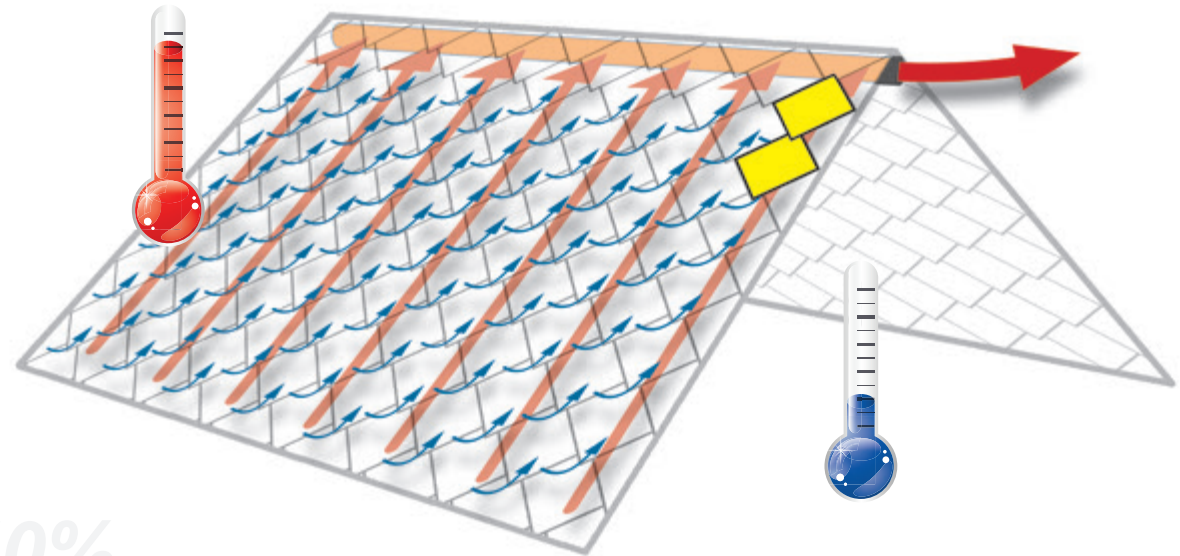




## Active ventilation through active ventilation cools the house! (Option)

Due to the active extraction of the air heated by the solar energy in the space between the roof, the top floor always remains pleasantly cool. I.d.R. air conditioning can be dispensed with and energy can be saved.

A fan sucks in the air through a ridge pipe in combination with the special ventilation function of the SolteQ solar tiles and simply conveys them to the outside.

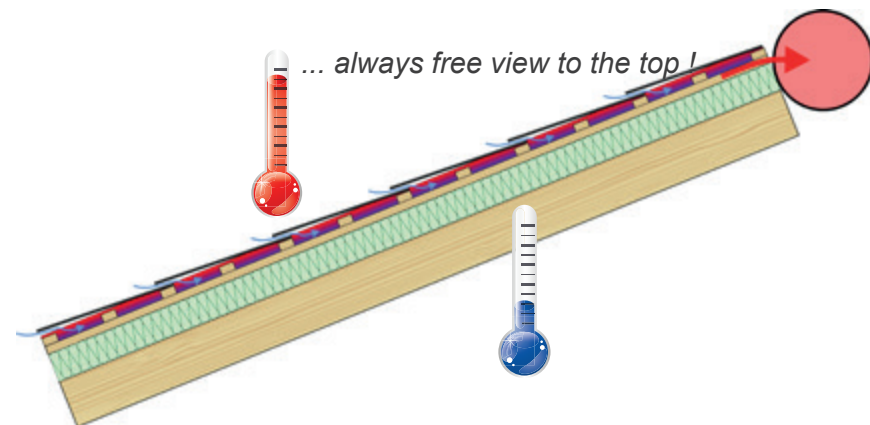


Up to **40%**  
more power  
through the active  
rear ventilation  
function!

## Snow defrost function

### Defrost function on snow (option)

By means of an electric heater, heated air is blown into the roof via the ridge pipe. This leads i.d.R. The snow melts and the roof becomes free of snow so that the integrated cells can produce electricity again. A power storage is recommended, so that the Abtaufunktion can be operated with previously self-produced electricity. Thus, this function is absolutely energy-neutral.



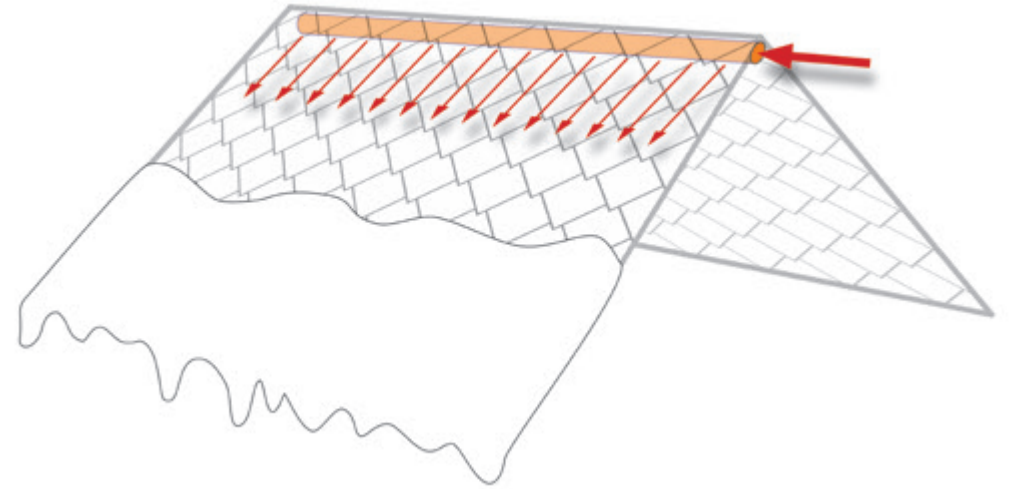


**The SolteQ roof**

- protects
- generates electricity
- generates thermal heat
- saves money
- earns money

**Never again fuel costs?**





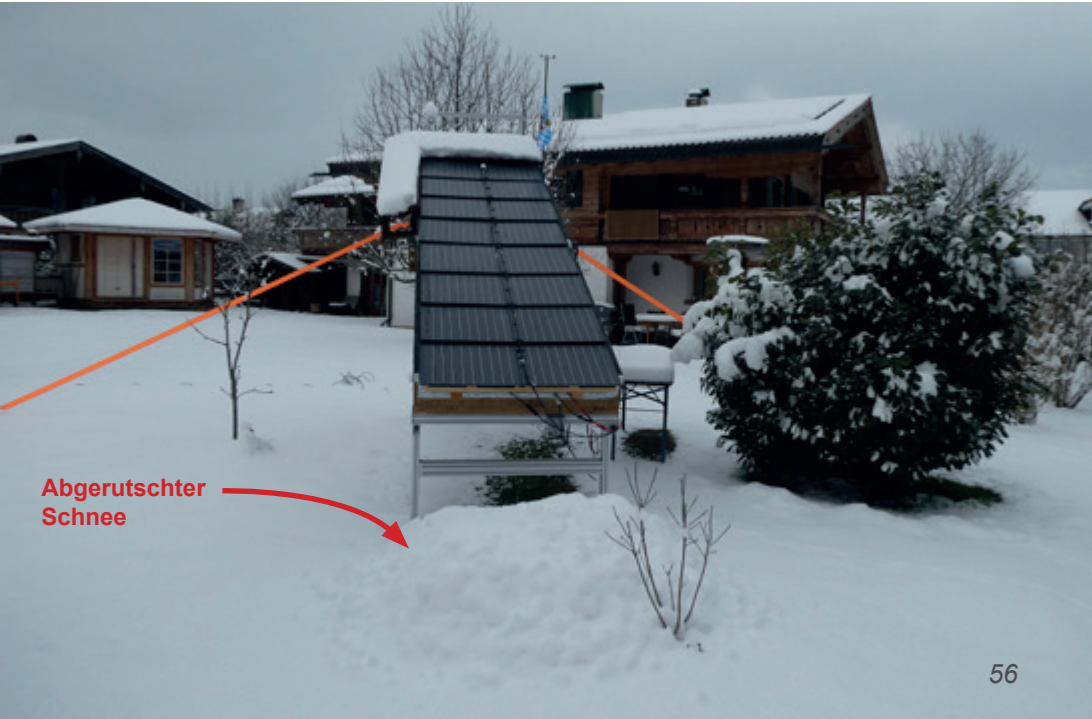
ESM Energieberatungs GmbH

Hochschule Rosenheim  
University of Applied Sciences





Aufdach-PV-Anlage



Abgerutschter Schnee



**No clearing of forests,  
No clearing of arable land  
for energy generation!**

*No rapeseed for fuel, no corn for biogas,  
but wheat for bread!*

*No open spaces for large PV parks,  
but many small roofs that are already there!*

*There are enough suitable roofs that can be  
used for energy generation that already exist.  
We have to protect our nature!*



# 60% of all cars could already be driving green today

Drive with zero emissions



Respectively there is no exhaust at all!



The car of the future will be charged by the sun



No leakage of anything





# ***60% of all trips a day are under 40 km***

*For this reason alone is an electric car worth  
every family.*



*The SolteQ solar roof is  
the perfect „charger“  
for your car for free charging!*

*Your own gas station.*

*... refuel for*



*Never again fuel costs  
... with SolteQ.*

# Think about electric mobility now

**... in 5 or 10 years we will drive all electric cars.**

More and more automakers are launching new e-car models. The thought of never having fuel costs again is more than tempting for any of us.

An electric car with a stronger drive motor, e.g. Tesla Model X, has a consumption of about 270W per kilometer driven. A Renault requires about 200W per km. You can count on it well.

## Charging at home + charging at work

The future has already begun. Each company will soon offer its employees a parking space with free charging.



**Can you imagine driving for 0, - Euro a year?**

**Never again fuel costs?**

For this we need three things:

1. The most efficient solar roof for power production
2. A power storage
3. An electric car

**Calculation example:**

The solar roof system must be dimensioned so that

- a) the budgetary needs are met
- b) electricity storage is loaded for the evening use of the generated electricity
- c) the car is being charged

in such a way that as little power as possible has to be purchased from the grid, even in winter, when the solar system produces less electricity. So it is quite possible to achieve a degree of autonomy of > 90%.

The statistic says: 60% of all trips are under 40km per day.

To charge an e-car with 270W / km energy demand and 40km driven km per day  
 $270W \times 40km = 10.8 \text{ kW}$  electricity needed.

The charge can be made:

- a) 10.8 hours with 1 kW, or 1kWh, or
- b) 2 hours with 5.4 kW, or 5.4 kWh

Your solar roof has e.g. an installed capacity of 20kWp, thus a daily output of:

Plant-day total power:

- at Pmax (best summer time): 99.93 kWh / day
- at Pmin (lowest yield in December): 23.70 kWh / day

Result: Even in the bad periods of the year, the roof is able to charge the e-car with about 1/4 of its capacity in 2 hours.



# SolteQ promotes the energy transition

**Plan the topic of „energy“ right from the start.**

**We are happy to accompany you before and during the construction phase in new buildings or renovations**

## **Planning phase:**

- Planning electricity generation
- Planning electricity storage
- Planning switchable sockets via Smart Home Control
- Planning routes
- Advice Effective uses
- Complete design planning for your energy needs

## **During the construction process**

- Support of the construction work according to planning

## **After completing the project**

- Advice Effective uses
- Other options for efficient energy generation and use

**Recommended layout of the system performance:** Basically, it makes a lot of sense to get the most out of the roof. The energy “lies” on the roof, whether we use it or not.

The ideal „energy house“ has a large pent roof, or a double pent roof, but any other roof shape with a low roof pitch is also possible.

In order to achieve maximum self-sufficiency, as much of the roof area as possible should be actively used for energy generation if the budget allows it.

Basically, the budget should not be the issue, because the larger the electricity-producing roof area, the higher the degree of self-sufficiency, the more money can be saved and the more money comes in (by feeding in the surplus). We try to put together a solution for our customers that will result in a bottom line at the end of the month, provided the roof surface is there.

## **Tip:**

Request the free architect's folder for your planning!





**Example:**

New roof or roof renovation  
 Financing amount: 35,000 euros

mntl. Financing rates: -146 euros  
 mntl. Electricity costs: -250 euros  
 mntl. Heating costs: -165 euros  
 Total monthly Cost: -561 euros



With SolteQ solar roof:  
 Financing amount: 60,000 euros  
 mntl. Financing rates: -250 euros  
 mntl. Electricity costs: - 50 euros  
 mntl. Heating costs: 0 euros  
 mntl. Income from feed-in: 122 euros  
 Total monthly Cost: -178 euros

Saved \*): 200 euros  
 Balance per month: + 22 euros

*\*) can be introduced as a special repayment. Finance your solar roof with the saved costs for fossil energies!*

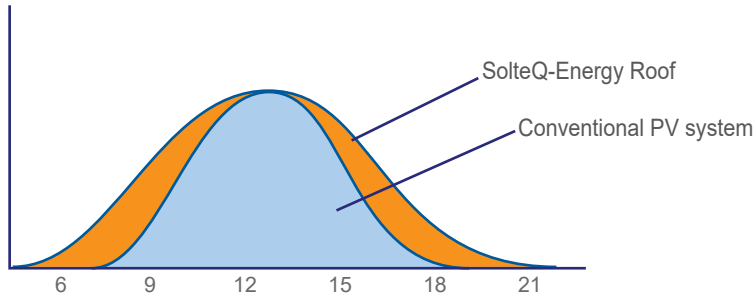
*Advantage after or without financing: 394, - per month PLUS!*





## Energy generation of a SolteQ Energy Roof during the day

The excellent low-light behavior enables power production even in twilight hours. While conventional PV systems are still “sleeping”, the SolteQ power roof is already generating electricity. Potentially 2 hours more yield in the morning and 2 hours in the evening, the total increase in yield over the day/year can amount to 20% more power production.

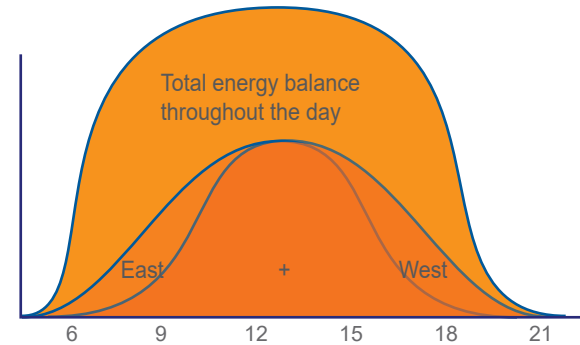
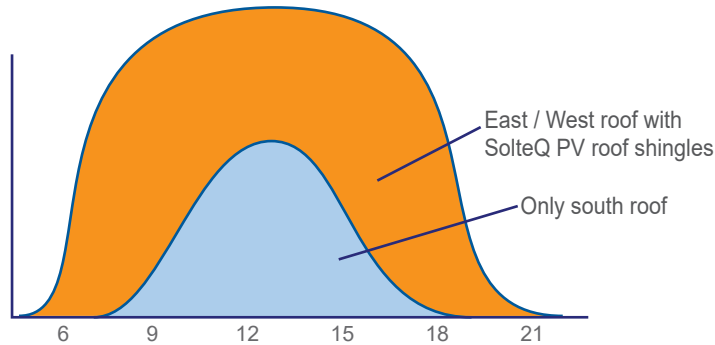
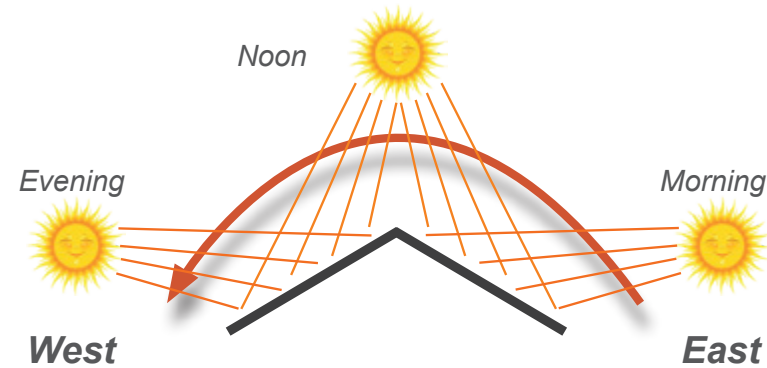


**20% extra yield per year due to the excellent low light usage (SLV) a SolteQ energy roof!**

## East / West roofs are ideal and very effective!

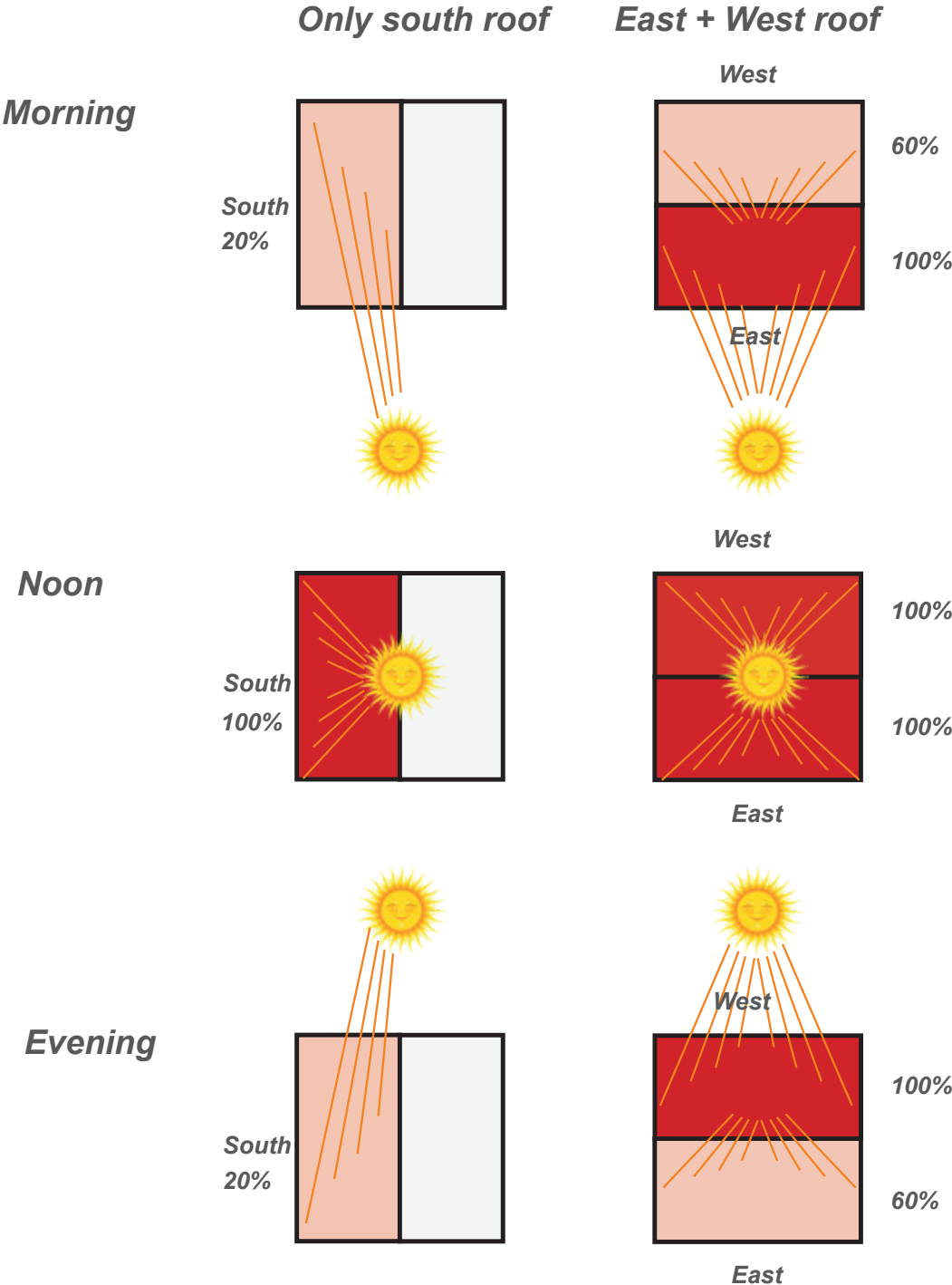
In the morning the sun shines with full vigor on the east surface, and from noon onwards moves progressively onto the west surface but for a large part of the day both surfaces are affected by the sunlight, so twice the yield. The main advantage with this configuration is that there is no longer a peak at noon, instead the power production is distributed throughout the day, from sunrise to sunset.

Although East / West occupancy does mean almost a doubling of the investment cost's, the return is twice as high and once the system payback period has been reached then this increased return really starts to pay dividends.



Note: Yields and gradients depend on roof area, slope, location

**Comparison: Energy balance south vs. south East / west roof orientation**





**THAT costs money**

**THAT is a waste of energy!  
THAT is a waste of money!**





# THIS brings money!

Saves money  
Earns extra money  
Saves 100% CO2  
Charges your electric car





*That's how I imagined the roof of  
my dream house would be!*



Made in Germany

**SolteQ**



# A roof - hard as steel.

Defies all weathers and is stormier than a normal roof.

**SolteQ**

*Picture: Quad40 premium anthracite on historic building,  
with partial occupancy with active and passive elements*



# The SolteQ Energy Roof

**Photovoltaic and solar thermal in one**

- 1. Electricity**
- 2. Heating energy for heating & hot water**

*In addition, use the thermal energy of the roof surface!*

*... the entire energy requirement for electricity, heating and hot water is covered by the roof!*

## **1. Electricity**

*Electricity is generated by the photovoltaic function of the roof tiles*

## **2. Heating + hot water**

*The roof surface is also used as a thermal collector surface, which provides heating energy for household heating & domestic hot water.*

*The tiled roof area is like a large solar thermal collector which can deliver an immense amount of heat energy even in the coldest winter.*

*The roof surface is warm, both in summer and in winter particularly if the roof tiles are black in color. Even in the winter months, daylight is enough to warm the roof surface sufficiently enough to have a temperature higher than the ambient air temperature. The SolteQ Energy Roof takes full advantage of this heat energy by harvesting it and using it for household heating and domestic hot water. The hot air that sits under the tiles is fed to an air / water heat pump where the energy is captured and stored in a heating buffer to be utilized for household heating or to provide domestic hot water.*

*We will show you how you can meet all your heating needs for from your roof.*

*Self-sufficient, without oil, without gas, without electricity, all from the roof.*

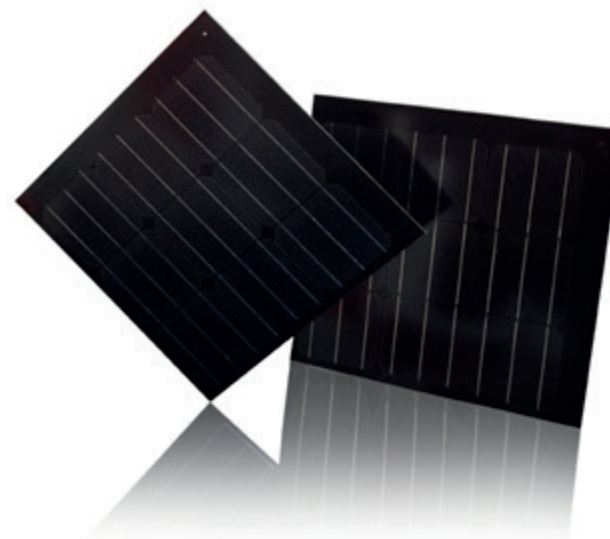
*The SolteQ energy roof uses the roof surface as a photovoltaic system and at the same time as a solar thermal system resulting in Electricity and heating energy, all from the roof.*



**One roof - 5 functions:**

- 1. Great look for the house**
- 2. Weatherproof roofing material**
- 3. Electricity**
- 4. Heating**
- 5. Insulation from the prevailing weather conditions**

*... the entire energy requirement for electricity, heating and hot water can be met by the roof!*



## *A roof as diligent and tireless as the bees ...*

- ★ *Great overall appearance of the building*
- ★ *Highest energy yield from the roof area*
- ★ *Protects the building more securely than any clay tile roofing*
- ★ *Works 50, 80 and more years without grumbling and growling*
- ★ *Absolutely wear and maintenance-free, except every year a cleaning with the water hose ... as in the car ...*

*High quality silicon, high quality glass will not rot and yellow in 100 years.  
Selected materials and high production quality - SolteQ.*





*The SolteQ Energy Roof is suitable for roofs that are considered unsuitable for conventional photovoltaics, because we produce a PV tile suitable for even the most complex of roofs, roofs with the smallest of roof surfaces and numerous penetrations. Even filigree roofs can be used up to 100%.*

*The SolteQ Energy Roof is suitable for roofs that are considered unsuitable for conventional photo-voltaics, because we produce a PV tile suitable for even the most complex of roofs, roofs with the smallest of roof surfaces and numerous penetrations.*

*Even filigree roofs can be used up to 100%.*

*Dormer roofs are not lost surfaces. With the small-format SolteQ roof tiles, these surfaces can also be used very well.*

*Even old European roof surfaces with coloured facades can be utilized.*



#### **Bat dormers**

*can be used over the whole area with SolteQ plain tile PV roof tiles.*

#### **Small and complex surfaces? No problem!**

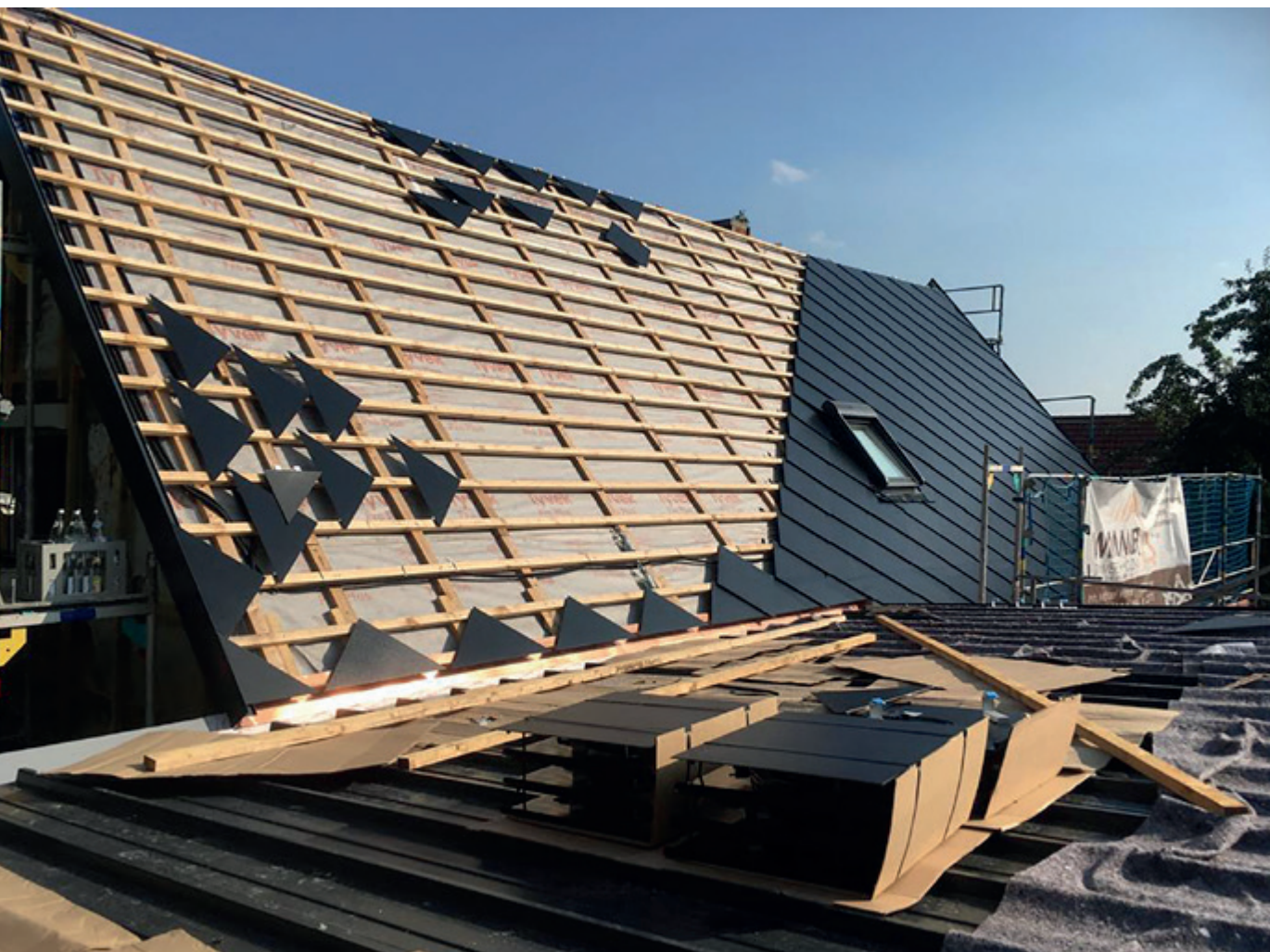
*Where there is a requirement for a particularly small roof tile to be used we would select a tile from our SolteQ Biber range of tiles, tiles that are not only small but also available in a range of colours. Even the most complicated of roofs can be utilised upto 100% for energy production. There is a SolteQ Energy roof available that will enable every roof, regardless of its complexity, to maximise its energy output.*

#### **Shadows? No problem !**

*Shadows and shading are a problem for conventional Solar Panel systems? This is not the case with SolteQ roofs !*

*The optimizer function in each individual roof tile minimises shading effects easily and reliably by the use of a bi-pass diode which ensures overall system performance is maintained.*

*Bat Dormers – are no problem for SolteQ roof tiles, 100% coverage is achievable.*





Electricity self-sufficiency: 90% - remaining costs: 250, - Euro per year  
electricity self-sufficiency with electricity storage: 98% - remaining costs: 50, - Euro per year  
Heating autarky: 100% - Remaining costs: 0, - Euro per year  
E-car charge: 100% - remaining costs: 0, - Euro per year





## Degree of self-sufficiency up to 98% relatively easy to achieve

Example:  
Roof with 60m<sup>2</sup> SolteQ system tiles,  
SQSZ-Black Premium  
Total system output: 10.0 kWp  
Power storage: E3DC S10 6.5kW

## Degree of self-sufficiency 100%

A self-sufficiency of 100% is quite possible with a good domestic power plant and a suitable roof size. A standard roof area of e.g. 80-100 m<sup>2</sup> are sufficient. The greater the greater the likelihood, because the trick is that the roof surface is able to cover the daily requirement even in the weak annual periods with little daily yield.

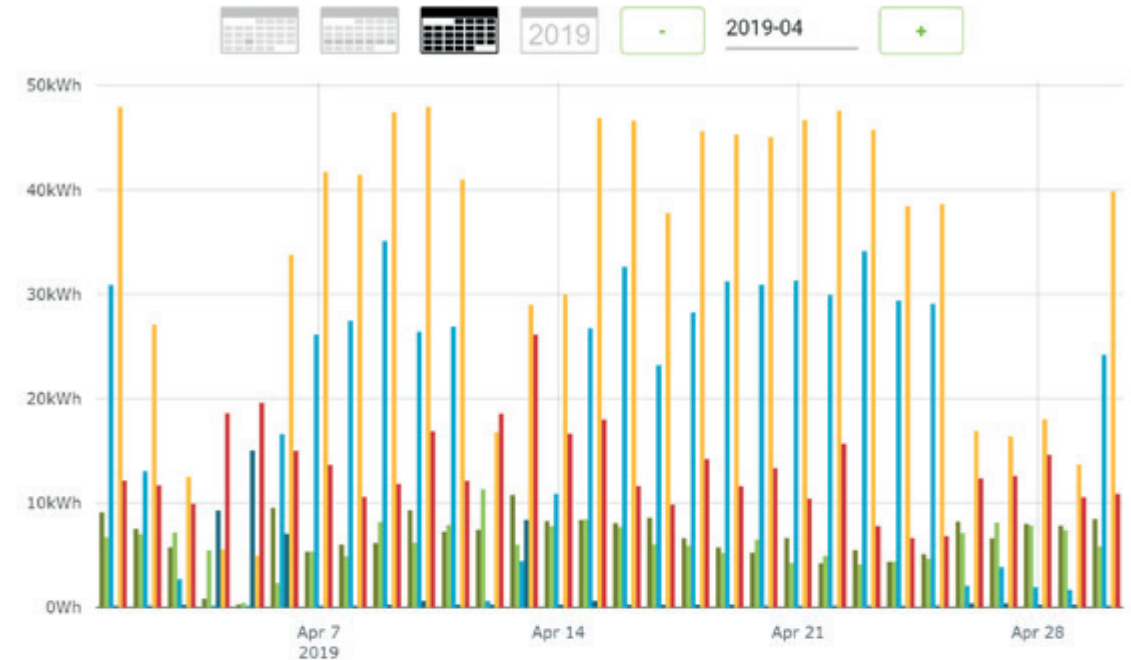


Long-term tests at our inhabited test house



## Leistungswerte (Standard)

2019-05-13 3:40:23



## ***ESN-complete solutions***

***Energy generation***

***Storage***

***Normal use***

***Electricity + heating***

*The house power plant- All in one*

*inverter*

*Power storage (Li)*

*emergency power*

*Interfaces for smart home solutions*

*and much more.*

*House plants E3DC*

*power range: 6,5 - 40kW*

**! Only available in Germany + Austria + France !**



*We protect your home  
and your energy costs*





## Storm and Weatherproof

# Every normal roof lifts off - the SolteQ roof protects!



### Lightning neutral

The SolteQ solar roof is a frameless system and therefore does not act like an antenna for a sheet and does not attract it, as with conventional photovoltaic modules.

### Storm clip on each shingle

Even in heavy storms with wind forces up to wind force 10, your house is safely protected.

The SolteQ solar roof protects your house against wind pressure and suction loads. In the storm, pressure loads of up to 850kg / m<sup>2</sup> and suction loads of 100kg can occur.

Roof tiles or roof tiles lift off and fly through the area. The SolteQ roof stands.

### Safe construction with SolteQ!

### Wind and suction loads

The official wind zone map has 4 wind zones:

	m/s vref	kmh vref	Windload qref/kN/m <sup>2</sup>	Windload kg/m <sup>2</sup>
1. Southern Germany	22,5	81	0,32	32
2. Northern Germany, Alpine foothills	25,0	90	0,39	39
3. North Sea Coastal Region, northern Mecklenburg	27,5	99	0,47	47
4. North Sea, North Sea Coast, Fehmarn, northern Rügen	30,0	108	0,56	56
Storm - CAT1	33,1	119-153	0,67	67
Storm - CAT2	15,0	154-177	0,94	94
Storm - CAT3	49,4	178-209	1,16	116
Storm - CAT4	58,3	210-249	1,45	145
Storm - CAT5	69,4	> 249	1,82	182

Note: 1kN is approximately 100kg

Storm resistance of a SolteQ roof: 850kg / m<sup>2</sup>  
Safety of a SolteQ roof: up to 1 to / m<sup>2</sup>

Tested by



Technische Prüfstelle für Solartechnik

**5x more stable than a conventional roof!**  
**You can be sure of that.**

... rather, the whole house takes off ...





*Battery storage enables the use of solar power generated during the day, even in the evening and at night. This avoids the purchase of expensive mains electricity and increases the return.*





# SolteQ energy consulting and planning for electricity and heating

## Energy

means not only electricity, but also heating energy  
SolteQ ensures that your home is always pleasant and warm.  
... without the need for gas or oil.

**The SolteQ energy concept:**

- + Roofing
- + Electricity
- + Heating
- + Storage solutions for electricity and heating
- + minimise your monthly energy costs
- .... simply complete our **Energy Assessment Form**.

We will then provide you with an energy consultation, where we calculate the electricity and heating energy required from your roof in order to meet your energy needs.

When considering one of our roofs it's not just the purchase price counts, but rather "Where are my monthly energy costs"? And "What can I earn with the roof"? SolteQ's energy concept is not just to sell you a roof, but to create an optimised energy plan for your current and future needs. For this reason, we offer in advance a detailed consultation and planning. On request, we will gladly come to your home and advise you in detail on how to make huge energy bills a thing of the past.

**Our consulting services include:**

- A visit to your home to provide you with advice on how best to reduce your monthly energy spends, by investing in a Energy Roof.
- Assessment of current demand for electricity and heating energy
- Personal energy cost optimisation, tailored to your needs
- Design of an optimised energy roof (based on available tile and power options)
- Detailed profitability calculation, incl. Amortisation calculation
- Example of financing
- Yield / cost optimisation with the aim of maximizing the benefit from your new roof
- Current memory calculation, heater memory calculation
- Optional: Calculation to determine the feasibility of the new roof meeting all of your household heating and domestic hot water requirements.
- Equipment planning and costing quotation based on your energy needs.

**Target design: 80% electricity self-sufficiency + 100% heating autarky**

(without power storage, with power storage direction 95%)

Of course, investing in an energy roof costs money. But we will show you how it will significantly reduce your month energy costs at a time of ever increasing energy bills!  
month energy costs at a time of ever increasing energy bills!

Make an appointment now!

Of course, an energy roof costs a penny of money. But we will show you how it is on you  
End of the month costs nothing!



*We will come to you.  
What better way than to have your consultation  
in the comfort of your own home.*

**Our strengths:**

1. Honest customer advice
2. Fair prices
3. Customer-oriented offer design  
(not sales-oriented)
4. Fun Consulting & Selling
5. There are always 3 winners



# The SolteQ energy concept: Building Energy Design

*SolteQ's aim is to not just sell a roof, but to provide a tailored design solution that meets the specific energy needs of the customer, a personal energy design.*

- ★ *Electricity generation*
- ★ *Heating energy*
- ★ *Power storage*
- ★ *Heating energy storage*
- ★ *A complete energy solution from one primary source*

*... and with the goal:*

- +> 95% power autarky and**
  - + 100% heating autarky**
  - + a move away from fossil fuels**
  - + 100% CO2-free**
  - + a move towards zero Euro electricity and heating costs!**
- With our certified roofer partner specialist companies in your area, we offer you the complete roof installation service.***

*We can offer a one stop shop for your roof project because we have certified specialist roofing partners in your local area. Whether it's replacing existing tiles with our SolteQ PV tiles or replacing/constructing a whole new roof from sarking board & waterproof membrane upwards, we can meet all of your roofing needs.*

## **SolteQ supports the roofing industry**

*The SolteQ energy roofs are installed by regional specialist partners in your area. So you are sure that the installation is professional and of the best possible quality. For product quality and execution, you can rely on SolteQ.*



***A SolteQ solar roof is not a money issue.  
It is an investment!***

*We make sure that you save and earn money right from the start,  
instead of spending it.  
The SolteQ solar roof will not cost you anything at the end of the month!*

***The goal:***

***80% electricity self-sufficiency + 100% heating autarky***



*Save your money,  
instead of burning it!  
We help you with that*

*The money you do not spend  
THAT is the return of the future!*



***Let us advise you!***





# What is the cost structure per year?

Example 1:  
Detached house with saddle roof  
with 100m<sup>2</sup> active and 100m<sup>2</sup> passive roof area.  
Orientation: North / South

Amortization complete roof: 12.8 years  
Taking into account electricity and heating costs  
with electric car heat pump and energy cost savings,  
as well as financing

Benefit without financing or  
pension after amortization:  
+ 5.670 €

With SolteQ solar roof:  
Annual benefit with  
financing \*):  
+ 2.780 €



Saved + income in 20 years:  
+74.800 €

Our goal:  
**WE** want **YOU** to  
safe and make  
money.

Only clay pan roof and gas heating:  
- € 5,300 energy costs + roof financing



Example 2:  
Detached house with saddle roof  
with 200m<sup>2</sup> active roof area.  
Orientation: East / West

Amortization complete roof: 15.3 years  
Taking into account electricity and heating costs  
with electric car heat pump and energy cost savings,  
as well as financing



**The SolteQ solar roof is an INVEST, not an expense.  
Future returns are the saved costs that you don't have  
to spend.**

Save your money and invest it in your new solar roof as an investment because it makes money for you. Like stocks on the stock market.

Of course, a solar roof also costs money first. But it earns money from the first month.

A SolteQ solar roof sucks with the highest efficiency so that you get your money back in a short time and continue to have income afterwards.







*Do we really want to allow such PV parks to spoil our environment and replace valuable forest and arable land?*

*Its makes far more sense to utilise your roof!  
Rooftops are available anyway.*

*Why not utilise this huge potential source of energy, your roof?*

*Free energy.*

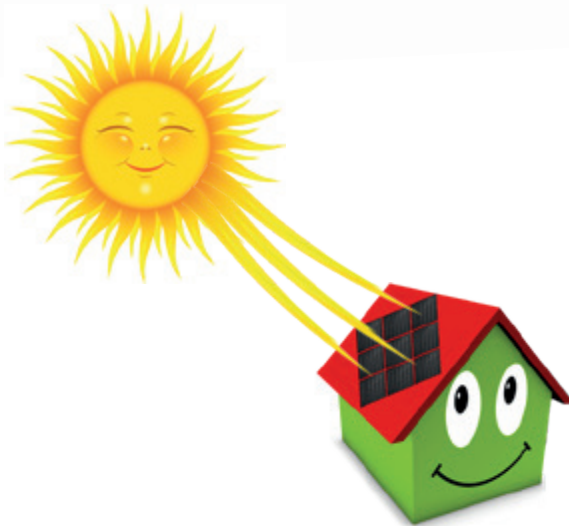
*Let's use it!*

**Photovoltaik YES - but always in respect to the nature !**

*Ecological and logical energy production:*

*There are enough suitable roof areas nationwide to be able to generate sufficient energy, when used in conjunction with other renewables such as wind energy, to meet the entire national energy demand. If this became a reality then all nuclear and coal power plants in the country could be shut down. The energy potential from roofs is not necessarily that obvious but it is significant none the less. Here at SolteQ we will show you how you can maximise the energy output from your roof and reduce your overall energy bill expenditure by investing in a SolteQ Energy Roof. The roof that can make energy bills a thing of the past.*

*Let us show you how!*



**The formula of the future:  $E = S \times PV^2$**



$Energy = Sun \times PV^2$

**... Energy from The Sun - for free !**



*Our sun gives us more energy than we need - let us use it!*

*SolteQ makes it usable*





# The SolteQ heating concept

When replacing or buying a new heater, you should always think about using the free solar energy. This can save a good part of the energy required to produce hot water. In the summer months you will not have to turn on your boiler at times, in the cool season, the solar thermal system supports the main heating. There are also attractive promotions.

In addition to power generation, the SolteQ energy roof is also able to cover your heating needs. On average, 670W of pure thermal energy per m<sup>2</sup> of roof area fall on your roof per year, which evaporates and goes unused. The SolteQ Energy Roof captures the heat energy under the roof tiles and routes it into an air-to-water heat pump, before capturing and storing the energy in a heating buffer tank. This leads to several advantages:

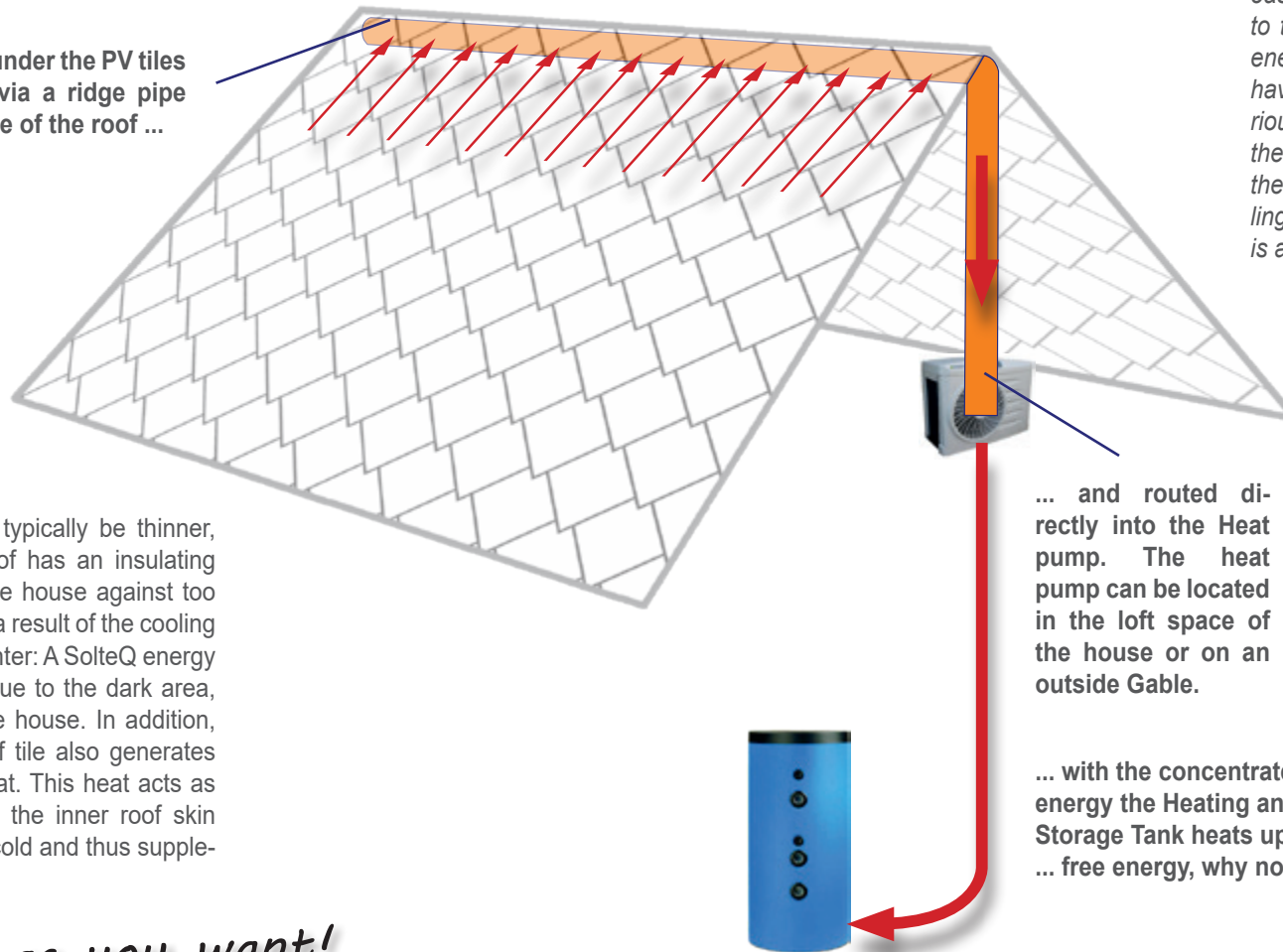
1. The heat energy affecting the roof surface is extracted by means of a heat pump, stored in a buffer to be used for household heating or domestic hot water heating.
2. Positive side effect 1: This simultaneously cools the PV tiles and increases their efficiency enormously
3. Positive side effect 2: By removing the warm layer under the tiles it reduces the possibility of the hot air heating the internal roof space.
4. Positive side effect 3: In the extreme scenario, this eliminates the need for an air conditioning unit which in turn saves energy and CO<sup>2</sup>

The warm air under the PV tiles is sucked in via a ridge pipe under the ridge of the roof ...

## Use of the entire roof area as solar thermal collector

### Roof Insulation

The insulation of the roof can typically be thinner, because the SolteQ energy roof has an insulating effect. In summer, it protects the house against too much solar heat, particularly as a result of the cooling effect of forced ventilation. In winter: A SolteQ energy roof warms up even in winter due to the dark area, keeping the cold away from the house. In addition, each solar cell in each PV roof tile also generates a certain amount of intrinsic heat. This heat acts as radiant heat, which radiates to the inner roof skin and so good insulating against cold and thus supplements the insulating wool.



... and routed directly into the Heat pump. The heat pump can be located in the loft space of the house or on an outside Gable.

... with the concentrated heat energy the Heating and Hot Water Storage Tank heats up.  
... free energy, why not use it!

The heat pump can be located  
a) in the loft space or  
b) placed on an outer wall (gable)

### The Storage Buffer

is typically available in older properties together with a conventional heating system. In such properties the existing buffer memory (hot water tank) can often be still be used, if however the amount of memory is insufficient, it is very easy to install another storage tank in parallel to the first in order to increase the amount of energy stored. For houses that do not already have a hot water storage tank, there are various alternative forms of storage available on the market. If space is limited inside the house, then other options are available such as installing an underground tank in the garden which is a relatively simple solution and inexpensive.

**Do you want 100% heating autarchy?  
It is possible!**

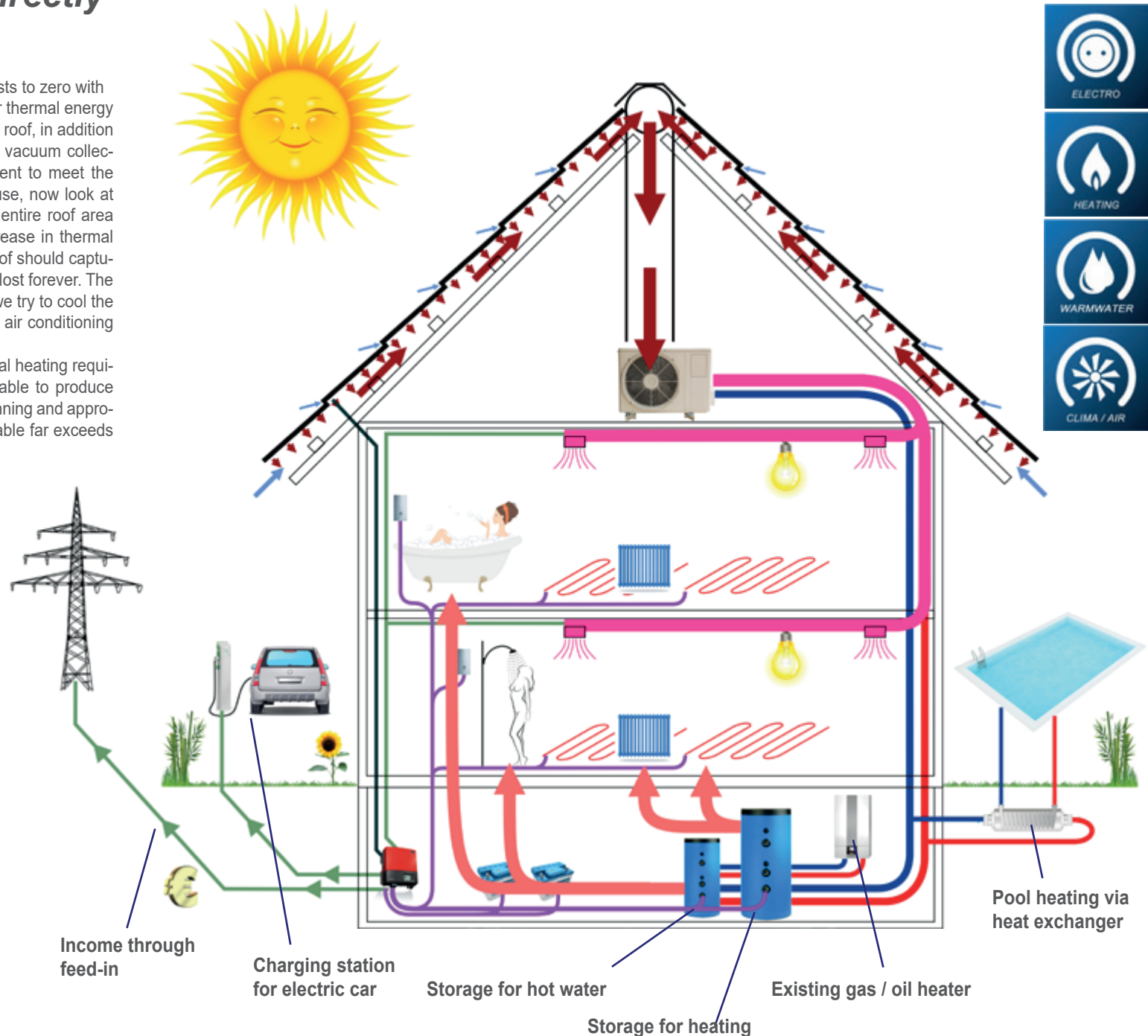
*Heat as much as you want!  
There is excess heat on your roof*

# Electricity + heat directly from your roof ...

See how easy it is to reduce your heating costs to zero with a SolteQ Energy Roof: The average value for thermal energy is 670 W per m<sup>2</sup>, which is available from your roof, in addition to electricity generation. If two solar thermal vacuum collectors with an area of approx. 3m<sup>2</sup> are sufficient to meet the hot water demand of a typical detached house, now look at the opportunity associated with utilising the entire roof area of your house and the associated huge increase in thermal energy generated. Clearly this huge amount of should captured and not just allowed to evaporate and be lost forever. The situation is compounded even further when we try to cool the heat that has permeated into the house with air conditioning units. What a double waste of Energy!

Example: A normal family home has an annual heating requirement of around 10,000 kWh. The roof is able to produce approx. 60,000 kWh. With a good energy planning and appropriate energy storage, the heat energy available far exceeds what is required

For more information please contact your nearest SolteQ Dealer or download the Brochure for the SolteQ Heating concept on [www.SOLTEQ.eu](http://www.SOLTEQ.eu)



We will help you to cover your household energy requirements !



## Options for household heating and domestic hot water heating.

The SolteQ Energy Roof not only generate electricity as a result of the integrated high-performance solar cells, but it is also able to generate heat through the thermal heat of the roof. Thus, the energy required for household heating or domestic water heating can be generated in various ways.

### a) Heating supply via electrical energy

The SolteQ energy roof usually generates more electrical energy than is needed, which can be used for the heating. Electric underfloor heating / infrared heaters: For new buildings, it makes sense to design the space heaters via electrical heating cables in the floor and infrared heaters on walls. Advantages: High efficiency, low maintenance, no water pumps, which also consume electricity. This is typically the cheapest heating variant for a new building. Two options are available, these are:

#### a1) heating based purely on electricity,

e.g. electric underfloor heating, infrared heaters etc.

Advantages:

- 100% efficiency - 0% loss

The electrical energy is converted directly into heat.

- Well suited for new construction and renovation
  - Cost-effective heating system
  - Completely maintenance-free, no wearing parts
  - Very long life
  - Infrared heaters can be placed invisibly
- > Tip: Very effective if the electricity costs nothing!

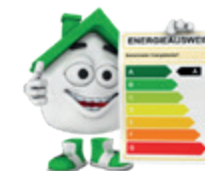
#### a2) Heating the heater buffer via the excess electrical energy from the roof

The heating buffer, as well as the hot water tank can be heated very easily with the surplus energy. For this purpose, electric heating elements are installed in the buffer memory, so that there is no need for water pipes connecting the roof to the storage. This makes the system very low maintenance.

Advantages:

- Very high efficiency
- The electrical energy is directly converted into heat.
- Well suited for new construction and renovation projects
  - Easy and inexpensive to retrofit to existing heating systems
- > Tip: Very effective if the electricity costs nothing!

Don't hesitate to discuss  
your heating options  
with us here at SolteQ.  
It is worth it!



## b) heating via thermal energy from the roof by means of a heat pump

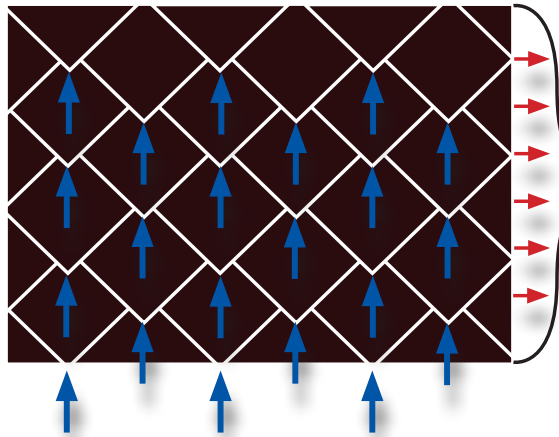
The SolteQ energy roof usually generates more electrical energy than is needed.

The large roof area of a house represents an enormous source of thermal energy, which is comparable to solar thermal collectors, only much larger. A typical detached house would require two solar thermal collectors, which are sufficient for the domestic hot water supply only, now imagine how much more energy can be supplied when the entire roof area is utilised. It makes sense to use this heat energy, energy that otherwise is just wasted. The additional positive side effect of harvesting this hot air from under the PV tiles is that they are cooled, which increases their efficiency for power generation. The warm air behind the tiles can be extracted by means of a heat pump and used for heat recovery, even in winter. An air / water heat pump has the great advantage that it can generate heat even in the dark and in the cold winter months, even at minus 30 ° C.

Thanks to the amount of energy provided by the SolteQ energy roof, the heat pump is able to meet the entire household energy requirement for heating and domestic hot water heating, all from the SolteQ Energy Roof.

### Double benefit:

- a) heat energy for heating + hot water => more electricity is at your disposal
- b) cooling of the PV tiles => better efficiency and thus more power output



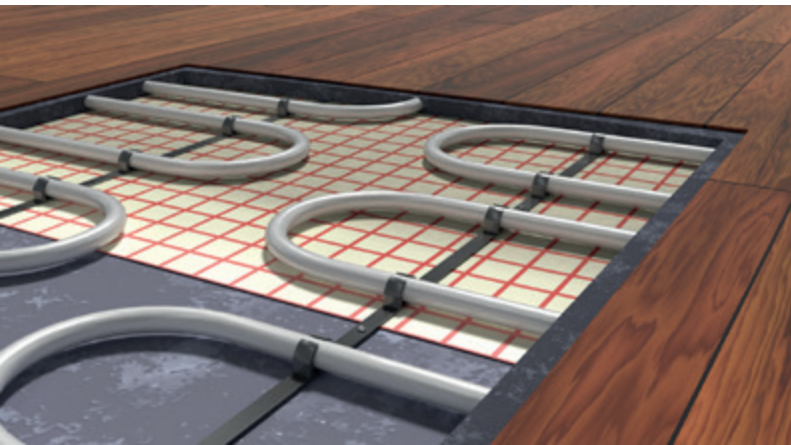
### Additional utilisation of the roof heating for

- Household heating



### Tip !

Underfloor heating systems are the most efficient and now cost-effective variant of a modern heating system. They only require a low flow temperature and have no heat loss. They ensure a pleasant feel-good climate through even heat distribution and always warm feet.



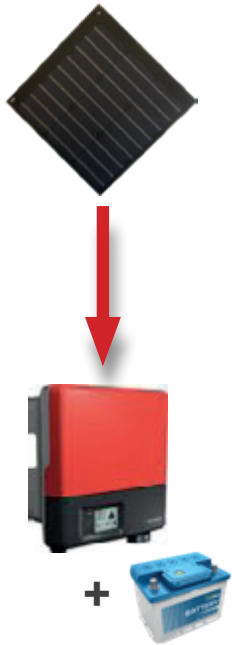
### Tip!

For further information please contact your nearest SolteQ dealer. See also our videos on YouTube





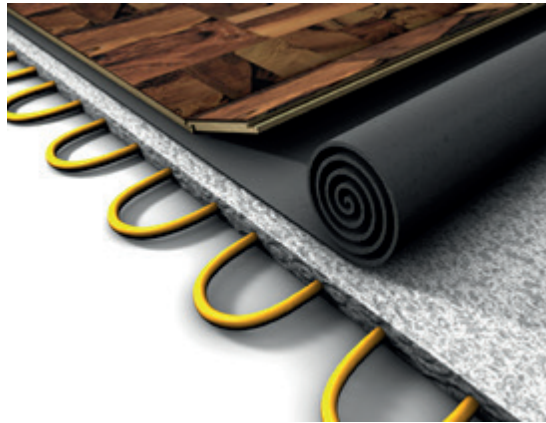
## Electric heating



### Electric underfloor heating

A modern heat pump is a must, regardless of whether it is a new building or heating renovation. Underfloor heating can also be retrofitted without any problems, e.g. as electric heating mats that can be laid directly under the new tiles or laminate. The SolteQ heating system offers several options:

- a) Pure electricity with electric heating mats and smart infrared heaters
- b) Via electricity with water-based underfloor heating (very easy to implement if there is underfloor heating)
- c) Via the thermal heat energy from the roof, advantage: The electrical energy from the roof is (almost) not required and is available for other purposes



### Infrared heaters

An infrared heater ensures particularly pleasant warmth and a good indoor climate. Infrared heaters have a high proportion of radiant heat, which is generally perceived as more pleasant than convection heat - similar to that of a tiled stove.

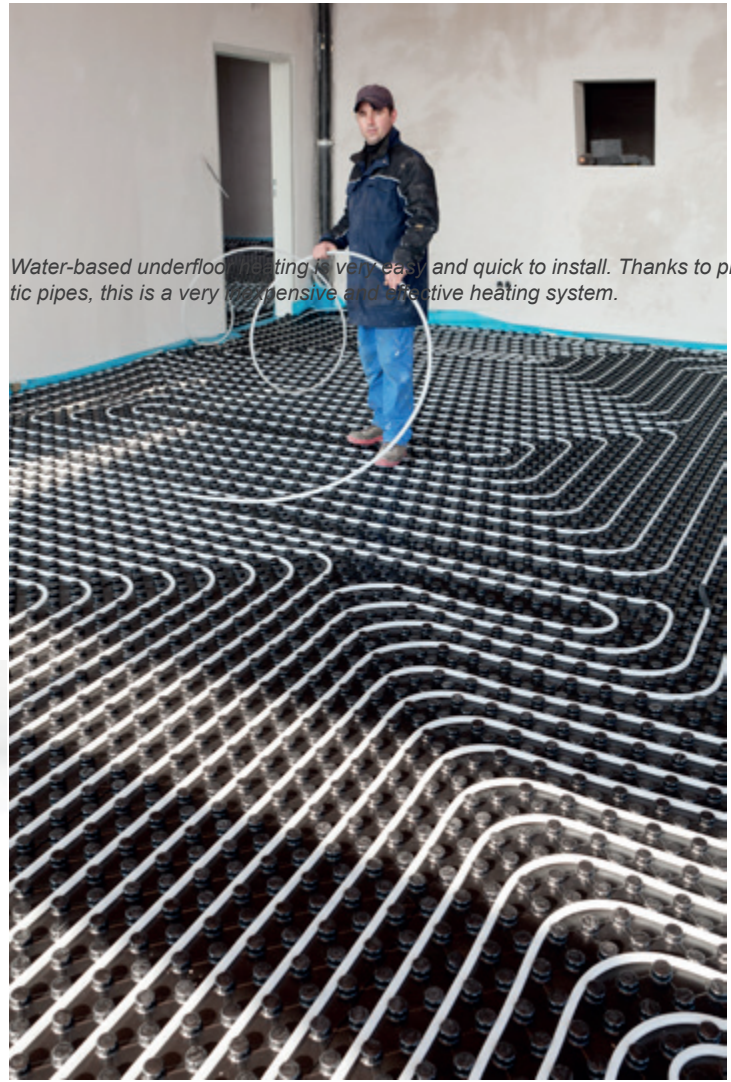
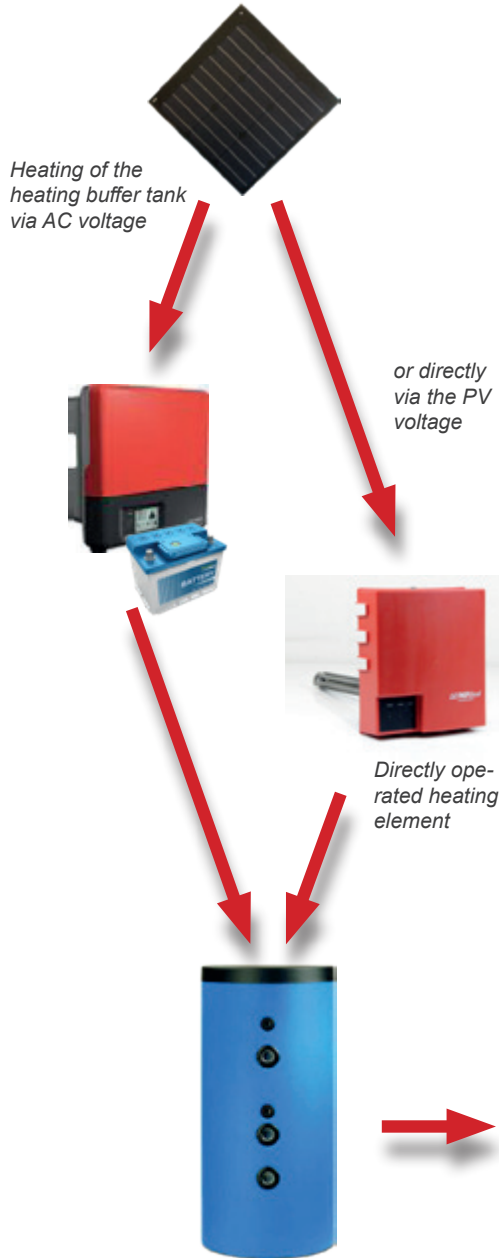
SolteQ infrared heaters are made of high quality heat glass and are available with your desired motif, family or holiday photo. The photo is printed on the back of the glass and is therefore very durable.





# Water based heating system

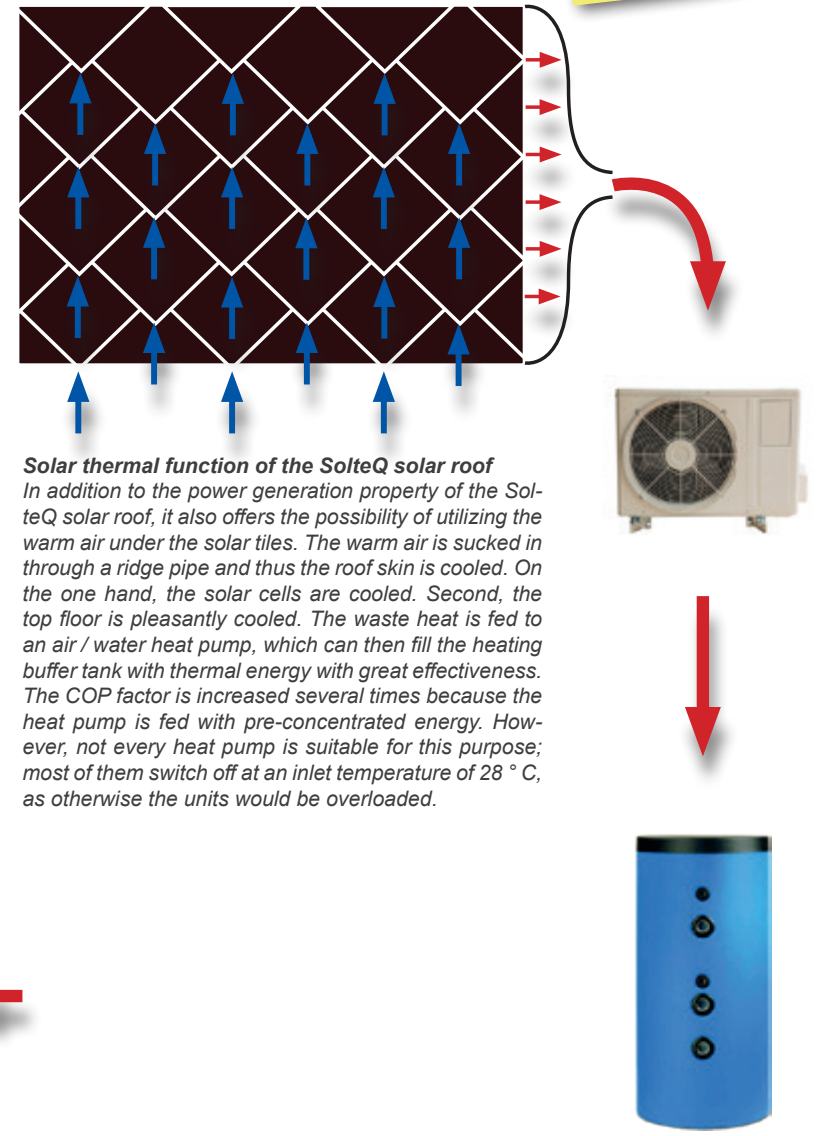
## About electricity



Water-based underfloor heating is very easy and quick to install. Thanks to plastic pipes, this is a very inexpensive and effective heating system.

or via solar thermal via warm exhaust air from the roof

Ask for the lucrative storage actions of SolteQ. It is worth it !





### c) Heating supply via ground source heat pump

With an existing geothermal heat pump, it is very easy to reduce its energy consumption to zero. Depending on the COP value, the HP has a power requirement of 4-5,000 kWh per year. It works like this:

1. The HP is not connected to the grid, but is supplied completely by the roof during the day.
  2. The PV system is designed to accommodate the demand from the heat pump and also sufficient battery storage e.g 5KWh to include the non-daylight hours demand from the pump.
  3. In the evening and at night, the HP is powered by the battery.
- The result is a 100% self-sufficient heating system!

If the roof surface is not large enough to meet the demand for heating then a ground source heat pump can provide an alternative. A ground source heat pump system harnesses natural heat from underground by pumping water through it in pipes. The heat pump then increases the temperature, and the heat is used to provide home heating or hot water. The pump is powered by electricity.

This type of pump has a power factor defined as (approx.) 1: 4. Therefore for every 100W input into the pump there is a heating output of 400W. The pump can be operated free of charge both day and night when used with the SolteQ energy roof and battery storage, resulting in free household heating 24hrs per day.

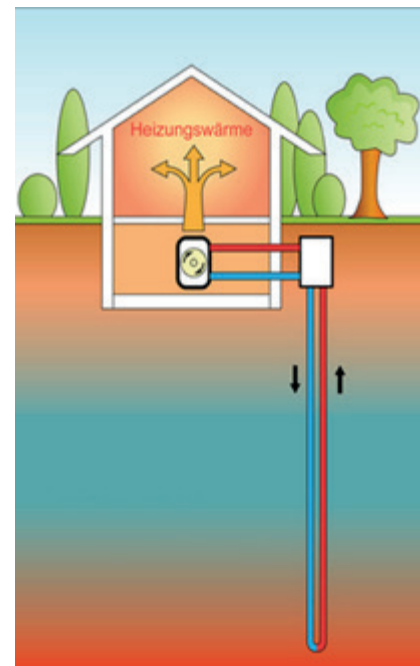
#### Heating and cooling via the underfloor heating

Underfloor heating can be adjusted so that it can heat in winter and cool in summer. A reversible heat pump is required for this. These are available as geothermal heat pumps or air / water heat pumps. The geothermal heat pump uses the ground to transport the heat from the inside of the earth into the house in winter or to release the warm room air to the environment in summer. Because the earth has an ideal property for this: it only warms up superficially in summer and freezes only a few centimeters deep in winter. In the layers below (up to 50 meters), however, the temperature remains relatively constant at around 10 degrees Celsius. However, it must be ensured that the cooling water flow temperature is at least 18 degrees (two-pipe system) so that no condensation can form. Otherwise the floor covering can be damaged or mold can form. With an increased building cooling load, two-line systems are no longer sufficient. Larger buildings or rooms with large glass surfaces in particular require more cooling and are therefore dependent on four-wire systems. In such systems, separate distribution systems are used for heating and cooling.

#### Active cooling

With active cooling, the entire heat pump cycle is reversed. If an air source heat pump can extract heat from the outside air, heat can also be extracted from the inside air. Active cooling is suitable for both geothermal heat pumps and air-water heat pumps. This actively lowers the room temperature. The great advantage of active cooling is also the cooling capacity, which can easily reach a room temperature of 20 ° Celsius in summer and, unlike air conditioning, does not dry out the air.

Those who use underfloor heating for heating and cooling ensure pleasant temperatures all year round.



Example geothermal heat pump

#### Tip:

With an energy solution from SolteQ, you can run your existing ground source heat pump completely free of charge! Example geothermal heat pump



#### Tip:

Take a look at our page [www.SOLTEQ.eu](http://www.SOLTEQ.eu), where you will find further informational news on PV & heating solutions. We always provide objective advice!

The negative aspects of a PV system are also addressed. However, we have a solution to almost everything. Please ask!

## Design options

*SolteQ offers not only a product, but also the energy concept that is perfectly matched to your wishes, requirements and possibilities:*

### **Design options:**

- a) *full occupancy, maximum yield*
- b) *needs-based design, adapted to the needs*
- c) *Modular Expandable, now only for the needs, later extend (passive against active exchange)*
- d) *€ 30,000 fixed price offer*

### **Pricing options:**

- a) *The full equipment: Complete roof with a series for maximum aesthetics, including SolteQ passive shingles for the inactive areas (without solar).*
- b) *SolteQ-Infinity can be blended with cheap fiber cement sheets 60 x 30 cm from Eternit or other manufacturers.*
- c) *SolteQ System tiles can be mixed with cheap Braas-Tegalit concrete roof tiles.*

*Thus, there are various options for a cost-effective solar roof solution, the right solution for every taste and budget. In any case, you get a holistic roof covering, according to your wishes.*

*For this reason, we would like to advise you in peace and with plenty of time at your home.*



Please ask:  
Service hotline  
or  
[info@solteq.eu](mailto:info@solteq.eu)  
or  
[info@solteq.uk](mailto:info@solteq.uk)

We're here to help !



## Free heating energy? Without oil or gas? How can that happen ?

*By utilising the energy from your roof!*

*SolteQ offers the right solution to use this energy to maximum effectiveness.*

*Today's "efficient" options for heat energy generation, in addition to conventional gas and oil heating systems:*

- a) "Combined heat and power plant": These plants continue to require gas to enable them to operate, so no significant cost savings and no environmental protection*
  - b) "Pellet heating": still needs fuel, so no significant cost savings and no environmental protection*
- In conclusion there is no significant technology to generate heating for heating and hot water.*

*SolteQ is revolutionising the heating industry with a completely new concept using existing technologies. Namely with a way to use the free energy that is already on your roof.*

- 100% free**
- 100% CO2-free**
- 100% clean energy**
- 100% SolteQ.**

*Practical example: A detached family house with a family of four has an annual heat energy requirement of approximately 10,000 kWh. A SolteQ energy roof with a roof area of 100<sup>m</sup><sup>2</sup> is capable of supplying approx. 100,000 kWh of thermal energy, 10 times the amount that is actually needed.*



*The return of the Future is the money I do not spend.  
Save your money instead of using it on ever increasing energy bills!*

# Heat recovery

Houses lose heat through the walls and the roof. Now imagine if that heat could be intercepted, and routed to an air/air heat pump which heats the re-circulated air and returns it to heat the house, at the same time as minimising losses from the fabric of the building.

This SolteQ heat recovery principle is presented below:

The house typically consists of a cavity walled structure, although an alternative can be to have an outer skin that consists of a solar façade, which also creates an insulating layer from which the heat can be extracted.

Most countries are now introducing energy-saving regulations which typically stipulate that in order to reduce energy losses, the house should be packed with insulation in order to minimise heat losses from the fabric of the building. However, this approach has many disadvantages:

- a) Increase in the number of construction activities.
- b) Increase in Costs
- c) A Loss of air circulation can quickly result in the formation of mold on walls and ceilings.
- d) The living environment within house is not degraded.

The SolteQ approach is simpler, cheaper, more effective and more environmentally friendly:

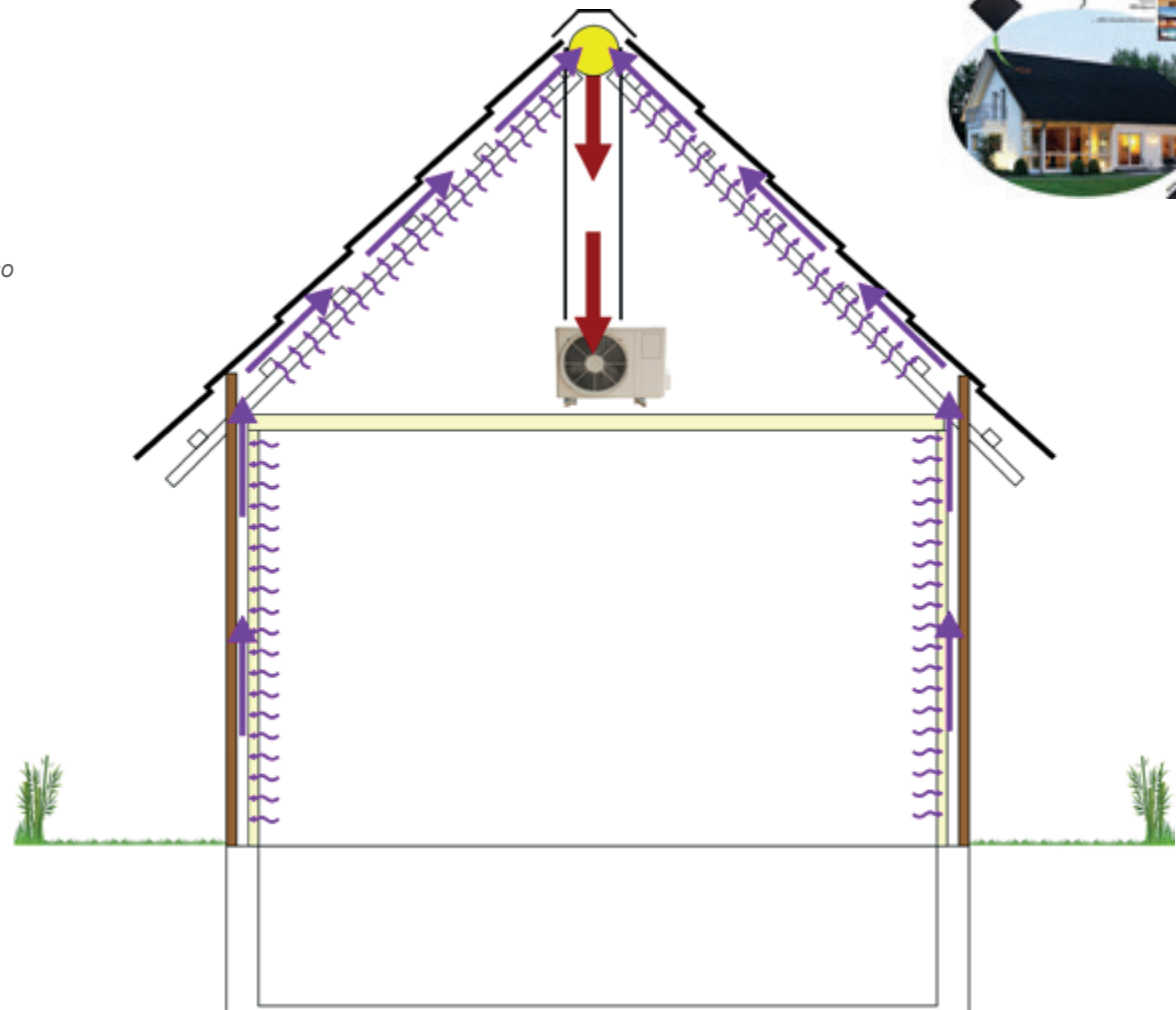
- a) No insulation with non-permeable materials
- b) No cavity wall insulation
- c) Only usual roof insulation
- d) Improved ventilation

A high degree of insulation means that the walls are no longer breathable. The air between the walls on the one hand provides good insulation and also provides the basis of the heat recovery system.

To summarise:

1. Improved quality of living
- +
2. Much healthier living environment

It does not get any more efficient than absorbing the lost heat and returning it to the house.



For more information, download the Brochure for Heating connection from [www.SOLTEQ.eu](http://www.SOLTEQ.eu) or contact your local approved SolteQ dealer for further advice.





# „Amortisation“ ?

Where is the „payback time“ for one

- a) car?
- b) boat
- c) your house?
- d) pool or sauna?
- e) What is the payback period for the normal roof?  
It NEVER pays for itself - the money is WAY!

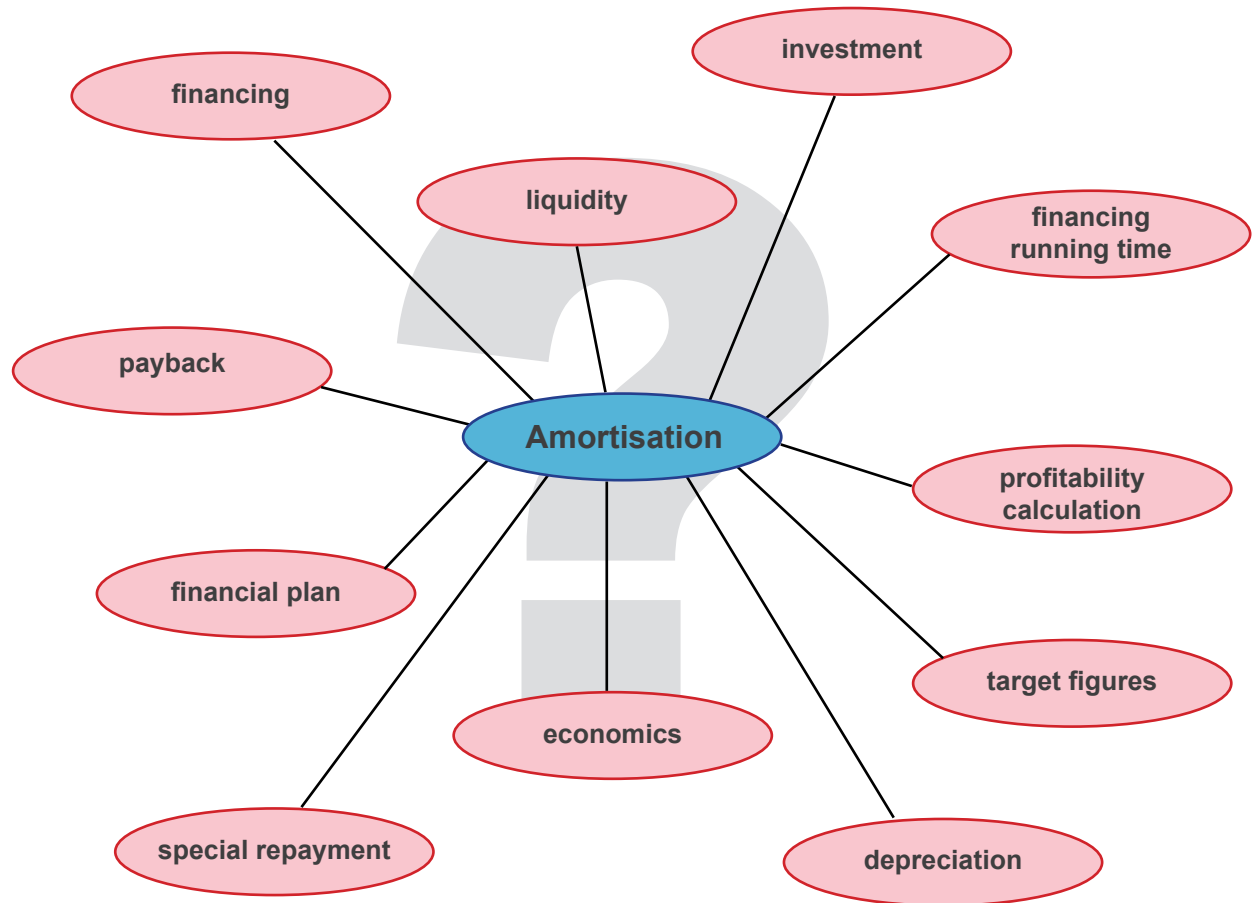
**But the SolteQ roof does!**

*The SolteQ roof*

- earns money
- saves money
- looks great
- increases the added value of the house
- pays off itself
- and forms a good pension

**The money comes back completely - with top interest!  
What more do you want ?**

**Eat „payback,“  
switch to the „earn money“ mode!**



Meaningful and correct calculation:

A conventional photovoltaic system is a pure investment. Of course, one calculates costs / benefits.

The SolteQ roof is primarily a roof covering. By the way, it is also a photovoltaic system and also a solar thermal system.

**The SolteQ energy roof: 1. Weatherproof roof covering + 2. Electricity generation + 3. Heating and hot water**

The SolteQ energy roof costs just as much as a normal roof covering + photovoltaic systems with the same output.

Even if the SolteQ roof offers many advantages and pays for itself completely in a short time, you should concentrate on

- a) How much effort or even profit do I have at the end of the month?
- b) What do I earn with my roof after the financing period?



*Zero heating  
costs?  
Sure, with my  
SolteQ solar roof*



## **Renovation with environmentally friendly technology!**

**Renovation with environmentally friendly technology!**

**A great look for your home that also saves you money.**

**A new roof, that's also full of energy!**

only  
14 kg  
per m<sup>2</sup>



*Quad 40... like slate, only much easier to install!*

# The 10 GOLDEN RULES

**of a SolteQ Energy Roof:**

1. A SolteQ energy roof upgrades the house significantly and looks great
2. If you can afford a clay roof, then you can also afford a SolteQ energy roof
3. The SolteQ energy roof pays for itself with the passing of time, the money for a clay roof is gone - forever.
4. If you need a roof and you are looking for the benefits of photovoltaics, then look no further than the SolteQ Energy Roof.
5. You produce your own electricity and can also harvest the solar thermal energy from your roof and become as energy self-sufficient as possible. No more electricity costs and no more heating costs - The households entire energy requirement is totally self-produced
6. You get a brand new roof covering that not only pays for itself but saves you significant amounts of money in the long term.
7. Purchasing an energy roof will provide you with a much better return on investment than the interest generated from your banks savings account.
8. The roof becomes part of your biggest asset, your home.
9. You become immune to rising electricity and energy prices
10. Put your money in your own roof. The saved energy costs will prove invaluable, particularly in the retirement years.

## Historic and Listed Buildings with a great SolteQ look

**SolteQ have a roof tile that's suitable for all buildings!**

With its comprehensive range of sizes, shapes and colours SolteQ have tiles that are ideally suited for use in the renovation of listed buildings, buildings that would otherwise not be able to take advantage of the benefits of conventional PV systems due to three main factors, visual impact, physical size and weight. But this is not the case with SolteQ tiles, even dormers, projections and other special features can be easily addressed, thanks to the small and flexible format of the PV tiles and accessories.

Advantages:

a) The SolteQ energy roof can have the appearance of a slate roofing, but with the inclusion of a PV system that is almost undetectable. At a distance of 15m, the fine cell structures are virtually invisible. The attractive dark blue cells are used to great effect in a variety of our tiles which provide a look very similar to that of slate. Excellent for historic and listed buildings.

b) Even historic and listed buildings can cover their own energy requirements with the SolteQ Energy Roof, and without the need to degrade the building in any way.

c) Improved weather resistance with the introduction of the toughened prismatic glass SolteQ PV roof tiles.

d) Buildings made from stone, have a very high demand for heating energy. The thermal energy of the SolteQ roof can be used in addition to the PV system, which can often result in all of the buildings energy needs being met by the roof!

**-> electricity + heating completely from roof!**

The heat energy is extracted under the tiles via an additional heat pump and fed into the heating system.

Thanks to the various great looking tiles in the SolteQ range, it is now possible for the first time to provide energy for listed buildings that, for aesthetic reasons, could not previously be covered with PV modules.

Normal roof tiles or shingles have a weight of 50-80 kg per square meter, slate is even heavier.

A SolteQ Quad PV roof shingle weighs only 3.3 kg. This results in a weight of only about 14 kg per square metre.

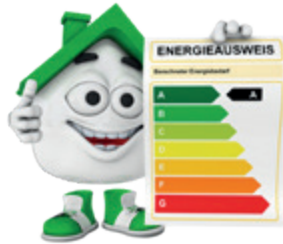


**SolteQ**



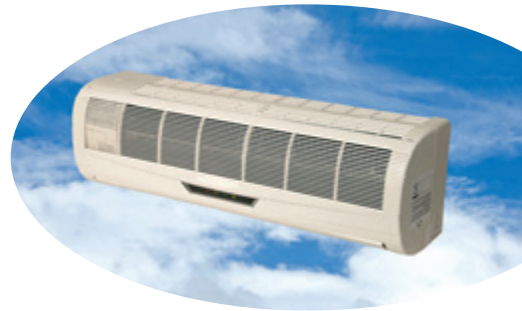
## Regardless of your house size, SolteQ have the roof for you.

With a SolteQ quad energy roof with a stylish, modern appearance, even the largest of building complexes can be enhanced with a great looking with maximum energy output.



## Air conditioning units

... really are very power-hungry. Never mind!  
Let your air conditioner run continually, because the power it needs is generated free of charge from your roof!



## The installation

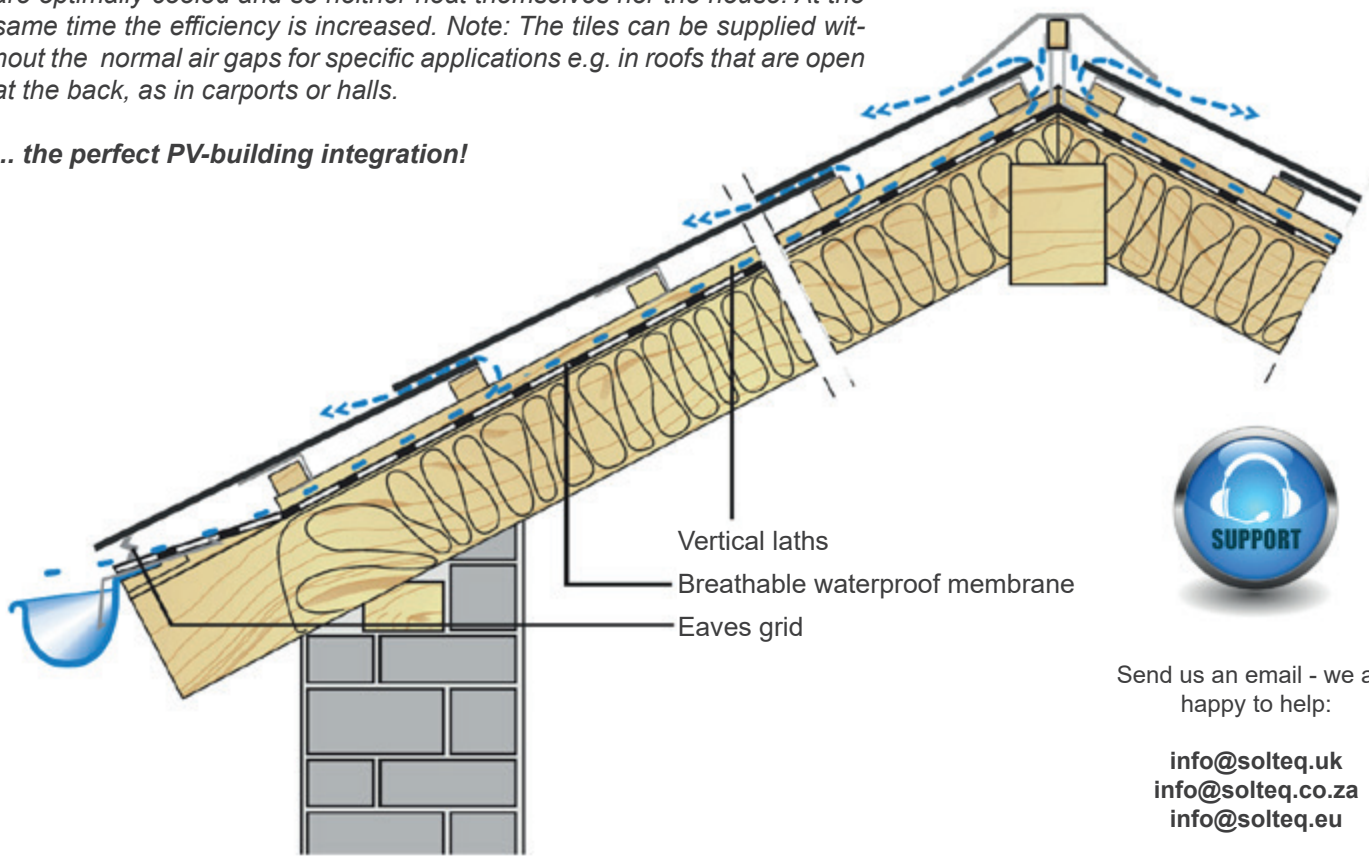
The SolteQ energy roofs are installed at your site by authorized and professional roofer partners.

The nationwide and Europe-wide network of roofer partners ensures smooth and fast delivery and installation of your SolteQ solar roof.

## Perfect ventilation

The simple yet sophisticated design of the SolteQ Quad PV Rooftop System provides great looks, cost savings and the highest energy yield. The special design of the tiles ensures optimal ventilation, so that the solar tiles are optimally cooled and so neither heat themselves nor the house. At the same time the efficiency is increased. Note: The tiles can be supplied without the normal air gaps for specific applications e.g. in roofs that are open at the back, as in carports or halls.

... the perfect PV-building integration!



Simple and discreet installation of a roof window.



Send us an email - we are happy to help:

info@solteq.uk  
 info@solteq.co.za  
 info@solteq.eu





# Easy Installation

Look how easy the installation of our Quad 40 tiles is:  
... easier than laying standard roof tiles

Sarking board, covered with breathable, waterproof membrane, battened and counter battened ready to accept the Quad 40 tiles.



1. Plug the connectors ...



2. Hang the tiles onto the battens ....



3. Fix with the special screw ...



... the tiles are laid from the eaves to the ridge ...



... the new SolteQ Quad Energy Roof is complete!



101 far easier than laying standard roof tiles.



**Suitable for flat roofs, pitched roofs and facades whether for new build or renovation**

The SolteQ Quad PV Roof Tile product line is suitable for inclinations from 3 ° to 90 °. Even with a roof pitch as low as 3 ° the roof will remain water tight and still have sufficient fall for effective rainwater drainage. Essentially all roofs and even vertical walls can be covered with the SolteQ PV tiles or facades, providing both a great look combined with huge amounts of energy.

SolteQ Quad PV Tile – Multi functional and Stylish.

Please note: Facades have a very high energy potential, especially in winter!



**SolteQ-Quad40 – Our most efficient roof tile!**

**Slate-like appearance**

From a distance, the Quad PV roof tile is virtually indistinguishable from a traditional slate roof. Add to that the extremely low weight of only 14kg / m<sup>2</sup>.

This is why the system is ideal for roof renovation in half-timbered houses, listed buildings and many more applications



SolteQ energy roof on a half-timbered house





## ***Produce your own clean energy.***

*Why not become energy self-sufficient,  
and make energy bills a thing of the past?*

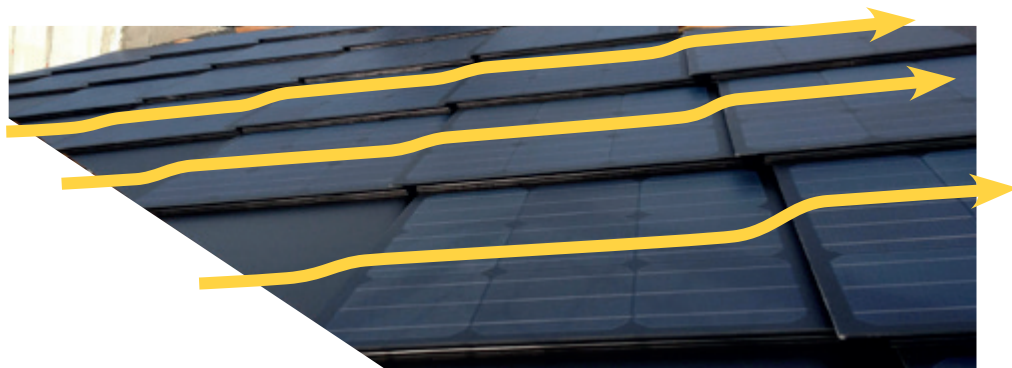
*Example of a SolteQ Energy roof where the tiles have been laid in the horizontal format  
with both active and passive elements which are indistinguishable from each other.*





## Very Strong

SolteQ energy roof tiles are more stronger than is demand by national standards. The compressive strength is significantly higher than that of conventional roofing or photovoltaic modules. For example, the standard in Germany requires a suction strength of 15kg for the beaver roof tile. The SolteQ Beaver PV Roof Tile is tested with 50kg. ... your SolteQ roof will not lift even in the strongest winds.



## Storm proof

The SolteQ Quad PV roof shingle is absolutely storm-proof. The tiles are fixed to the battens at 3-points on the back of each tile for improved safety suspension, so the tiles cannot lift even in the most severe storms. The tiles also come complete with a special patented seal that ensures the wind cannot get under the tile and lift it from the roof. In stormy conditions, the wind suction on the lee side of the roof is a problem for all roof's. The SolteQ Quad tiles however offer far more protection in such conditions due to their intrinsic design.



## Hail proof

The SolteQ-Quad-PV-Tile is completely resistant to hail storms. The back of the tiles hang on aluminium hooks which ensure that the tiles cannot lift, and the surface of the tiles is made of toughened glass, glass can withstand the most severe category of hail storms.



## Guaranteed up to 20 Years

The standard warranty is 5 years. Which can be optionally extended to up to 20 Years.

## Performance guarantee up to 40 years

We guarantee that even after 40 years the output of you roof will still amount to at least 80% of the installed capacity today.



## SolteQ Roof - the Safety Roof



### 1. The SolteQ Roof is strong.

SolteQ Energy Roof tiles far exceed the strength requirements stipulated for roof covering materials. The compressive strength is significantly higher than that of conventional roofing or photovoltaic modules. For example, the SolteQ Beaver PV Roof Tile has been tested to withstand suction forces over 3 times that specified by the German standard.

### 2. The SolteQ Roof is 100% rainproof

The overlapping installation guarantees 100% rain protection.

### 3. The SolteQ Roof is hail and storm resistant

SolteQ energy roof tiles are a composite element (ESG safety glass), similar to the glass used for car wind-screens. The tiles are hail resistance class 3 and as such are extremely safe. The SolteQ Energy Roof is much stronger and more resistant to storm damage than any conventional roofing. The roof can cope with oversized hailstones and even extreme mechanical damage, where it will not shatter due to the laminated safety film on the back of each tile. See Illustration.

Even post impact the risk of injury from the glass, if touched is minimal.

### Thus:

Protection from the elements is maintained even in the unlikely event of breakage!

The backside security foil remains undamaged - guaranteed!

The unique composite material and highly sophisticated manufacturing process that produces SolteQ PV roof tiles and shingles provide's additional protection:

Typically even if one or more, or even all, tiles on the roof are destroyed by extreme storm or hail, your roof will remain rainproof, as long as all the shingles are in place. The special laminated foil on the back side of the tiles ensure your roof remains water tight.

### 4. The SolteQ roof consists of a number of individual toughened glass roof tiles which are both strong and fire resistant (flame retardant).

All requirements of the building code and rules of the German roofing trade are 100% met, and in some instances even exceeded i.e. The SolteQ energy roof is stronger than the standards demand!

### 5. The SolteQ safety shutdown system provides additional protection in system shut down situations.

The SolteQ energy roof is fire-retardant and is additionally equipped with an integrated fire brigade switch. The SolteQ-BFA safety shutdown device also provides protection from high voltage shocks when the PV system is shut down for routine maintenance activities.

... what better way to enhance your property and save money than to invest in a SolteQ Energy Roof.

Fig: Surface of a SolteQ PV roof tile after a fracture test in 1: 1 scale!





## **A roof for generations - a roof to inherit**

### **Lifespan: >> 80 years**

SolteQ Energy Roofs are made up of high quality, prismatic, toughened glass PV roof tiles, utilising high purity silicon and incorporating only the best solar cells available on the market.

The glass and silicon do not age, do not rot, do not yellow and are frost proof. The result of this amalgamation of materials is a top quality German product that will not only enhance your property for years to come but will also continue to save you money, well into your retirement years and beyond.

### **SolteQ Guarantees for the PV roof tiles:**

A 5year Product Guarantee.

A 30year spare parts warranty.

A 40year performance guarantee.

### **SolteQ have the solutions for a clean planet**

The SolteQ Energy Roof is the roof of the future available now.

#### *The SolteQ Vision:*

- 100% clean energy from our energy roofs, roofs that are not just functional but also look great too.
- To maximise the number of energy roofs in operation around the globe in order to reduce/eliminate reliance on fossil fuels worldwide.
- To make energy roofs affordable to everyone, not just the wealthy few.

### **Finance your new energy roof from the savings made by no longer having to buy your energy from fossil fuel-based sources.**

By investing the money that you spend on your energy bills on a new SolteQ roof covering you can make energy bills a thing of the past, not just for your generation but also for your future generations.

No more monthly electricity and heating costs for life!

In these days of ever increasing energy costs, the savings to be made are significant, especially when the life expectancy of the energy roof is in excess of 50years.

### **No more fuel costs!**

The savings become even more significant when the savings associated with running an electric vehicle are considered. Your new electric car will be charged (free of charge) from your roof, not at the petrol station!

You could be saving £500 per month !

## **Build a house for generations.**

- A house, made of durable building material, „as in ancient times“, yet highly insulated.
- A roofing as stable and durable as a slate roof.
- Covers its own energy needs for electricity and heating

...what more do you want ?

**250, - Euro every month  
more on the table!**







*Do not ponder any longer,  
You can get the best that is technically possible today.*

*A roof made of concrete or clay tiles costs you money, and generates no income for that investment.  
The SolteQ Energy Roof on the other hand can cost as little as 50 euros per month and saves you money immediately, and can quickly get to the point where all the income generated is pure profit! Cover your electricity needs, recharge your car free, and no more oil or gas cost heating costs. All this in addition to having the benefit of enhancing the look of your biggest asset, your home.  
**YOU HAVE ONLY BENEFITS!***

*If you have (a) a need for a new roofing and b) are considering investing in photovoltaics, then please come and talk to us!  
Let a SolteQ consultant advise you accordingly.  
Register as soon as possible your new power roof, every day costs you cash!*



## Landlords

Supply your tenants with self-generated and clean electricity.  
We also offer suitable planning options for rental properties.  
Our consultants are happy to advise you in this direction.  
Download the brochure „Renter Stream“ at:

[www.SOLTEQ.eu](http://www.SOLTEQ.eu) or  
[www.SOLTEQ.uk](http://www.SOLTEQ.uk)



## Tenant electricity

Sell the generated electricity directly to your tenants.  
Make money and offer your tenants 100% green electricity.  
A green energy solution that benefits both you (as the landlord) and your tenants!





## Tenant electricity - the business model for landlords

*The landlord thus becomes an energy producer and thus has the opportunity to sell cheap green electricity to the tenants, e.g. for 2 cents below the market price.*

*However, the feed must be regulated because the tenant, although the solar power is cheaper, but receives only a relatively low feed-in tariff.*

*Therefore, it makes sense that the feed goes to the landlord. This can be determined well via the bidirectional counter. What is fed is credited to the landlord, the tenant remains completely unaffected. The tenant enjoys the cheaper solar power.*

*More green energy is not ...*

## Buildings that house a number of Individual residential units

The energy roof is a shared roof, so every residential unit as a user can draw as much power as it needs. The surplus is fed into the grid, where permitted.

In detail:

1. Each residential unit is connected as usual to the public electricity network and will be charged as usual. The network meter is a bidirectional meter.
2. The DC power supply from the energy roof is connected in parallel to each residential unit
3. Each housing unit has its own inverter with integrated power storage, e.g. 2kW
4. Each inverter also has a counter which measures the amount of power used by each of the respective residential units.
5. Every residential unit draws the solar power from the roof, which can either consumed accordingly with any excess being automatically exported to the grid (where permitted).
6. Alternatively, it is also possible that the energy roof is divided into individual, equal sectors, which in turn are each assigned to a residential unit. This requires a corresponding roof size, since in each sector the required inverter starting voltage must be achieved.

This ensures fair use.



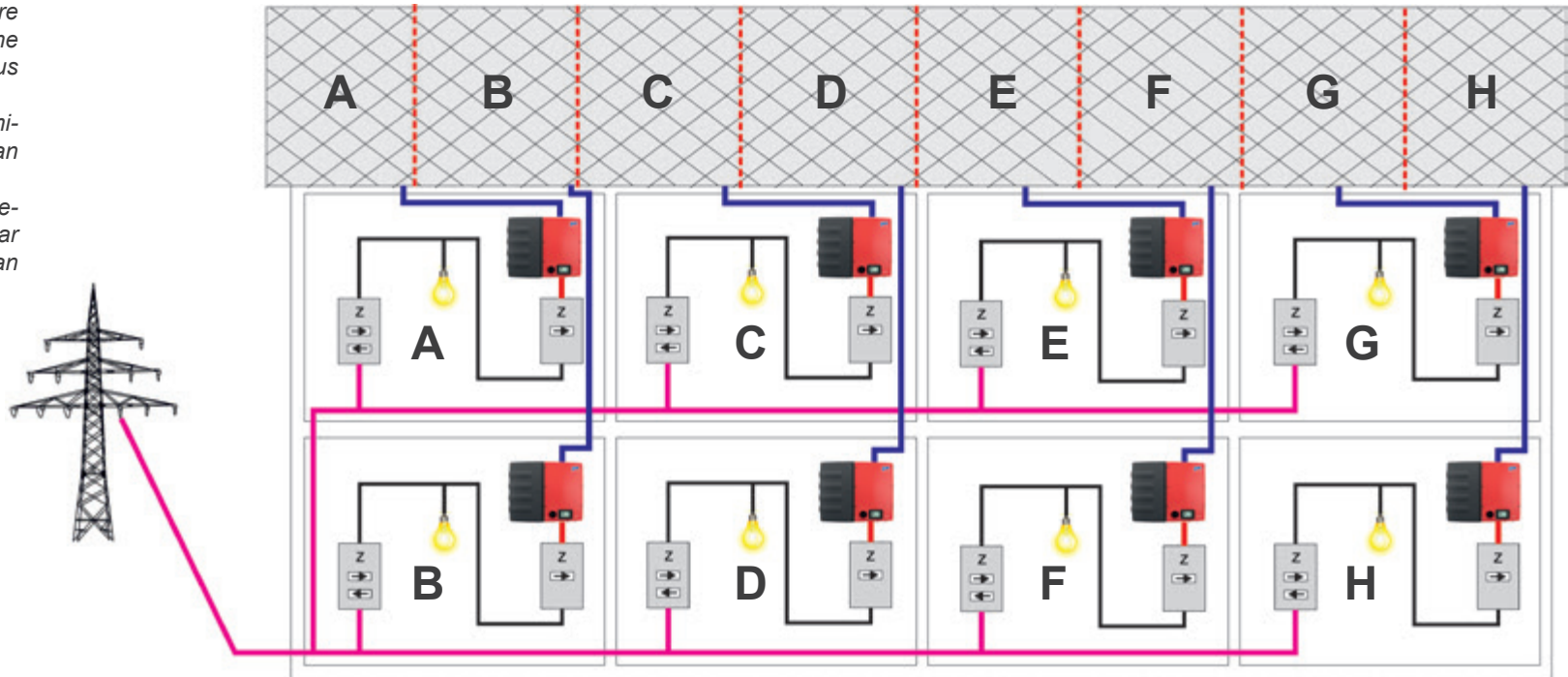
## Tenant electricity principle

### Sectional power supply with individual inverters with integrated electricity storage

A certain section of the solar roof is assigned to each residential unit. The division is only electrical, there is no division from the outside, the roof looks like a normal, continuous roof.

Big advantage: easy billing, no mixing of the electricity, nobody can complain that he gets too little.

By means of an inverter with integrated electricity storage, the solar roof can be used excellently in an apartment building.





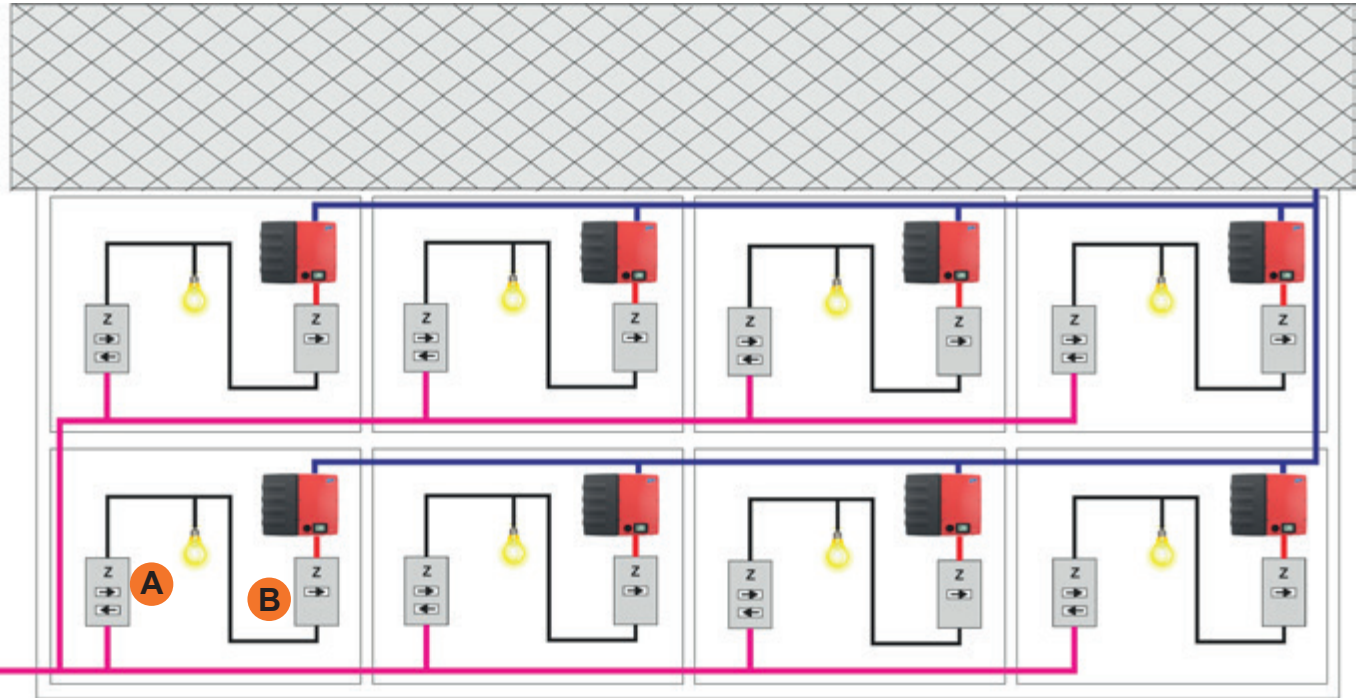
## Tenant electricity - Principle

An inverter with built-in energy storage in each apartment and a self-metering counter allow the exact count of the consumed and the supplied current.



Counter A: (bidirectional counter)  
Measures,  
a) what is obtained from the network  
b) what is fed into the grid (where permitted)

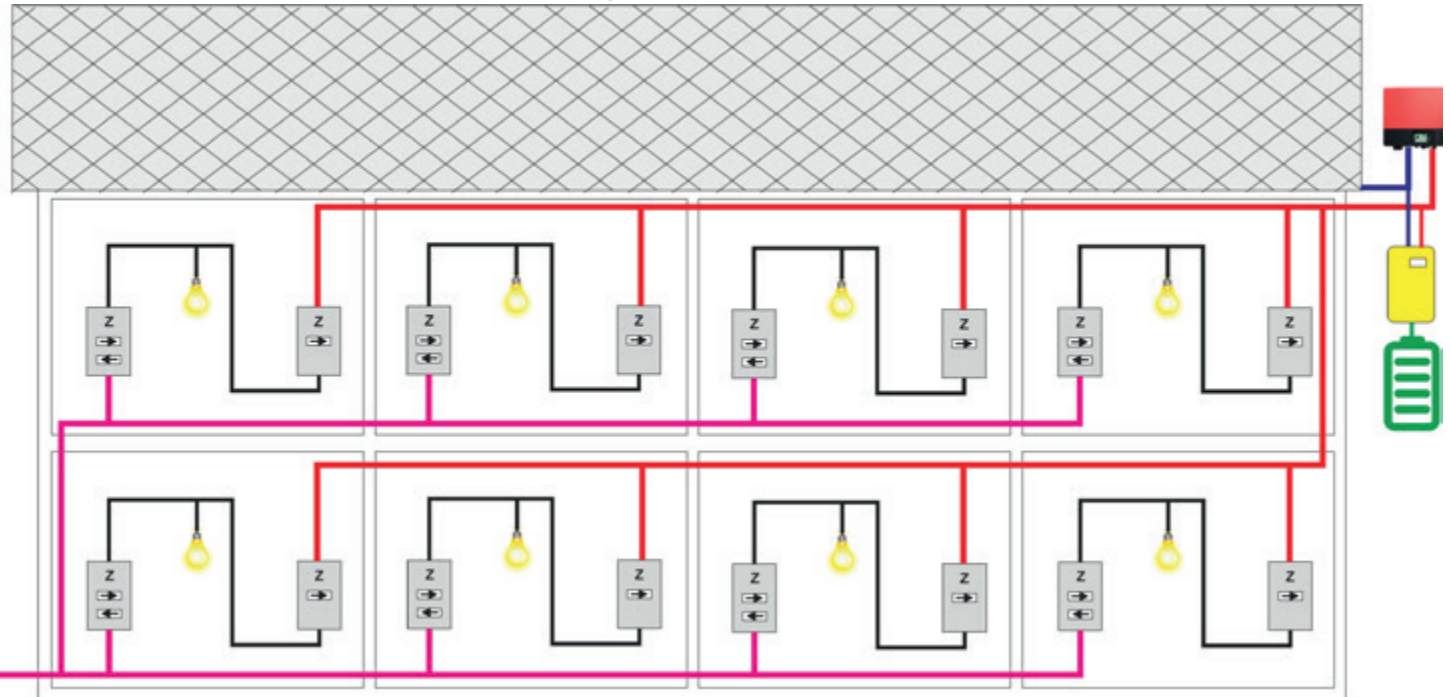
## Common supply with single inverter and single storage



Counter B:  
Measures what the individual residential unit is consuming



## Central inverter and central storage





*Tomorrow we will all drive an electric car.*





# Electro-mobility - the future

## Car Ownership, without fuel costs? and without exhaust emission's.?

Electric cars are becoming more and more popular and will soon outnumber conventional powered cars that rely on oil derived fuels. The average citizen travels less than 60km per day. For most journeys, the range of an electric car is already sufficient for a return trip. According to a recent study by the Technical University of Munich, the German power grid is not prepared for an electric car boom. Even if electric vehicles are assumed to constitute only 30 percent of the overall car market, major power supply bottlenecks will occur, since the utility companies do not have the capacity to meet this emerging demand and the existing power lines are not designed for this purpose. The solution is self-sufficiency, and what better way to become self-sufficient than to invest in a SolteQ Energy Roof, where you will always be independent and can charge your car in the comfort of your home, completely free of charge with 100% clean energy production from our sun. Our sun is a gigantic power plant, producing clean green energy, let's use it!



**0% CO2**  
**0,00 fuel costs**

Charge your car completely for free via your own solar filling station!

## How much energy do I need for an e-car?

E-Car	Distance	Distance reg.	Battery-	Electricity demand	
	at cold	Manufacturer	Capacity /kWh		
Tesla-Model-S	206,9 km	502 km	85,00 kWh	31.025	kWh p.a.
Nissan Leaf	69,1 km	199 km	24,00 kWh	8.760	kWh p.a.
BMW i3	61,4 km	130-160 km	21,60 kWh	7.884	kWh p.a.
Mitsubishi i-MiEV	61,3 km	150 km	16,00 kWh	5.840	kWh p.a.
Renault Zoe	58,9 km	100-150 km	22,00 kWh	8.030	kWh p.a.

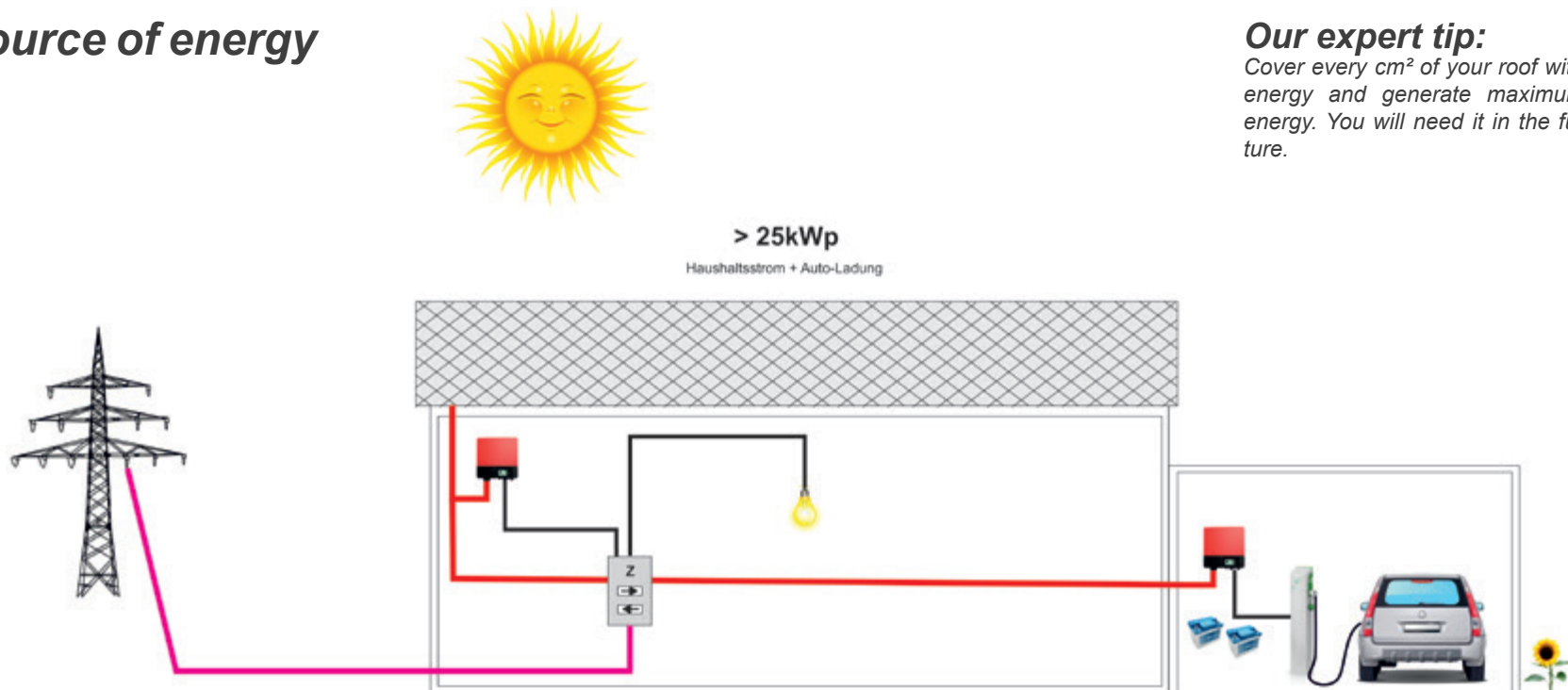


# Your roof - your source of energy

## Possible construction

### Complete System

Conventional laying: You put a system on the roof, which then supplies the entire house network. The surplus automatically goes into the public network via the bidirectional meter and makes money.



### Our expert tip:

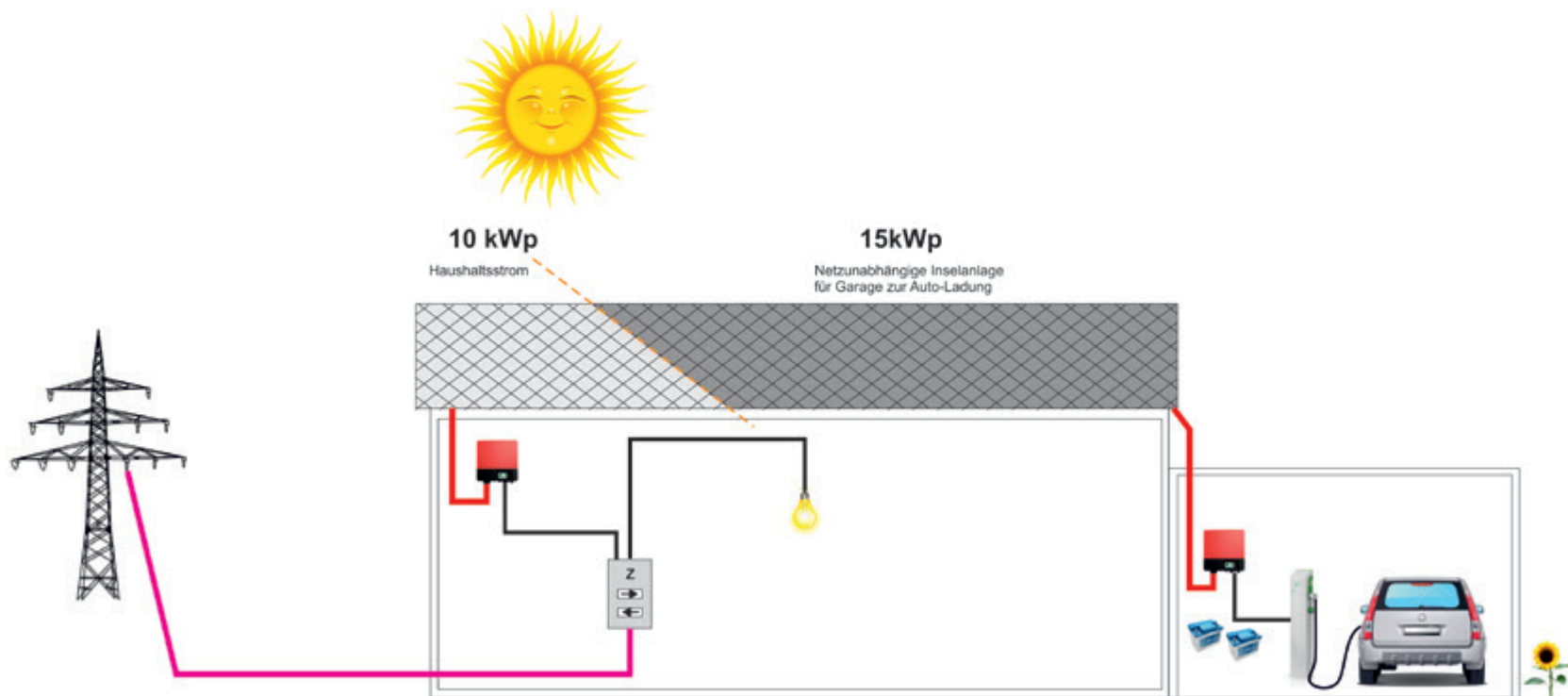
Cover every  $\text{cm}^2$  of your roof with energy and generate maximum energy. You will need it in the future.

### Split-System

Use part of the system as a grid-connected PV system for your household electricity and to feed the surplus.

The other part serves purely as a gas station for the car and possibly for the garden electricity.

The roof area is completely covered with active bricks, so that a roof area can be seen visually. The electrical division is made into two electrically separate systems. The split system supplies your in-house e-filling station with enough energy so that you can charge your car free of charge.





**SolteQ-energy roofs**  
**The energy roofs that are good for a log house.**



Housebuilder:  
[DieBlockhausbauer.de](http://DieBlockhausbauer.de)



*Infinity XS-tile red/Toscana-Mix  
alignment: all 4 directions  
roof performance: 18kWp*





*SolteQ-Biber-380-DD-Anthrazit-Plus*  
*alignment: all 4 directions*  
*roof performance: 12,kWp*





*Biber-Oldtown-Package  
alignment: South  
roof performance: 18kWp*





*SolteQ-Systemtiles-Braas-Tegalit + Brass-Tegalit-Concrete-Tiles*  
*alignment: South*  
*roof performance: 12kWp*





*Biber-380-Radiant  
alignment: 4 directions  
roof performance: 22kWp*





*Infinity XS rock grey  
alignment: east / west  
roof performance: 32kWp*









## *Settlement projects ?*

*We take care of the complete energy design for the settlement.  
Electricity, heating, storage.*







*Think about the future now!*

### **SolteQ energy roof, the perfect roof in retirement.**

*With the saved electricity costs and saved heating costs resulting from the energy roof together with any additional income from feed in tariffs (where applicable), you have a guaranteed source of income to supplement your pension during the retirement years. Put your money into your own roof and enjoy 6, 8 or 12% return! There is no better and safer investment.*



**SIEGER DES  
DEUTSCHEN NACHHALTIGKEITSPREISES 2021**





**Energy**

*means not only electricity, but also heating energy  
SolteQ ensures that you always have it pleasant and cozy warm.  
... without gas and without oil.*



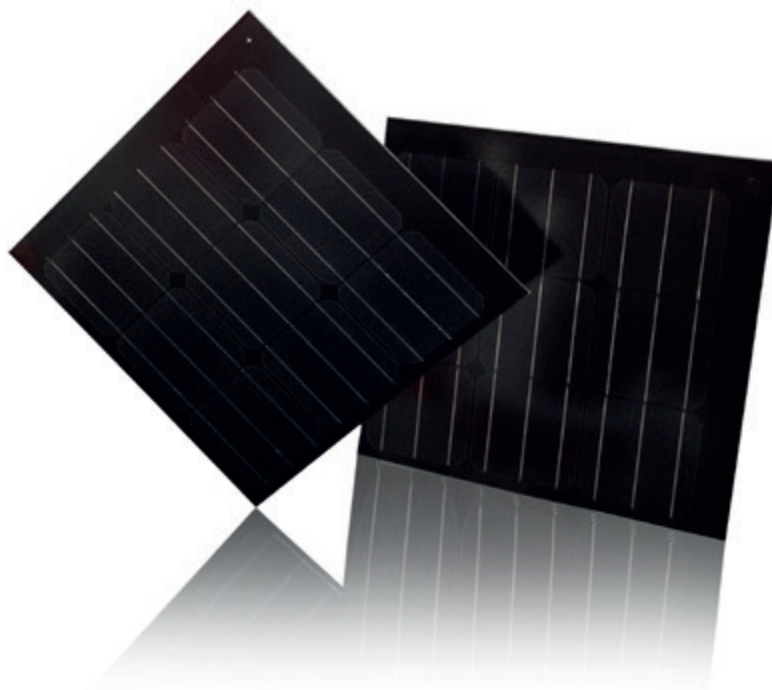
# QUAD40

SolteQ

*Solar tiles for roofs and facades  
Building integrated photovoltaic (BIPV), but with style!*



*Sun is life,  
Sun is energy,  
Sun is SolteQ.*



*Patent pending*

SolteQ



# Quad40 -Energy Roof Tiles

*Photovoltaic yes - but with style!*

## **Frameless and Clean**

The fantastic frameless design and the "fish scale" pattern of the SolteQ-Quad-Energy-Roof makes your roof look sleek and modern. The frameless design not only looks great, but also helps keep the roof clean and free of debris for the lifetime of the product, which is in excess of 50 years. The quality of the glass ensures the tiles do not discolour with the passage of time. The SolteQ-Quad-Energy-Roof has no frame, where water and dirt can be collected, it does not collect at the edges either and will completely drain away. Integrated self-cleaning effect!

## **Frameless and Overlapping Layout Means Improved Roof Utilization**

With the frameless and overlapping design, the cells lie very close to each other over the whole roof area. No lost space with aluminium frames etc. The roof tiles are able to maximise PV roof coverage and therefore minimise passive area coverage.

## **Modular Design**

The SolteQ-Quad-PV-Tiles-System is a modular system, which is flexible and can be adapted to every roof.

## **Lightweight**

Conventional tiles have a weight of 50-80 kg per square metre. A SolteQ-Quad40-PV-Tile has a weight of only 3.3 kg. This results in a weight of only approx. 14 kg per square metre. Perfect for new buildings and building undergoing renovation.

## **Self-Cleaning Effect**

The glass of the tiles has an anti-stick surface, which makes water and dirt drain away. Even after 50 years or more, the roof will still look like new.

## **Weatherproof**

Perfectly weatherproof with robust material and over-lapping layout.

## **Thermal Insulation**

The low heat transfer properties of the tiles provide the roof with excellent insulation properties against the cold.

## **Acoustic Insulation**

The robust Quad-Roof-Tiles also gives an acoustic barrier for sound with a damping of approx. 38..42dB

*For roofs and facades*

- + High rain safety
- + High cell density on the roof surface
- + High weather resistance



only  
14 kg  
per m<sup>2</sup>

## **Hail and Storm proof with 3-Point Safety Mounting**

The back of the tiles hang on aluminium hooks which ensure the tiles cannot lift up. In addition to the hooks the tiles also have a rubber seal which ensures the tiles remain in place even in high wind conditions.



# **A Great look for your house**

*The high-quality photovoltaic system, that you cannot see.*

*You only see a beautiful house with a stylish roof that you can be proud of.*

*The perfect slate replacement  
& full of energy*



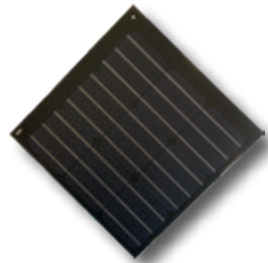


## Holistic roof system

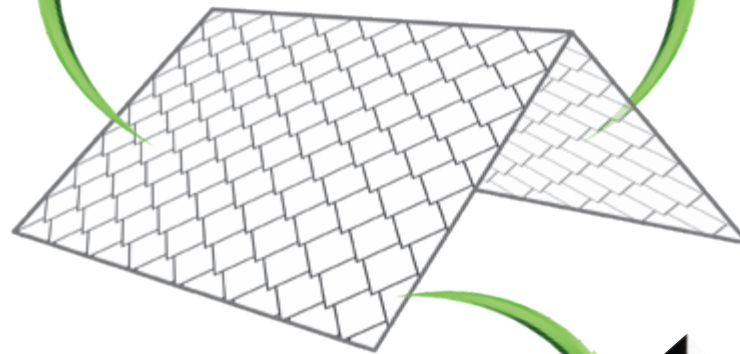
The SolteQ Quad Energy Roof is a technically advanced roofing product made up of SolteQ's most powerful PV roof tiles. A typical roof would have active tiles fitted to the south facing roof element, and passive tiles fitted to the north, east and west facing roof elements. Thus all roof faces are covered with SolteQ tiles, which create a holistic looking roof that not only looks great but is also full of energy.

In the edge areas of the roof, half elements arise. For this purpose, half tile elements with the same appearance but without solar cells are available. Also for the north side half tile and whole tile elements are available without integrated cells, if this side of the roof is not subject to sunlight. This ensures that the entire roof has a uniform look. ... just a complete roof system.

**Active Quad-Tiles**  
for the sunny side of your roof



**Passive Quad-Tiles**  
for the opposite side  
(same material, same look, without cells)



**Half and quarter elements**  
(passive) for the border zones and to fit windows etc.  
(same glass and material, but without cells)



### Suitable also for East/West-Roofs

With help of the light-boost-effect of the prismatic surface and the brilliant low-light behaviours of the roof, the SolteQ-PV-Roof-Tiles are perfect to use for East/West direction. The tiles also work in twilight, much better than conventional PV-modules.



**Up to 36% more Efficiency, than conventional Systems!**

The Solteq Quad-PV Tiles are placed so that the system maximises the energy from the Sun. The whole of the roof is used, the tiles are laid right up to borders without any need for aluminium framing etc. By overlapping the tiles, the cells lie very close together, so the efficiency is even higher.

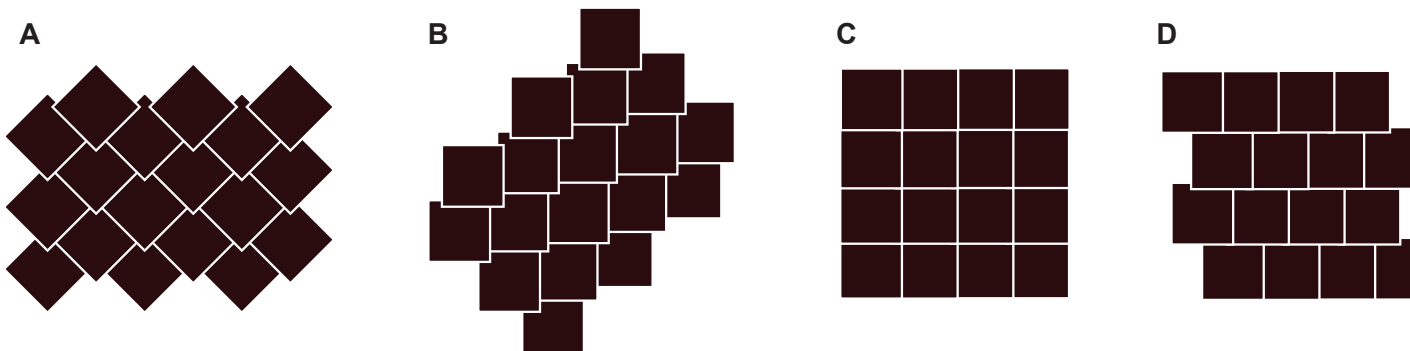
### Need-Based Power Adaption

The sunny-side of the roof can be used for maximum power generation with active tiles on the total sunny-side area. If maximum power is not needed, the system can be adapted to suit the amount of power actually required, by using passive tiles on part of the area. In all scenario's the overall look still remains the same.

## Several patterns

Free your imagination ... architecture, aesthetics and high product quality for a fair price - these are the targets of the SolteQ-Quad-Product-Range.

All SolteQ-Products are produced within the SolteQ-Group, which ensure that you have a huge choice of energy roof products able to meet your specific individual requirements. You have a choice of not only tile colours, but also the pattern in which your chosen tile's are to be laid. The tile laying options are: diamond look (A), skew angled (B), horizontal nested (C) or horizontal composite (D).



### SolteQ Planning Support

The technicians of SolteQ are always here to help. To make it even easier, you can plan the roof design with free planning tools and our team of experts. As a reseller you can generate within minutes an exact offer for your customers. With help of the graphical tools, you can simulate the roof and see how many tiles are needed for each customised design.

### Easy Installation and Adaptable for Almost Any Roof Type

The handy size of the tiles makes them quick and easy to install. One square metre requires only 4 tiles, making the installation simple for any size roof.

### SolteQ Installation Service

Installation training is available, but basic knowledge of PV systems combined with typical roofing experience will usually be sufficient.

### Customer Service

For home-builders we can help to find an authorised SolteQ Installation Partner in your area.



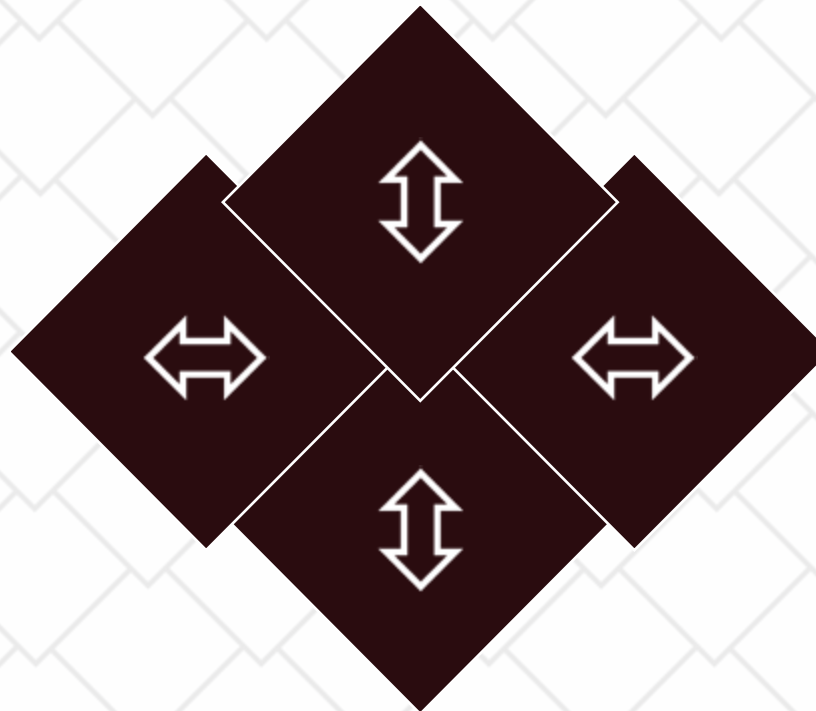
Nature and Technology in harmony - it works!

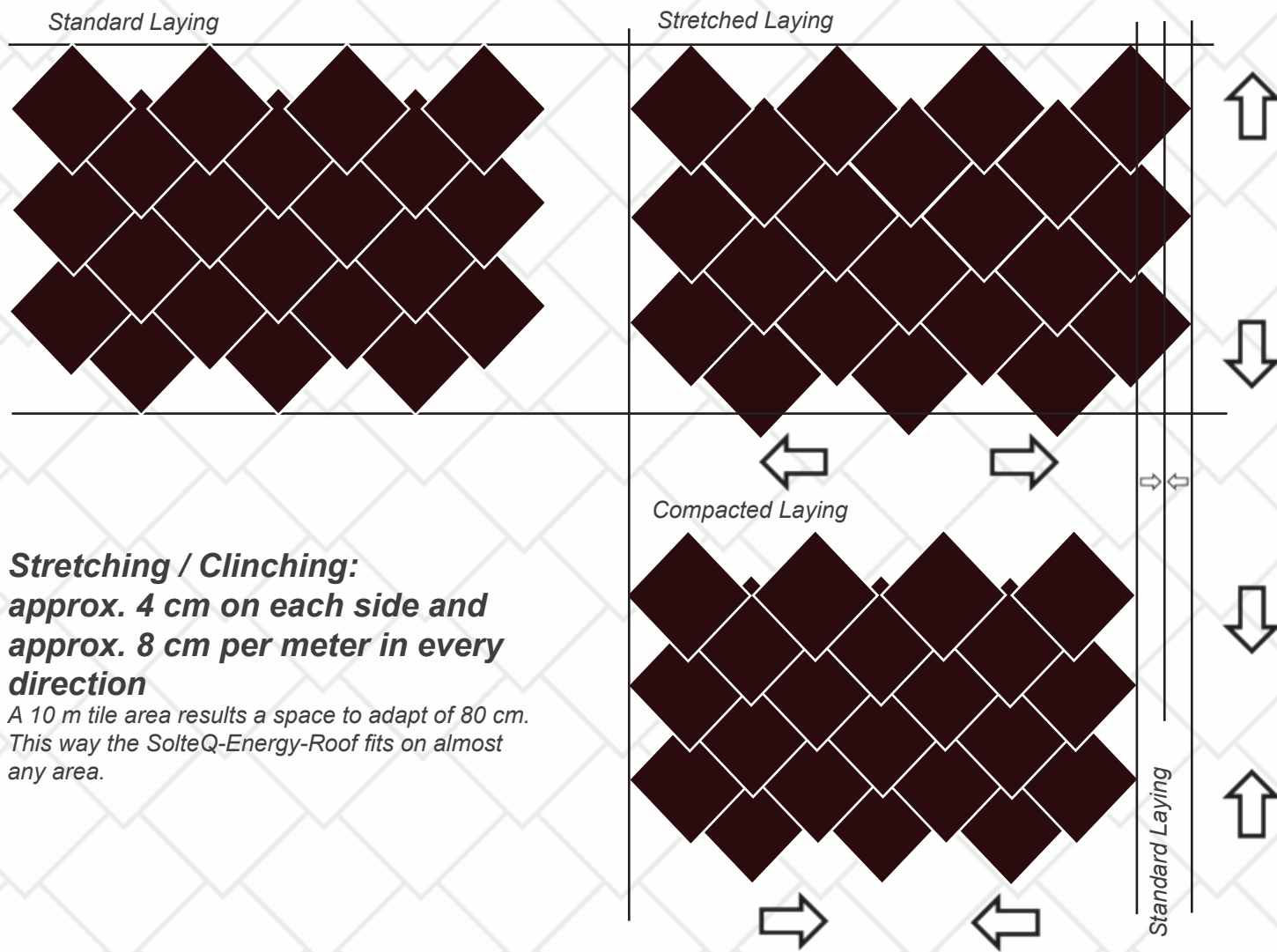




## **Easy and Flexible Installation with “Accordion” Effect**

*The SolteQ-Energy-Roof with Quad-PV-Roof-Tiles are adaptable. By overlapping, the tiles can be moved slightly to the left or right, so that the whole area of tiles can be stretched or compacted. The amount of overlap can be adjusted to suit the specific site requirements which makes for a very flexible and effective installation. The border can be created with half-elements and individually cut metal sheets of the same colour, which complete the overall look of the roof.*





**Stretching / Clinching:**  
**approx. 4 cm on each side and**  
**approx. 8 cm per meter in every**  
**direction**  
 A 10 m tile area results a space to adapt of 80 cm.  
 This way the SolteQ-Energy-Roof fits on almost  
 any area.



## 100% rainproof with Under-Foil and Special Seals

### a) The SolteQ-Energy-Roof is 100% Rainproof

Each tile has a rubber on the two lower edges, a patented special seal with multi-lips, which prevents the water entering in an upwards direction. The SolteQ Quad Energy Roof is rainproof and offers exceptional mechanical safety. Only a small gap at the lower edge with approx. 2cm length is open for air circulation. Only in the case of exceptionally high winds or storms is there the small possibility of water entering underneath the tile, through the opening for cooling. However any water ingress via this route is prevented from entering the roof space by the waterproof mem-brane/roofing felt underneath the tiles.

### b) The SolteQ-Energy-Roof is 100% Waterproof

With the recommended breathable waterproof membrane under the tiles, the roof will be 100% waterproof, and breathable (see system manual and specifications) as per the manufacturers guarantee. As an alternative, tarred roofing felt can be used.

### c) The SolteQ-Energy-Roof is 100% Safe Against UV

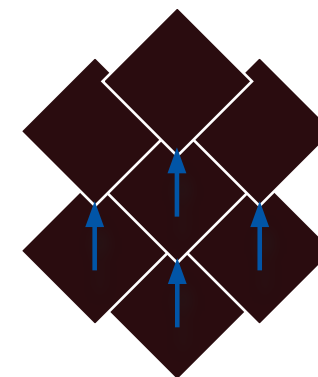
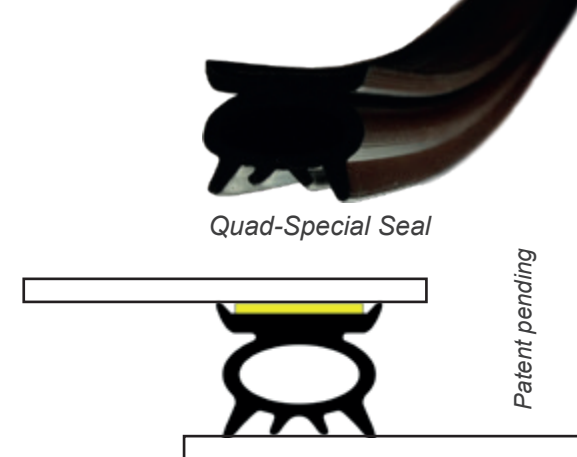
The overlapping installation of the tiles, the light proof seal on the borders coupled with the fact that UV light will not pass through the tiles ensures that the waterproof covering underneath the tiles is protected from sunlight.

### d) The SolteQ-Energy-Roof is Mechanically Robust

The patented seal besides being waterproof provides mechanical stability to the roof. The seal is con-structed like a spring to accommodate the horizontal and vertical movements and forces on the tiles. This special seal ensures that the roof is protected from not only storm related movements but also from the long term natural movements of your home.

### e) The SolteQ-Energy-Roof is Hail and Stormproof

The backs of the tiles are fixed onto the laths in the centre of each tile, with robust aluminium hooks, which ensure the tiles cannot lift even in heavy storms.



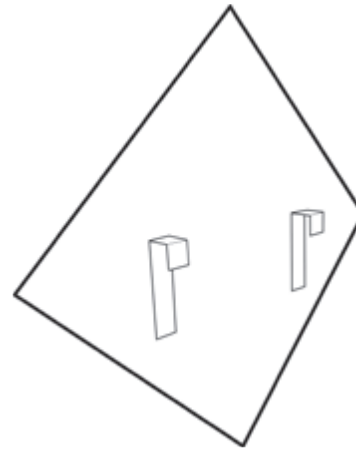
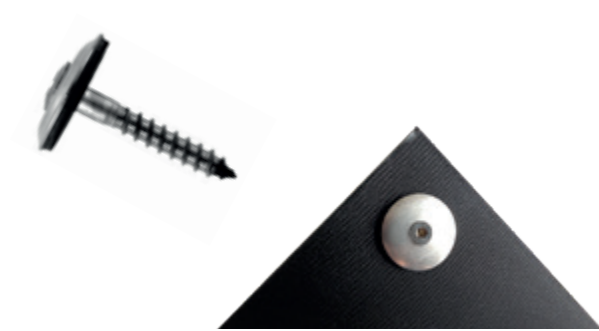
**20 years warranty  
on all seals!**



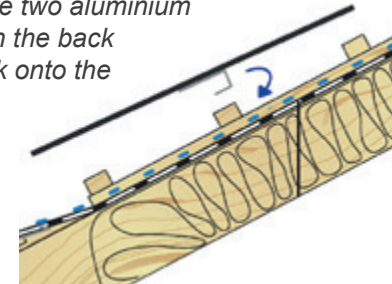
# Easy installation

**Hang up - fix with one screw - finished !**

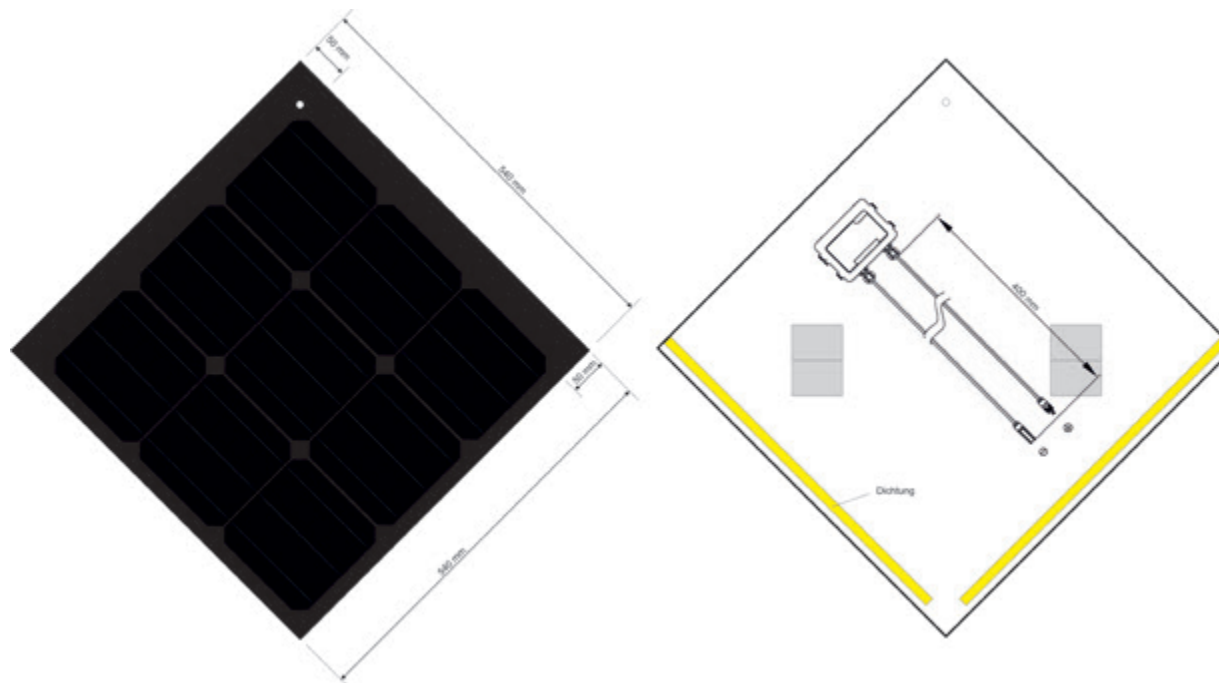
The installation is done easily by hanging the tiles onto the wooden battens. The tile is then further secured to the batten with a stainless steel screw.



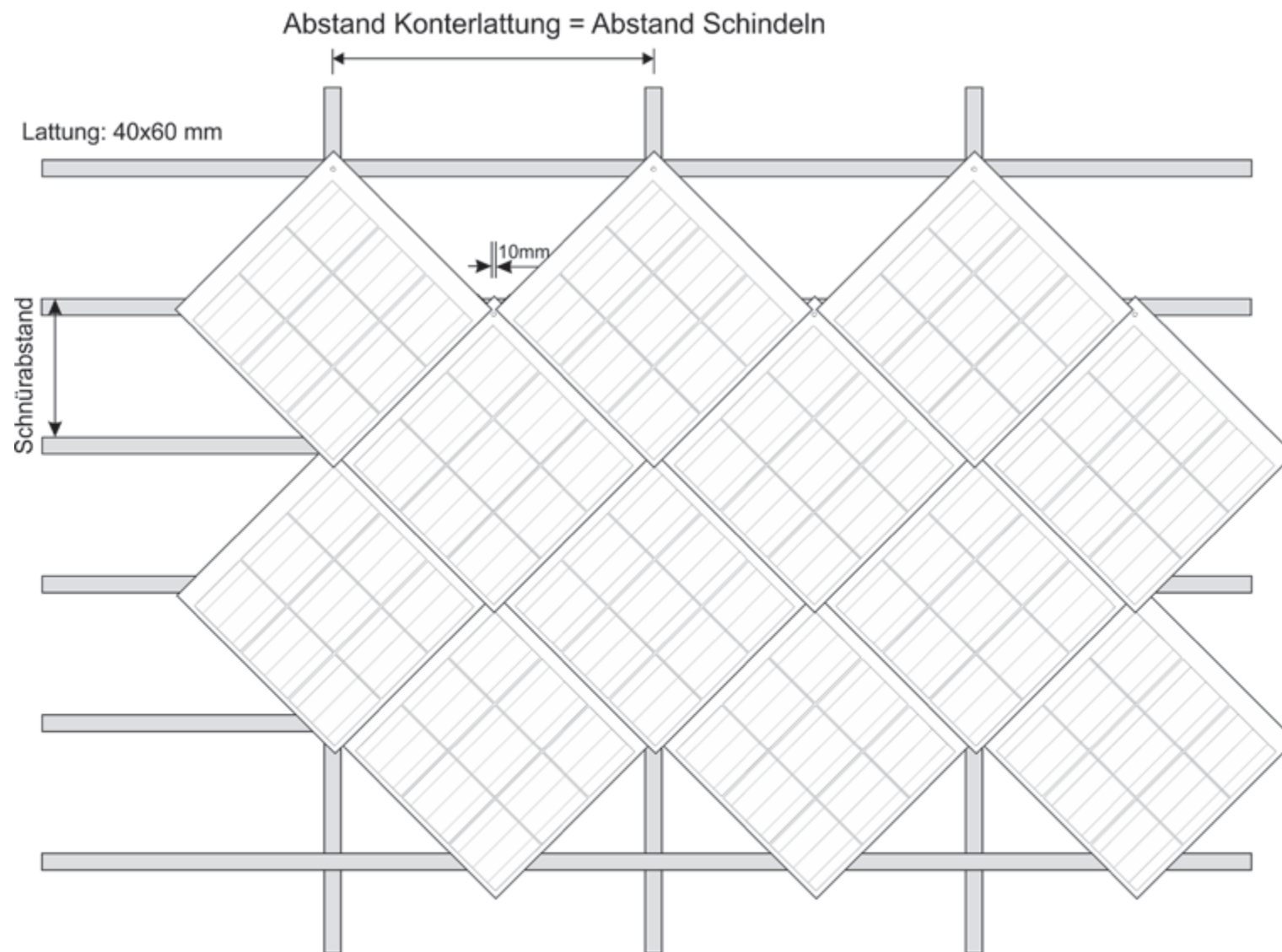
**Hooks on the back**  
There are two aluminium hooks on the back that hook onto the battens.



**Dimensions:**







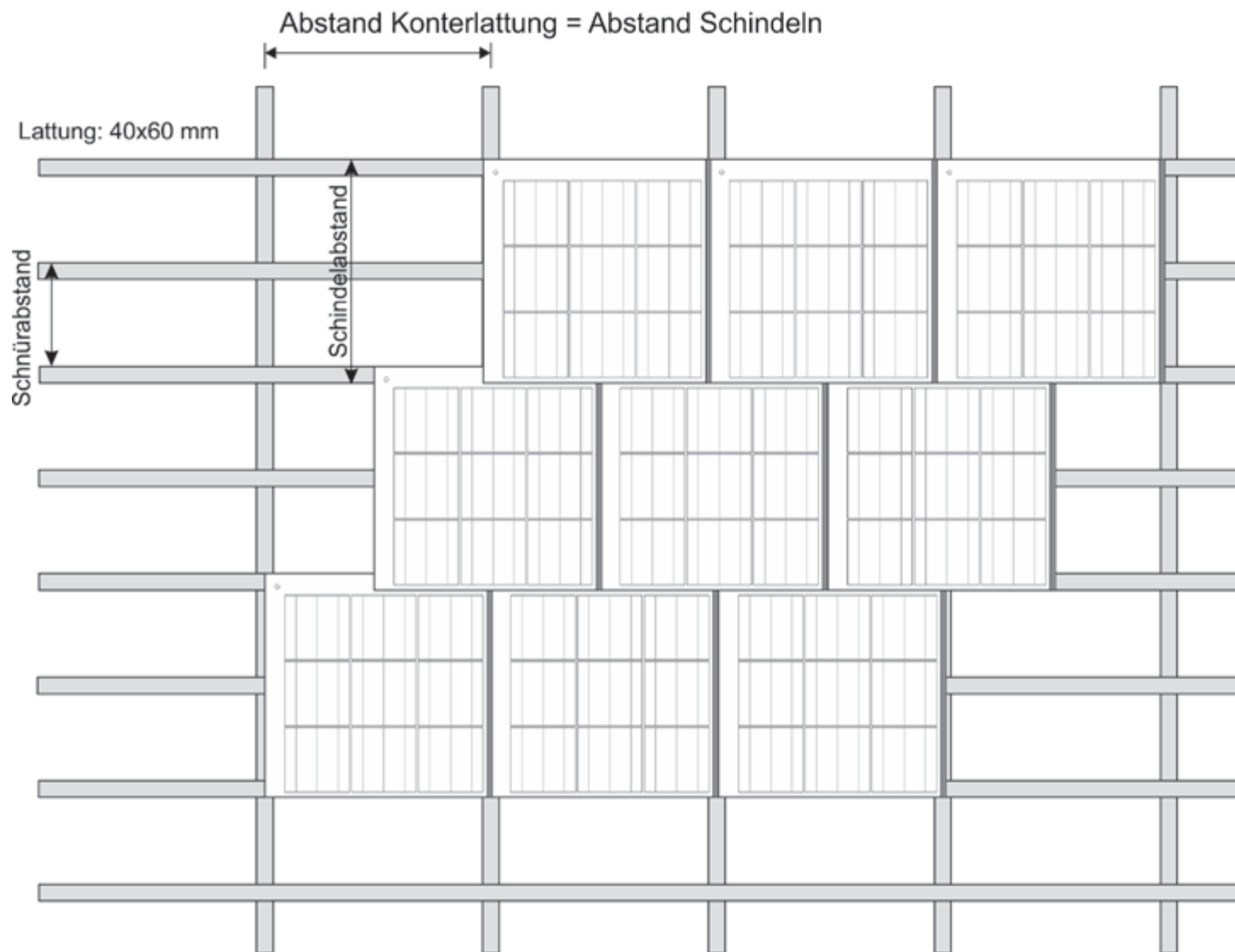
Abstände Konterlattung = Achsabstand Schindeln horizontal

Minimal:	76,5 cm
Optimal:	78 cm
Maximal:	81 cm

Regeldachneigung 25 °  
 Minstdachneigung 15 °  
 Befestigung über Klammerhaken oder Verschraubung

Schnürabstand:

Minimal:	31,5 cm
Optimal:	33,5 cm
Maximal:	35,5 cm



Abstände Konterlattung = Achsabstand Schindeln horizontal

Minimal:	54,5 cm
Optimal:	54,5 cm
Maximal:	54,5 cm

Regeldachneigung 25 °

Minstdachneigung 15 °

Befestigung über Klammerhaken oder Verschraubung

Schindelabstand:

Minimal:	49,5 cm
Optimal:	50 cm
Maximal:	50,5 cm

Schnürabstand:

Minimal:	24,75 cm
Optimal:	25 cm
Maximal:	25,25 cm



*Stella L. from Limburg:  
The SolteQ energy roof brings me € 285 per month and I have  
no electricity and heating costs more. So I can afford my daughter  
her hot desired, own horse.*





*Your solar roof is a financial investment  
and earns money.*

*... so that you can afford something in between.*

*Made in Germany*



# Quad40 -Economy

## Quad Economy Class The entry level Roof Tile

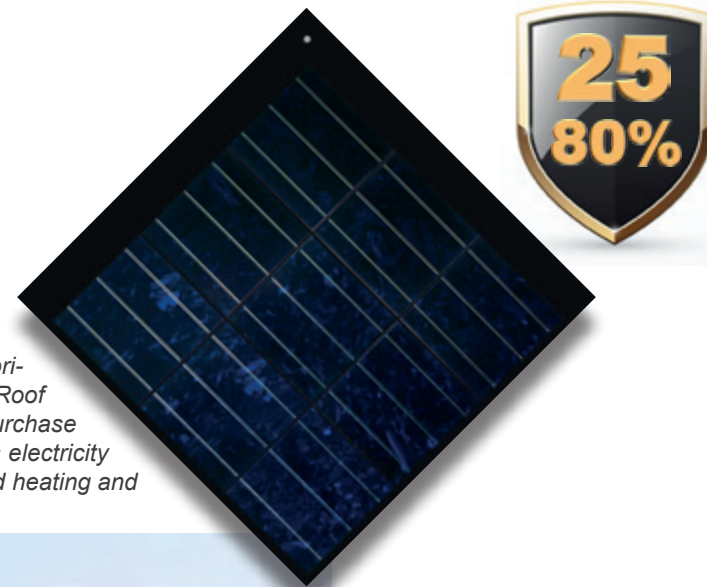
This is the low cost entry into the world of autarkic energy.  
Best quality 100% made in Germany

...the right roof for every home.

### Unbeatable price!

A SolteQ-Energy Roof for almost the same price as a replacement roof plus a solar panel system. Why compromise the look of your home with solar panels when you can have a great looking SolteQ Energy Roof!

With a conventional photovoltaic system, you also need an appropriate roof covering to fix the solar panels onto. The SolteQ Energy Roof is in itself a superb quality roofing material, so with this single purchase you have all the functionality of a top quality roofing material plus electricity and a huge amount of heat energy that can be used for household heating and domestic hot water heating!



The best roof in the world is the one that not only enhances the appearance of your home but can also make energy bills a thing of the past.



Polycrystalline photovoltaic cells are made of natural raised crystal structures and are blue in colour. Please note that the colour of the tiles produced during the actual production process may differ very slightly from the colour shown in the Brochure.

Cells:	polycrystalline
Color:	blue crystalin
Efficiency:	approx. 18%
Power:	ca. 40,5Wp bzw. 162 Wp/m <sup>2</sup>
with SLV:	ca. 195 Wp/m <sup>2</sup>
Voc:	5,76 V
Isc:	8,8 A
Product warranty:	5 years
Performance guarantee:	20 years with 80% of the installed capacity

SLV = low light behavior



# Quad40-Premium-Black

## Quad-Premium-Black The Premium-Model

**Advantage: Slate look, optimal price / performance, very high area performance**

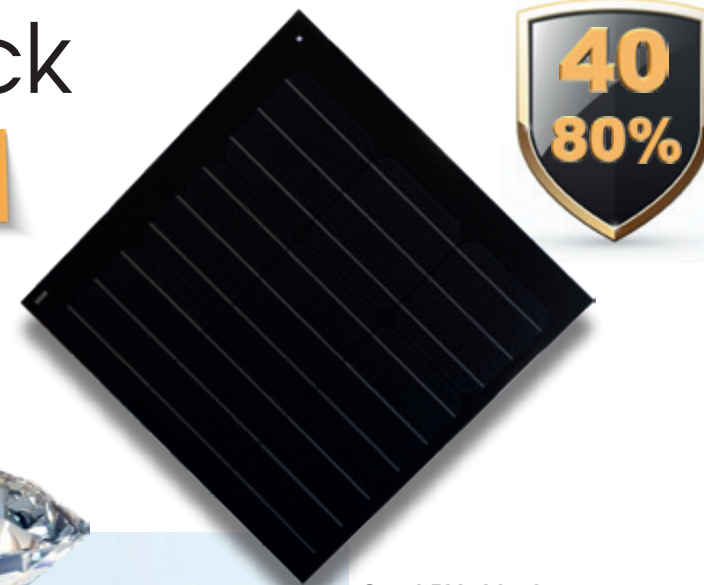
„Anthracite“ is the classic color that is universal and timeless. An anthracite coloured SolteQ Energy Roof looks great on any style of house, be it a traditional classic period type or a state of the art architect designed modern building.

A roof that will provide you with years of satisfaction courtesy of our most efficient PV roof tiles.

... the Longlife roof with energy.

... the stylish roof.

**The energy roof with a great slate effect**



Similar pictures

### Quad-PV-shingle „Quad Premium Black“ or „Black Diamond“ (Standard version)

in a fine „pinstripe suit“ style with fine silver stripes.

Cells: black / dark blue monocrystalline cells with black backing

**Special feature:**

**Great slate effect, from about 15m distance, the stripes are no longer visible.**

Cells:	monocrystalline
Color:	anthracite
Efficiency:	approx. 20.2%
Power:	ca. 44 Wp bzw. 173 Wp/m <sup>2</sup>
with SLV:	ca. 212 Wp/m <sup>2</sup>
Voc:	5.76 V
Isc:	8.8 A
Product warranty:	5 years
Performance guarantee:	40 years with 80% of the installed capacity

SLV = low light behavior  
Depending on the production batch, the cells may have a slight dark blue effect.



# Quad40-Premium-Black +

## Quad-Premium-Black - Plus The Exclusive-Model

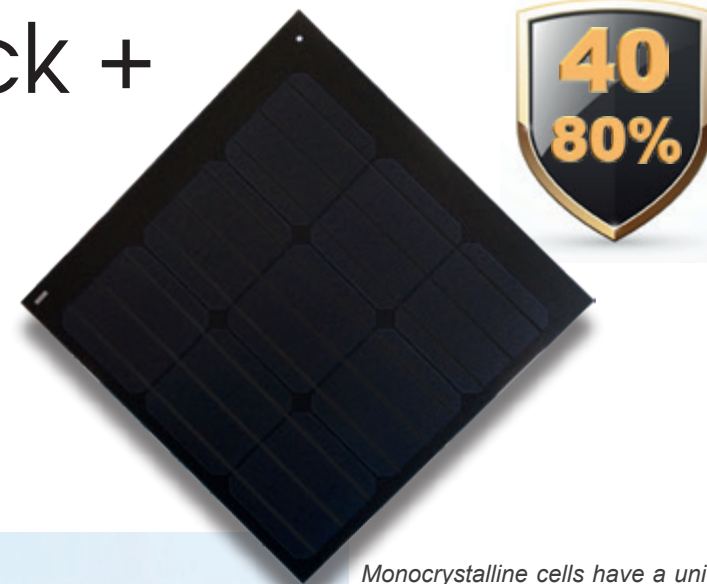
„Anthracite“ in its perfect form:  
Black cells, completely without silver stripes.

... for every type of house the right roof.

The surfaces of the SolteQ  
shingles are the surface  
structure of the glass and  
not an additionally applied  
layer.



The black diamond for your house.



Similar pictures



Monocrystalline cells have a uniform and homogeneous color structure. So the roof gets a calm look.

Monocrystalline cells are the highest quality PV cells and have the best efficiency. The surfaces of the SolteQ tiles are the surface structure of the glass and not an additionally applied layer.

Cells:	monocrystalline
Color:	anthracite with black covered silver stripes
Efficiency:	approx. 20.2%
Power:	ca. 44 Wp bzw. 173 Wp/m <sup>2</sup>
with SLV:	ca. 212 Wp/m <sup>2</sup>
Voc:	5.76 V
Isc:	8.8 A
Product warranty:	5 years
Performance guarantee:	40 years with 80% of the installed capacity

SLV = low light behavior  
Depending on the production  
batch, the cells may have a slight  
dark blue effect.



# Quad40 -Gold-Class

## Quad-Gold-Class-Exclusive with real gold leaf 24 carat

*Aesthetically pleasing and exclusive.  
The energy roof for the most discerning customer.  
The cells are covered with real gold leaf, giving your roof a  
totally unique look.*

Cells: monocrystalline  
Color: anthracite

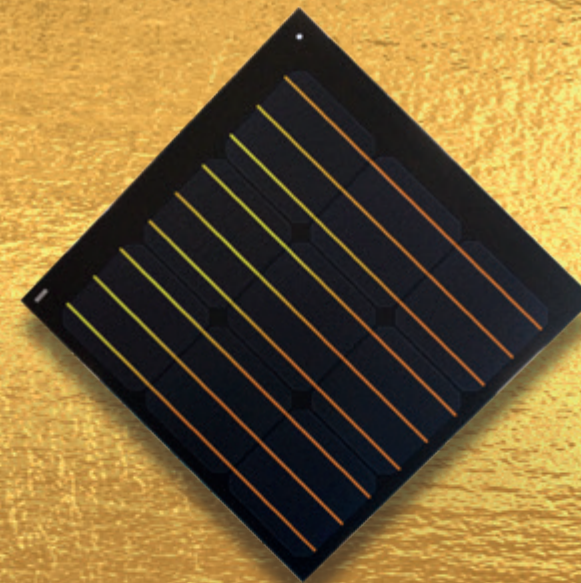
**special feature:**  
**Cell connector with real gold  
leaf, 22...24 carat**

Efficiency: approx. 20.2%  
Power: ca. 44 Wp  
bzw. 173 Wp/m<sup>2</sup>

with SLV: ca. 212 Wp/m<sup>2</sup>  
Voc: 5.76 V  
Isc: 8.8 A

Product warranty: 5 years  
Performance guarantee: 40 years  
with 80% of the installed capacity

SLV = low light behavior  
Depending on the production  
batch, the cells may have a slight  
dark blue effect.



Similar pictures

*... with a touch of gold for total exclusivity.*





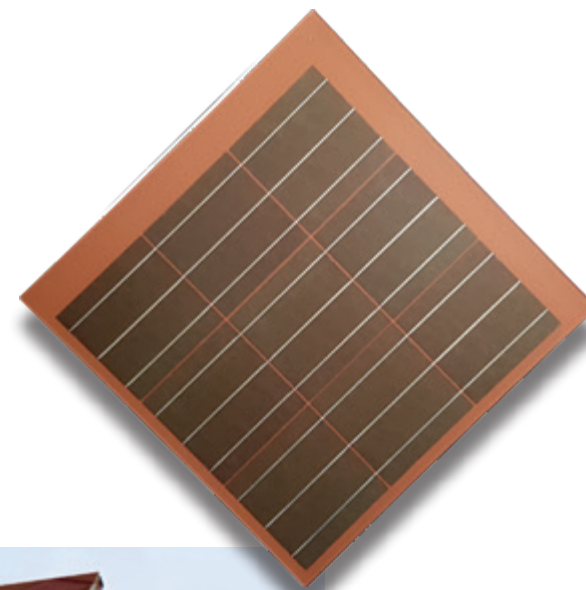
# Quad40-Tile red

## SolteQ-Energy Roof

„Brick Red“ ... the primary rock

„Brick Red“ - elegant and timeless.

Red is the classic color that has always been mounted on roofs. Even in Roman times houses were already protected with burnt clay tiles against wind and weather.



Similar pictures



Polycrystalline photovoltaic cells consist of naturally grown structures and are subsequently dyed. The textures and colours of the actual tiles may vary depending on the production batch, so please be aware that the illustrations represent an approximation of the actual production tile colour. Also different delivery batches can vary.

Cells:	polycrystalline
Color:	similar to tile red
Efficiency:	approx. 15.4%
Power:	ca. 35.2Wp bzw. 140.8 Wp/m <sup>2</sup>
with SLV:	ca. 170 Wp/m <sup>2</sup>
Voc:	5,76 V
Isc:	8,8 A
Product warranty:	5 years expandable to 20 years
Performance guarantee:	20 years with 80% of the installed capacity

SLV = low light behavior

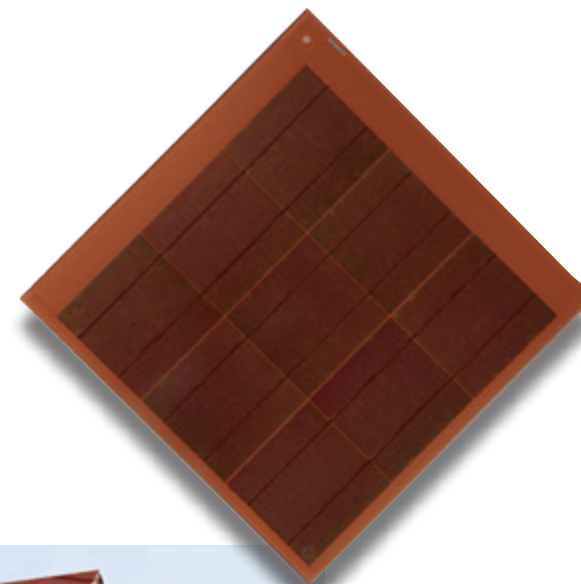


# Quad40-Terracotta

## SolteQ-Energy Roof

„Terracotta“ ... the Mediterranean Look

“Terracotta” is the classic reddish hue that has been mounted on roofs for centuries. Terracotta is the perfect colour, especially for Mediterranean regions.



Similar pictures



Polycrystalline photovoltaic cells consist of naturally grown structures and are subsequently dyed. The textures and colours of the actual tiles may vary depending on the production batch, so please be aware that the illustrations represent an approximation of the actual production tile colour. Also different delivery batches can vary.

Cells:	polycrystalline
Color:	similar to tile red
Efficiency:	approx. 15.4%
Power:	ca. 35.2Wp bzw. 140.8 Wp/m <sup>2</sup>
with SLV:	ca. 170 Wp/m <sup>2</sup>
Voc:	5,76 V
Isc:	8,8 A
Product warranty:	5 years expandable to 20 years
Performance guarantee:	20 years with 80% of the installed capacity

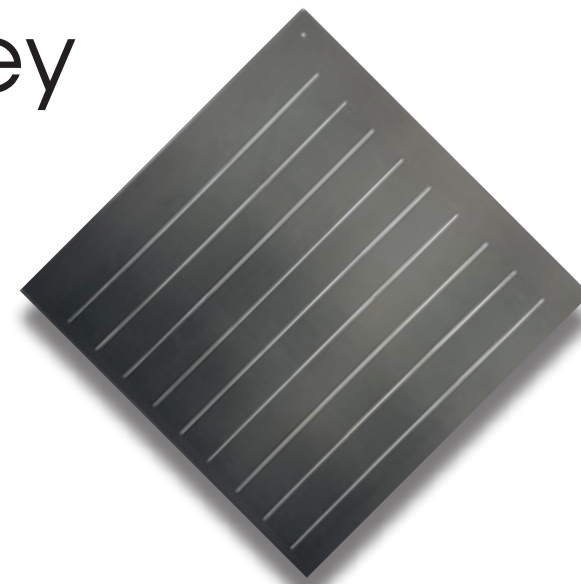
SLV = low light behavior



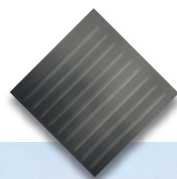
# Quad40-Shades of grey

## SolteQ-Energy Roof in subtle shades of gray

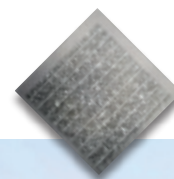
„Gray“ is timeless and elegant. Whether it's the elegant plain dark gray or the grey with the crystalline look, either will enhance the look of your home and make it a jewel of the street.  
-3 shades of gray.



Similar pictures



SolteQ energy roof rock gray



SolteQ energy roof silver gray

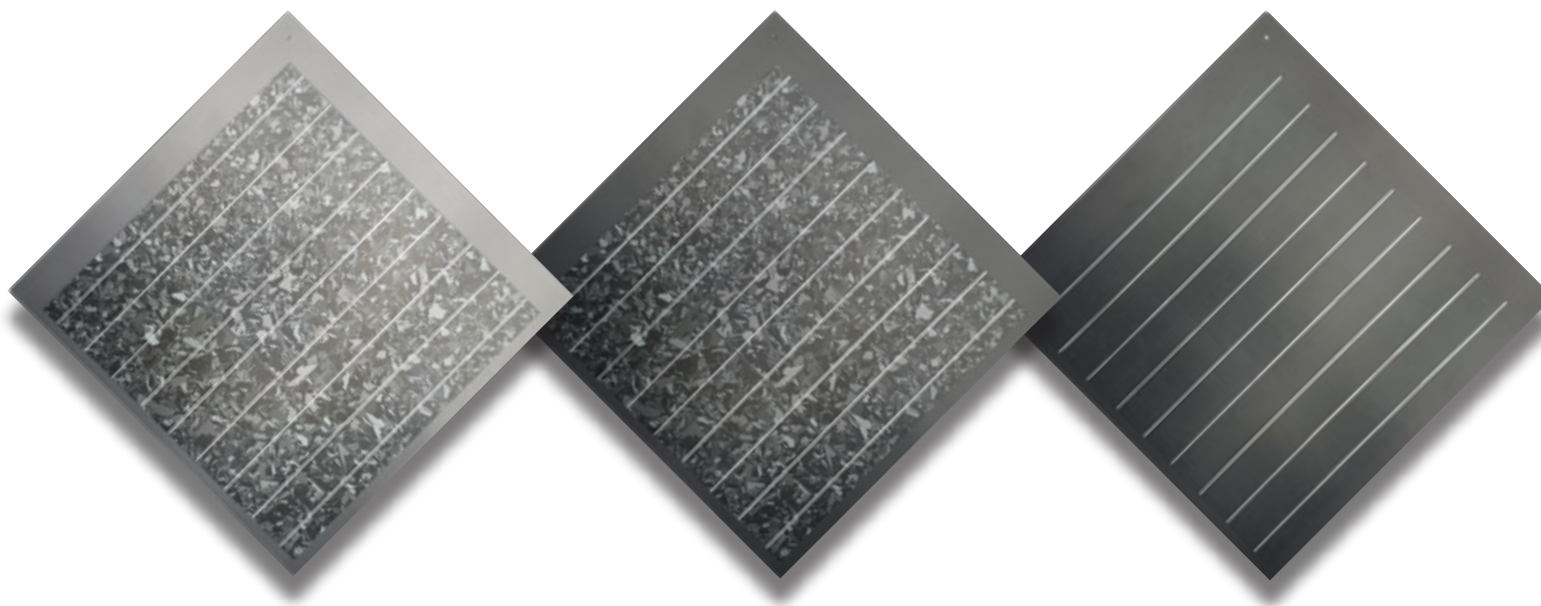
Polycrystalline photovoltaic cells consist of naturally grown structures and are subsequently dyed. The textures and colours of the actual tiles may vary depending on the production batch, so please be aware that the illustrations represent an approximation of the actual production tile colour. Also different delivery batches can vary.

Cells: polycrystalline  
 Colors:  
 - silver gray / crystal slate look  
 - dark gray / crystal slate look  
 - dark gray / rock gray  
 Efficiency: approx. 15.4%  
 Power: ca. 35.2Wp  
           bzw. 144 Wp/m<sup>2</sup>  
 with SLV: ca. 173 Wp/m<sup>2</sup>  
 Voc: 5,76 V  
 Isc: 8,8 A  
 Product warranty: 5 years  
 expandable to 20 years  
 Performance guarantee: 20 years  
 with 80% of the installed capacity  
 SLV = low light behavior/effect

## SolteQ-Energy Roof

available in three shades of gray, in either a plain or crystalline look.

„Gray“ is a great choice of roof colour to enhance any style of home. The choice is yours, choose from :



Quad Slate Gray

Crystal Quad Dark Gray Crystal

Quad Rock Gray

All versions also available as „plus“ version with covered silver stripes.

# SolteQ





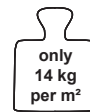
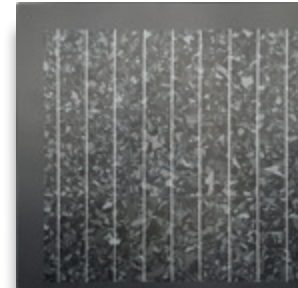
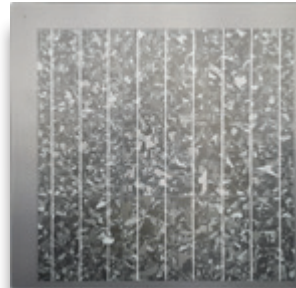
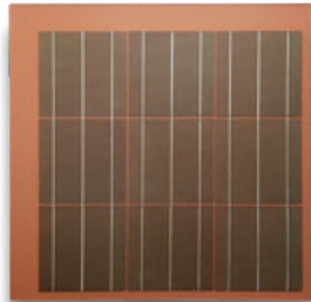
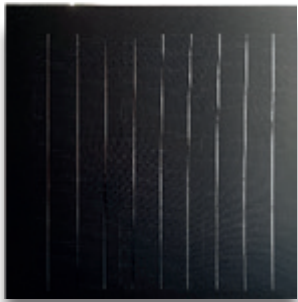




***Energy with excess  
means quality of life  
SolteQ - your energy designer***



# Quad54 - Easy-SolarRoofTiles



#### Quad 54 Technical Data

Cells: monocrystalline

Colour: anthracite

Efficiency: approx. 20.2%

Amount per m<sup>2</sup> for horizontal/diamond format: 3.75 / 4 tiles/m<sup>2</sup>

Actual Power: 166.39 / 177.48Wp/m<sup>2</sup>

Power equivalent including max LLE: 199.67 / 212.98 Wp/m<sup>2</sup>

Actual output from other colours:

Tile red: 143.44/ 153 Wp/m<sup>2</sup>

Grey shades (Crystal): 135 /144Wp/m<sup>2</sup>

Product warranty: 10 years

Performance guarantee: 40 years

with 80% of the installed capacity

Rain safety guarantee: 50 years

Note: Low Light Effect (LLE) values are estimated values and are location dependent.

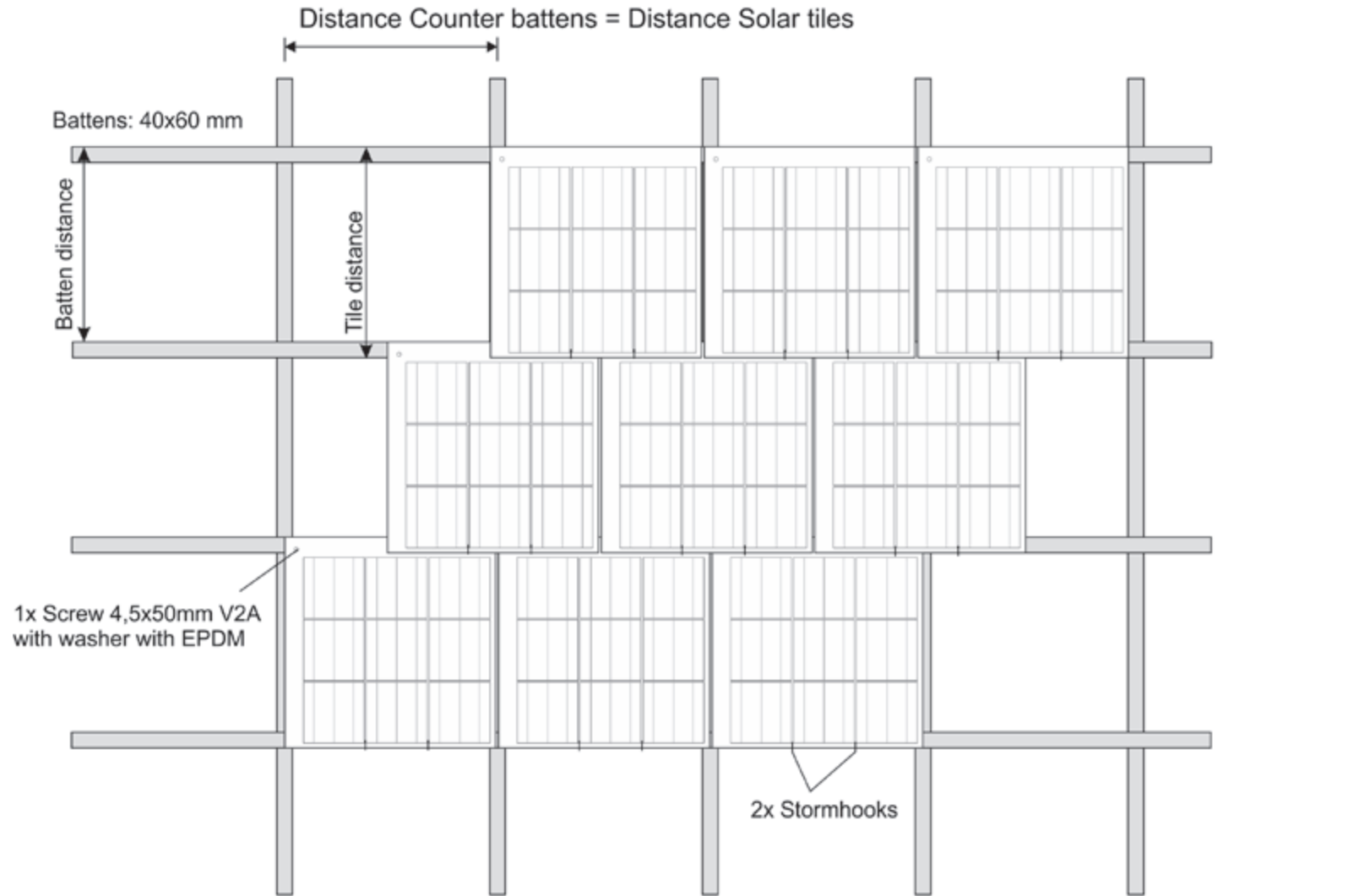
Optionally, all variants are also available as a plus version with the same performance.



**Solteq**  
**SOLARROOFS**  
The ENERGY of the FUTURE



# SolteQ Quad54-Easy Solar Roof Tiles 540x540mm - Horizontal Pattern



Distance Counter Battens = Distance axis tiles horizontal  
 Minimum: 54.5 cm  
 Optimum: 54.5 cm  
 Maximum: 54.5 cm

Nominal roof angle 25 °  
 Minimum roof angle 15 °  
 Installation with 1x screw + 2x stormhooks per tile

Distance Horizontal Battens = Distance axis tiles vertical:  
 Minimum: 50.0 cm  
 Optimum: 51.0 cm  
 Maximum: 52.0 cm

**Quad 54 Hall roofing  
as a roof renewal**

*Top right picture:  
Quad54 with SolteQ light lines.  
The entire roof consists of one system with  
no transitions to other elements, so 100%  
rainproofness can be guaranteed on the entire  
roof surface.*

*Picture right below and below left:  
Direct assembly using simple battens on the  
existing, old roof.*

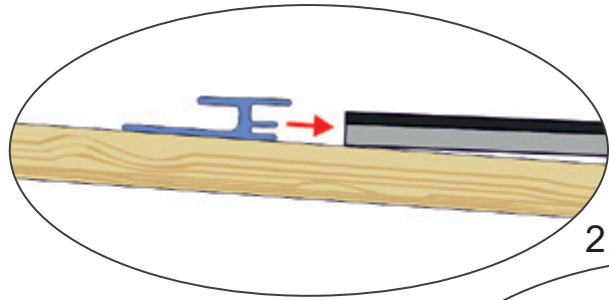
*Simple and inexpensive roof renewal ... simply  
perfect!*



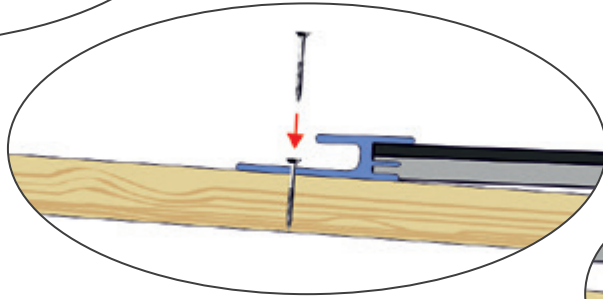


# Direct installation on the plywood - easy

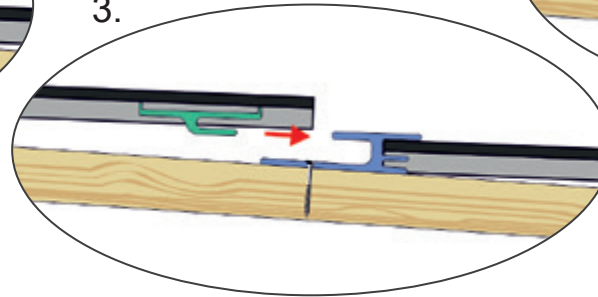
Easy - quick - cost saving.



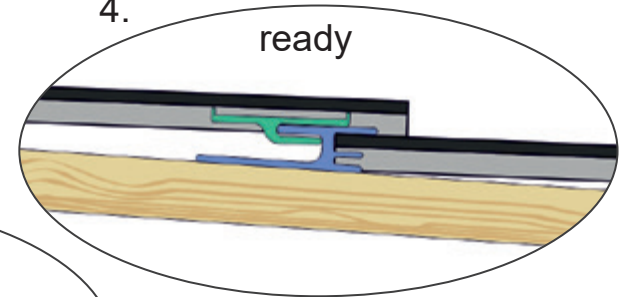
2.



3.



4.



ready

**Active Cooling:**  
With the SolteQ active Roof-Cooling-System you need much less air conditioning and have always a cool roof and a cool house !

Easy.



Option with 40mm space for better Ventilation by natural convection or Active Roof Cooling



**SolteQ-ActiveRoof-Cooling:**  
With the SolteQ active Roof-Cooling-System you need much less air conditioning and you'll have always a cool roof and a cool house !

# SolteQ-Quad54-Solar Roof Tiles Plywood - Horizontal Pattern

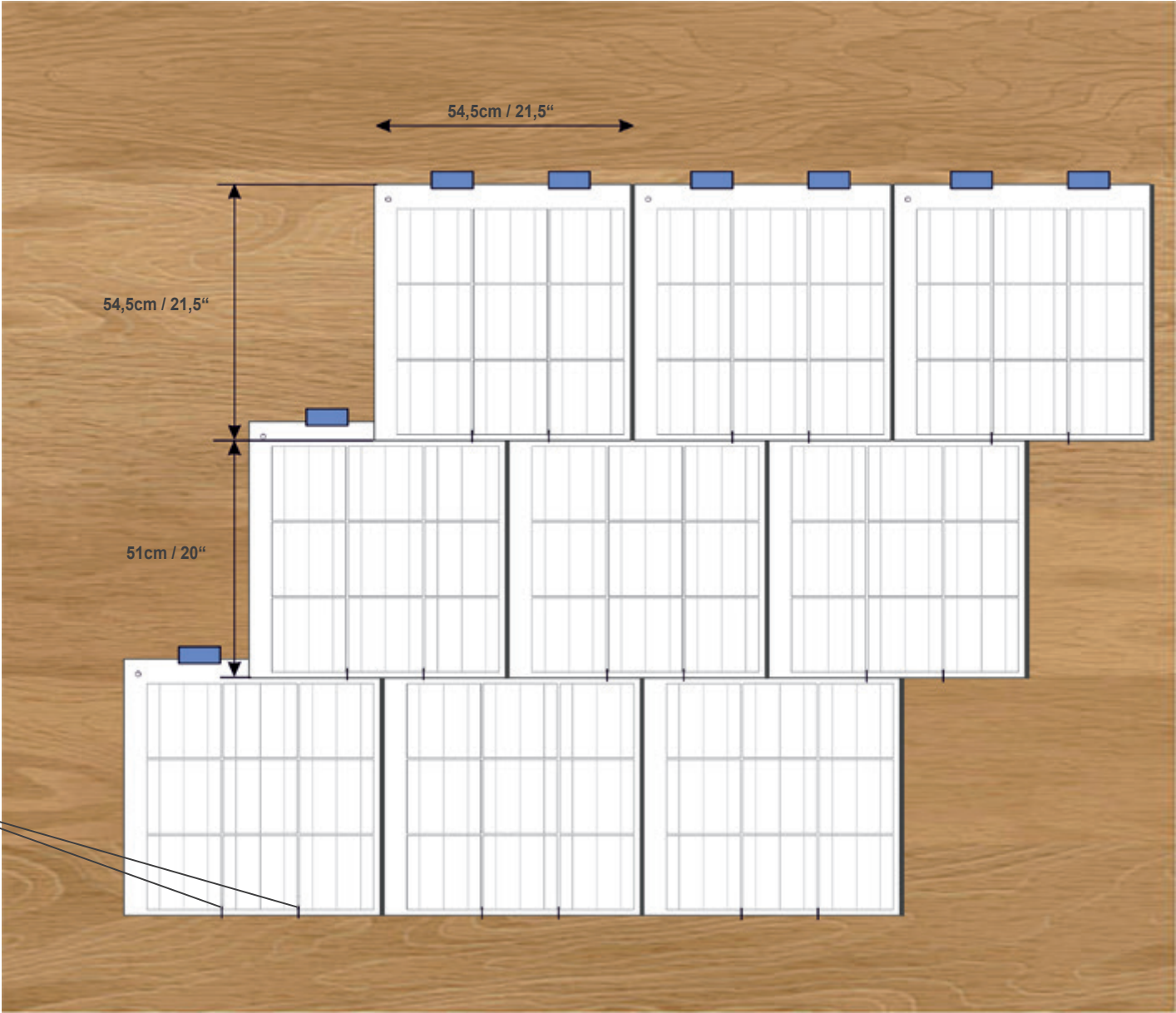
All houses roofs in the future must get a weatherproof protection including energy production.

No more Energy bills with a SolteQ-SolarRoof.

**Stormsafe up to**  
160 mph with 2 screws  
+stromhooks  
or  
200 mph with 4 screws  
+stromhooks

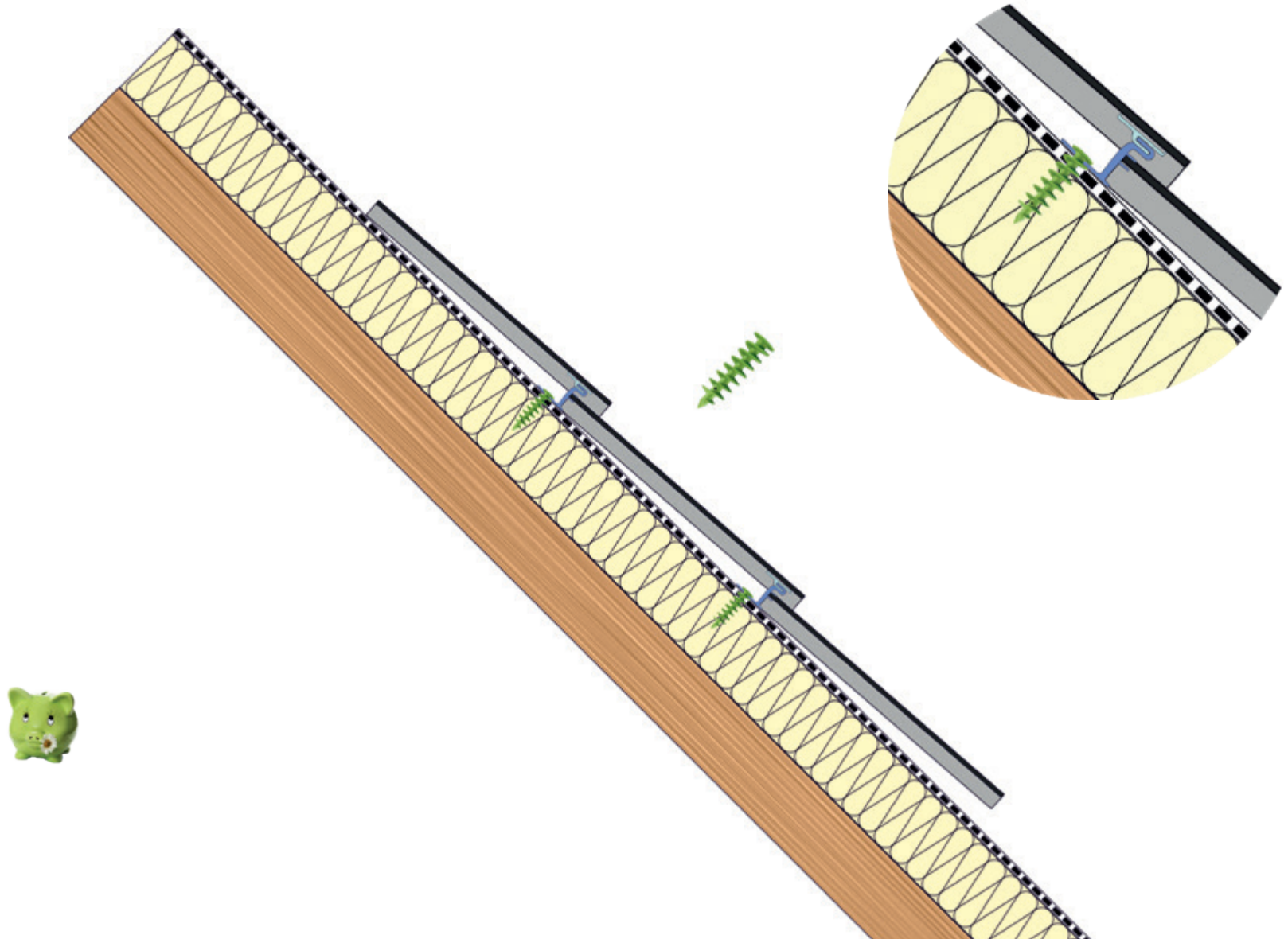
**Stormhooks**  
In regions with higher  
winds and storms the  
two springhooks will be  
installed additionally. This  
makes the system much  
more strong.

Please note:  
The SolarRoof can only be  
safe as much the under-  
layment is strong enough !

















**SolteQ-Energ-Roof in Noble Colours**



### **Amethyst**

*Colour: Lavender  
... for ever summer fresh*



### **Ruby**

*Colour: Ruby / Wine-Red  
Noble and gentle, the shade  
of the gourmet*



### **SolteQ-Quad-Colour-Polykristallin**

*In addition to the classic shades with monocrystalline cells, the SolteQ Quad product line is available as a special color in other great shades. Thanks to polycrystalline cell technology, the SolteQ Quad Color roof shingle has a unique structure that gives the roof a phenomenal „crystalline“ look and is available in your favorite colors.*



### **Emerald**

*Colour: Emerald / Forest Green  
In keeping with nature*



*Standard colours:  
Terracotta RAL 8004  
Forest-Green RAL 6020  
Silver-Grey RAL 7036  
Lavender RAL 7016  
Wine-Red: RAL 3005  
(colours similar)*



### **Sapphire**

*Colour: Dark Blue  
Blue is the color of silence  
and relaxing*



### **Bernstein**

*Colour: Bernstein*

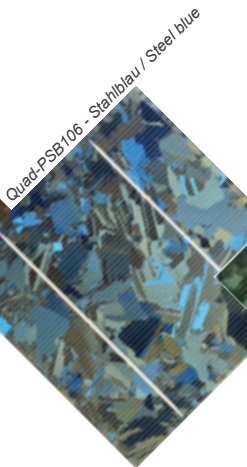
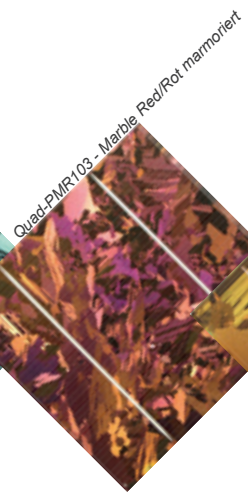
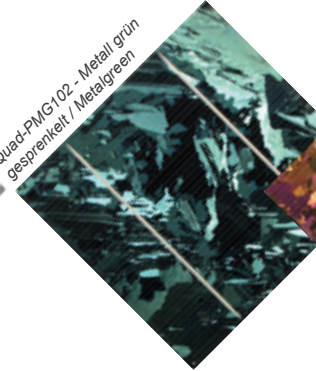
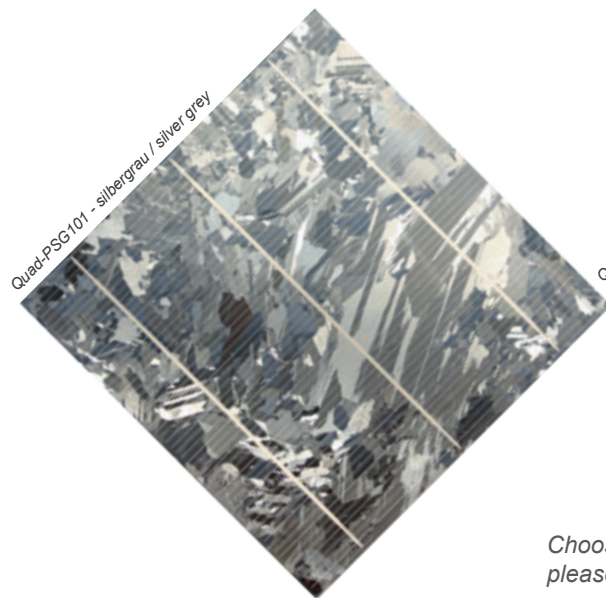
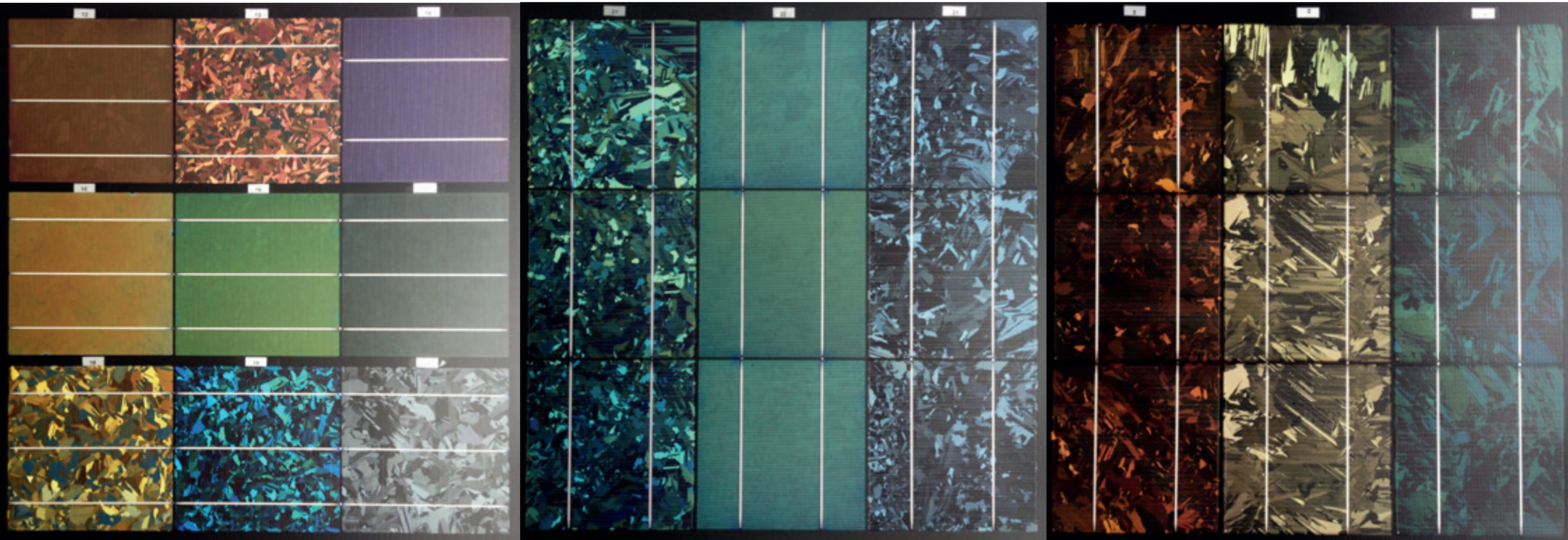


**SolteQ**



# Elegant and subtle shades

SolteQ not only offers the right shape of tile for every taste, but also the right colours. Our engineers worry about your energy supply and your well-being. You need to feel comfortable and safe in your home, as well as being proud of your choice of roof, a roof to enhance your home.



Choose from SolteQ's wide range tiles in the colour of your choice. If there is a colour that you prefer that is not listed in our brochure then please don't hesitate to contact us in order that we can assist you further.





## **The 5 star roof**

*... with 5 functions*

**Energy with excess**

**Life quality**

**SolteQ - Your energy designer**

*The SolteQ Quad Energy Roof*

*The roof of the future available now throughout Europe & Africa.*

*The roof that can make energy bills a thing of the past.*



**[www.TheSolarroof.eu](http://www.TheSolarroof.eu)**



# Technical Specifications

**Safety included !**  
**The Energy-Roof includes**  
**the emergency and fire**  
**switch SolteQ-BFA for main-**  
**tenance and emergency.**

## BASIC DATA AND MECHANIC DESIGN

Module Type	Quad40 / 54
Cell Material	Mono-Polycrystalline Silicon
Cell Size	156 x 156 mm
Module Dimensions	540x540 mm
Weight	ca. 3,3 kg
Weight per m <sup>2</sup>	ca. 14 kg
Cooling	Single Module Cooling
Connectors	MC 4 Compatible
Cables	2x ca. 50 cm, 4mm <sup>2</sup>
Bypass Diode	1 Diode
Thickness of Glass	4 mm, Prismatic
Glass certifications	DIN EN 12150-1   2019-08, Glass in construction, Option: DIN EN 14179-1 Single-pane safety glass, thermally toughened and hardened
Mechanical Resilience	8500 Pa (approx. 850kg)
Backing Laminate	UV- and Weatherproof
Roof angle:	10 - 90°

## ELECTRICAL DATA

Nominal Power / Tlfe	ca. 40,5 to 43,25 Wp
Power per m <sup>2</sup>	ca. 161,6 - 178 Wp
Efficiency	18,8 - 19,8
Tolerance/ STC	+5%
Max. System voltage	1000 V DC
Nominal Voltage	4,7 V
Nominal Current	8,75 - 9,0 A
Voltage Without Load (Uoc)	5,6 - 5,8 V
Short Cut Current (ISC)	9,4 - 9,8 A
Operation temperature	-40 °C to +85 °C
Min. Power 15 years	90% of nominal power
Min. Power 25 years	85% of nominal power
Min. Power 40 years	80% of nominal power
Estimated lifetime	> 50 Years with > 85% of nominal power
Product warranty:	5 years, expandable to 20 years
Spare parts guarantee:	30 years
Performance guarantee:	for monocrystalline cells: 40 years with 80% of the installed power for polycrystalline cells: 20 years with 80% of the installed capacity

## Monocrystalline (Std.)

## Low light performance\*

intensity [W/m <sup>2</sup> ]	V <sub>mpp</sub> * [%]	I <sub>mpp</sub> * [%]
1000	0	0
900	-0,3	-10
500	-1,94	-50
300	-3,91	-70
200	-6,06	-80

The electrical data apply at 25 °C und AM 1,5 (IEC 60904-3 ed.2 2008).

## TEMPERATURE COEFFICIENTS

UOC	- 0,33 ± 0,02% / K
ISC	+ 0,04 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TESTING CONDITIONS (STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

## Fire classe - Module/Shingle -

Front:	Solarmodule Glass, Tempered, Prismatic
TPT-Foil (Rear):	PYE/PET (Polyethylene Terephthalate)
Specials:	Safety hang up
Certificate-TPT-Foil:	Testet reg. ANSI/UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112, ISO75-2, ISO527-2, ISO178, ISO179-2, ISO180

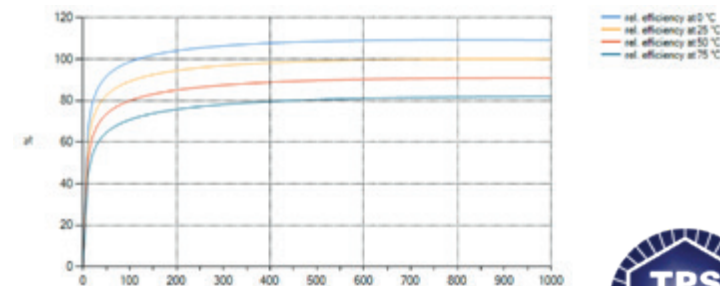


**DATA SAFETY SYSTEM BFA** - separate data sheet of the SolteQ-BFA System -  
 Max. Count of Modules no limit  
 Certificates TPS Intercert, RETI  
 Emergency Button Specification EN54-11, Typ B  
 Conform to Standards VDE0100-537, IEC60364-5-537, VDE0100-53 and E VDE-AR-E 2100-712:((2010-09))



## CERTIFICATE / Warranty - Module -

Certificate	CE, TPS Intercert (Technische Prüfstelle für Solartechnik), RETI, IEC61215, Safety IEC EN 61730, Salt corrosion tested IEC EN 61701 DIN 1055-4
Windload	CEN/TR 15601
Rain proofness	IEC 61215, Extension Switzerland: Hail resistance class 3
Hail class	IEC 62716
Ammonia corrosion test:	II, IP65
Protection class	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
German standards	konform nach den Regeln der Liste der Technischen Baubestimmungen
Safety	schwer entflammbar, Fire Class 1 gem. UNI 9177
Fire safety	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glas break parts (crumb formation) Certification of the mounting mechanism conform to CSTB Eu conditions
Breaking safety:	



Awarded the environmental seal for particularly energy-saving and environmentally conscious technology „The green tree“

\* These electr. Parameters are typical averages from historical production data. Future production batches may differ. This also applies to color deviations.



Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress. The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.





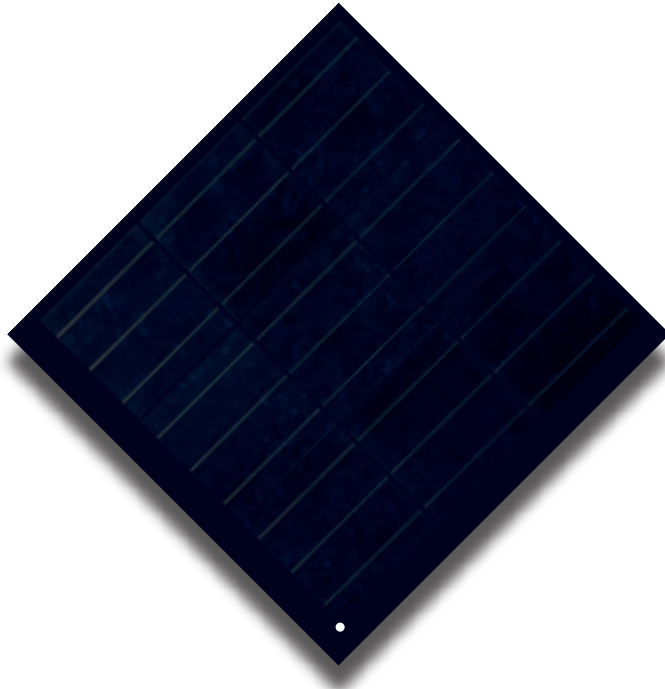
Hotel in the Bavarian Alps,  
SolteQ Quad 60 solar shingles  
Plant performance; 32 kWp  
24kWh power storage  
100% self-sufficiency





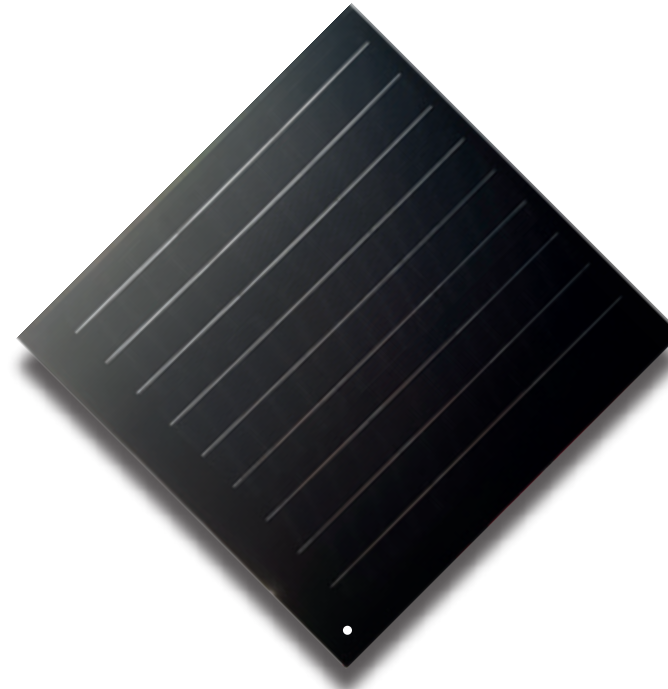
# Quad60

## the ultimate ROOF SOLUTION



SolteQ-Quad60 - ECO

*SolteQ-Quad60 - The economic SolarRoof  
With a maximum of efficiency and a low cost in the passive areas, you  
will get for every demand a very suitable solution.*



SolteQ-Quad60 - Premium-Anthracite



### **Quad 60 Technical Data**

*Cells: poly/monocrystalline  
Colour: dark blue / anthracite  
Efficiency: approx. 18-22.8%  
Amount per m<sup>2</sup> for horizontal/diamond format: 3.75 / 4 tiles/m<sup>2</sup>  
Actual Power (Anthracite): 166.39 / 177.48Wp/m<sup>2</sup>  
Power equivalent (Anthracite) including max LLE: 199.67 / 212.98 Wp/m<sup>2</sup>*

*Actual Power (Eco/Prem): 151.88 / 162Wp/m<sup>2</sup>  
Power equivalent (Eco/Prem) including max LLE: 182.25 / 194.4 Wp/m<sup>2</sup>*

*Product warranty: 10 years  
Performance guarantee: 40 years with 80% of the installed capacity  
Rain safety guarantee: 50 years*

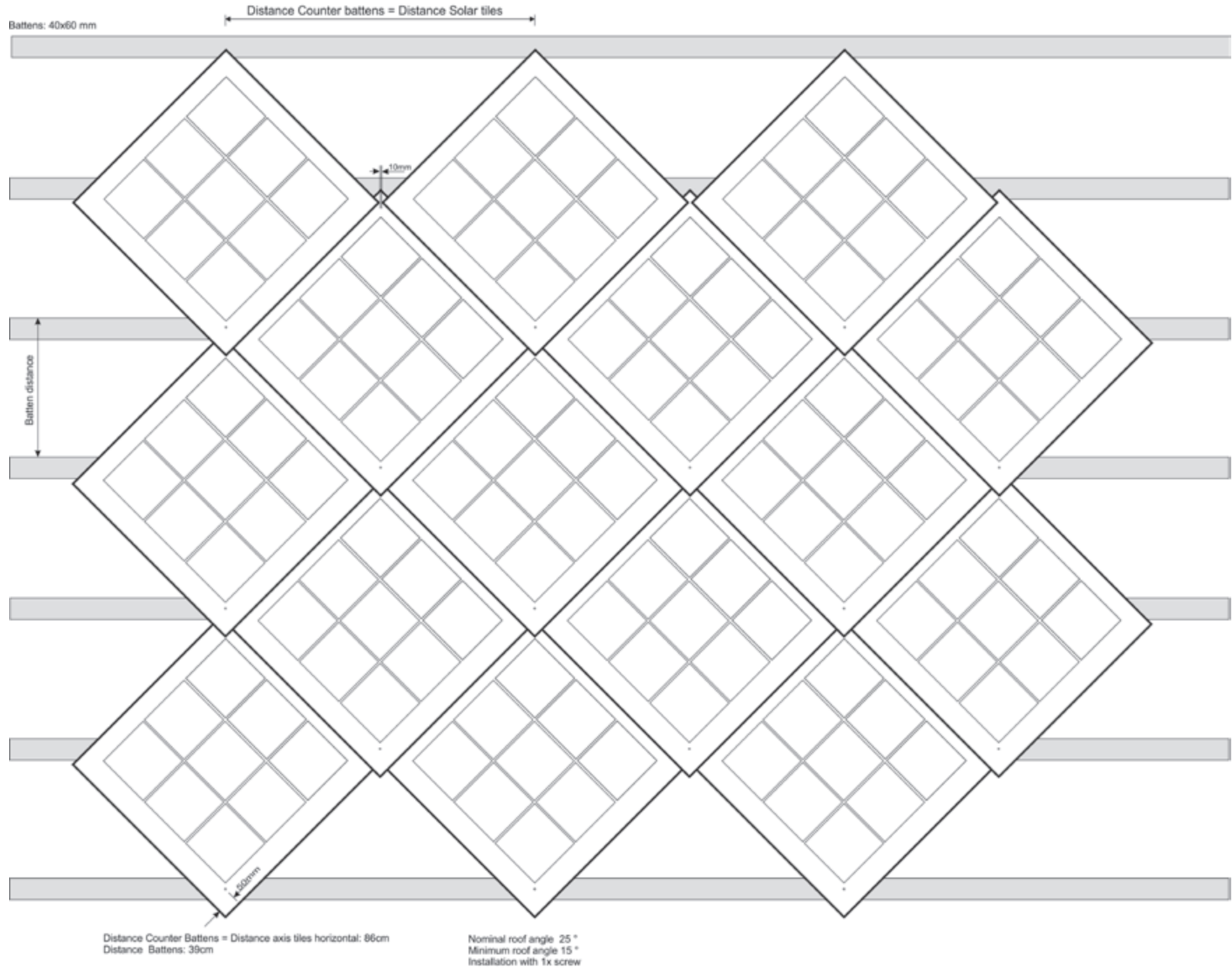
*Note: Low Light Effect (LLE) values are estimated values and are location dependent.*







# SolteQ Quad60 Easy Solar Roof Tiles 600x600mm - Diamond Pattern









*The elegance of a SolteQ roof cannot be compared.*

**plant data**

**Location: Austria**

**Installed power: 28 kWp**

**Electricity storage: domestic power plant, 13.5 kWh**

**Self-sufficiency rate: 100%**

**SolteQ**

# INFINITY

SolteQ

*Roof and facade elements  
SolteQ-Infinity*



SolteQ



*Harnessing nature: energy roof tiles with a*

# SLATE LOOK

## **SolteQ energy roofs and façades Standard items or custom made to your requirements**

Because all of our tiles are made in-house it is even possible for us to respond to specific requests from both customer's and architect's alike.

If you have specific requirements in mind for a particular tile be it shape or colour, then please don't hesitate to contact us.

## **Brand quality from SolteQ**

SolteQ roof and façade elements can be used for both roofing and cladding. In either case, the buildings aesthetics are not only enhanced but so too is the buildings energy potential as a result of the PV and solar thermal attributes of the SolteQ products. Products that have the potential to reduce your energy bill to zero.

Energy generation from both roof and façade's – the basis of energy generation of the future!

Our tiles and façade's are all made of high quality and durable glass that has both a high impact resistance and is extremely strong. Other advantages and features are:

- Weathering and frost resistant
- Resistant to rot and corrosion
- Anti-adhesive surface for moss and lichen
- Pest resistant
- Durable
- Permanent colour
- Shock-resistant
- UV-resistant
- Ventilated
- Humidity regulating
- Insulates against external temperature variations
- Preventive fire protection factory installed
- Flame retardant, hard roofing acc. DIN4102
- Breakage behaviour: Laminated safety glass DIN EN 12150, increased impact and impact resistance
- Hail protection class 3: tested with 35mm hailstones
- Manufacturer warranty: 5 years, extendable to 20 years
- Performance Guarantee: 40 years with 80% performance
- Low weight, easy to install making them ideal for renovation projects
- Meets all requirements of the German roofing trade

## **Slate**

*A slate roof is a great looking traditional tried and tested roofing material in lots of countries throughout the world.*

*A SolteQ Energy Roof in one of our Infinity range of tiles is a fantastic alternative to real slate for the active areas of a roof, with the passive areas being made up of real slates, fibre slates or SolteQ passive infinity tiles the choice is yours.*

*The look of slate with all the advantages of a top class PV system plus huge amounts of heat energy, all from your roof.*

*What more do you want ?*

*A roof for life  
... with a lifespan of more  
than 50 years!  
Same as real Slate.*

## SolteQ roof and facade panels

### Infinity Series – Tiles based on the traditional 600 x 300 format.

The Infinity tiles are a new addition to our extensive range of tiles that come with two USP's. The first is their fantastic resemblance to real slate and the second is their ability to be used in conjunction with a variety of passive tile alternatives, that is particularly beneficial when large roofs are required to be covered.

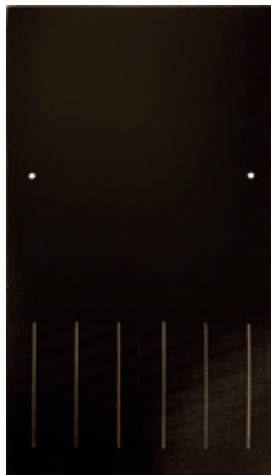
**SolteQ-Infinity Tiles for your roof or façade.** Roof tiles made of artificial stone or fibre cement, e.g. Eternit roofing and facade panels are very popular, easy to work with and look good. We now have the ability to extend this popular passive roofing system with the introduction of our highly efficient power generating Infinity tiles. The SolteQ -Infinity roof and façade tiles measure 60x33 cm and can be combined perfectly with standard artificial stone slabs or even real slate slabs, for a price that compares very favourably with on roof PV systems, but with far superior aesthetics. The laying of the tiles is done in the same way as a conventional 60x30 cm fibre cement or slate, with a storm hook at the bottom of each tile.



#### SolteQ - „Infinity“, the „Infinity“

*The roof and facade panel for the house of the future.*

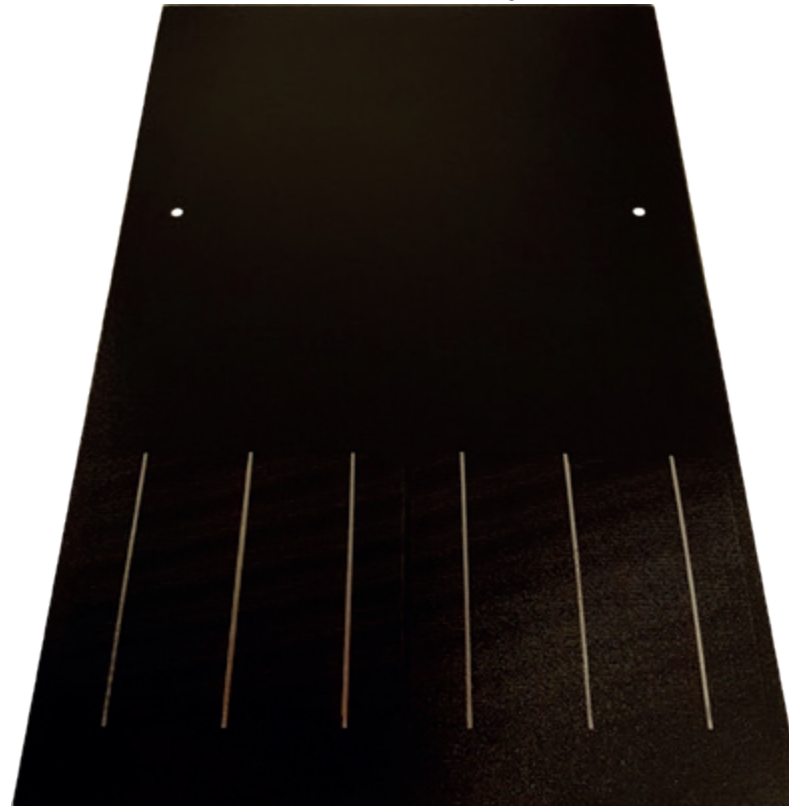
*Protection from the rain is achieved, as per a normal roof/façade panel, by the double overlapping nature of the installation. The tiles are fixed at their lower edge by a storm hook that is attached to the roof battens.*



**Format: 60 x 33 cm**

*Infinity Anthracite option:  
136,98 Wp/m<sup>2</sup>(including 10% LLE)  
7,3m<sup>2</sup>/kWp*

#### SolteQ - Infinity



*100% compatible with commercially available roof tiles and facade elements or real slate tiles in the format 60x30/33 cm*



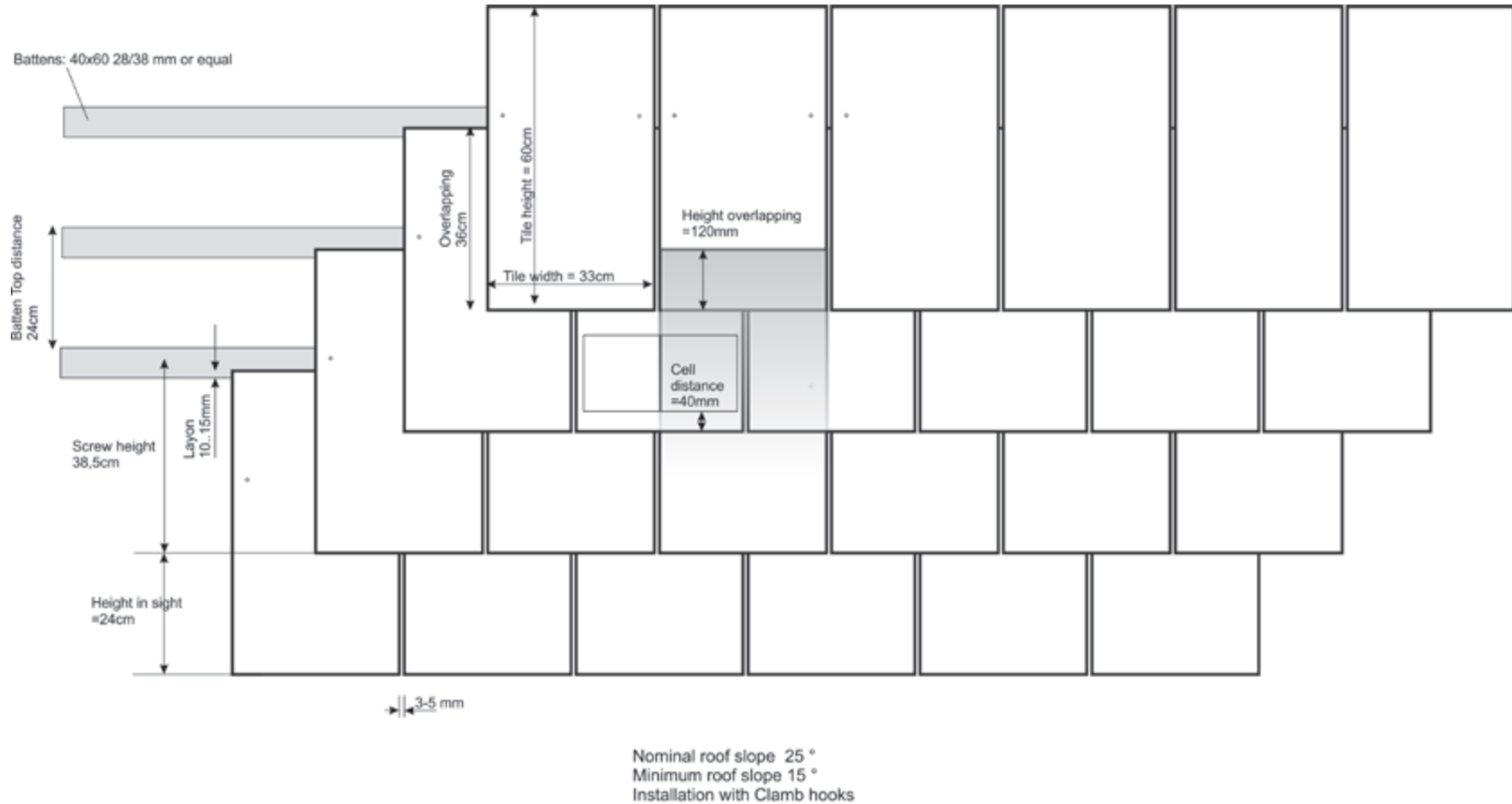
## SolteQ roof and facade panels Series Infinity - traditional double coverage

Without additional sealing rubbers, laying in conventional double covering.

**SolteQ-Infinity, as easy to lay as conventional roof and facade panels**

Simply fix with slate pins or screws, a storm clamp, done.

**60x33cm**



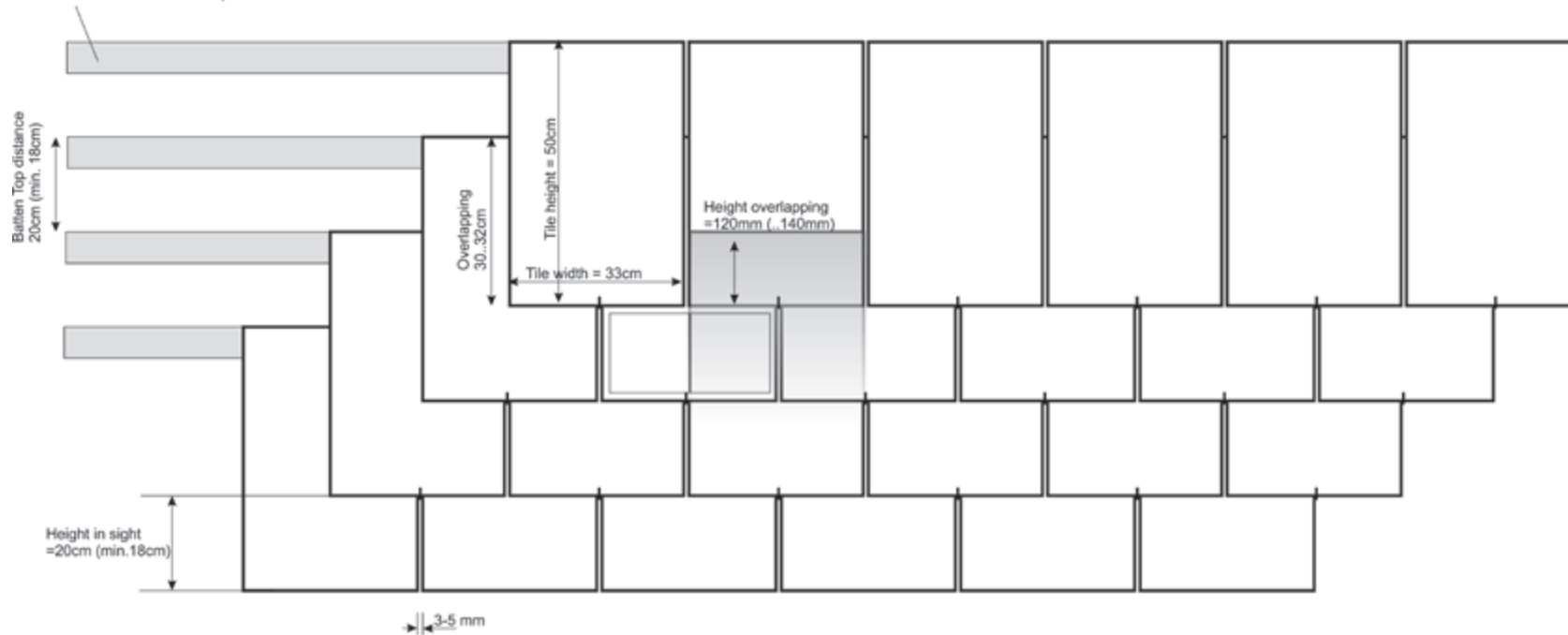
By default, the installation is done only via staple hooks, as in a conventional slate.  
As a special version, the plate can also be fixed with two screws (optional holes)

**100% rainproof due to double covering**



## 50x33cm

Battens: 40x60 28/38 mm or equal



Nominal roof slope 25 °  
Minimum roof slope 15 °  
Installation with Clamb hooks



# INFINITY -Premium-Black

*Photovoltaics yes - but with style!*

*For roofs and facades*

## **Frameless and clean**

*The great frameless design makes your roof or facade a gem. The frameless design not only looks great, it also helps keep the tiles clean. It has no edges where the dirt can accumulate instead the water (and the dirt) are able to flow un hindered from the surface of the tiles. The PV tiles are made of glass, which does not deteriorate with age and therefore continues to look like new for the life of the product. Tiles with a built-in self-cleaning effect!*

## **Frameless and overlapping installation**

*= Maximum utilisation of roof surface*

*Due to the frameless nature of the tiles and the fact that they are overlapped during installation, the PV cells lie very close to each other over the entire roof surface resulting in maximum utilisation of the available area for power generation.*

## **Modular construction**

*The SolteQ Infinity System has a modular design and is optimally adaptable to almost any roofing situation. Passive tiles for the shady side of the roof, walk-on tiles with steps for easy access and cuttable elements for maximising roof coverage ensure the system is extremely adaptable when even the most complicated of roof designs have to be accommodated.*

## **Lightweight**

*Normal roof tiles or shingles have a weight of 50-80 kg per square metre. A SolteQ Infinity PV Roof and Facade Element has a weight of only 1.8 kg. per tile which results in a weight of only 19kg per square metre. A tile that is ideally suited for both new construction and renovation projects.*

## **The lotus flower effect = lifelong as new!**

*Due to the high-quality non-stick surface and frameless design, moss and other organic materials have no opportunity to form, this coupled with the self-cleaning nature of the glass ensures the roof always looks great. The system also has the benefit of an integrated power switch-off option which ensures that the roof is totally safe in shut-down situations for roof maintenance or cleaning. A roof that's always clean, always beautiful, always maximising the return on your investment.*



**only  
19 kg  
per m<sup>2</sup>**

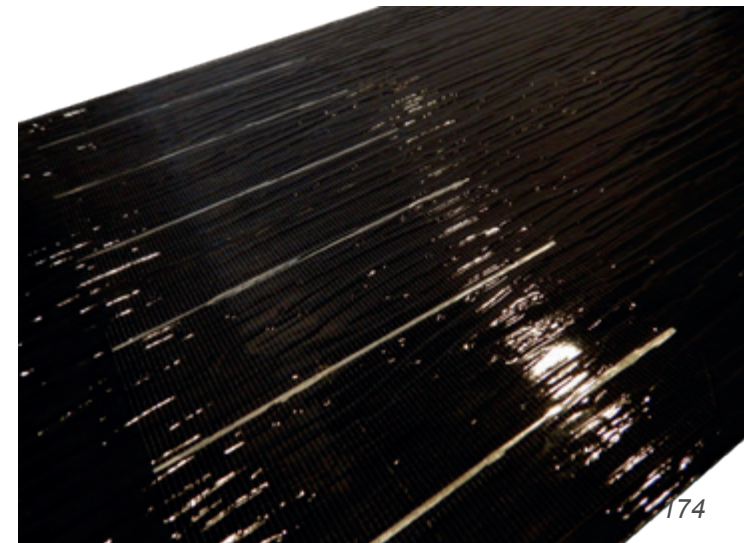
## **Installation**

*Please be aware that the standard method of installing these tiles is by means of a single slate hook located on the lower edge of each tile which attaches the tile to the roofing batten. On request we can manufacture the tiles with additional fixing holes to facilitate two fixing screws in addition to the tile hooks for added security.*

*Are you looking for something special?  
SolteQ Infinity with Slate Structure Surface:*



*Fantastic surface  
with slate structure*



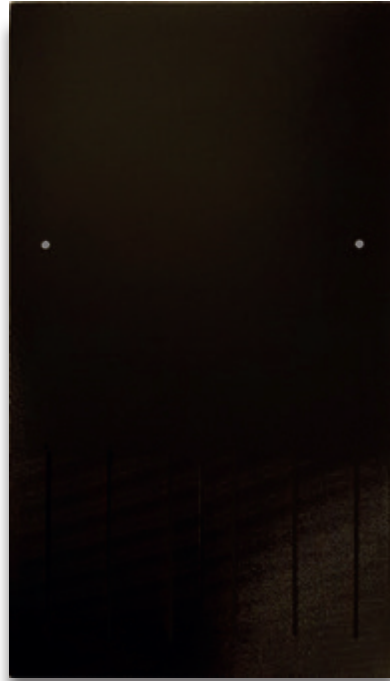


# INFINITY-Variants

*Slate look infinity*



*SolteQ-Infinity Anthracite*



*SolteQ-Infinity Slate Crystal look*



*SolteQ-Infinity Silvergrey*

# Variants slate look - The direct comparison

***A comparison between slate look Infinity tiles and two readily available passive tile options.***

*Infinity variants:*

- Anthracite
- Dark grey
- Slate crystal
- Silver-grey crystal
- Tile red

*The two crystal effect options that are available in these tiles, provide the tiles with a very attractive slate like overall appearance when viewed from a distance.*

*The silver, fine stripes in the cells are also no longer visible when viewing the roof from a normal distance at ground level.*



*Marley Eternit roof and facade panel*

*SolteQ-Infinity rock grey*

*SolteQ-Infinity Silver grey crystal (dark gray / crystal)*

*Real-Slate (Rathscheck)*

*SolteQ-Infinity Anthracite*



# INFINITY-Variants

*Infinity - Tile red*



*Infinity - Slate-Plus*



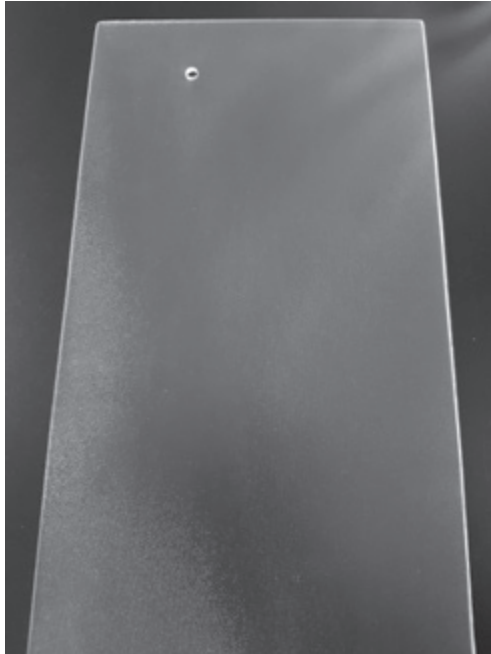
# Glass and silicon The materials of the future.

*SolteQ energy roof tiles are not only available in a variety of colours, but also in different types of glass surfaces.*

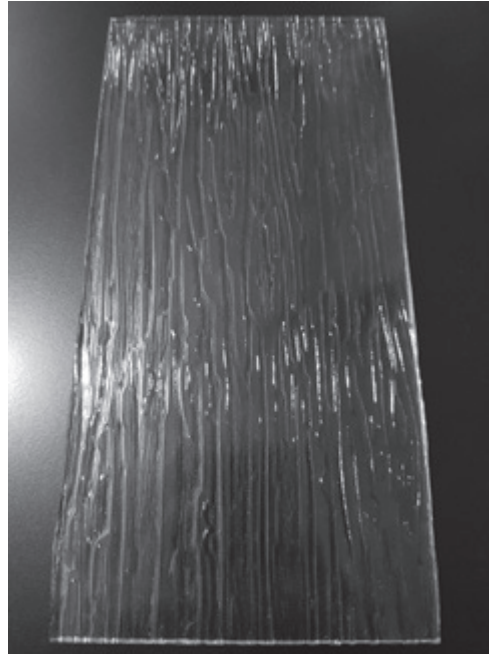


Up to 36% extra yield, compared to a conventional PV system due to:  
a) full roof area use  
b) excellent low-light behaviour

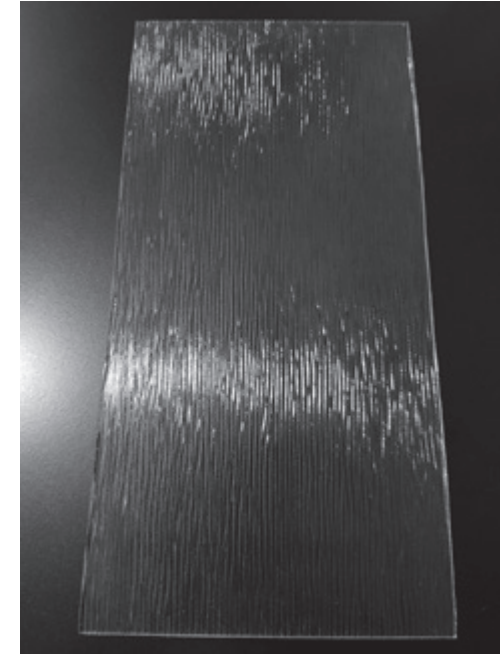
*Available glass surfaces:  
Prismatic (Standard)*



*Riven look*

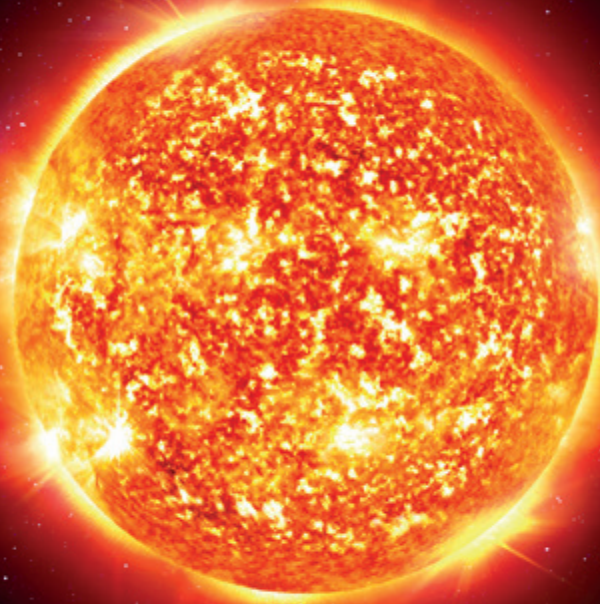


*Wood look*





## The Generator:



*Our sun is a real power plant.  
It can provide us with more energy than we need.  
Let's use this free clean energy.  
What more do we need?  
**SolteQ**-Energy solutions.*

*We no longer have to continue to burn valuable resources.  
That has to stop !*

*Every day...  
we burn 90 million oil barrels,  
or 45 supertankers.  
Day after day...*







*The Slate Roof of the future available now from SolteQ. Real slate combined with infinity slate*



## SolteQ Infinity - the benefits

Roof and façade panels made of fibre cement or real slate can be used in a variety of ways and are very popular with both roofers and customers alike. SolteQ Infinity solar roofing and façade panels can be combined perfectly with conventional 60x30 cm artificial stone panels. The ultimate combination however is when they are combined with real slates that are in the 60x30 cm format. In order to get as close as possible to the real slate look, cells with a silver-grey crystal structure were developed by SolteQ, which from a distance, has the appearance of a conventional slate roof but with all of the functionality of a top quality PV system, a system that is almost invisible to the naked eye. ... it could not be more real.



Back connection



One slate hook per tile,  
hang it, done!



**Traditional craftsmanship at its best!**





## **Double coverage**

*The tiles are laid in the same way as conventional roof tiles are laid:*

- Attach the slate hook to the batten.
- Connect the MC4 connectors and then Insert the infinity solar tile into the slate hook.

*The roofer does not have to concern himself with any electrical planning since this has already been completed by the technicians at SolteQ. SolteQ support is only available during the design phase of a project but it is also available during the construction phase which may even extend to having a presence on site where required.*

*Installation in combination with real slate tiles supplied in this instance by Rathscheck.*

*Installation in combination with real slate, here the company Rathscheck*



### **Customer Testimonial:**

I have already been approached by several people regarding my beautiful roof and how much they like the look of it well it, but then they ask "I thought you wanted to have solar on your roof"? My roof is so real and unobtrusive that you have to really scrutinise the roof in order to be able to see the active tiles.

Jörg Stockhausen, comp. Wiedemann



*SolteQ-Infinity-Rectangular double coverage  
combined with real slate  
System power 11,8kWp*









## The SolteQ energy roof: What does this cost ?

### The SolteQ Energy Roof essentially costs you nothing, but not only that it even earns you money too!

*If you were to purchase a normal passive roof made from clay or concrete tiles the return on your investment is nil. From the onset of the purchase the money is gone!*

***The SolteQ Energy Roof on the other hand costs you nothing and even earns you money - every month!***

*The financing of your SolteQ Energy Roof can come from the savings generated by the free energy from your new roof, savings that equate to the current purchase price of electricity and heating energy.*

*- No additional costs per month.*

*- You finance your new roof with the money you save from your reduced electricity and heating bills, plus in some countries a feed-in tariff. So a roof that not only pays for itself, but also saves you huge amounts of money, money that you no longer have to spend on ever increasing energy bills. Once the roof has been paid for all energy savings you make are pure profit, profit that is particularly useful in the retirement years. The SolteQ energy roof not only far nicer looking than on roof solar panel's, but it is also easier to install than a conventional rooftop PV system. And you don't potentially damage your roof, with the introduction of fixing rails and having to cut existing roof tiles to facilitate the fitting of the panels.*

***The SolteQ vision:***

- 1. Perfect weather protection.***
- 2. Affordable for everyone.***
- 3. Meets all of your energy needs.***
- 3. A great look for your house***
- 4. Adds value to the house***
- 5. A roof that pays for itself in the short term then continues to save money in the longer term.***
- 6. Makes energy bills a thing of the past.***
- 7. A very good old-age provision.***
- 8. Maintenance free.***
- 9. Has a significant impact on a cleaner environment***
- 10. Very long life with at least 50 years and more***

***The roof of the future generating clean energy - that's the SolteQ energy roof.***

***The roof that generates both electricity and solar thermal energy for heating and hot water.***

***Invest your money in your own roof. There is no better return on your investment in these days of ever in-creasing energy prices***

***If your roof brings in more money than it costs, then it must be a SolteQ Energy Roof.***

***Do the calculation for yourself:***

- + Current costs for electricity per month.***
- + Current costs for heating per month.***
- Financing costs for SolteQ Energy Roof***

***=?***



## The SolteQ-Energy Roof-Concept:

1. The that will reduce your monthly energy bill expenditure.
2. The roof that is designed to upgrade your home, through great looks and energy self-sufficiency
3. The roof that is cheaper than any other roof on the market over it's lifecycle because it not only pays for itself, but it actually saves you money by reducing or even eliminating your energy bills.
4. We show you how you can finance your new roof from the savings you will make on your energy bills, bills that have their basis in fossil fuels.
5. We advise you on how to optimise your roof, ensuring that the financial benefits from your great looking state of the art roof are also optimised.
6. The roof that pays for itself
7. Additional revenues resulting from electricity exports secured by the state in certain countries.
8. A much better return on investment than savings account interest rates.
9. The roof that continues to perform for a lifetime and beyond: Lifespan SolteQ energy roof: >> 50 years (The high-quality glass does not deteriorate with the passage of time)

**Invest in a SolteQ Energy Roof and make Energy Bills a thing of the past!**

You will benefit from the monthly saving immediately.

If this is of interest to you, then please don't hesitate to contact for free advice.

## The SolteQ Energy Roof - the roof that not only pays for itself but also continues to save you money on your energy bills forever!

The SolteQ Group is active in various areas of renewable energy. All products are developed and produced in-house from start to finish. German Quality with style. This 100% made in German approach, applies to every product in the SolteQ range, an exclusive range of products, all of which contribute to a cleaner planet but at a realistic price. Why not Improve the quality of your life and that of your family by investing in a SolteQ Energy Roof! Without a doubt the best roof on the market today.

*A roof as diligent as the bees, it never stops being productive!*

*A roof as diligent as  
the bees*





# Technical specification



## BASIC DATA AND MECHANICAL CONSTRUCTION

Tile type	Infinity
Cell material	Monocrystalline / polycrystalline silicon
Cell size	156 x 156 mm
Tile dimensions	600x330 mm
Tiles per m <sup>2</sup>	ca. 12,8
Weight approx.	1.8 kg
Weight per m <sup>2</sup>	ca. 24.32 kg
Cooling	single module rear ventilation
Connector	MC 4 compatible
Connecting cables	1/2x ca. 40 cm, 2.5mm <sup>2</sup>
Bypass diodes	1 safety diode in each tile
Glass thickness / glass type	ca. 4 mm, including prismatic (standard) or alternatively wood / slate
Glass certifications	DIN EN 12150-1   2019-08, Glass in construction, Option: DIN EN 14179-1 Single-pane safety glass, thermally toughened and hardened
Mechanical load	8,500 Pa (= 850 kg / m <sup>2</sup> )
Back laminate	UV and weatherproof
Roof pitch:	pitched roof / flat roof / facade 3 - 90 °

## ELECTRICAL DATA\*

Rated power per shingle	S. Table
Rated power per m <sup>2</sup> (with SLV *)	S. Table
Efficiency	ca. 16 - 22 %
Performance tolerance at STC	+ 5%
Max. System voltage	1000 V DC
Rated voltage	1.2V
Rated current	8.75 - 9.0 A.
Open circuit voltage	1.12 - 1.42 V
Short-circuit current	8,8 - 9,8 A
Operating temperature range	-40 °C to +85 °C
Power 15 years	90% of rated power
Power 25 years	85% of rated power
Power 40 years:	80% of rated power
Estimated Product life time:	> 50 years with > 85% of rated power
Product warranty:	5 years, expandable to 20 years
<i>Spare parts guarantee:</i>	<i>30 years</i>
Performance guarantee: for monocrystalline cells: 40 years with 80% of the installed power for polycrystalline cells: 25 years with 80% of the installed capacity	

## TEMPERATURE COEFFICIENT

UOC	- 0,32 ± 0,02% / K
ISC	+ 0,043 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TEST CONDITIONS(STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

## Fire protection class - PV shingle -

Front:	Solar module glass, tempered / prismatic
Back side:	PYE / PET (polyethylene terephthalate)
Special features:	mech. safety suspension
Certificates TPT / PYE film:	Tested to ANSI / UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112,

## DATA SAFETY SYSTEM BFA - separate data sheet of the SolteQ-BFA-System -

Max. Count of Modules	no limit
Certificates	TPS Intercert, RETI
Emergency Button Specification	EN54-11, Typ B
Conform to Standards	VDE0100-537, IEC60364-5-537_VDE0100-537 and E VDE-AR-E 2100-712:((2010-09))

## CERTIFICATE / Warranty - Module - Certificate

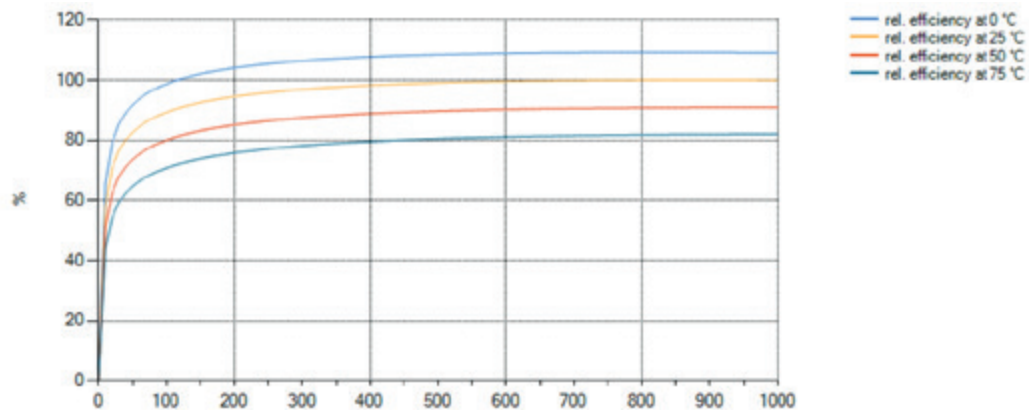
Windload	DIN 1055-4
Rain proofness	CEN/TR 15601
Hail class	IEC 61215, Extension Switzerland: Hail resistance class 3
Ammonia corrosion test:	IEC 62716
Protection class	II, IP65
German standards	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
Safety	konform nach den Regeln der Liste der Technischen Baubestimmungen
Fire safety	schwer entflammbar, Fire Class 1 gem. UNI 9177
Breaking safety:	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glas break parts (crumb formation) Certification of the mounting mechnism conform to CSTB Eu conditions

	Number of cells	Performance per tile	Efficiency /%	Number of tiles per m <sup>2</sup>	Installed Power per m <sup>2</sup>	Effective Power with SLV *)
Infinity-Anthracite -60x33	2	9,86	20,8	12,63	124,53	149,44
Infinity-Slate/ Crystall -60x33	2	8,00	18,2	12,63	101,04	121,25
Infinity-Silver/ Gray/Crystall -60x33	2	8,00	18,2	12,63	101,04	121,25
Infinity-Rock Gray -60x33	2	7,33	18,2	12,63	92,63	111,15
Infinity-Tile Red -60x33	2	8,50	17,6	12,63	107,36	128,83

Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress.  
The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.

All illustrations in this catalog are similar. Depending on the production batch, the cells may have a slight dark blue effect with anthracite.  
In the case of polycrystalline, colors and structures are always different due to the naturally grown crystal structures. Every shingle is unique.

\* These electr. Parameters are typical averages from historical production data. Future production batches may differ. This also applies to color deviations.



**Integrated safety!  
Power roof with factory-in-  
stalled fire brigade switch  
SolteQ-BFA safety shut-  
down for fire brigade and  
maintenance!**

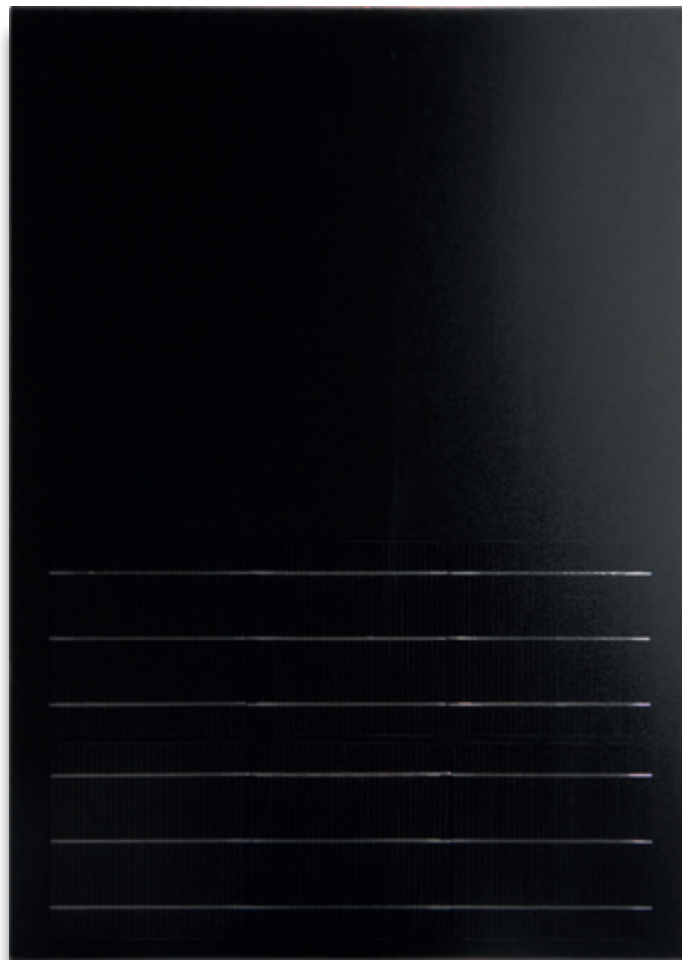


# INFINITY-XL-800x510-DD

*For roofs and facades*

*Infinity slate look with maximum yield*

*Laying: Rectangle double covering*



*Infinity-6-Cell - 80x51 cm*

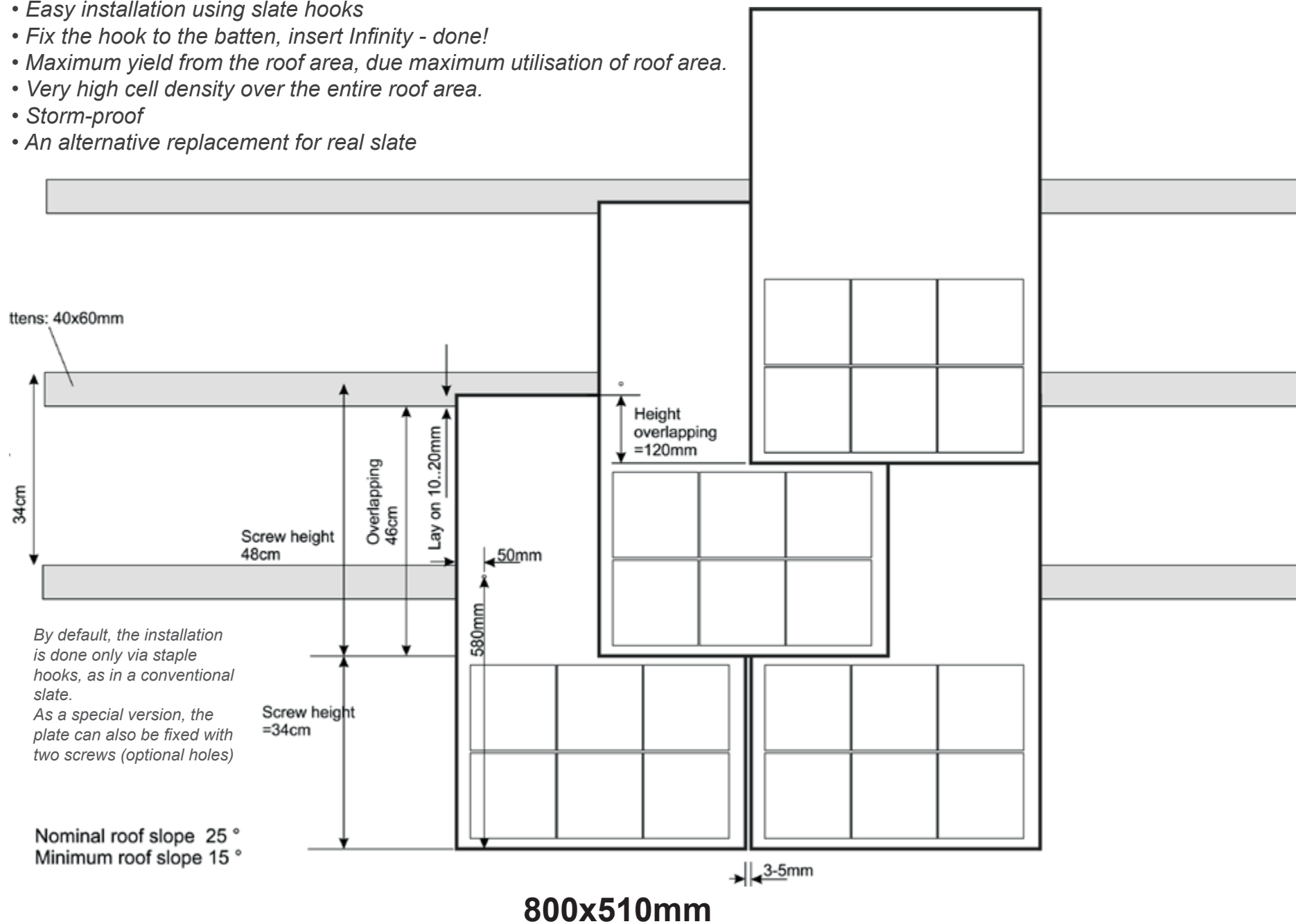
*SolteQ-Infinity XL Anthracite  
Installation by means of a slate hook.*

*Cells: monocrystalline  
Colour: anthracite  
Depending on the production batch, the cells may have a slight dark blue tint.  
Dimensions: 800x510mm  
Efficiency: approx. 20.2%  
Power/tile: ca. 29,8 Wp  
Power/m<sup>2</sup>: 170.68 Wp/m<sup>2</sup>  
with LLB/LLE: ca. 204.82 Wp/m<sup>2</sup>  
Voc: 5.76 V  
Isc: 8.8 A  
Product warranty: 5 years  
Performance guarantee: 40 years with 80% of the installed capacity*

*LLB/LLE = low light behavior  
Depending on the production batch, the cells may have a slight dark blue effect.*

## Advantages:

- 100% rainproof, with rectangular double covering
- Easy installation using slate hooks
- Fix the hook to the batten, insert Infinity - done!
- Maximum yield from the roof area, due maximum utilisation of roof area.
- Very high cell density over the entire roof area.
- Storm-proof
- An alternative replacement for real slate





# Quad40 -540x540-6Cell

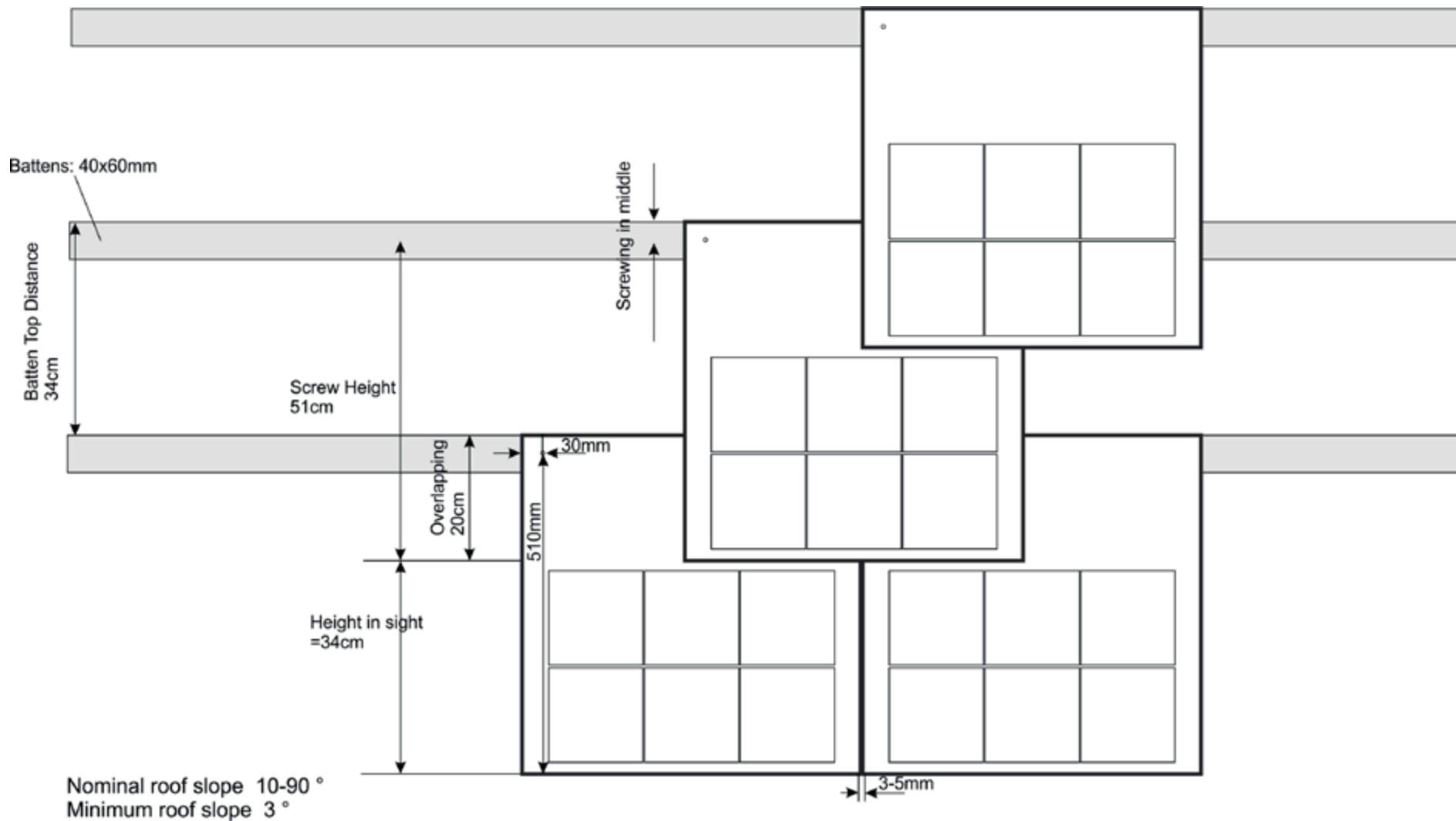
*For roofs and facades*



*Quad-6-Cell - 54x54 cm*

*Cells: monocrystalline  
Color: anthracite  
Depending on the production  
batch, the cells may have a slight  
dark blue tint.  
Dimensions: 540x540mm  
Efficiency: approx. 20.2%  
Power: ca. 29,8 Wp  
bzw. 161.21 Wp/m<sup>2</sup>  
with LLE: ca. 193.45 Wp/m<sup>2</sup>  
Voc: 3.84 V  
Isc: 8.8 A  
Product warranty: 5 years  
Performance guarantee: 40 years  
with 80% of the installed capacity*

*LLB/LLE = low light behavior*



*Installation:*  
 On the back you will find sturdy aluminum hooks for hanging.

**540x540mm**



# INFINITY-X-780x330-DD

*For roofs and facades*

*Infinity slate look with maximum yield*

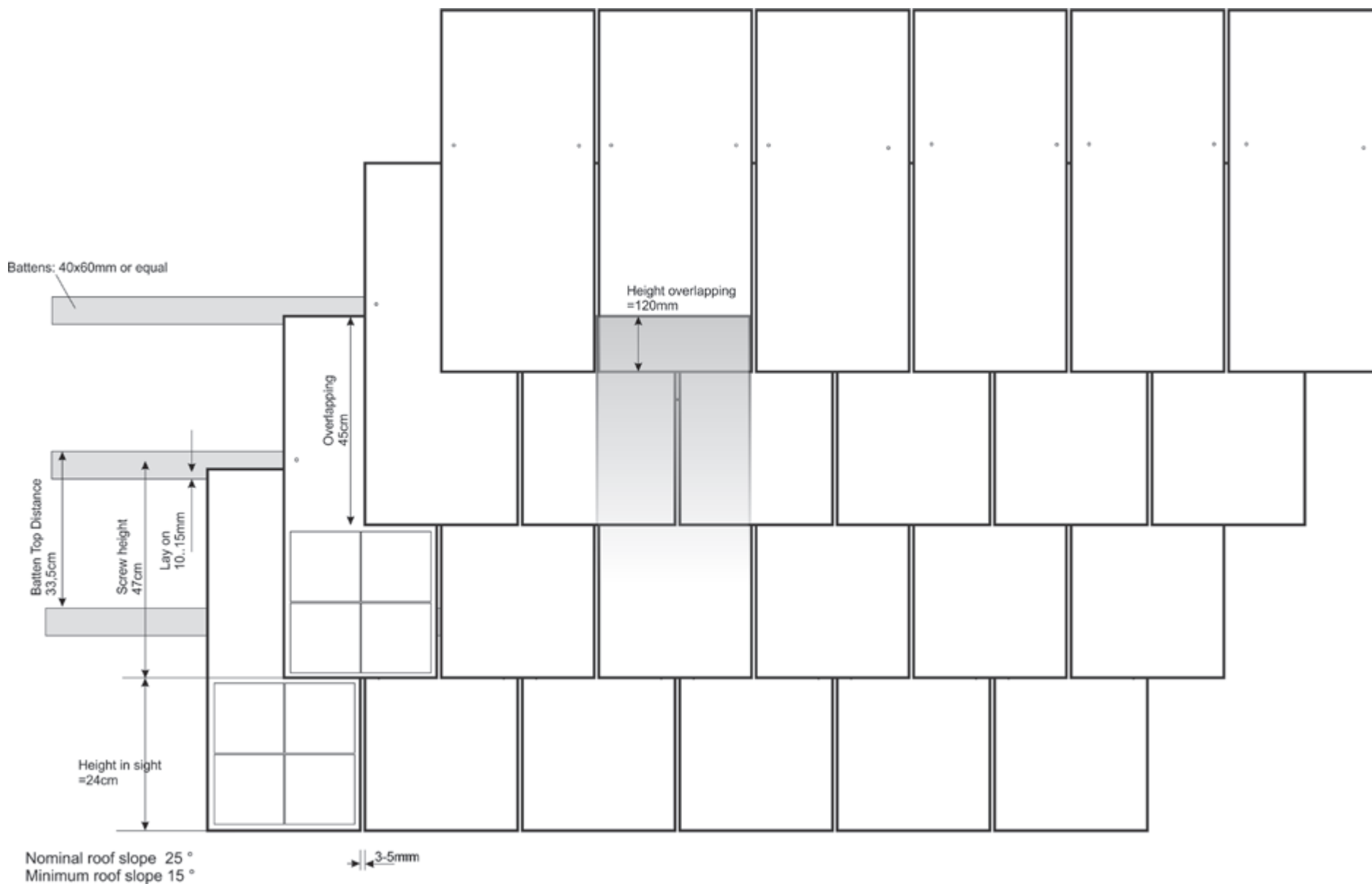
*Laying: Rectangle double covering*



*Infinity-4-Cell - 78x33 cm*

Cells: *monocrystalline*  
 Color: *anthracite*  
*Depending on the production batch, the cells may have a slight dark blue tint.*  
 Dimensions: *780x330mm*  
 Efficiency: *approx. 20.2%*  
 Power: *ca. 29,8 Wp*  
           *bzw. 181.03 Wp/m<sup>2</sup>*  
 with LLE: *ca. 217.24 Wp/m<sup>2</sup>*  
 Voc: *2,66 V*  
 Isc: *8.8 A*  
 Product warranty: *5 years*  
 Performance guarantee: *40 years with 80% of the installed capacity*

*LLB/LLE = low light behavior*



## 780x330mm

By default, the installation is done only via staple hooks, as in a conventional slate.  
 As a special version, the plate can also be fixed with two screws (optional holes)



# INFINITY-S-480x330-DD

*For roofs and facades*

*Infinity slate look with maximum yield*

*Laying: Rectangle double covering*

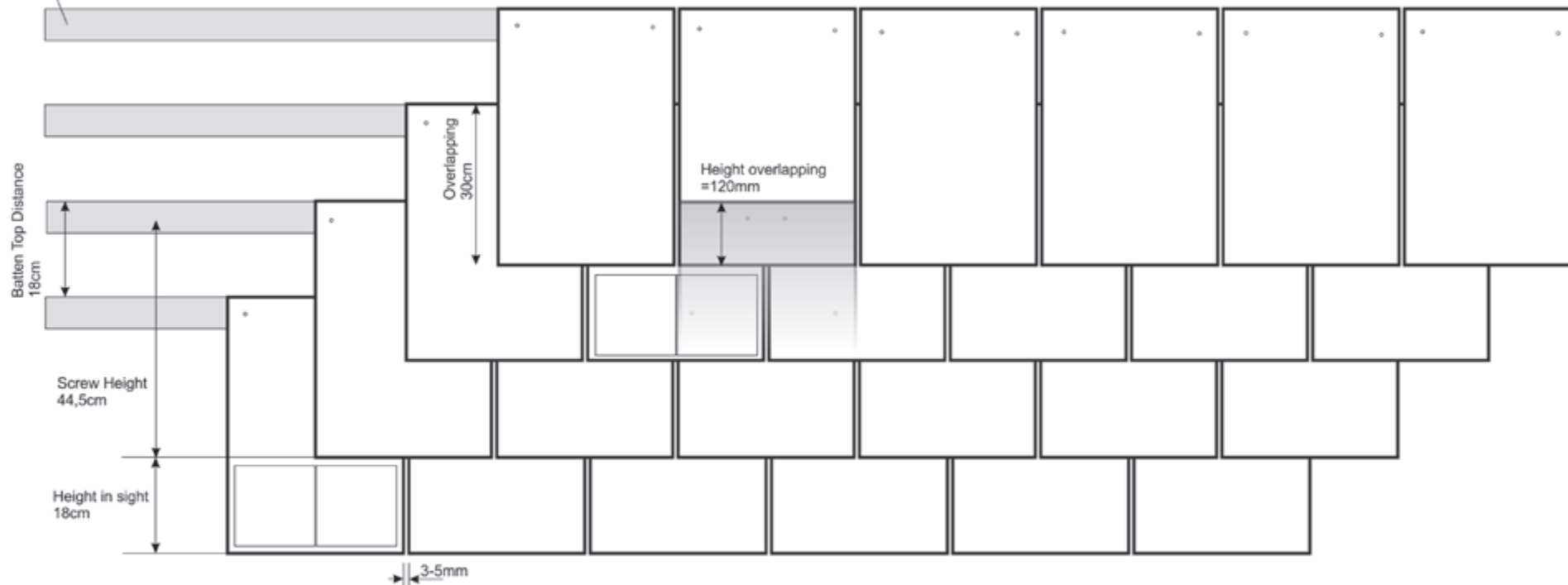


*2-Cell - 48x33 cm*

*Cells: monocrystalline*  
*Color: anthracite*  
*Depending on the production batch, the cells may have a slight dark blue tint.*  
*Dimensions: 480x330mm*  
*Efficiency: approx. 20.2%*  
*Power: ca. 9,9 Wp*  
*bzw. 166.04 Wp/m<sup>2</sup>*  
*with LLE: ca. 199.25 Wp/m<sup>2</sup>*  
*Voc: 1,28V*  
*Isc: 8.8 A*  
*Product warranty: 5 years*  
*Performance guarantee: 40 years with 80% of the installed capacity*

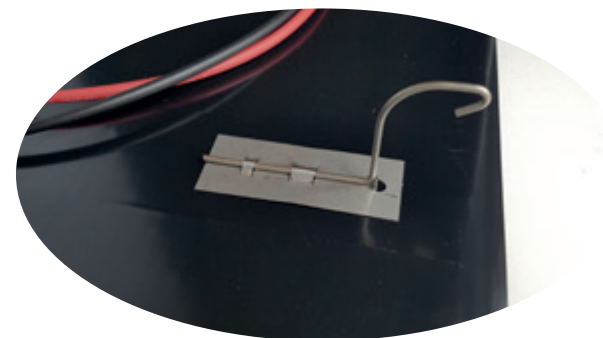
*LLE/LLB = low light behavior*

Battens: 40x60 o. 30x50mm



Nominal roof slope 10-90 °  
Minimum roof slope 3 °

*Easy installation. Each tile has its own storm hook on the back.*



**480x330mm**



# INFINITY-XS-420x330-4Cell

*For roofs and facades*

- + High rain safety
- + High cell density on the roof surface
- + High weather resistance

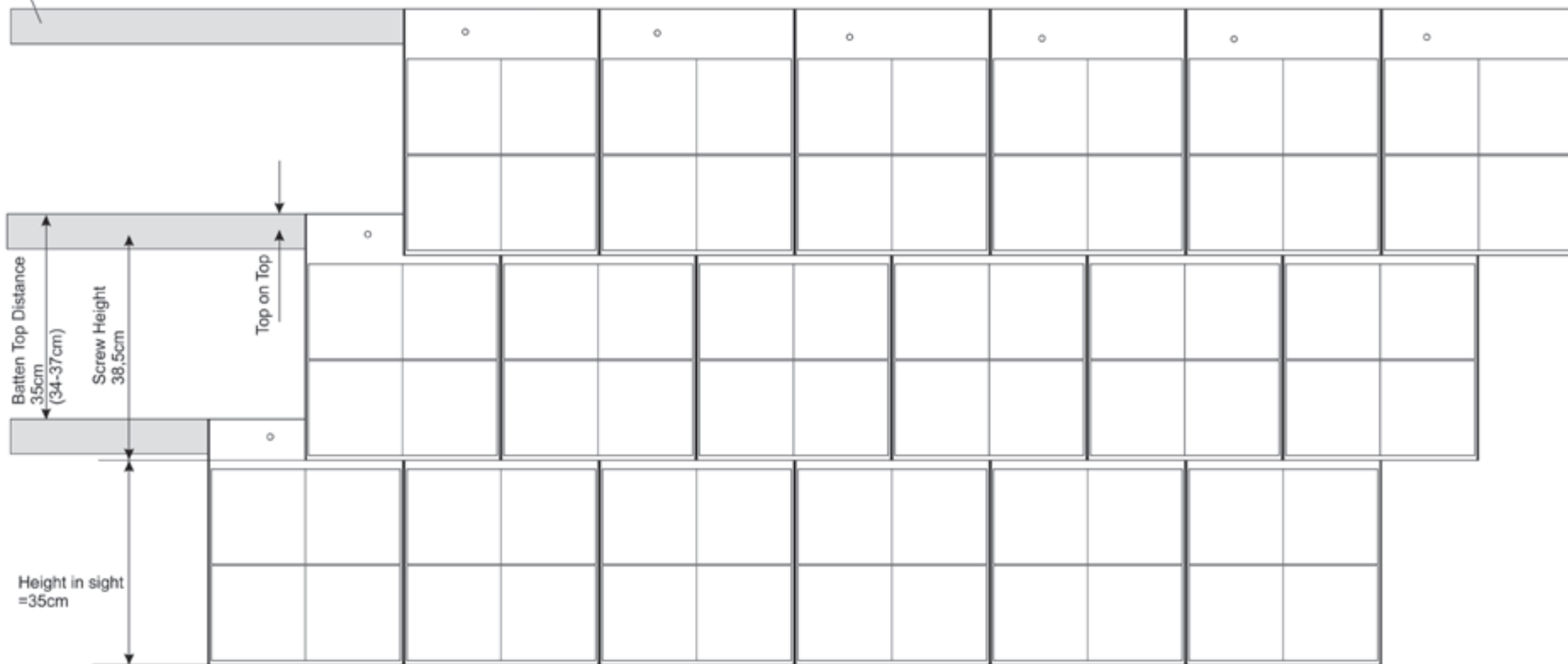


4-Cell - 42x33 cm

*Cells: monocrystalline*  
*Color: anthracite*  
*Depending on the production batch, the cells may have a slight dark blue tint.*  
*Dimensions: 420x330mm*  
*Efficiency: approx. 20.2%*  
*Power: ca. 19,72 Wp bzw. 190 Wp/m<sup>2</sup>*  
*with LLE: ca. 204,92 Wp/m<sup>2</sup>*  
*Voc: 2,66 V*  
*Isc: 8.8 A*  
*Product warranty: 5 years*  
*Performance guarantee: 40 years with 80% of the installed capacity*

*LLE/LLB = low light behavior*

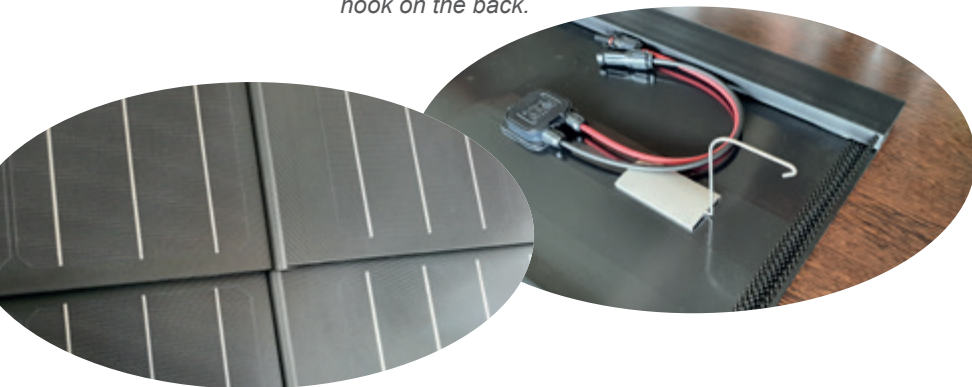
Battens: 40x60 / 30x50 mm



Nominal roof slope 10-90 °  
Minimum roof slope 3 °

**420x330mm**

*Easy installation. Each tile has its own storm hook on the back.*

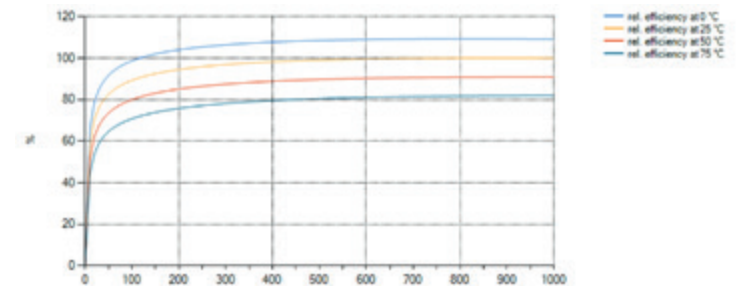




Variant	Cell-Code	Area per tile	Cells per tile	Power per tile /Wp	Uoc	Isc	Umpp	Impp	Tiles per m <sup>2</sup>	Power per m <sup>2</sup> / Wp	Power per m <sup>2</sup> / Wp (inkl. SLV)	m <sup>2</sup> / kWp
Infinity-Anthracite-60x33-DD			2	9,86	0,6450	9,5540	0,5440	9,0630	12,63	124,53	149,43	6,7
Infinity-Slate-effect / Crystal -60x33-DD			2	8,00	0,6260	7,8300	0,5270	7,3700	12,63	101,04	121,25	8,2
Infinity-Dark Gray / Crystal-60x33-DD			2	8,00	0,6260	7,8300	0,5270	7,3700	12,63	101,04	121,25	8,2
Infinity-dark / rock gray -60x33-DD			2	7,33					12,63	92,63		9,0
Infinity-Tile red -60x33-DD			2	8,50	0,6230	8,7700	0,5230	8,2200	12,63	107,36	128,9	7,8
Infinity-Passive-Anthracite -60x33-DD									12,63			
Infinity-Passiv-Tile red/color -60x33-DD									12,63			
Infinity-XL-Anthrazit 800x510-DD		0,41	6	29,58	0,6450	9,5540	0,5440	9,0630	5,77	170,68	204,82	4,88
Quad40-540x540-6Cell		0,18	6	29,58	0,6450	9,5540	0,5440	9,0630	5,45	161,21	193,45	5,17
Infinity-X-Anthracite 780x330-DD		0,26	4	19,72	0,6450	9,5540	0,5440	9,0630	9,18	181,03	217,24	4,60
Infinity-S-Anthracite 480x330-DD		0,16	2	9,86	0,6450	9,5540	0,5440	9,0630	16,84	166,04	199,25	5,02
Infinity-XS-Anthracite 420x330		0,14	4	19,72	0,6450	9,5540	0,5440	9,0630	8,66	170,78	204,94	4,88
<b>Equipment</b>												
Clamp hook, black												
screw set V2A stainless												



## Electrical values



Please note that the performance data quoted above may vary slightly due to the variation in cell outputs from one production batch to another. The colours of the delivered products may also differ slightly from the illustrations in the brochure. Area information is indicative and depends on the final installation

## Comments from our specialist:

### • **Is laying easy or difficult?**

-> SolteQ products are always laid on battens. Therefore, the principle of intermediate consumption is almost equal to the traditional tile roof. The actual roof covering, here the infinity shingle, is identical to the laying of a slate - rectangular double covering by means of hook fastening.

If you have previous knowledge of slate coverings, then it's easy.

In addition to the slate expertise is then actually only the connecting the plug added. These are absolutely confusing according to the key-lock principle. Errors excluded.

The processing on edges and penetrations is carried out with e.g. Slate and is thus the whole thing regulated in the technical rules for slates of the DDH, so almost a normal roof.

### • **What is to be considered in the substructure for the solar roof shingle, what is different from normal roof tiles?**

-> Basically, nothing is different.

The SolteQ Infinity shingle is used and used in accordance with the recognized rules of technology (= specialist rule for slate, here for rectangular double covering on battens).

The only difference is that for the power yield / sqm preferred a height coverage of 12 cm is selected, so for the flattening roof pitch. Even with roof pitches, for which also 10 or 8 cm would be sufficient. The reason is that with larger container heights, the number of PV cells decreases because fewer shingles are laid per square meter.

### • **Would you recommend the system? Is it worth it for big and small roofs?**

-> Yes, in any case, I recommend the system because the solar surface so inconspicuous corresponds to the slate that the difference is almost invisible. My own experience shows that, for example, in my own roof, almost everyone has to explain where the solar surface is located.

After completing my roof, I was very often complimented on my beautiful new roof.

Persons who knew my „solar project“, but somehow always asked, when I would because „the solar“ on it would make? I have always stated that this has already happened and explains how to recognize it. It does not look inconspicuous and it pleases the viewers without exception !!

The roof size only has to be sufficiently large for the desired power output.

Shaded or solar technically unsuitable surfaces (e.g., north side) are conventionally covered with slate.

Due to the small-scale shingles, roof areas are also suitable which are rather unsuitable for large rooftop modules.



## **SolteQ supports traditional craftsmanship!**

Place emphasis on quality and „made in Germany“ in the product and in the execution. Buy products from the region.



*Like the waves on the ocean ....*





# WAVE

SolteQ

*Roof and facade elements  
SolteQ-WAVE*



SolteQ



# WAVE

## SolteQ WAVE The architectural „wave cut“ for your house

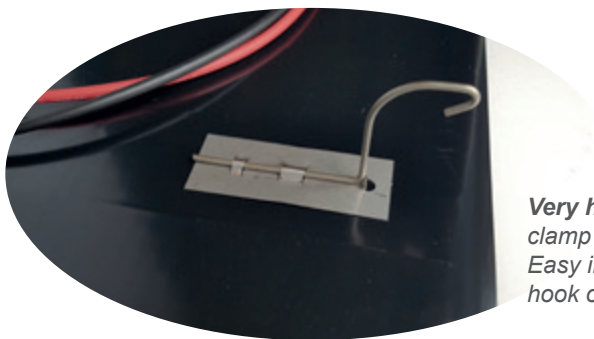
Timeless, chic and as timeless as the ocean



WAVE-anthracite

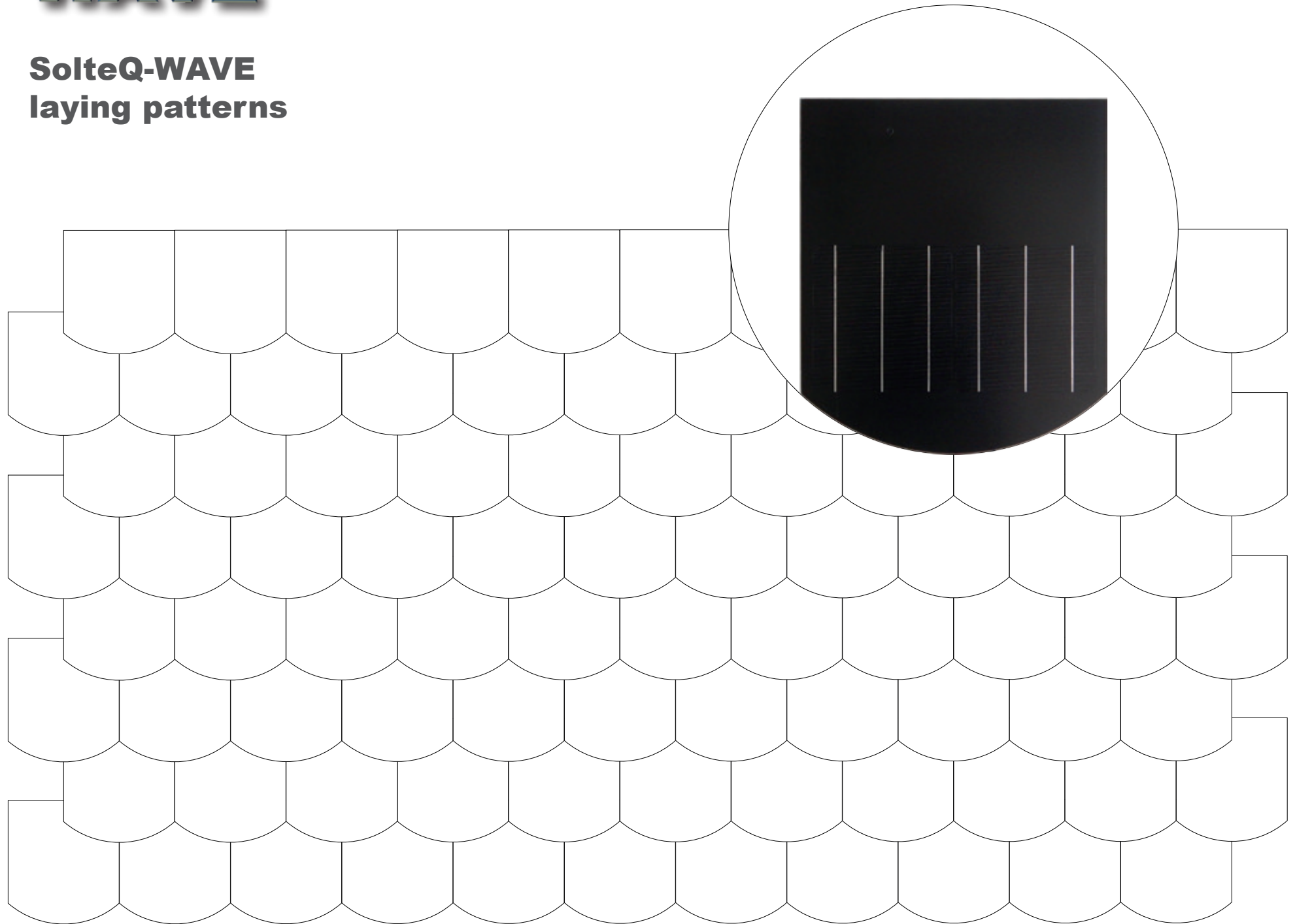


WAVE-anthracite-plus



**Very high storm safety** due to the rear storm clamp on each individual shingle.  
Easy installation. Each tile has its own storm hook on the back.

## SolteQ-WAVE laying patterns





# SolteQ-Facade-Element 34x38 - WAVE

Natural shapes and patterns - always timeless, always chic.

The right thing for every taste: discreet gray tones

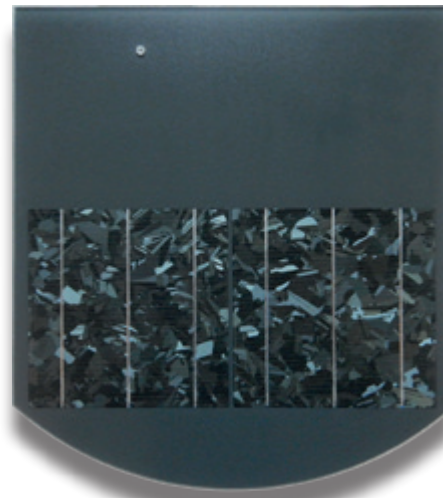
anthracite



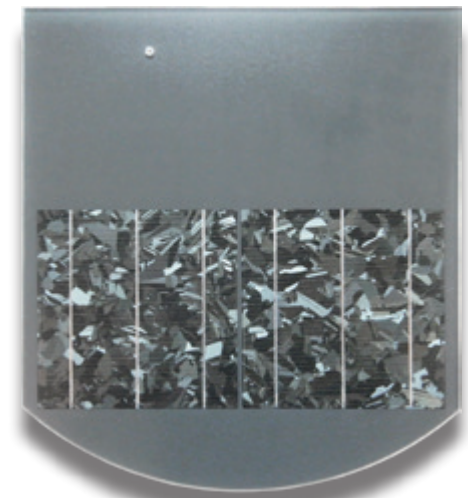
rock gray



Dark gray / slate



Silver Gray / Crystal



anthracite-plus



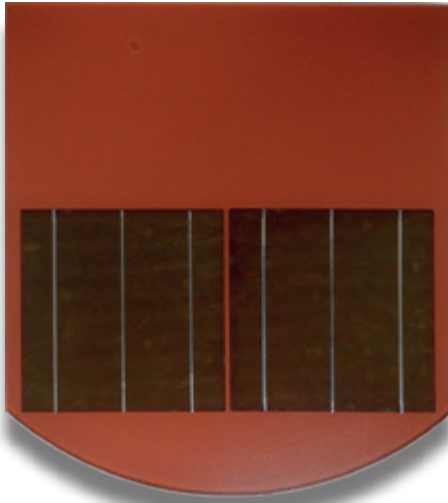
rock gray-plus



# SolteQ-WAVE in other, elegant shades

In timeless tile red or in noble color combinations. Noble anthracite paired with high-quality color accents.

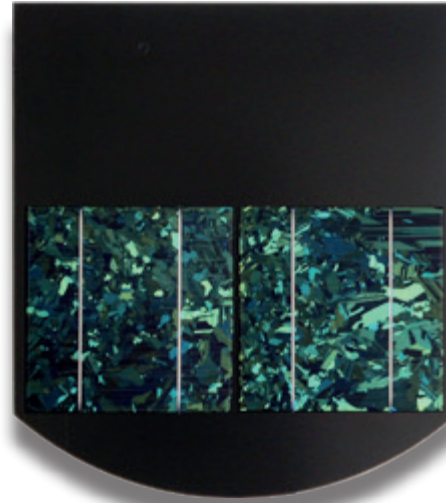
Tile red



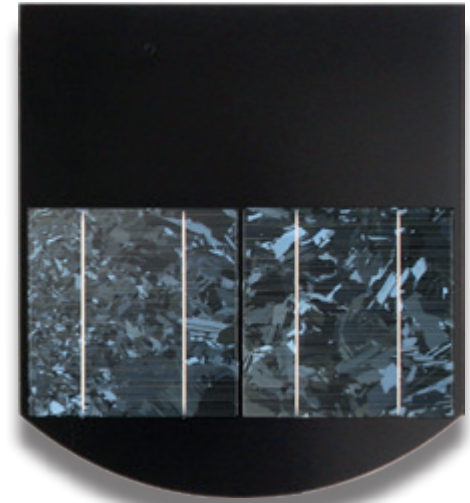
Forestgreen/anthracite



Emerald green/anthracite



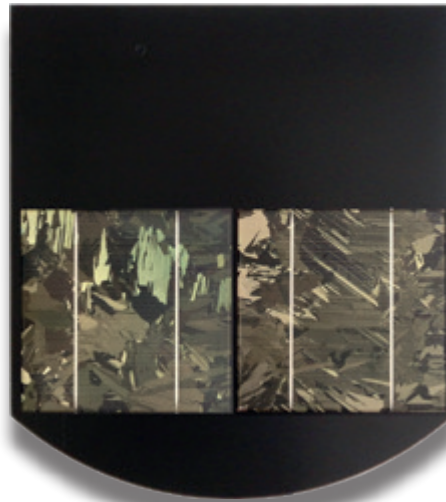
Iceblue/anthracite



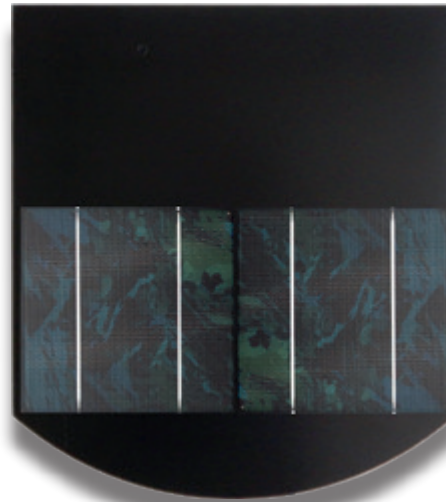
Camouflage/anthracite



Olive crystal/anthracite



Petrol/anthracite



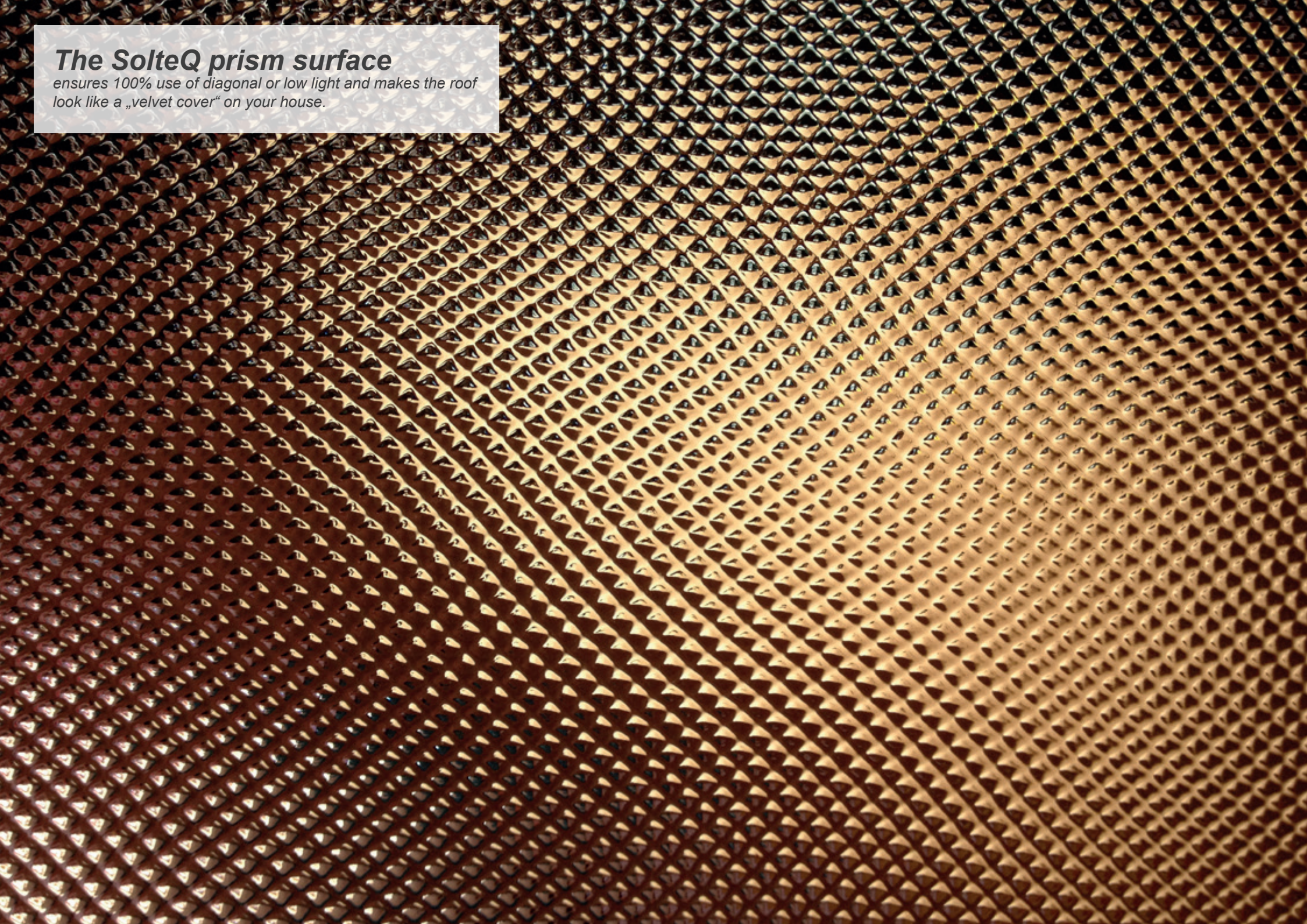
Brownred/anthracite





## ***The SolteQ prism surface***

*ensures 100% use of diagonal or low light and makes the roof look like a „velvet cover“ on your house.*





# Technical Specifications

## BASIC DATA AND MECHANICAL CONSTRUCTION

Tile type	SolteQ-WAVE
Cell material Anthracite:	Monocrystalline / Colored cells: Polycrystalline silicon
Cell size	156 x 156 mm
Tile dimensions	340x380 mm (WxH)
Tiles per m <sup>2</sup>	s. Table
Weight	approx. 1.2 kg
Weight per m <sup>2</sup>	approx. 13.2 kg
Cooling	single module rear ventilation
Connector	MC 4 compatible
Connecting cables	2x approx. 20 cm, 2.5mm <sup>2</sup>
Bypass diodes	1 safety diode in each Tile
Glass thickness / glass type approx.	4 mm, including prismatic (standard) or alternatively wood / slate
Mechanical load	8,500 Pa (= 850 kg / m <sup>2</sup> )
Back laminate	UV and weatherproof
Roof pitch:	pitched roof / flat roof / facade 3 - 90 °

## ELECTRICAL DATA\*

	Monocrystalline (std.) / Polykristallin	Low light performance*)		
Rated power per shingle	S. Table	intensity	Vmpp*	Impp*
Rated power per m <sup>2</sup> (with SLV *)	S. Table	[W/m <sup>2</sup> ]	[%]	[%]
Efficiency	ca. 16 - 22 %	1000	0	0
Performance tolerance at STC	+ 5%	900	-0,3	-10
Max. System voltage	1000 V DC	500	-1,94	-50
Rated voltage	1.2V	300	-3,91	-70
Rated current	8.75 - 9.0 A.	200	-6,06	-80
Open circuit voltage	1.12 - 1.42 V	The electrical data apply at		
Short-circuit current	8,8 - 9,8 A	25 °C und AM 1,5		
Operating temperature range	-40 °C to +85 °C	(IEC 60904-3 ed.2 2008).		
Power 15 years	90% of rated power			
Power 25 years	85% of rated power			
Power 40 years:	80% of rated power			
Estimated Product life time:	> 50 years with > 85% of rated power			
Product warranty:	5 years, expandable to 20 years			
<i>Spare parts guarantee:</i>	<i>30 years</i>			

Performance guarantee: for monocrystalline cells: 40 years with 80% of the installed power for polycrystalline cells: 25 years with 80% of the installed capacity

## TEMPERATURE COEFFICIENTS

UOC	- 0,33 ± 0,02% / K
ISC	+ 0,04 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TESTING CONDITIONS (STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

### Fire classe - Module/Shingle -

Front:	Solarmodule Glass, Tempered, Prismatic
TPT-Foil (Rear):	PYE/PET (Polyethylene Terephthalate)
Specials:	Safety hang up
Certificate-TPT-Foil:	Testet reg. ANSI/UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112, ISO75-2, ISO527-2, ISO178, ISO179-2, ISO180

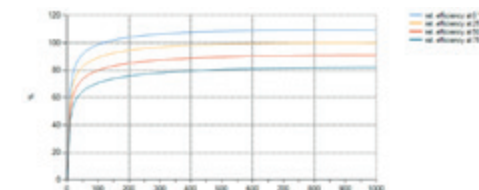
## DATA SAFETY SYSTEM BFA - separate data sheet of the SolteQ-BFA-System -

Max. Count of Modules	no limit
Certificates	TPS Intercert, RETI
Emergency Button Specification	EN54-11, Typ B
Conform to Standards	VDE0100-537, IEC60364-5-537_VDE0100-537 and E VDE-AR-E 2100-712:((2010-09))

## CERTIFICATE / Warranty - Module -

Certificate	CE, TPS Intercert (Technische Prüfstelle für Solartechnik), RETI, IEC61215, Safety IEC EN 61730, Salt corrosion tested IEC EN 61701
Windload	DIN 1055-4
Rain proofness	CEN/TR 15601
Hail class	IEC 61215, Extension Switzerland: Hail resistance class 3
Ammonia corrosion test:	IEC 62716
Protection class	II, IP65
German standards	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
Safety	konform to the rules of Technischen Baubestimmungen
Fire safety	schwer entflammbar, Fire Class 1 gem. UNI 9177
Breaking safety:	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glas break parts (crumb formation). Certification of the mounting mechnism conform to CSTB Eu conditions

	Number of cells	Performance per tile	Efficiency /%	Number of tiles per m <sup>2</sup>	Installed Power per m <sup>2</sup>	Effective Power with SLV *)
WAVE-Anthracite	2	9,86	20,8	12,0	108,46	149,44
WAVE-Slate/Crystall	2	8,00	18,2	12,0	88,00	121,25
WAVE-Silver/Gray/ Crystall	2	8,00	18,2	12,0	88,00	121,25
WAVE-Dark Gray	2	7,33	18,2	12,0	80,63	111,15
WAVE-Tile Red	2	8,50	17,6	12,0	93,50	128,83
WAVE-other colors	2	8,50	17,6	12,0	ca. 93,50	ca. 128,83



Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress.

The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.

All illustrations in this catalog are similar. Depending on the production batch, the cells may have a slight dark blue effect with anthracite.

In the case of polycrystalline, colors and structures are always different due to the naturally grown crystal structures. Every shingle is unique.



*Clean environment means ...  
life quality*





# BIBER

SolteQ

*The classic roofing  
in the Mediterranean style and  
for historical, listed buildings*



SolteQ





# BIBER-500

*The powerful*  
*Maximum yield from each m<sup>2</sup>*





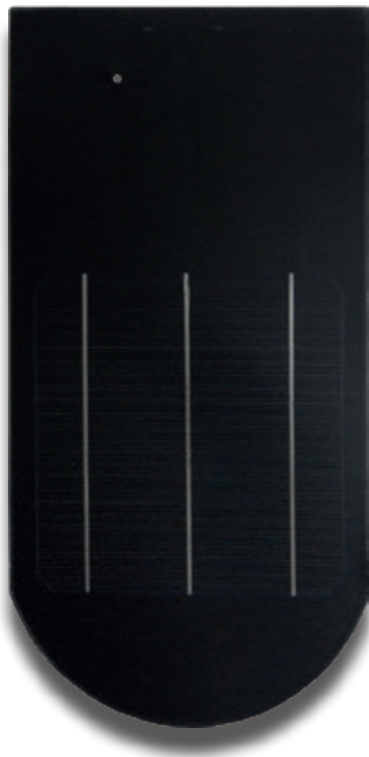
# BIBER-380

## ***The original beaver, the monument beaver***

*Same format with 380x180mm, as conventional beavers.*

*The roof can be laid with pure SolteQ beaver tiles with active and passive elements. Alternatively, it can be combined with real tone beavers.*

*Available in all listed color combinations.*



*Biber380 anthracite black  
as round cut  
380x180mm*



*Biber380 anthracite black plus  
as round cut  
380x180mm*



*Biber380 anthracite black plus  
as segmental cut  
380x180mm*

# BIBER-Tilered

For roof and facade

## Beaver tile, the oldest tile shape

### Frameless

The great frameless design „fish scales pattern“ makes your roof a gem. The frameless design not only looks great, it also helps keep the tiles clean. It has no edge where water can accumulate and become almost insoluble when drying the dirt. The water flows off completely. The modules or PV shingles are made of glass, which does not rot and therefore looks like new even after many years. With built-in self-cleaning effect!

### Modular construction

The SolteQ Beaver system has a modular design and can be optimally adapted to almost any roof. Blind shingles for the north side, walk-on shingles with steps and cuttable elements make the system extremely flexible.

### Holistic roof system

The SolteQ-Beaver-PV-Dachschindel product range covers the entire roof with the south, but also the north, west and east sides, ie the entire roof of the house. In the edge areas of the roof, half elements arise. For this purpose, half elements with the same appearance, but without solar cells are available. Half and whole elements without integrated cells are also available for the north side, if this side of the roof is not exposed to sunlight. This ensures that the entire roof is given a uniform look. ... just a complete roof system.

### lightweight

Normal roof tiles or shingles have a weight of 50-80 kg per Square meters. A SolteQ Beaver PV roof shingle has only a weight of 1.3 kg. Per square meter results in a weight of only about 16 kg. Excellent for new construction and renovation.

### Self-cleaning effect

The glass of bricks has an anti-stick surface, from the water and thus the dirt rolls off. Even after 40 years your new roof will look like like almost new! Always clean, always high yields.

... always in harmony with the house and nature



only  
16 kg  
per m<sup>2</sup>



patent submitted  
All images, illustrations, graphics are copyrighted and property of SolteQ

SolteQ



# BIBER-Terracotta

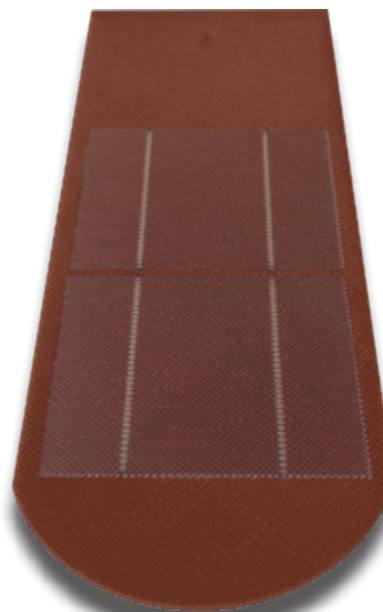
## The Mediterranean type: SolteQ Biber Terracotta PV Tile

„Terracotta“ is the classic colour that has always been mounted on roofs in the Mediterranean region. Even in Roman times houses were protected against the elements by burnt clay tile's. This SolteQ tile is particularly well suited to the Mediterranean regions of Europe where its coloured accents and overall look is totally in keeping with the areas historical heritage. Subtle and elegant colours for your new Energy Roof.

... the right roof for every type of house.

## Also suitable for East / west roofs

Due to the light-amplification effect of the prismatic glass surface the tiles exhibit outstanding low-light behaviour, that is of real benefit for all roof orientations but is of particular benefit when east/west roofs are used since the reduced light levels in these orientations can also be fully utilised. Studies have shown that up to 80% of the comparable performance of the south side can be achieved by an east/west roof combination.



*Biber-PV-Tile Terracotta*

The "Toscana" tile is unique. Each brick has its own "fingerprint" due to the crystalline structure of the cells. Overall, this results in a very noble, Mediterranean inspired look



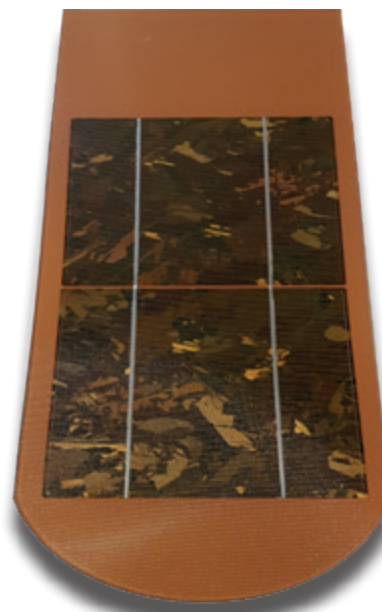
# BIBER-Toscana

## **The Mediterranean type: SolteQ Biber Toscana PV Tile**

*The „Toscana“ tile is unique, since each individual tile has its own unique look due to the crystalline structure of the PV cells. The overall effect is aesthetically pleasing, a look inspired by the Mediterranean.*

## **Also suitable for East / west roofs**

*Due to the light-amplification effect of the prismatic glass surface the tiles exhibit outstanding low-light behaviour, that is of real benefit for all roof orientations but is of particular benefit when east/west roofs are used since the reduced light levels in these orientations can also be fully utilised. Studies have shown that up to 80% of the comparable performance of the south side can be achieved by an east/west roof combination.*



*Beaver-PV-Tile Toscana*



### **Tip!**

*All SolteQ beaver roof tiles can be mixed and matched with each other. Thus, different roof optics can be achieved for a given roof area!*



# BIBER - Anthracite

**The classic type:**  
**SolteQ Biber Anthracite PV Tile**  
*... the perfect replacement for slate*

*„Anthracite“ is the classic colour that is universal and timeless. Regardless of the house type or design an anthracite-coloured roof always looks great, and with an appearance that is similar to that of a real slate makes it an ideal choice for preserving the look of historical buildings and buildings of architectural significance. Because of its neutral colour, the Biber Anthracite PV roof tile suits almost every type of house from period dwellings to ultra-modern state of the art houses. You will enjoy yours for years*

*... the right roof for every type of house.*



**Ideal for protecting historical and listed buildings!**

**Anthracite-Plus**

Cells: Monocrystalline



**Up to 36% higher yield, compared to a conventional on-roof PV system!**

# BIBER-WOOD

## **SolteQ beaver and SolteQ wood - the new energy roof in classic and Mediterranean style**

*Especially regions and objects that were previously not approved for photovoltaic reasons for aesthetic or aesthetic reasons, can now also enjoy the benefit of a highly effective photovoltaic system and generate energy itself. SolteQ's PV roof shingles have been specially designed to make a roof-integrated PV system look like a fancy roof rather than a conventional PV system. The range of SolteQ roof shingles sees a classic roof with conventional shingles, such as Slate or clay pans in the Old Romanesque style, deceptively similar and are therefore ideally suited for these regions. For areas in which „blue modules“ or modern optics were previously not allowed, SolteQ PV roof shingles open up completely new possibilities.*

## **SolteQ-Beaver - The ideal alternative for the preservation of monuments: Roof tiles as a classic plain tile, slate or wood look and with energy generation**

*After all, heritage-protected buildings also need energy today. The SolteQ power roof provides a way to maintain the historic look of the building while still generating electricity. Even 1,000-year-old buildings, which are under absolute monument protection, belong to our customer objects. Take advantage of the free energy of the sun to provide your „castle“ with high energy or heating needs completely free.*



*Dimensions: approx. 18 x 25 cm  
cell type: monocrystalline  
Output per m<sup>2</sup>:  
Brick red: ca. 127 Wp / m<sup>2</sup>,  
anthracite: ca. 142 Wp / m<sup>2</sup>,  
24.75 shingles / m<sup>2</sup>*



# BIBER -Variants



*SolteQ-Biber Tilered*



*SolteQ-Biber Toscana*



*SolteQ-Biber Tilered/Violet*



*SolteQ-Biber Tilered/Camouflage*

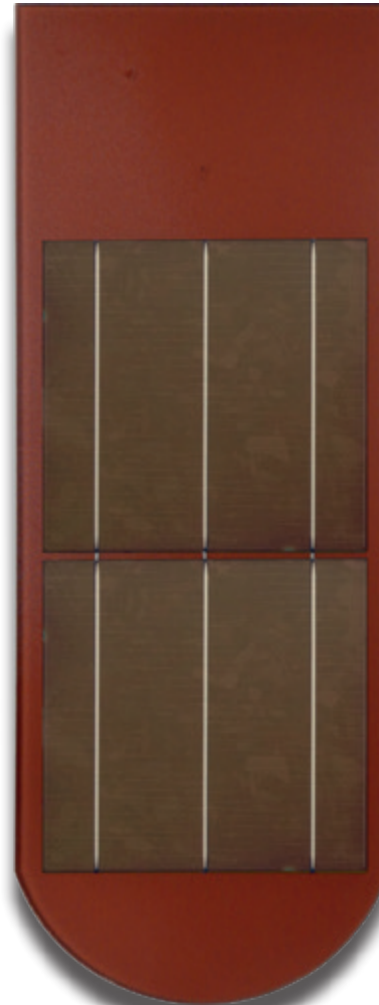
# *Preserving the buildings aesthetics with hidden photovoltaics? It works!*



*SolteQ-Biber Tilered/Green*



*SolteQ-Biber Tilered/Sand*



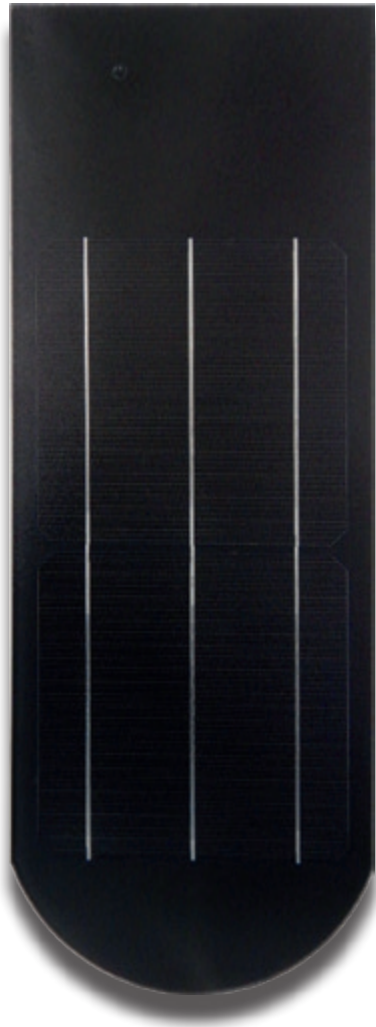
*SolteQ-Biber Tilered/Brown*

*By the using a combination of tiles with different shades e.g. Sand and brown, or brick red and sand or anthracite, results in a fantastic looking roof with a Mediterranean feel.*





Please note that the various tile colours on offer are not coloured pigments or coloured films that would reduce light transmission and thus tile performance, but rather they are produced as a result of "surface passivation" of the surface structure of the silicon cells. A chemical process is used to produce the desired colour effect which can be varied depending on the chemicals used. The colours of our tiles are therefore dependent on this manufacturing process which may result in slight colour variations from one production run of tiles to the next. Please therefore note that the colours of the tiles in this brochure are as accurate as can be based on the colour tolerances of our manufacturing process.



SolteQ-Biber anthracite



SolteQ-Biber anthracite plus



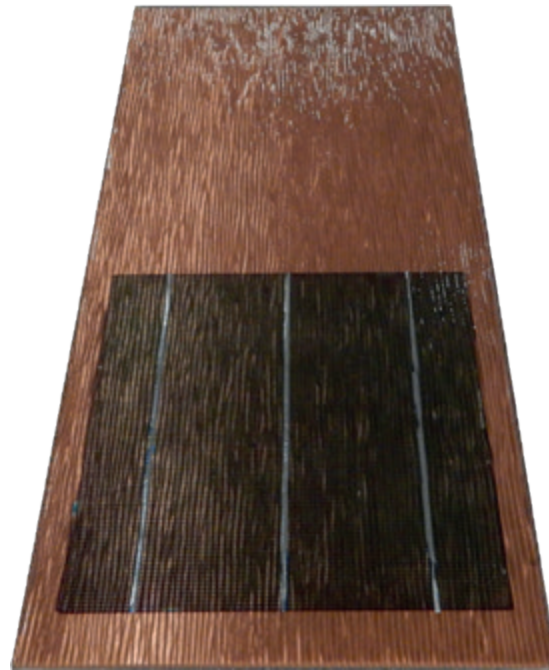
SolteQ-Biber anthracite/Green-Camouflage



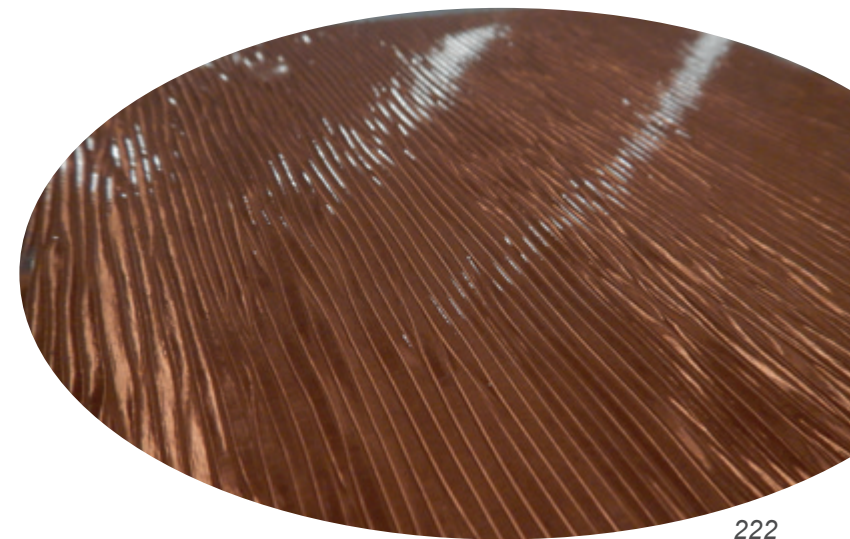
SolteQ-Biber Silvergrey

Similar pictures

*You love the special?*



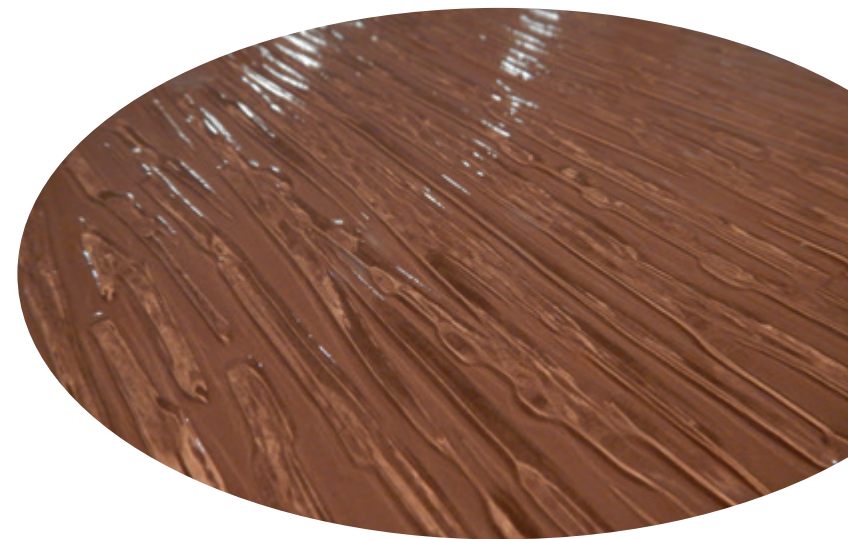
*SolteQ-Biber with wood structure*



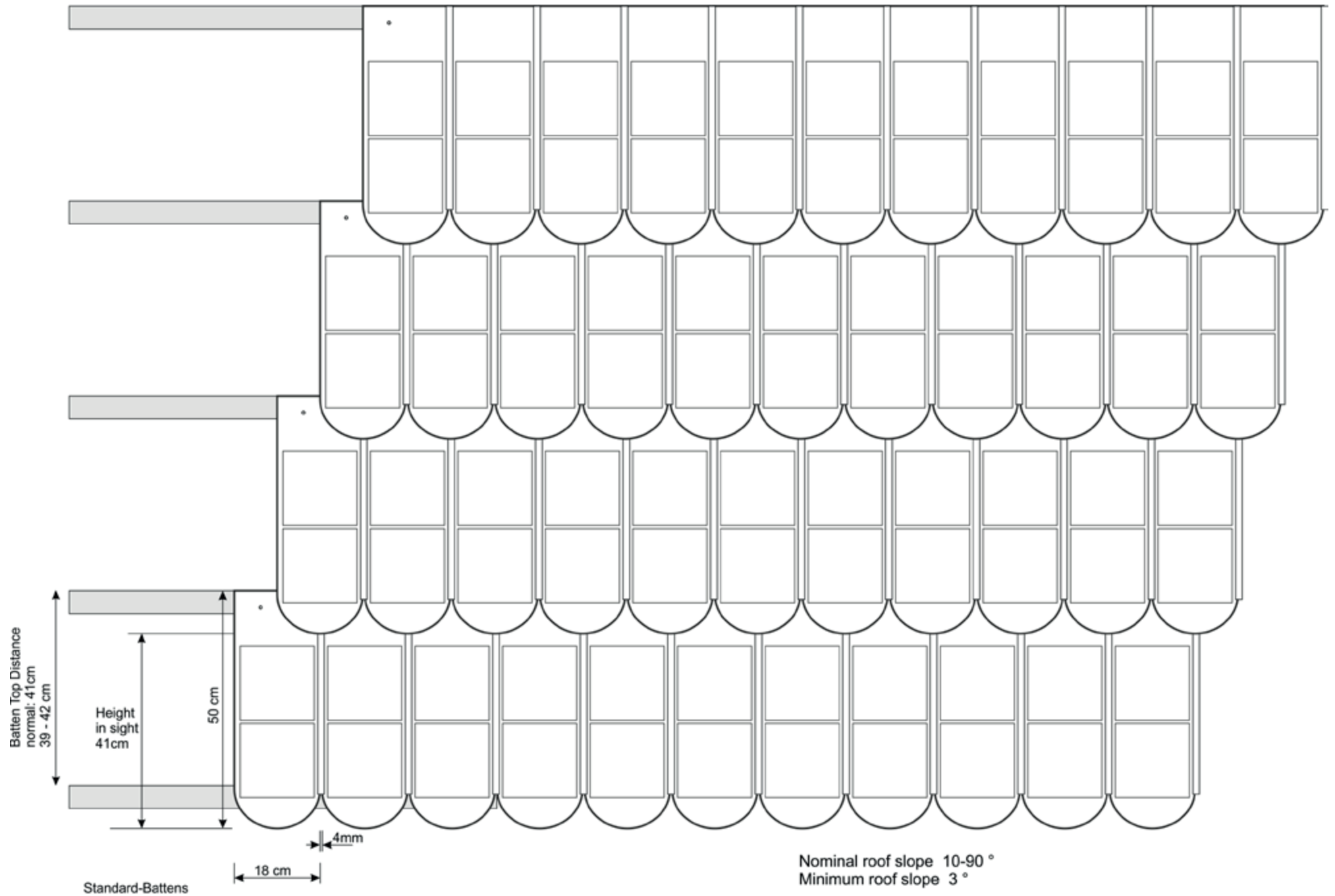




*SolteQ beaver with slate structure*

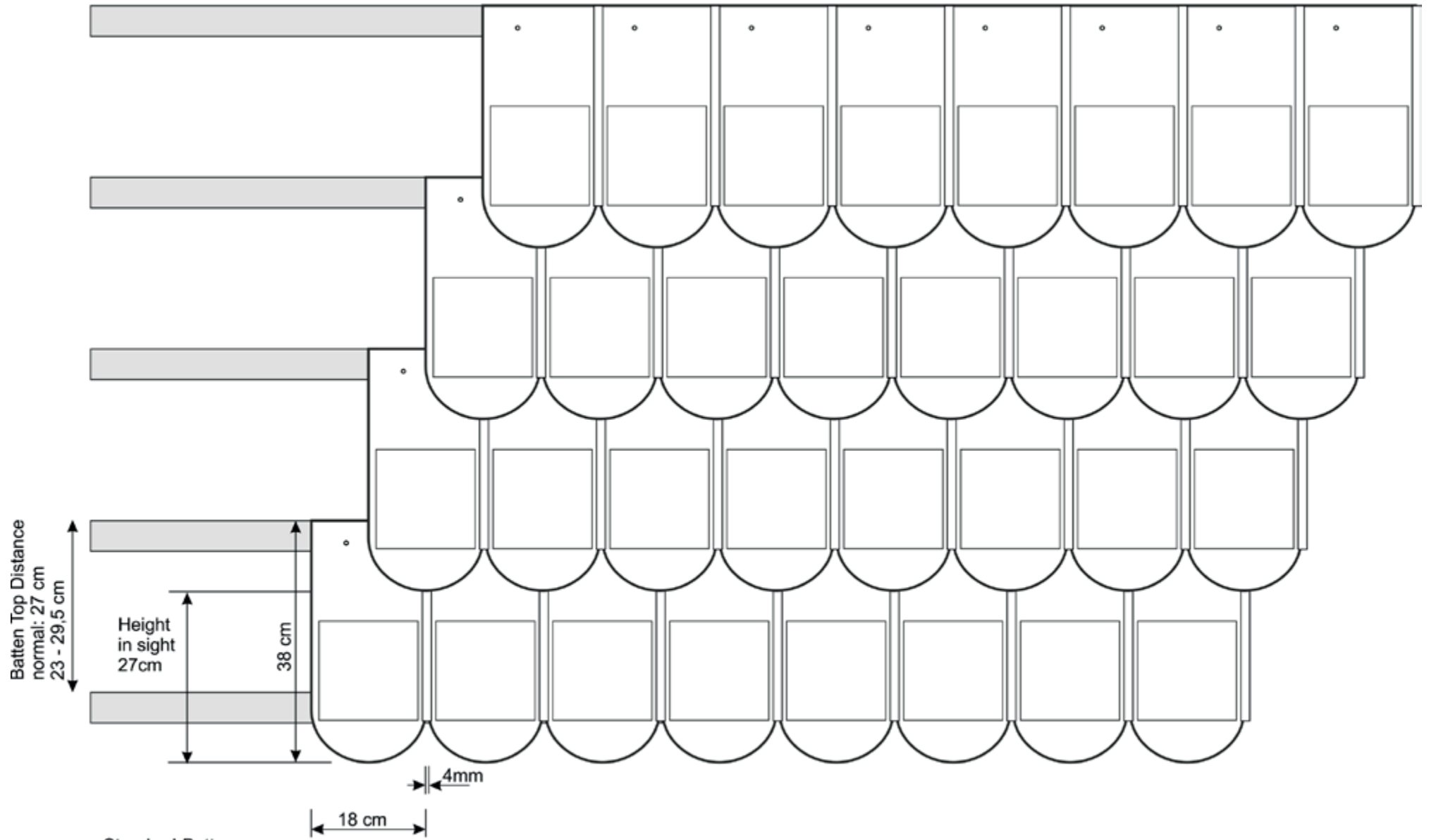


# Biber500





# Biber380



Standard-Battens

24x48mm  
30x50mm  
40x60mm

Nominal roof slope 10-90 °  
Minimum roof slope 3 °

*Let the sun into your house!*

**Are you still looking for an energy solution?  
Then harness the power of the sun!  
It lays on your roof.**

**Free electricity?  
No more electricity costs?**

**Yes of course!  
The sun makes it possible!**

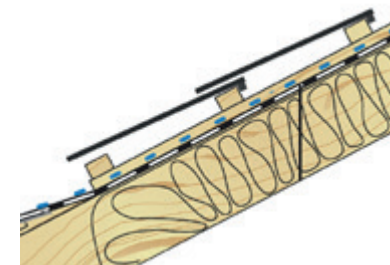
**Your roof has more energy than  
you think, enough in fact to make all  
your energy bills a thing of the past.**



# BIBER

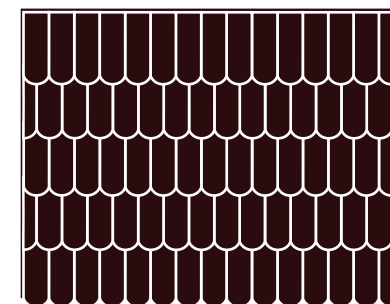
## Easy construction

The tiles are attached directly to the roof battens and do not require any further aluminum substructure. On the back there is just one storm clip, Just clip it in and you're done! And you have a waterproof, great looking roof that's full of energy.



## Maximum roof utilization

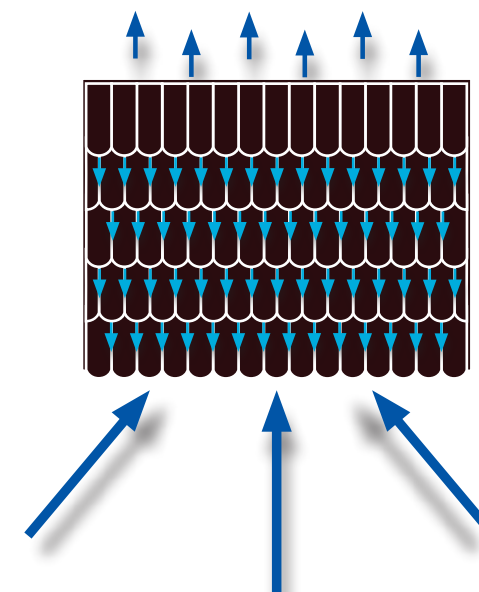
Due to the frameless nature of the tiles and their small size, maximum coverage of the entire roof is achievable. In addition the tiles are overlapped during installation which results in the PV cells lying very close to each other over the entire roof surface thereby ensuring maximum utilisation of the available area for power generation.



## Optimum cooling through perfect ventilation

Solar cells become warm during operation, as do normal passive clay tiles when exposed to warm sunlight. However the laying pattern of the SolteQ Biber tiles not only ensure the roof looks great but also ensures optimum cooling through natural convection. Cool air enters at the eaves of the roof and exits at the bottom of each tile and the ridge.

The cooling effect is therefore much better than with on-roof systems where the air is static. All the tiles on a SolteQ roof have the benefit of being cooled individually. Perfect ventilation, thus more yield!



## More stable than a normal clay tile roofing

Tested and certified with a pressure and suction load of 50kg per beaver tile!

## Storm and weatherproof

Storm clip on each tile!

Rain protection is guaranteed even in driving rain and the strongest of storms. The standard fixing on the back of each tile acts as storm clip that holds the tile firmly even in the most extreme of weather conditions.

## Hailproof

The Biber PV roof tile is resistant to larger hailstones and even meets the increased Swiss requirements for hail protection class 3.

## 100% rainproof

Each tile has a patented special seal on the side with multiple sealing lips, which reliably prevents the ingress of water at these points.

However, the actual function zone is located on the back of the seal, protected against weather and UV radiation. There are two drainage channels, which safely conducts even the least penetrating water to the next shingle, thus ensuring 100% rainproofness. The material of the special seal is the high-quality and UV-resistant EPDM with a minimum lifespan of more than 70 years.

The only area that is open to the elements is the small rear ventilation opening at the lower edge of the tile. Only in extreme stormy conditions is there a small possibility that water is pushed up through the vent. This also happens with a normal tile roof, and is even good for the roof, because some moisture is good for the battens. These small amounts are absorbed by the underlay.

So the roof is 100% rainproof and 95% waterproof.

## 100% waterproof

The SolteQ energy roof with its PV roof tiles is 100% waterproof, weatherproof and stable.

The PV tiles provide rain protection and mechanical protection. Where 100% water resistance is desired, it can be achieved very easily and conveniently by means of a vapor-permeable, water-resistant underlay. This ensures 100% rain protection and 100% waterproofness.

## 100% stability

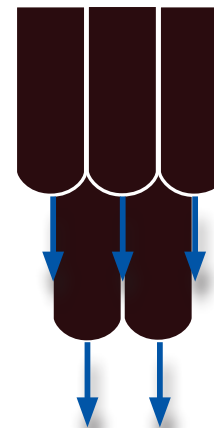
The SolteQ energy roof is both more stable and stronger than a normal roof, capable of withstanding loads of up to 850kg per m<sup>2</sup>. One of the fundamental design elements that enables the roof to be stable and able to withstand such loads is the rubber seal fitted to the back of the tile, that not only seal's the roof against water ingress but provides stability to the whole roof skin as well as acting as an expansion joint. This patented seal is designed to act as a mechanical spring that constantly adjusts to the horizontal and vertical movements of the tiles, improving their stability in all prevailing weather conditions for the life of the roof.

## Highest wind suction safety

Current standards prescribe a wind load or tensile force of 15kg per tile..

The SolteQ roof tile is tested and certified with 50kg per tile.

**20 years warranty on all seals!**



*The SolteQ energy roof is more safe and stable than a normal roof!*



# **SolteQ**

Energieconcepts



*For*

- *Electricity production*
- *Electricity storage*
- *Heat Energy production*
- *Heat storage*
- *Optimized usage of electricity*
- *Optimized usage of heat energy*
- *Smart Energy Management*

# L.S.T.W.

Let's  
Save  
The  
World





## Holistic roof system

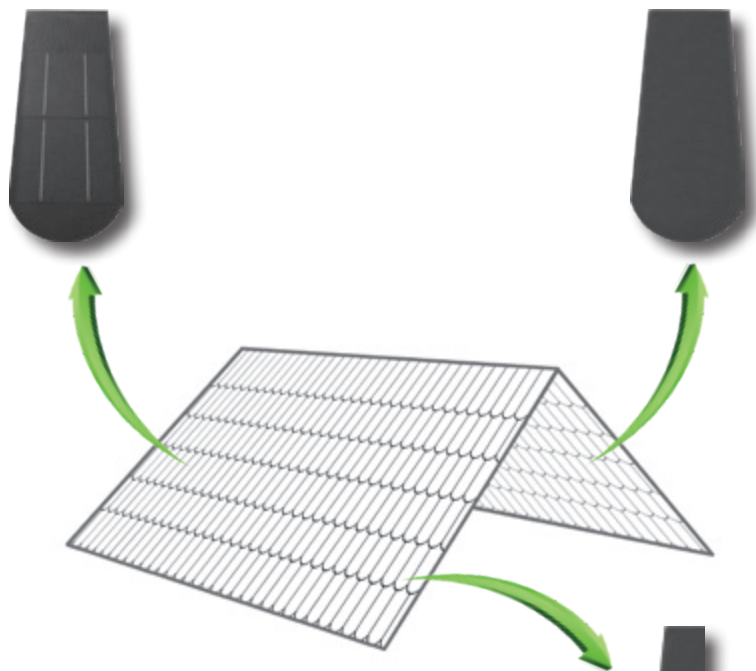
The SolteQ-Beaver-PV tile product line is a complete roof system for the entire roof. A typical roof in the UK or Eu-ropo would have active tiles fitted to the south facings roof element, and passive tiles fitted to the north, east and west facing roof elements. Therefore all roof faces are covered with SolteQ tiles, which create a holistic looking roof that not only looks great but is also full of energy. The passive tile elements have the same appearance as the active tiles but without solar cells, this approach ensures that the entire roof has a uniform look. ... just a complete roof system.

**The SolteQ Energy Roof ... always in harmony with the house and nature**

**Active tiles**  
for the south side (north side in Southern Hemisphere).

**Passive tiles**

(same material, same look, without cells)



Back:  
Storm hooks on each solar tile and high quality EPDM gasket

### Also suitable for east / west roofs

Due to the light-amplification effect of the prismatic glass surface and their outstanding low-light behaviour, the SolteQ beaver roof tiles are also very well suited for the east and west facing roofs where they are able to take full advantage of the reduced light condition's. Studies have shown that east/ west roofs can typically produce up to 90% of the output of that achieved from a south facing roof. Half and quarter elements (passive) for the edge areas and for accommodating windows and dormers (same material, same look, but without PV cells)

Half and quarter elements (passive) for the edge areas and for the compensation of windows and dormers (same material, same look, without cells)

### Demand-oriented performance adjustment

The sunny side of the roof can be fully covered with active tiles for maximum energy production. If however the energy required is less than what would be achieved by maximising the active area available, the area covered by the active tiles can be reduced and the passive area increased accordingly, therefore the roof can be designed to meet the customer's specific power requirements yet still maintaining a great look.

## The Energy roof with Biber PV Roof Tiles

### The look of one of the oldest forms of roof tile.

Good looking, simple and elegant, the beaver-tail can cover a wide variety of roofs. This SolteQ tile is based on what many consider to be one of the first roof tiles to have ever existed, a tile that has been around and protecting houses in Europe for more than 3,000 years.

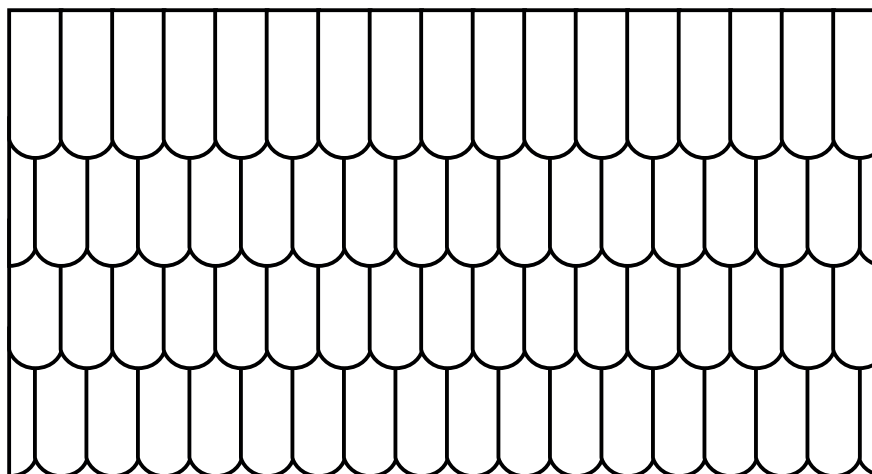
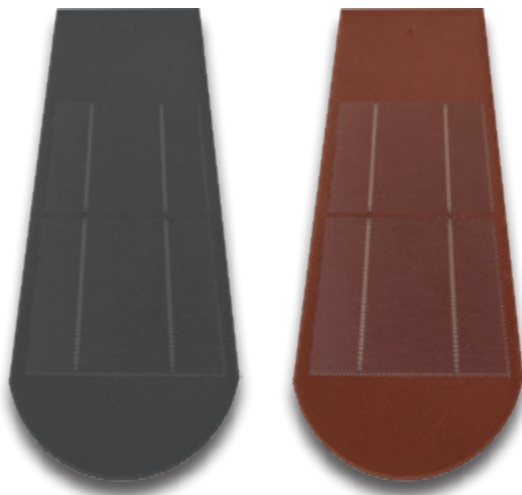
The SolteQ-Biber Tile is the latest incarnation of these historic tiles, a tile that can be a clay tile substitute with the added functionality of solar cells, all integrated within a great looking direct roofing material.

#### Beaver 500

##### The longer look

Dimensions: ca. 18 x 50 cm  
Power per m<sup>2</sup>:

Tile red: ca. 139 Wp / m<sup>2</sup>,  
Anthracite: ca. 155Wp / m<sup>2</sup>,  
13.6 Shingles / m<sup>2</sup>  
(inclusive of max SLV)

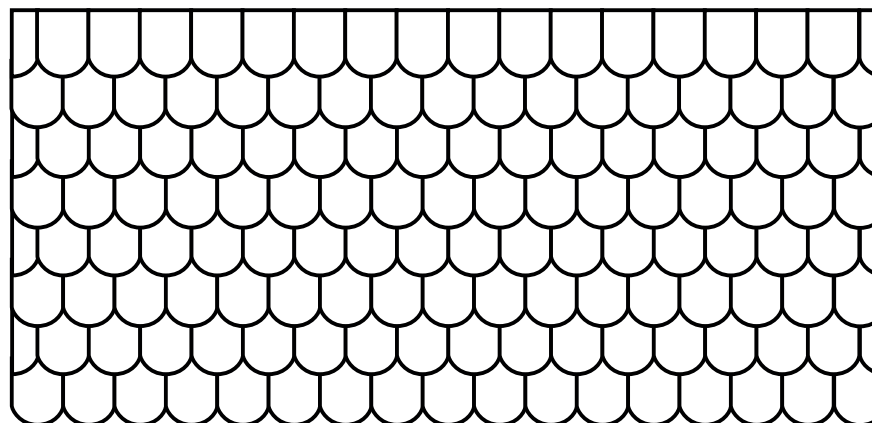
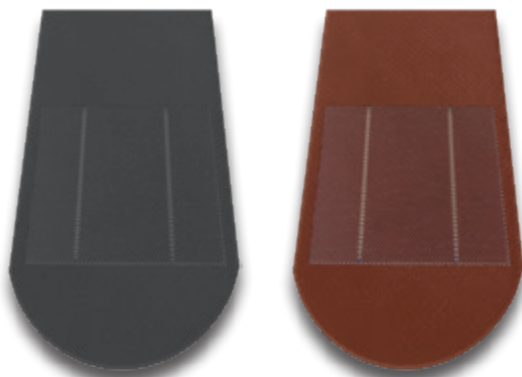


#### Beaver 380

##### The shorter look

Dimensions: ca. 18 x 38 cm  
Power per m<sup>2</sup>:

Tile red: ca. 126 Wp / m<sup>2</sup>,  
Anthracite: ca. 146Wp / m<sup>2</sup>,  
24.75 Shingles / m<sup>2</sup>  
(inclusive of max SLV)





## A roof to suit all tastes

The "SolteQ-Beaver-PV-Roof" range is available in a variety of different shades. The choice is yours, simply choose your desired and not only enhance the look of your house but also make your energy bills a thing of the past.



**Clean Energy is the future!  
... but stylish and safe!**

*The SolteQ Energy Roof combines aesthetics,  
energy and safety in one great looking product.*



### Available color styles

- a) Anthracite
- b) Lavender
- c) Blue
- d) Forest green
- e) Terracotta
- f) Burgundy red

special colors:

- h) Silver (poly)
- i) gold (poly)

cells:

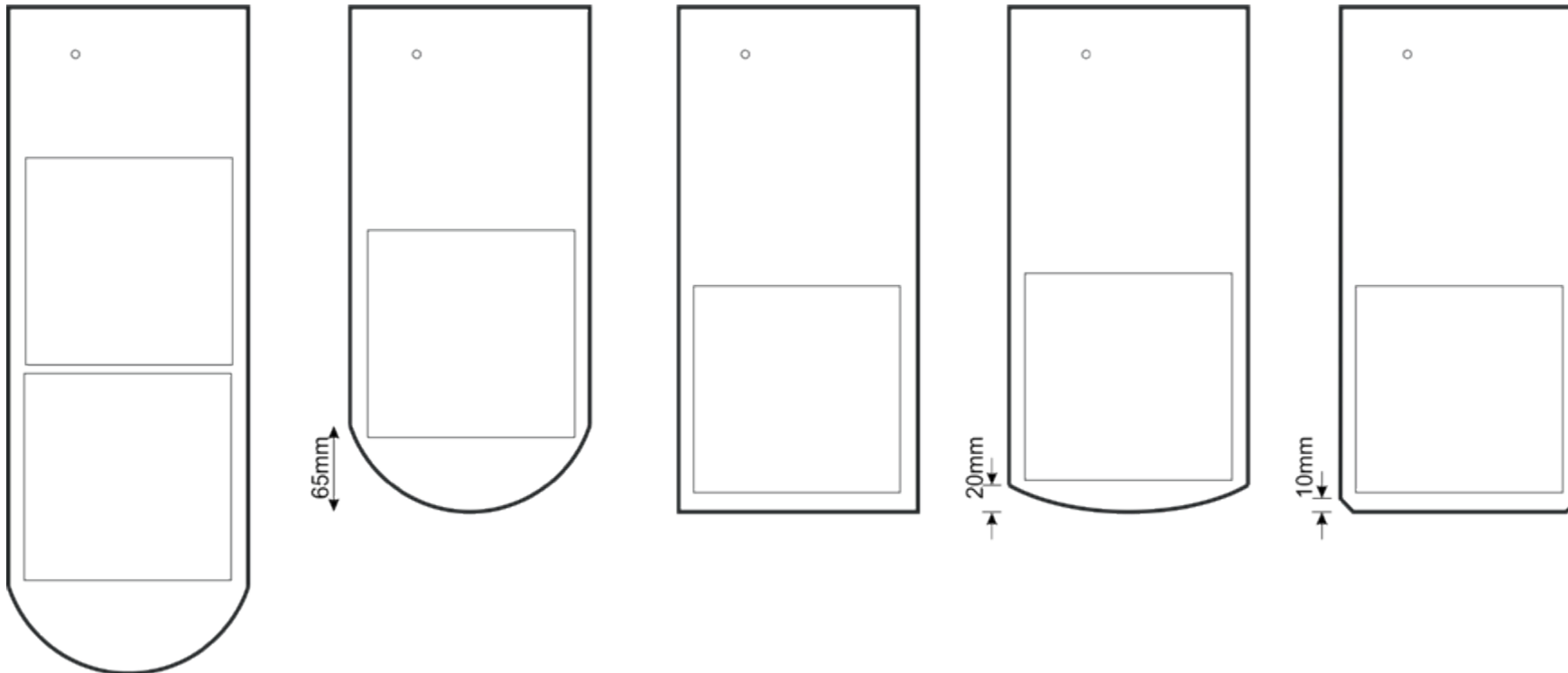
Anthracite: mono crystalline  
All others: polycrystalline

*Please note that shades may vary from production run to production run. Each roof at we supply will consist of tiles that come from the same production run in order to minimise any slight colour differences. The colours shown in this brochure represent our best efforts to indicate the colours of our production tiles, but please be aware that the shades may vary slightly from those in the catalogue due to the nature of our production process.*

# BIBER - Variants

Plain tile, the oldest tile shape

By default, these variants are delivered with intermediate seal, which serves for rain protection and as an expansion joint.



## **Biber500**

500x180mm  
anthracite: ca. 9,86 Wp  
tilered: ca. 8,50 Wp  
Number/m<sup>2</sup>: 14  
Power /m<sup>2</sup>: 161 Wp (LLE)  
Batten distance: 40cm

**Beaver with maximum area performance**

Each beaver variant can be delivered in the colors listed.

## **Biber380-Classic**

380x180mm  
anthracite: ca. 4,93 Wp  
tilered: ca. 4,25 Wp  
Number/m<sup>2</sup>: 20,83  
Power /m<sup>2</sup>: 146 Wp (LLE)  
Batten distance: 23cm

**Church beaver monument beaver**

## **Biber380-Rectangle**

380x180mm  
anthracite: ca. 4,93 Wp  
tilered: ca. 4,25 Wp  
Number/m<sup>2</sup>: 20,83  
Power /m<sup>2</sup>: 102 / 123,3\* Wp  
Batten distance: 17/23cm  
Height covering: 4cm  
This is sufficient because there is no capillary action by distance.  
-> Can be used as a double cover without rubber seals

**Wood shingle replacement**

## **Biber380-Segment cut**

380x180mm  
anthracite: ca. 4,93 Wp  
tilered: ca. 4,25 Wp  
Number/m<sup>2</sup>: 22,83  
Power /m<sup>2</sup>: 102 / 123,3\* Wp  
Batten distance: 17/23cm  
Height covering: 4cm  
This is sufficient because there is no capillary action by distance.  
-> Can be used as a double cover without rubber seals

**Monument beaver**

## **Biber380-Radiant cut**

380x180mm  
anthracite: ca. 4,93 Wp  
tilered: ca. 4,25 Wp  
Number/m<sup>2</sup>: 20,83  
Power /m<sup>2</sup>: 102 / 123,3\* Wp  
Batten distance: 17/23cm  
Height covering: 4cm  
This is sufficient because there is no capillary action by distance.  
-> Can be used as a double cover without rubber seals

**Monument beaver Wood shingle replacement**



# BIBER - Real double coverage

*Plain Tiles in classic double cover, without sealing*



*Biber 180x380 Anthracite  
as double covering*



*Biber 180x380 Anthracite - Plus  
as double covering*

**Biber380-double coverage**

380x180mm

ca. 3.0 Wp

Number/m<sup>2</sup>: 31

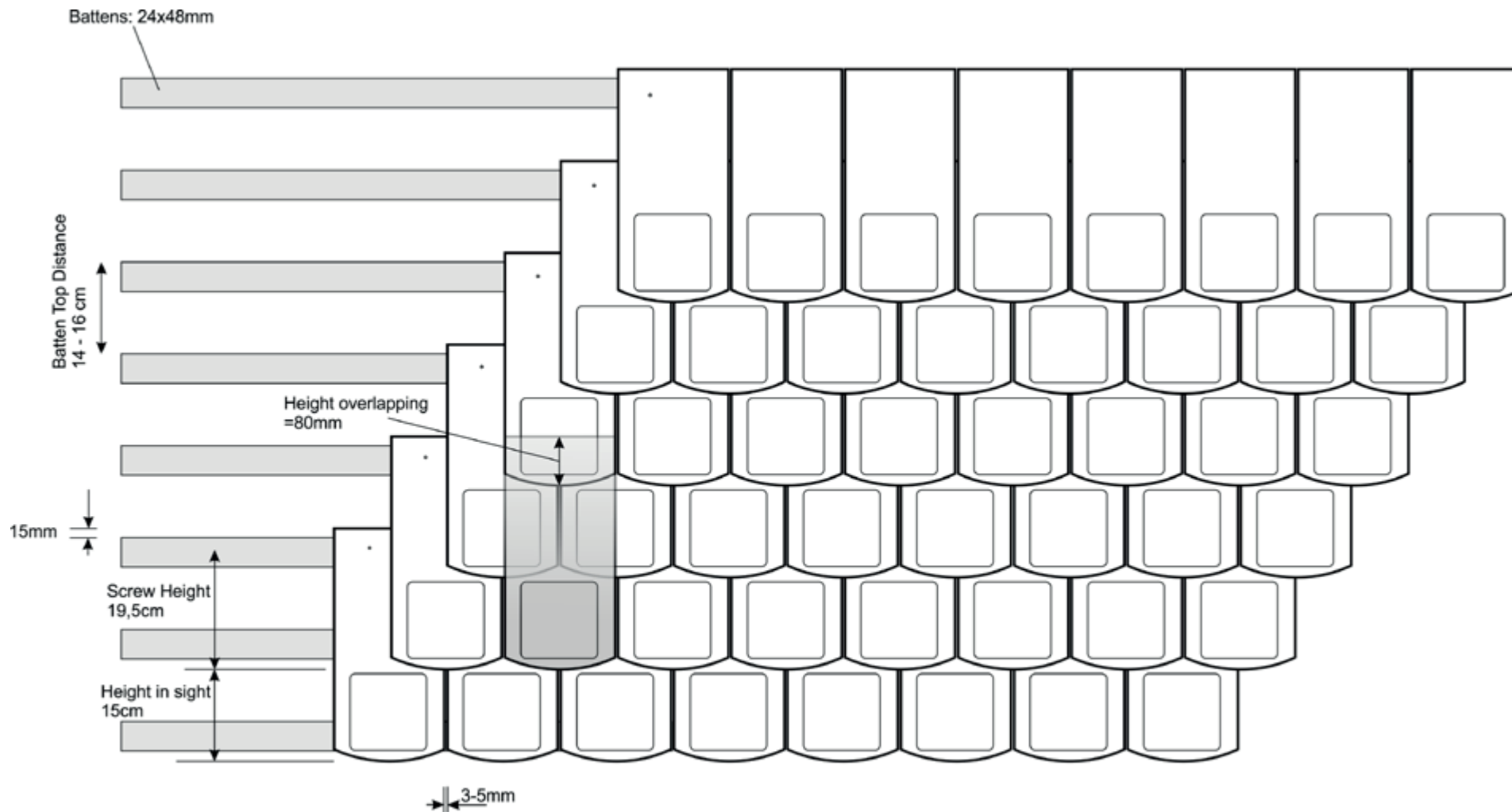
Power /m<sup>2</sup>: 95,5 Wp

Power /m<sup>2</sup> with LLE: 114,6 Wp

Batten distance: 14-16cm

Height covering: 8cm

## Beaver Tile 380x180mm, double coverage



Standard-Battens

- 24x48mm
- 30x50mm
- 40x60mm

Nominal roof slope 10-90 °  
 Minimum roof slope 3 °

*Easy installation. Each tile has its own storm hook on the back.*





# BIBER -460 Real double coverage

*Beaver tail bricks in classic double covering with 6 "cells and more power, without any seal*



*Biber 180x460 anthracite  
as double coverage*



*Biber 180x460 anthracite - Plus  
as double coverage*

## **Biber460-double coverage**

460x180mm

ca. 4,8Wp

quantity/m<sup>2</sup>: 31

power /m<sup>2</sup>: 148,8 Wp

power /m<sup>2</sup> mit SLV: 178,6Wp

Batten distance: 19cm

Height coverage: 8cm

Delivered as a chain of 5.

*Beaver tail tiles 460x180mm, Double coverage, segment cut*

*Easy installation. Each brick has its own storm hook on the back.*





### Easy installation with variable accordion effect

The SolteQ energy roof with Biber PV tiles have vertical adjustment due to the overlapping nature of the tiles. This overlapping allows the SolteQ energy roof system to be optimally adapted to any roof. The installation is completed in the same way in which a traditional beaver tail tile is installed:

Hook into the battens - fix with screw - done!

### Storm safe

The SolteQ Biber PV roof tile is totally storm-proof. Due to the rear, centrally located fixing, the tiles cannot lift even in a storm. The tiles are also fitted with a special seal, which prevents the wind from getting under the tile and causing it to lift. In stormy weather conditions, the wind suction on the leeward side of the roof is a problem for the majority of roofs. However the storm hooks fitted to the Biber roof tiles ensure the tiles are as secure as they possibly can be and can withstand the most extreme weather conditions.

### Hail Safe

The SolteQ PV roof shingle meets the requirements of the current German and European hail resistance standards and even the higher criteria laid down by the Swiss Standards.

### Old building roof renovation

With its historic tile appearance, the SolteQ Biber system is ideally suited for the renovation of old buildings, which would otherwise not be suitable for conventional PV systems both visually and because of weight constraints. Roof dormers, projections and other special features can be easily addressed, thanks to the small and flexible format of the Biber PV tiles and the accessories.

### Rustic, classic look - beaver tail

From a distance, the PV roof tile is virtually indistinguishable from a classic clay roof. In addition, the tiles are extremely light in weight (14kg / m<sup>2</sup>) making them ideal for roof renovation projects involving historical and listed buildings, together with many other applications.

### SolteQ-planning aid

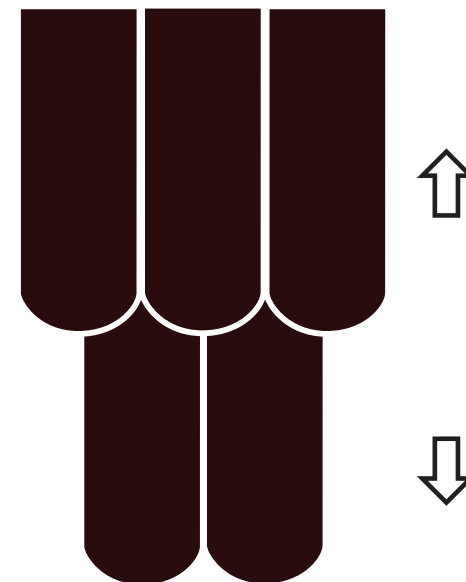
We are at your side during the planning phase. For easy and quick planning, there are also several free tools available. As a retailer, you can use the quotation tool to create an offer for your customers within minutes. At the same time, graphical tools are available to cover the roof with PV tiles. For projects, we help you to plan and assemble the required components.

### Easy installation due to handy format

The format of our tiles allows easy and quick installation of a roof in a very short time.

### SolteQ Installation Service

During all phase's of the project we will be there to provide assistance .We will also provide site construction support where required.



### **Bat dormers**

*The Biber range of tiles is particularly well suited to more complex roofs which include such features such as Bat dormers. SolteQ PV roof shingles have been developed in conjunction with roofers and are therefore recognised and accepted by the roofing trade throughout Europe. The Biber tiles create not only a fantastic looking roof for your home, but in addition they provide you with a huge amount of free energy from our Sun.*









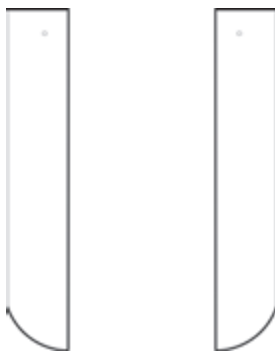




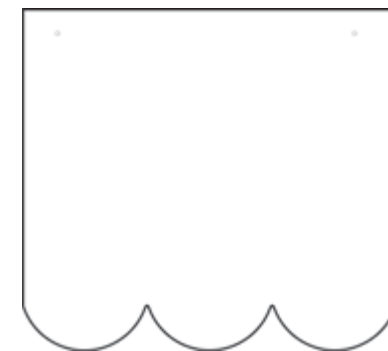
## Side and special elements



**Brick beaver sides**  
with side mounting holes for installation in roller coverings, e.g. for dormers.  
Material: aluminum or glass  
Version: Available for right or left installation



**Beaver half brick**  
with side mounting holes for laying on verge  
Material: aluminum or glass



**3-way element**  
for the assembly of ventilation connections and pipes. Also available as a complete ventilation element.  
Material: aluminum

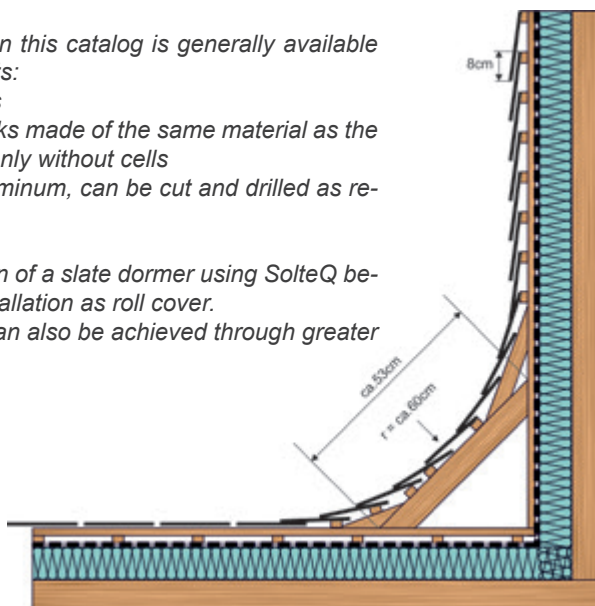
**Beaver half brick**  
with side mounting holes and water supply for safe drainage to the center of the roof for laying on verge  
Material: aluminum or glass

### Other special elements as required.

Note:  
Each roof tile in this catalog is generally available in three variants:

- a) active bricks
- b) passive bricks made of the same material as the active bricks, only without cells
- c) made of aluminum, can be cut and drilled as required

Fig. : Formation of a slate dormer using SolteQ beaver in the installation as roll cover.  
Smaller radii can also be achieved through greater overlap.



## Installation

The Biber tiles are fixed to the wooden battens by an engineered stainless steel screw complete with special washer.

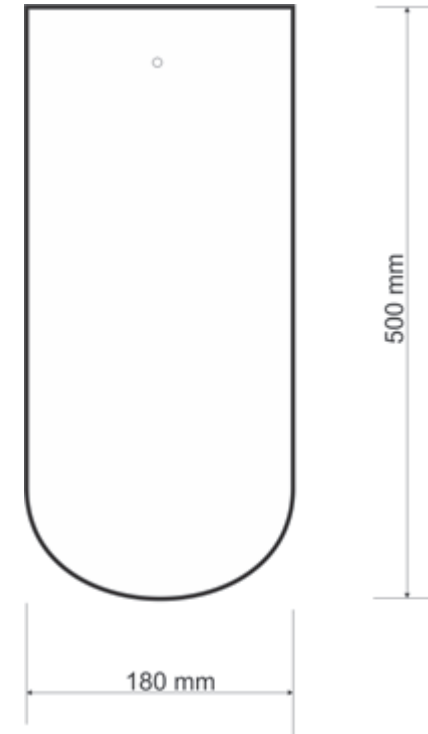


## Storm hook on the back

A Factory-fitted stainless steel metal hook is fitted to the back of each tile which not only secures the tile to the batten but also acts as a storm hook. Stability: 50kg per tile wind uplift, more than three times as stable as the standards demand (standard = 15kg).

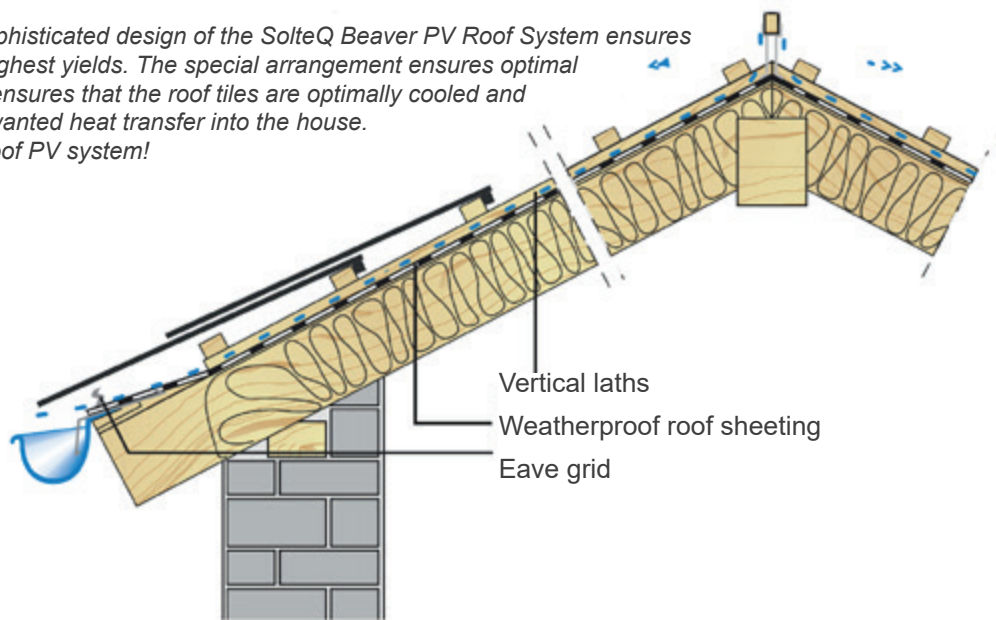


### Dimensions:



## Perfect ventilation

The simple yet sophisticated design of the SolteQ Beaver PV Roof System ensures great looks and highest yields. The special arrangement ensures optimal ventilation which ensures that the roof tiles are optimally cooled and also minimise unwanted heat transfer into the house. ... the perfect in-roof PV system!



Send us an email - we are happy to help:

[info@solteq.uk](mailto:info@solteq.uk)



# Technical specification



## BASIC DATA AND MECHANICAL CONSTRUCTION

Brick type	SolteQ-Beaver tile
Cell material Anthracite:	Monocrystalline / Colored cells: Polycrystalline silicon
Cell size	156 x 156 mm
Brick dimensions	500x180 mm
Brick per m <sup>2</sup>	s. Table
Weight	ca. 0,6 - 0,88 kg
Weight per m <sup>2</sup>	ca. 12 kg
Cooling	single module rear ventilation
Connector	MC 4 compatible
Connecting cables	2x ca. 10 cm, 2.5mm <sup>2</sup>
Bypass diodes	1 safety diode in each brick
Glass thickness / glass type approx.	4 mm, including prismatic (standard) or alternatively wood / slate
Glass certifications	DIN EN 12150-1   2019-08, Glass in construction, Option: DIN EN 14179-1 Single-pane safety glass, thermally toughened and hardened
Mechanical load	8,500 Pa (= 850 kg / m <sup>2</sup> )
Back laminate	UV and weatherproof
Roof pitch:	pitched roof / flat roof / facade 3 - 90 °

## ELECTRICAL DATA\*

Rated power per shingle	4,8 - 9,6 Wp
Rated power per m <sup>2</sup> (with SLV *)	S. Table
Efficiency	ca. 16 - 22 %
Performance tolerance at STC	+ 5%
Max. System voltage	1000 V DC
Rated voltage	1.2V
Rated current	8.75 - 9.0 A.
Open circuit voltage	1.12 - 1.42 V
Short-circuit current	8,8 - 9,8 A
Operating temperature range	-40 °C to +85 °C
Power 15 years	90% of rated power
Power 25 years	85% of rated power
Power 40 years:	80% of rated power
Vorstl. Product life	> 50 years with > 85% of rated power
Product warranty:	5 years, expandable to 20 years
<i>Spare parts guarantee:</i>	<i>30 years</i>
Performance guarantee:	for monocrystalline cells: 40 years with 80% of the installed power for polycrystalline cells: 25 years with 80% of the installed capacity

## Monocrystalline (std.) / Polykristallin

### Low light performance\*)

intensity [W/m <sup>2</sup> ]	V <sub>mpp</sub> * [%]	I <sub>mpp</sub> * [%]
1000	0	0
900	-0,3	-10
500	-1,94	-50
300	-3,91	-70
200	-6,06	-80

The electrical data apply at 25 °C und AM 1,5 (IEC 60904-3 ed.2 2008).

## TEMPERATURE COEFFICIENTS

UOC	- 0,33 ± 0,02% / K
ISC	+ 0,04 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TESTING CONDITIONS (STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

## Fire classe - Module/Shingle -

Front:	Solarmodule Glass, Tempered, Prismatic
TPT-Foil (Rear):	PYE/PET (Polyethylene Terephthalate)
Specials:	Safety hang up
Certificate-TPT-Foil:	Testet reg. ANSI/UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112, ISO75-2, ISO527-2, ISO178, ISO179-2, ISO180

## DATA SAFETY SYSTEM BFA - separate data sheet of the SolteQ-BFA-System -

Max. Count of Modules	no limit
Certificates	TPS Intercert, RETI
Emergency Button Specification	EN54-11, Typ B
Conform to Standards	VDE0100-537, IEC60364-5-537_VDE0100-537 and E VDE-AR-E 2100-712:((2010-09))

## CERTIFICATE / Warranty - Module - Certificate

Windload	CE, TPS Intercert (Technische Prüfstelle für Solartechnik), RETI, IEC61215, Safety IEC EN 61730, Salt corrosion tested IEC EN 61701
Rain proofness	DIN 1055-4
Hail class	CEN/TR 15601 IEC 61215, Extension Switzerland: Hail resistance class 3
Ammonia corrosion test:	IEC 62716
Protection class	II, IP65
German standards	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
Safety	konform nach den Regeln der Liste der Technischen Baubestimmungen
Fire safety	schwer entflammbar, Fire Class 1 gem. UNI 9177
Breaking safety:	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glass break parts (crumb formation) Certification of the mounting mechanism conform to CSTB Eu conditions

**Integrated safety!  
Power roof with factory-installed fire brigade switch  
SolteQ-BFA safety shut-down for fire brigade and maintenance!**

Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress.  
The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.

All illustrations in this catalog are similar. Depending on the production batch, the cells may have a slight dark blue effect with anthracite.  
In the case of polycrystalline, colors and structures are always different due to the naturally grown crystal structures. Every shingle is unique.

*A clean environment means ...  
Improved quality of life*





**Get a new roof for only**

**40, - Euro**

**per month during the financing period.**

**After the financing period  
receive**

**280, - Euro**

**per month to supplement your pension.**

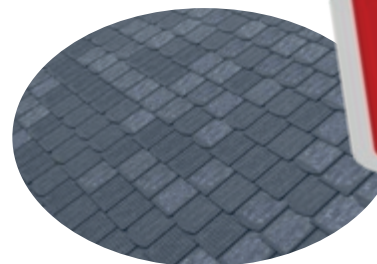
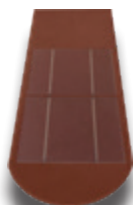
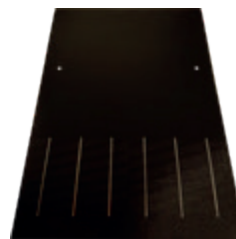
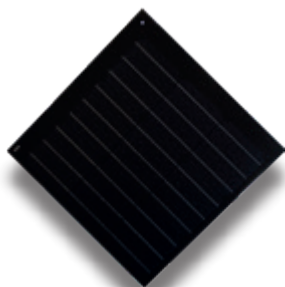
*This is an example, which can become a realisation on engaging with one of our consultants.  
You finance with the savings you make from your energy bills and where applicable feed-in tar-iffs.  
Your new roof.  
After financing, the roof will have completely paid for itself and it will effectively have cost you nothing.  
After that, it will bring you an income.  
Why should you do this? Because you know it makes sense.*



# Historic Buildings

SolteQ

*Roofing with energy  
also for listed buildings*



**From German regional offices  
certified for historic preservation**

SolteQ



## Solar power and solar heat for historical and listed objects in antique execution

*The perfect solution for building-integrated photovoltaics for listed objects with preventive fire protection as direct roof covering / BIPV*

*Building integration with style:  
Classic rustic, slate and clay brick look,  
combined with the latest photovoltaic technology*



## Solar energy and historic preservation

*Our monuments are valuable testimony to history. They create identity and shape the appearance of cities, villages and entire regions. They improve our quality of life and for this we owe them a great deal. For this reason, monument protection and monument preservation are among the most important of our cultural obligations. At the same time cultural monuments are part of our social and economic life in the present. Many monuments are still inhabited or are alternatively still an integral part of everyday life. Preservation and preservation of monuments is primarily about a respectful and contemporary use. Only in this way can we succeed in preserving our architectural heritage for the future. The installation of solar systems can also form part of a respectful and sympathetic use of architectural monuments. If solar cells existed 2,000 years ago, we would see them on the roofs today. Historical buildings should be allowed to benefit from the up-to-date generation of energy that is available today, particularly since these are the buildings that can benefit the most from cheap, clean energy. This brochure is intended to show that heritage protection and solar energy are not mutually exclusive. SolteQ aspires to develop an acceptable solution for listed buildings that is very close to the original look of the building. All of our tiles are made in-house and therefore the quality of tiles required for historical and monument-protected buildings is guaranteed. Tiles which come very close to the original roof covering, from both a size and shape perspective and also from a colour perspective. With the introduction of a SolteQ Energy Roof, even the most sensitive of historical buildings can become energy self-sufficient and produce clean electricity and heating energy that can make energy bills a thing of the past.*

*Our energy roof tiles have been designed to be very close to traditional slate or beaver roofing. We develop energy roofs which are designed to be sympathetic and in keeping with the conservation of monuments. Our goal is that even protected buildings can move with the times and use renewable energies. We attach great importance to safety and preventive fire protection. Our energy roof systems are equipped with a fire shutdown facility, which ensures 100% safety for the historical building.*

## Photovoltaic and solar thermal in one

*The SolteQ Energy Roof combines photovoltaics for electricity generation and solar thermal for heat for heating and hot water. From a distance, neither the photovoltaic system or the solar thermal system can be seen. The combination of an air / water heat pump and the hot air from under the roof tiles serves to produce heat energy that can be stored and utilised for space heating and hot water heating. And all completely free. Improve the aesthetics and functionality of your historical renovation project by investing in a SolteQ Energy Roof.*

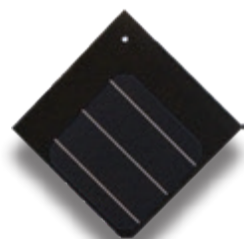
# Roof tiles as a replacement for Slate but with energy for historical buildings



SolteQ

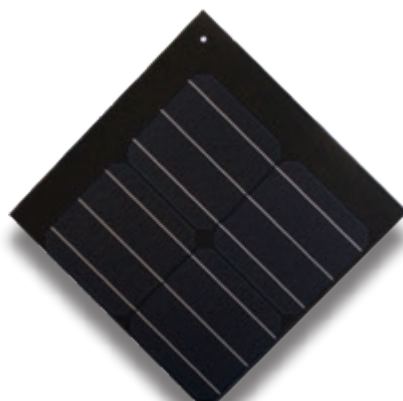
## Series SolteQ Quad with slate look and beautiful surface finish.

The Quad series with its slate-like appearance is available in different variants, a variant to suit every roof scape. The toughened glass tiles are prismatic with an anti-reflective surface which is appealing to the eye and to the touch. Anthracite-coloured monocrystalline cells provide maximum energy with a look that closely resembles that of real slate. When viewed from ground level the fine silver stripes are no longer visible, you only see a great looking anthracite-coloured roof, one that looks like slate.



### Quad5-1cell

The "single cell" roof tile.  
The appearance is comparable to the fine slate roofing of historic castles and palaces.  
The tiles are supplied in multiples of 5.  
Dimensions: ca. 20 x 20 cm  
Cell type: monocrystalline  
Power per m<sup>2</sup>: ca. 148 Wp



### Quad18-4cell

The "4-cell" roof tile,  
The appearance is also comparable to a slate roofing with a medium structure.  
Dimensions: ca. 36 x 36 cm  
Cell type: monocrystalline  
Power per m<sup>2</sup>: ca. 155 Wp



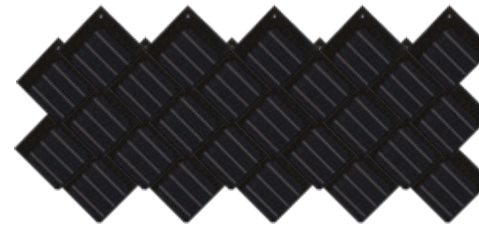
### Quad40-9cell

With 9 highly efficient cells, the Quad-40 tile delivers maximum performance. This variant is recommended for larger roof areas.  
Dimensions: ca. 54 x 54 cm  
Cell type: monocrystalline  
Power per m<sup>2</sup>: ca. 177.48 Wp





*Delivery condition of the 1-cell*



*SolteQ German cover anthracite, combined with real slate*

**Especially important for listed buildings:  
Fire Prevention !  
Energy roof with factory integrated fire station switch  
SolteQ-BFA-safety shutdown for fire brigade and maintenance!**



*SolteQ German cover rock gray, combined with real slate*



*SolteQ German cover rock gray, combined with real slate*

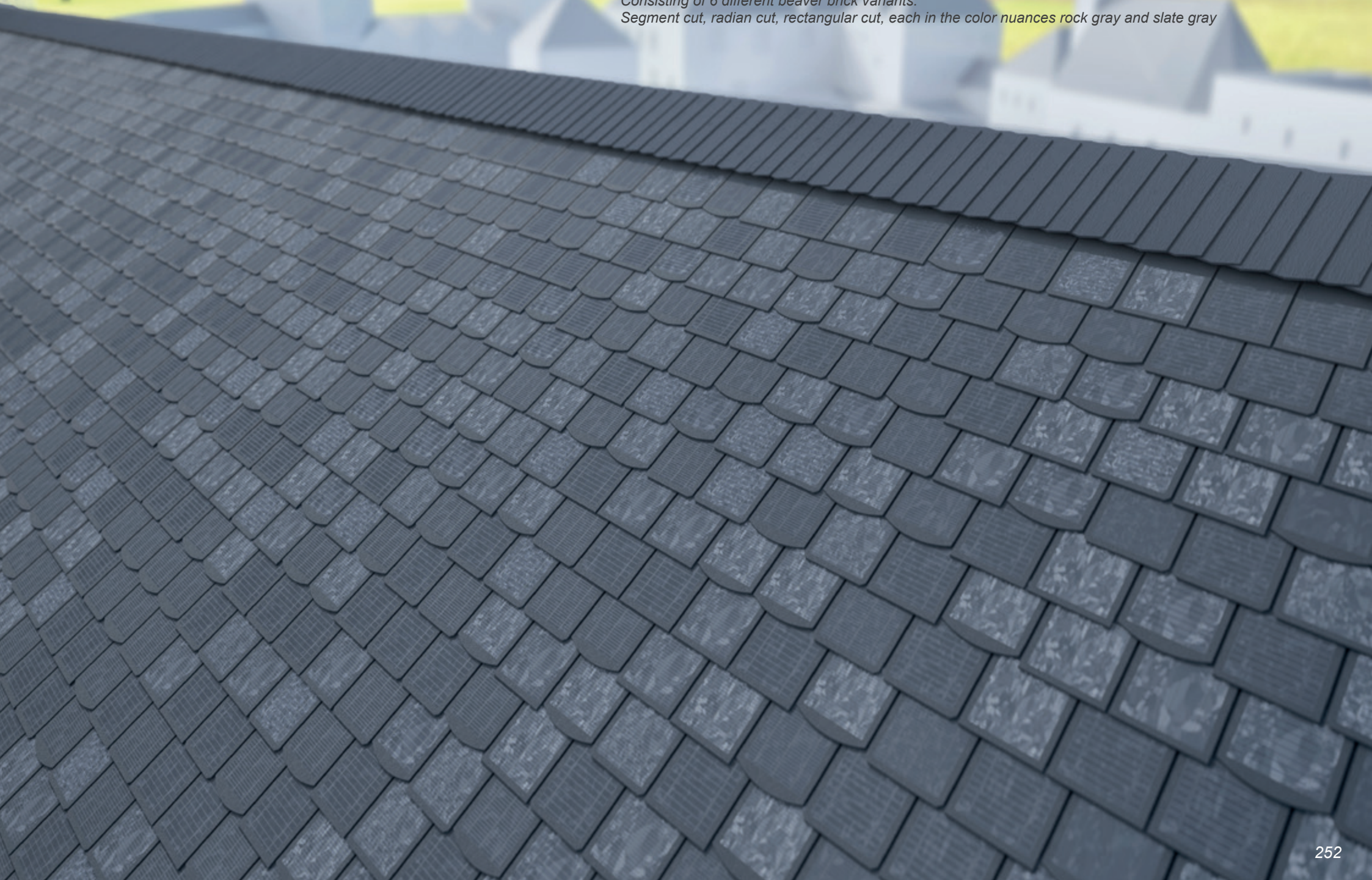




***We are particularly proud of that:***

## ***Our SolteQ Old Town package***

*Consisting of 6 different beaver brick variants:  
Segment cut, radian cut, rectangular cut, each in the color nuances rock gray and slate gray*











# SolteQ

THE ULTIMATE SOLAR SOLUTION

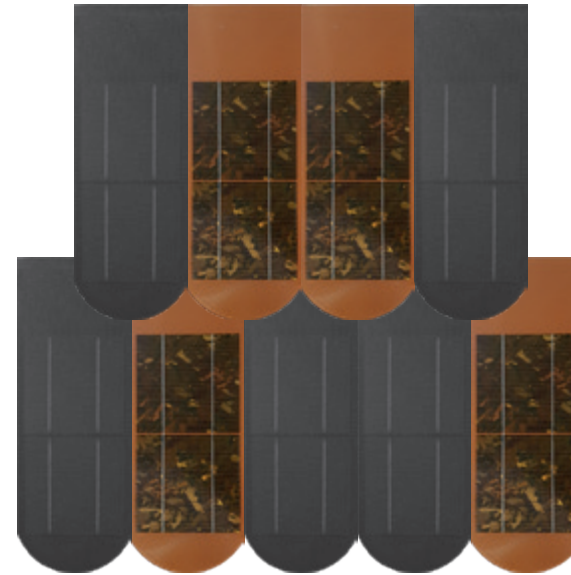
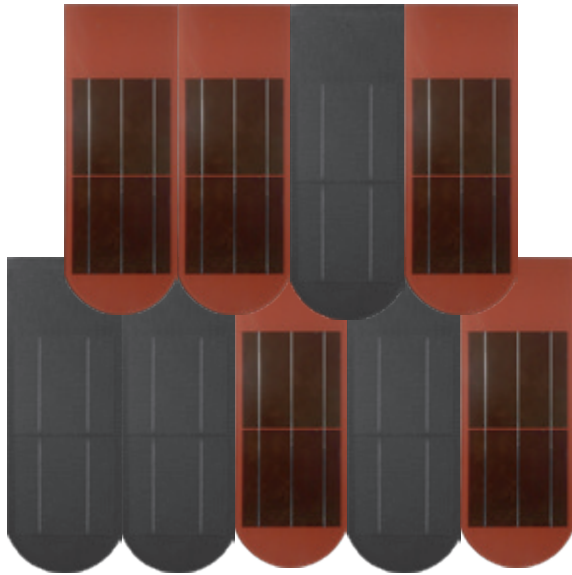
SolteQ



## ***Historic buildings can also benefit from the free energy of our sun***

***SolteQ PV roof tiles provide a look that is very close to the original look of the roof.***

*The Beaver Tail Series has the same dimensions (500 x 180 mm or 380 x 180 mm and thickness of ap-prox. 18 mm) as a well-proven beaver cover in the historical style. The offered colour variants can be mixed with each other as desired, so that the original look of the building can be replicated as closely as possible. The fine silver stripes becoming invisible when the roof is viewed from ground level.*





RATHAUS





**30%** of our native birds no longer fly south.

**30%** the remaining birds find nothing to eat in winter. Why ?

Because WE have cleared **90%** of the forests.

That is why it is our duty to take care of our fellow creatures as we take care of ourselves.

Help us and do good!

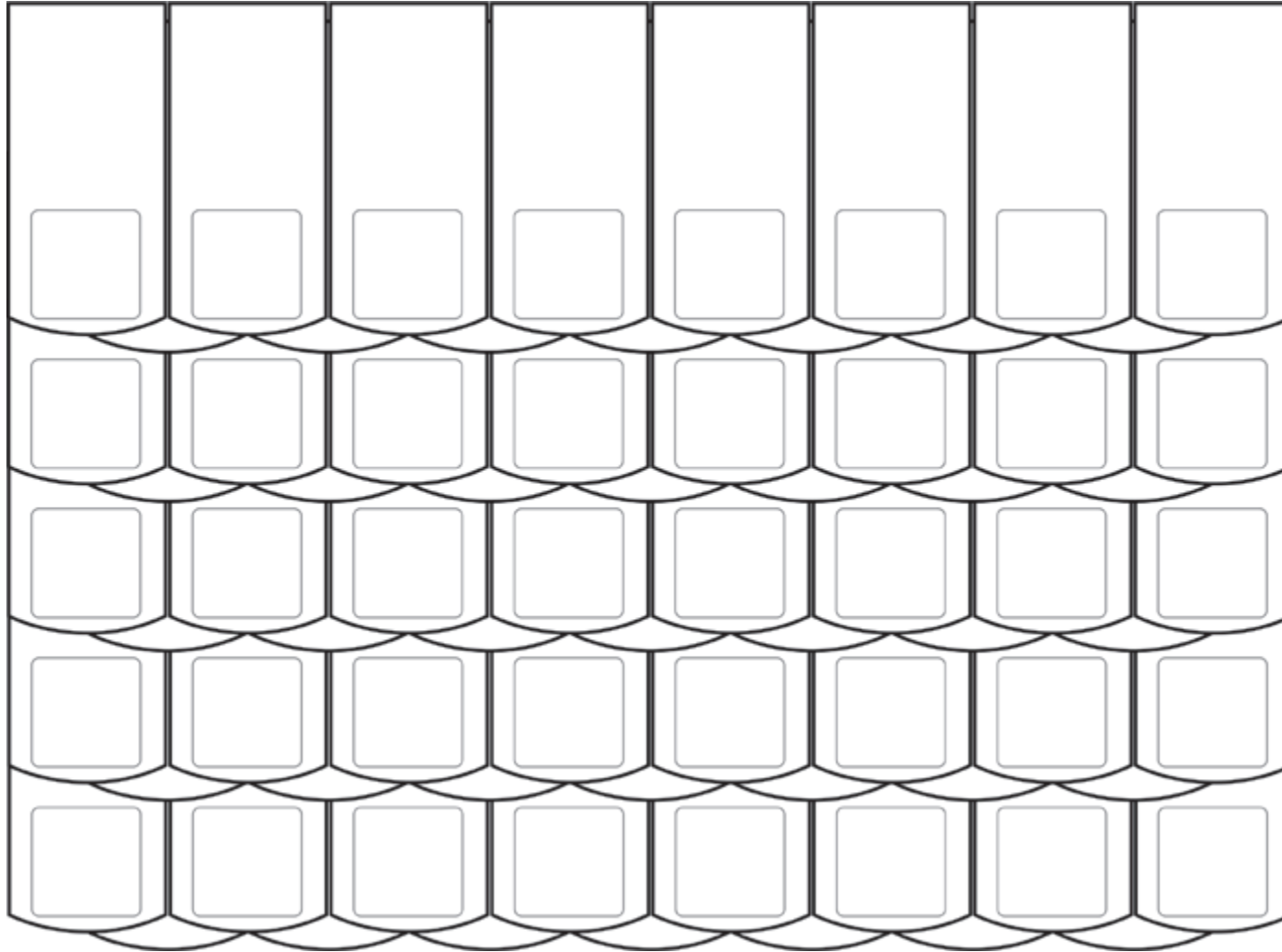
Anyone who has a garden or balcony can hang up a beautiful bird feeder and enjoy the wonderful picture with which our little friends enjoy the feed. Join in!



Everyone can do that.  
Please join everyone!



*Crown coverage with help from passive tiles*





# Sympathetic shades

SolteQ PV roof tiles can be combined to provide a variety of colour shades, which serve to enhance the look of even the most impressive buildings.

**Ideal for the restoration & protection of Historical Buildings!**

Imagen: Castillo de Ratisbona

## The SolteQ Energy Roof as an aid to the preservation of Historic Buildings

SolteQ's mission is to promote energy renewables on a global basis, a philosophy that has its roots in creating a cleaner planet that is no longer reliant on fossil fuels for energy production. The preservation of historic buildings and monuments is seen as an integral part of this philosophy by ensuring that buildings of historical significance are able to benefit from clean green energy, energy from an advanced roofing concept that also serves to protect the building from the elements. Historical buildings require huge amounts of energy, both electricity and heat both of which can be provided by the SolteQ Energy Roof. Here at SolteQ we are constantly striving to develop new products that increase the choice of roofing solutions available for historical buildings, roof tiles that not only look in keeping with the buildings aesthetics but also enable them to become self-sufficient in energy. If SolteQ existed 2,000 years ago, then historic roofs would be covered with SolteQ roof tiles.

**Up to 36% higher yield, compared to a conventional rooftop PV system!**



Abbildung: Schloss Regensburg



# GERMAN TILES

SolteQ

*German craftsmanship  
Real German cover with solar*



SolteQ



# GERMAN TILES

## SolteQ solar roof tile for combination with real slate as genuine German cover in bow cut or universal cut

### Monument Protection with Solar - Extrem

Our SolteQ engineers think about using the sun's energy in every area. The focus is always on the highest possible effectiveness and maximum aesthetics.

So even managed to move an ancient type of slate roofing, namely the historical German cover, as a pure solar energy roof, or to combine SolteQ solar shingles with real slate.

SolteQ solar roof shingles - German cover can be laid either purely with SolteQ assets and passive shingles, or with real shale or cheap fiber cement shingles from manufacturers such as Eternit, Creaton and others.

According to the weather direction available for left and right coverage

Lead angle: 0-45 °

Lifetime expectancy: > 100 years

1-Cell - 30x30cm  
Bow cut laying



SolteQ solar shingles  
German-cover-Anthracite, bow cut



SolteQ solar shingles  
German-cover-Anthracite, universal cut

### German Tiles

The German or Old German cover are also called the „Queen of the Deckarten“. They are the most technically demanding type of cover. Such a slate roof is artfully formed in the details and is one of the top achievements of the roofing trade.

Characteristic in this type of cover is the use of cover stones of different height and width, which creates a cover image full of harmony and liveliness. The result is unique in any case: No cover succeeds like another, the roof is individually noble, a real unique. Due to its variability, the German Cover is particularly suitable for demanding and complicated roof geometries.

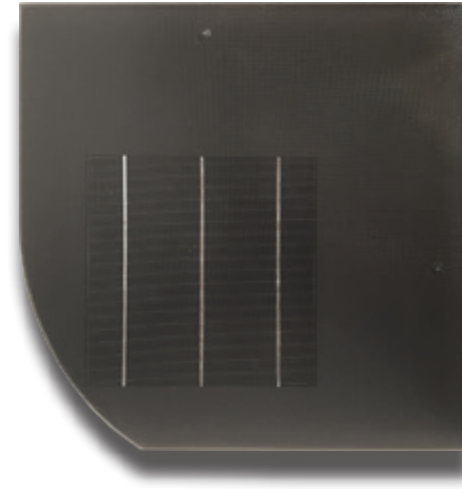


SolteQ solar shingles  
German-cover anthracite-Plus, bow cut



*SolteQ solar shingles  
German-cover-slate effect / crystal  
Resection*

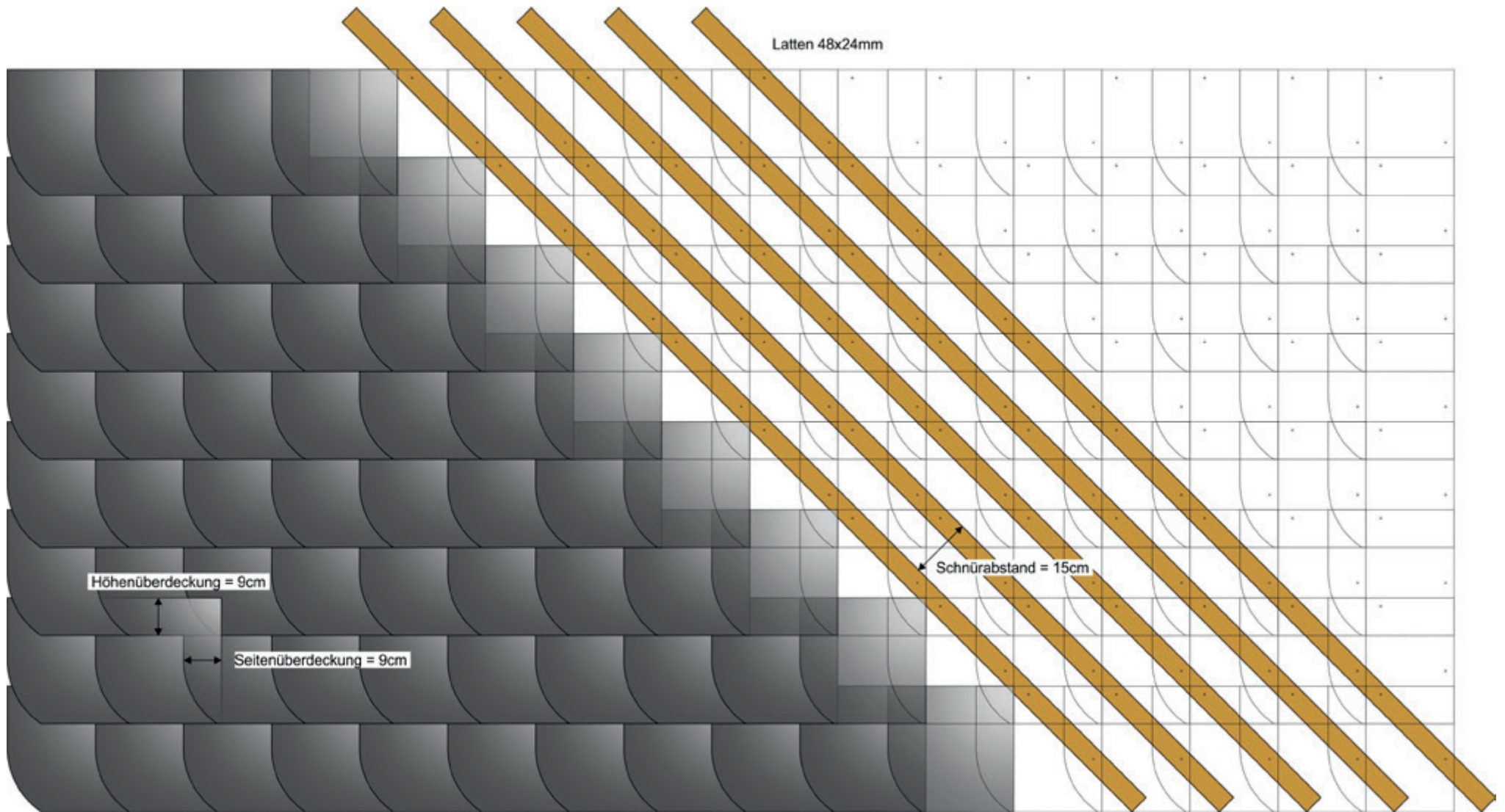
*Can be combined with real slate for the  
passive surfaces.*



*SolteQ solar shingles  
German-covered rock Gray  
Resection*

*Can be combined with fiber-cement  
panels in German coverage*





# Technical specification



SolteQ

## BASIC DATA AND MECHANICAL CONSTRUCTION

Tile type	German tiles
Cell material	Monocrystalline / polycrystalline silicon
Cell size	156 x 156 mm
Brick dimensions	300x330 mm
Tiles per m <sup>2</sup>	ca. 20,25
Weight approx.	0.8 kg
Weight per m <sup>2</sup>	ca. 19,8kg
Cooling	single module rear ventilation
Connector	MC 4 compatible
Connecting cables	1/2x ca. 40 cm, 2.5mm <sup>2</sup>
Bypass diodes	1 safety diode in each tile
Glass thickness / glass type	ca. 4 mm, including prismatic (standard) or
Glass certifications	DIN EN 12150-1   2019-08, Glass in construction, Option: DIN EN 14179-1 Single-pane safety glass, thermally toughened and hardened
Mechanical load	8,500 Pa (= 850 kg / m <sup>2</sup> )
Back laminate	UV and weatherproof
Roof pitch:	pitched roof / flat roof / facade 3 - 90 °

## ELECTRICAL DATA\*

Rated power per shingle	S. Table		
Rated power per m <sup>2</sup> (with SLV *)	S. Table		
Efficiency	ca. 16 - 22 %	<b>Low light performance*</b>	
Performance tolerance at STC	+ 5%	intensity [W/m <sup>2</sup> ]	Vmpp* [%]
Max. System voltage	1000 V DC	1000	0
Rated voltage	1.2V	900	-0,3
Rated current	8.75 - 9.0 A.	500	-1,94
Open circuit voltage	1.12 - 1.42 V	300	-3,91
Short-circuit current	8.8 - 9.8 A.	200	-6,06
Operating temperature range	-40 °C to +85 °C	The electrical data apply at	
Power 15 years	90% of rated power	25 °C und AM 1,5	
Power 25 years	85% of rated power	(IEC 60904-3 ed.2 2008).	
Power 40 years:	80% of rated power		
Estimated Product life time:	> 50 years with > 85% of rated power		
Product warranty:	5 years, expandable to 20 years		
Spare parts guarantee:	30 years		
Performance guarantee: for monocrystalline cells:	40 years with 80% of the installed power for polycrystalline cells:	25 years with 80% of the installed capacity	

## TEMPERATURE COEFFICIENT

UOC	- 0,32 ± 0,02% / K
ISC	+ 0,043 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TEST CONDITIONS(STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

### Fire protection class - PV shingle -

Front:	Solar module glass, tempered / prismatic
Back side:	PYE / PET (polyethylene terephthalate)
Special features:	mech. safety suspension
Certificates TPT / PYE film:	Tested to ANSI / UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112,

## DATA SAFETY SYSTEM BFA - separate data sheet of the SolteQ-BFA-System

Max. Count of Modules	no limit
Certificates	TPS Intercert, RETI
Emergency Button Specification	EN54-11, Typ B
Conform to Standards	VDE0100-537, IEC60364-5-537_VDE0100- and E VDE-AR-E 2100-712:((2010-09))

## CERTIFICATE / Warranty - Module -

Certificate	CE, TPS Intercert (Technische Prüfstelle für Solartechnik), RETI, IEC61215, Safety IEC EN 61730, Salt corrosion tested IEC EN 61701 DIN 1055-4
Windload	DIN 1055-4
Rain proofness	CEN/TR 15601
Hail class	IEC 61215, Extension Switzerland: Hail resistance class 3
Ammonia corrosion test:	IEC 62716
Protection class	II, IP65
German standards	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
Safety	konform nach den Regeln der Liste der Technischen Baubestimmungen
ni-	schwer entflammbar, Fire Class 1 gem. UNI 9177
Fire safety	
Breaking safety:	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glas break parts (crumb formation) Certification of the mounting mechanism conform to CSTB Eu conditions

	Number of cells	Performance per tile	Efficiency /%	Number of tiles per m <sup>2</sup>	Installed Power per m <sup>2</sup>	Effective Power with SLV *)
Infinity-Anthrachte -60x33	1	4,93	20,8	20,25	122,02	146,42
Infinity-Slate/Crystall -60x33	1	4,00	18,2	20,25	99,00	118,80
Infinity-Silver/Gray/Crystall -60x33	1	4,00	18,2	20,25	99,00	118,80
Infinity-Dark Gray -60x33	1	4,00	18,2	20,25	99,00	118,80
Infinity-Tile Red -60x33	1	4,25	17,6	20,25	105,19	126,23

Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress.

The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.

\* These electr. Parameters are typical averages from historical production data. Future production batches may differ. This also applies to color deviations.

All illustrations in this catalog are similar. Depending on the production batch, the cells may have a slight dark blue effect with anthracite.

In the case of polycrystalline, colors and structures are always different due to the naturally grown crystal structures. Every shingle is unique.





## Roof pays off itself

You will receive an offer from us with a profitability calculation from which it becomes clear that the SolteQ energy roof is the only roof that pays for itself. And not only that it actually earns you money over its lifetime.

Example:

A conventional roof with e.g. Clay tiles cost money. The same amount will come in 20 years on top again for the financing with interest. This money is gone!

The money you spend on a SolteQ roof will come back!

As:

A SolteQ solar roof earns the cost of its purchase during the same period and pays for itself in a short time, e.g. after 12 or 14 years. The entire roof!

Then it still earns 200 or 400, - € per month for you. And that for another 20 or 40 years.

What more do you want ?



## Roof covers construction costs

You will receive an offer from us with a profitability calculation, which shows that the SolteQ energy roof essentially reduces the overall construction cost of the building over its lifetime. In the course of a house financing period of say 30 years, the roof earns a lot of money. It can pay for itself completely after 12 or 14 years and then continues to earn you money. What more do you want?

## The money is coming back!

Example:

Roof area:	150m <sup>2</sup> (north / south, 50% active)
Your future energy costs (electricity + heating):	0.- Euro
You even get money on it:	
Annual profit, despite financing:	2,430 Euro
Annual profit without financing:	4,600 euros per year

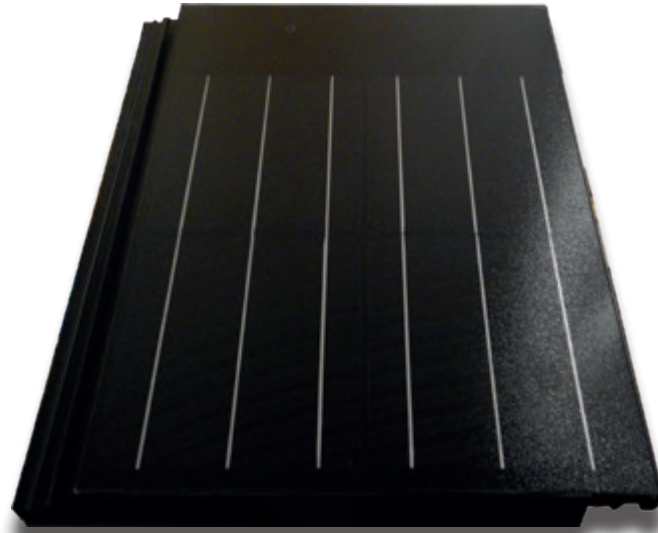
What more do you want ?



# Interlocking Tiles

SolteQ

*SolteQ System tiles  
Can be combined with conventional roof tiles  
The practical roof tile*



SolteQ



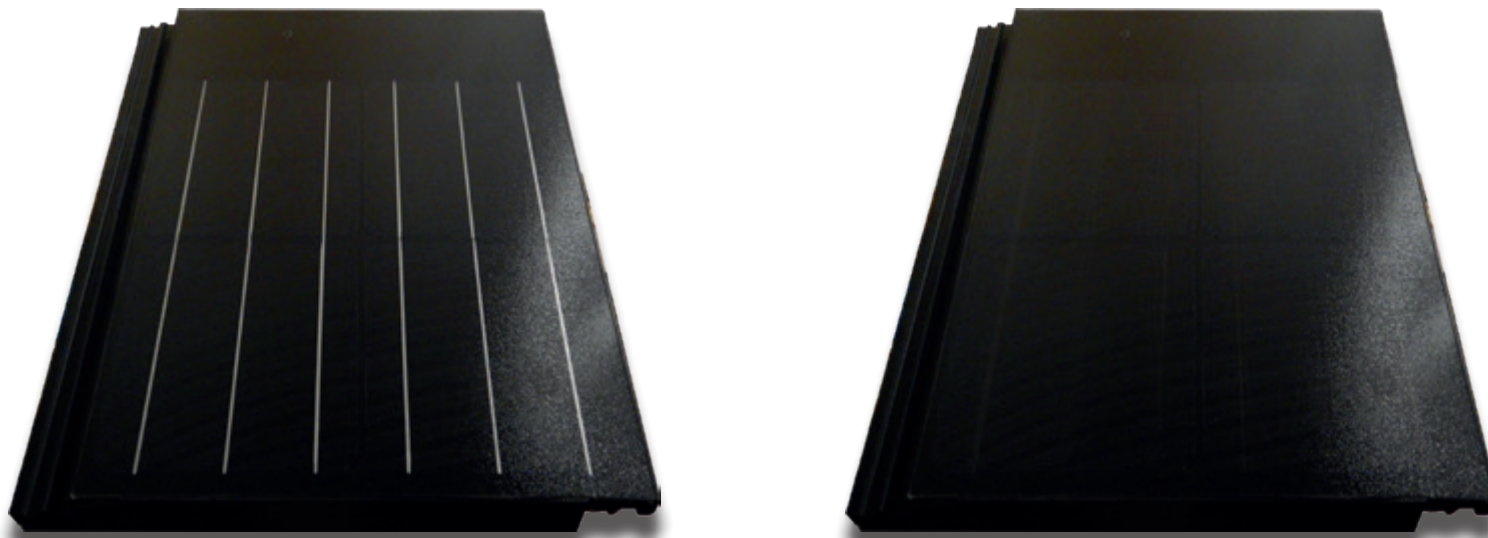
# Interlocking Solar Tiles

*Can be combined with conventional concrete roof tiles*

*SolteQ is revolutionizing the world of power generation with clean energy systems.*

*Our engineers are constantly developing the best and most effective ways to improve our product range.*

*To that end we have developed a new PV tile that can interface directly with readily available concrete interlocking roofing tiles. So the active area of the roof will consist of SolteQ Interlocking PV tiles with the passive surfaces being covered with very cost affective concrete roof tiles available from your local roofing supplier.*



## **SolteQ-Interlocking-Tile single size:**

*Replace one Concrete Tile of the types:*

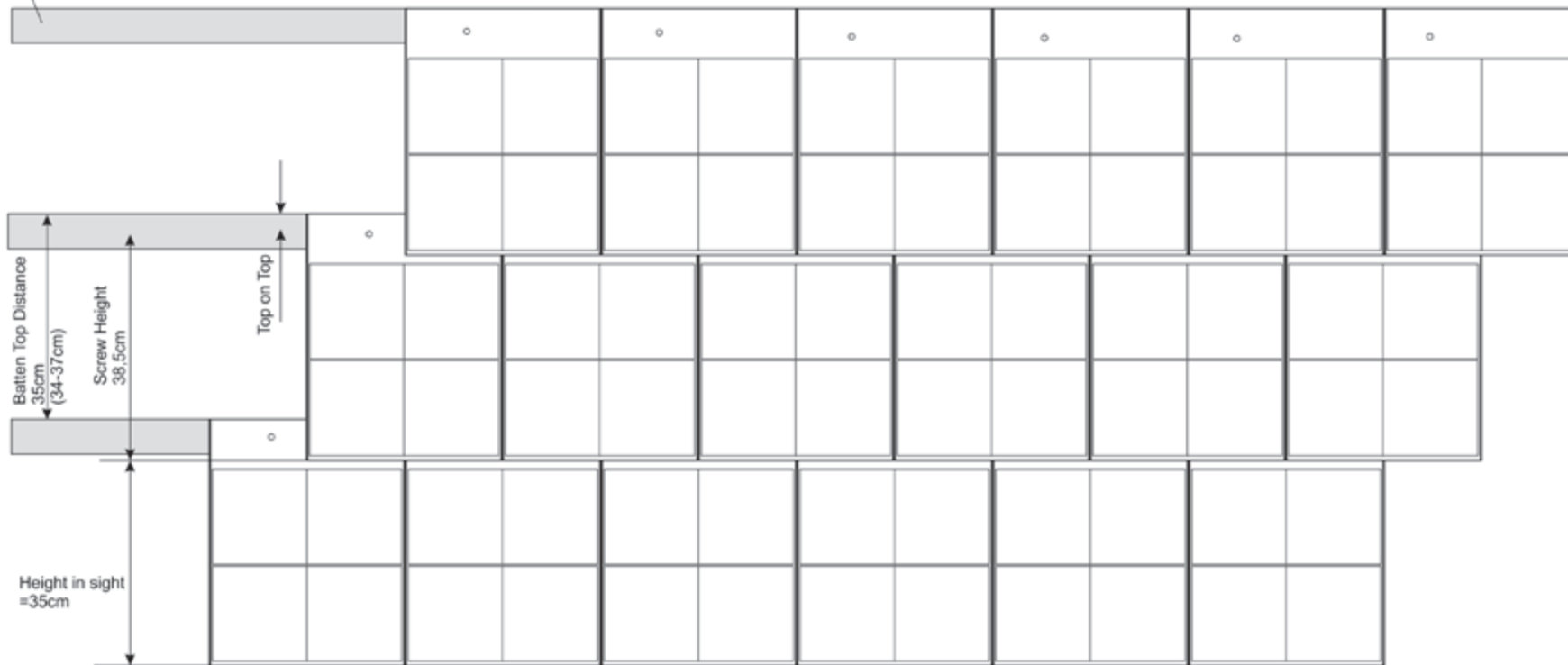
*Braas-Tegalit*

*Type: SQ-Braas-Tegalit-SZ*

*Marley-Modern-Tile*

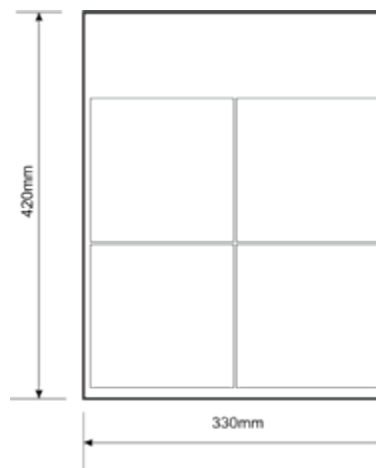
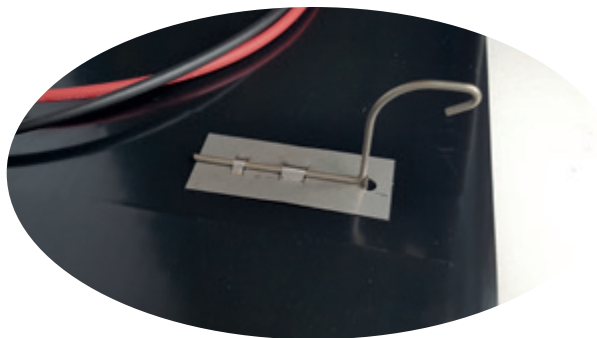
*Type: SQ-ML-MT-SZ*

Battens: 40x60 / 30x50 mm

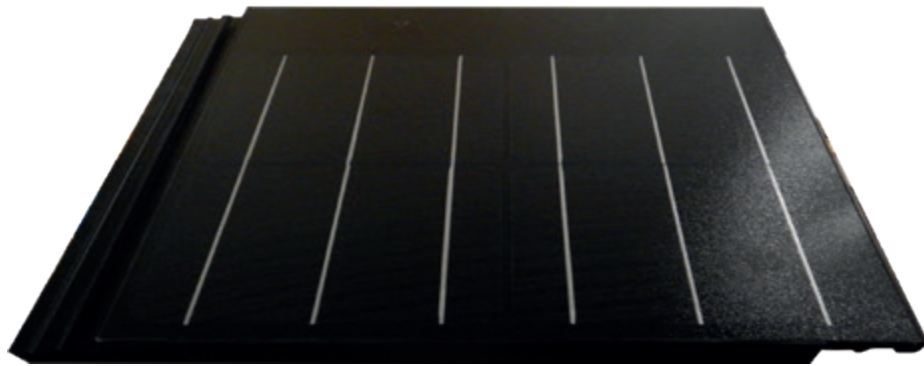


Nominal roof slope 10-90 °  
Minimum roof slope 3 °

*Easy installation. Each brick has its own storm hook on the back.*







**SolteQ-Interlocking-Tile-double size**

*Replace two Concrete Tiles of the types:*

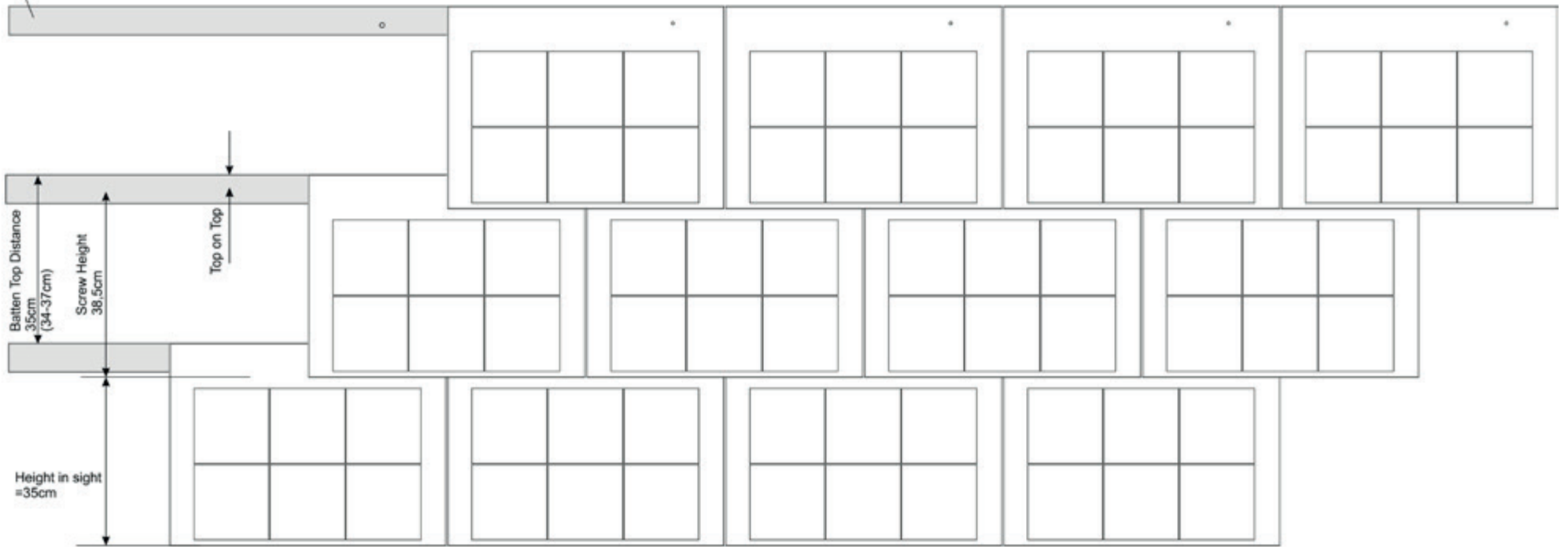
*Braas-Tegalit*

*Typ: SQ-Braas-Tegalit-DZ*

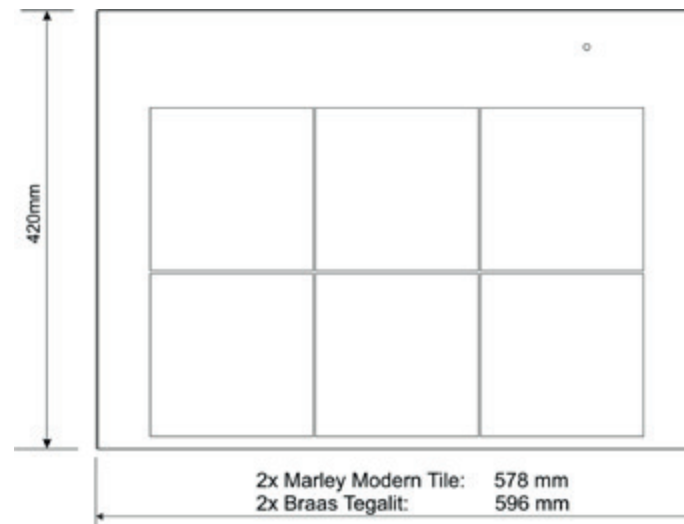
*Marley-Modern-Tile*

*Typ: SQ-ML-MT-DZ*

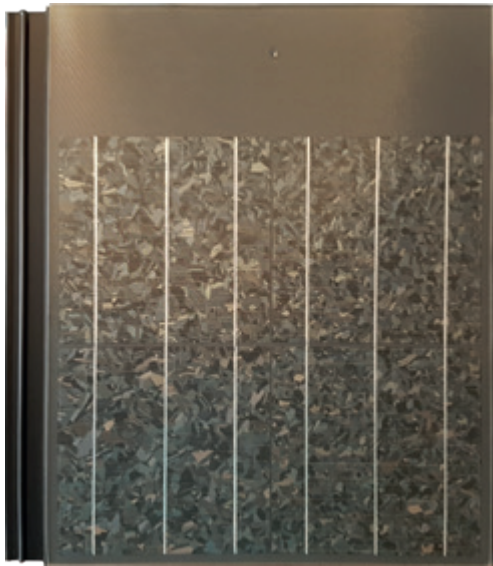
Battens: 40x60 / 30x50 mm



Nominal roof slope 10-90 °  
Minimum roof slope 3 °







***SolteQ-System-tile-Slate look / crystall***



***SolteQ-System-tile-rock grey-plus***



***SolteQ-System-tile-Tile red***

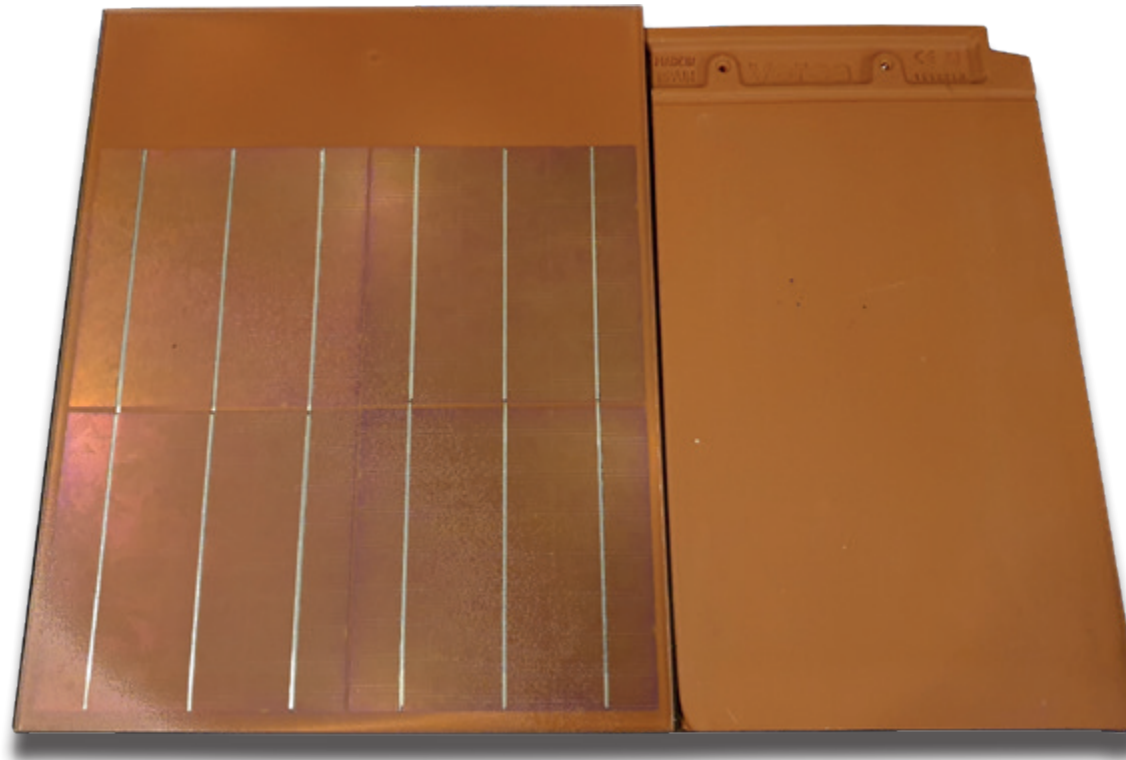
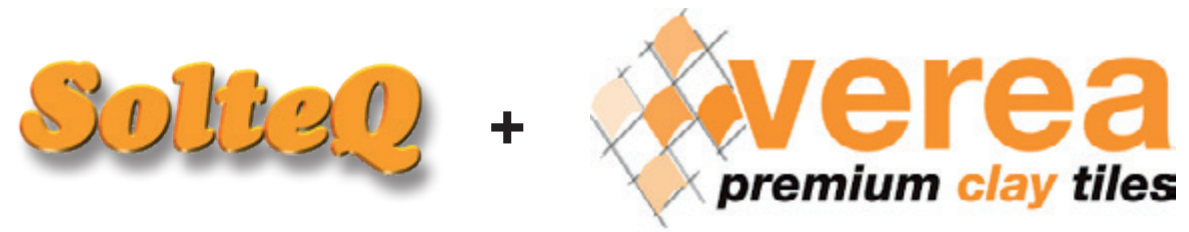
*Available as single size or double size*

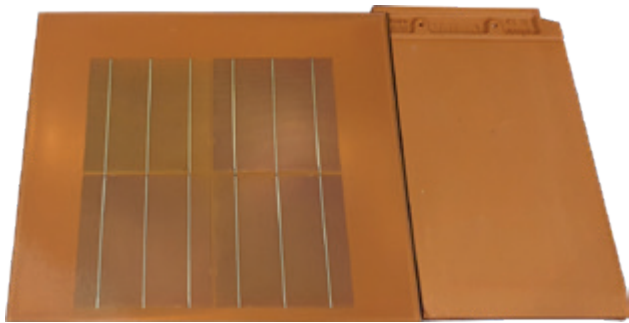
*You can only see a nice roof ...  
... if you don't know that solar is also behind it.*





Example: SolteQ-Verea Solar Roof Tiles - installation on battens - Horizontal Pattern

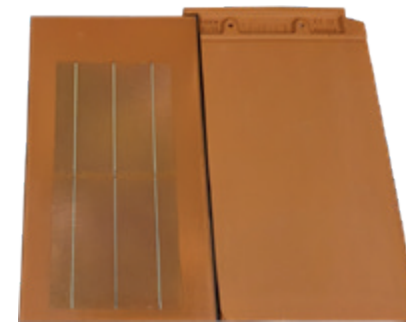




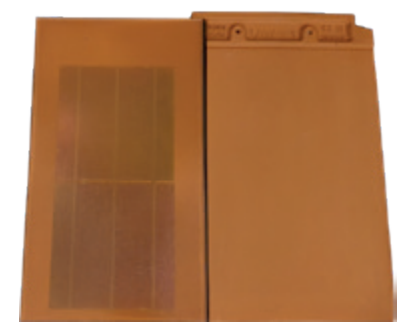
*SQV-Doublesize  
replaces two conventional tiles*



*SQV-Doublesize-Plus*

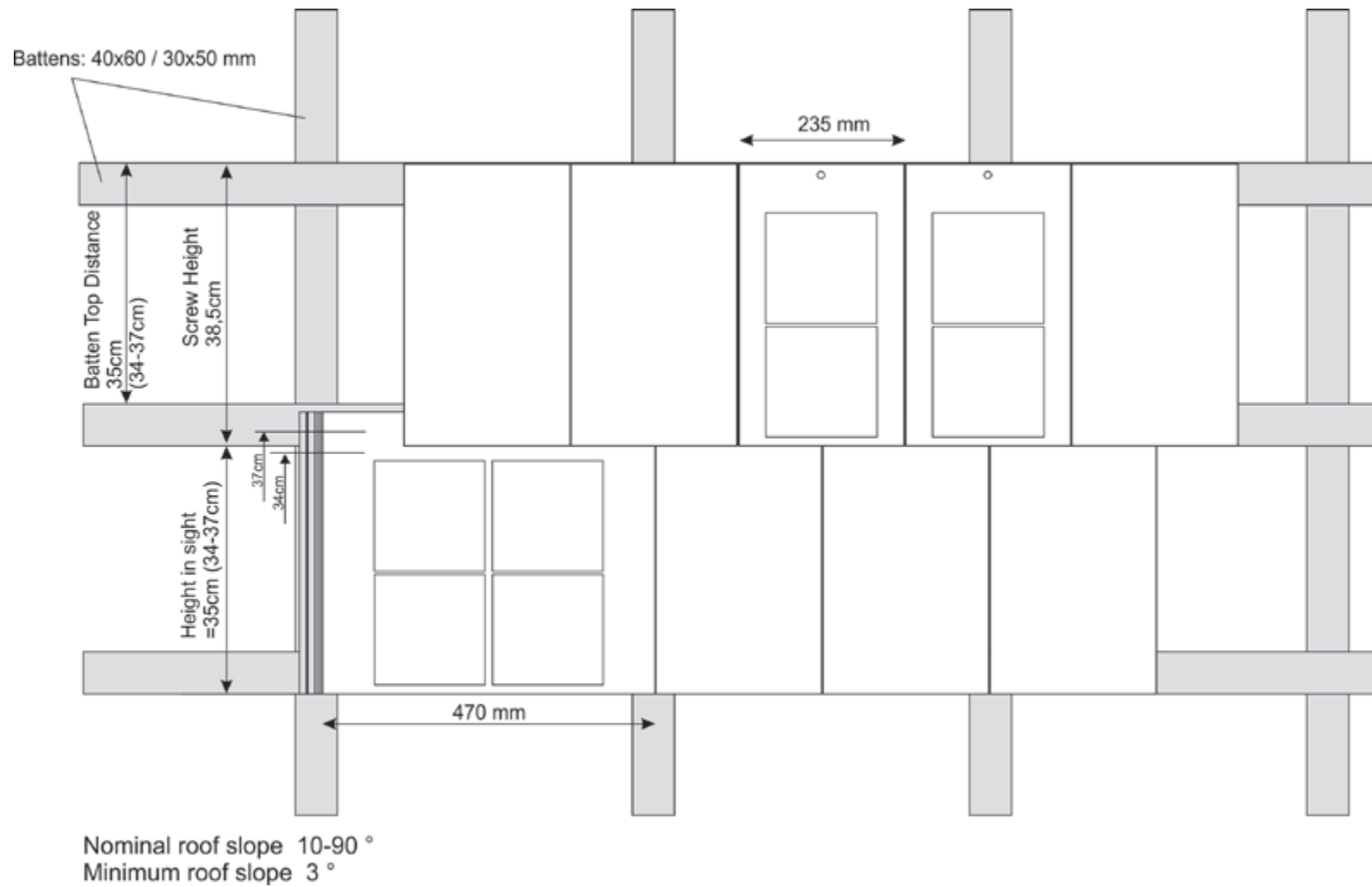


*SQV-Singlesize  
replaces one conventional tile*



*SQV-Singlesize-Plus*





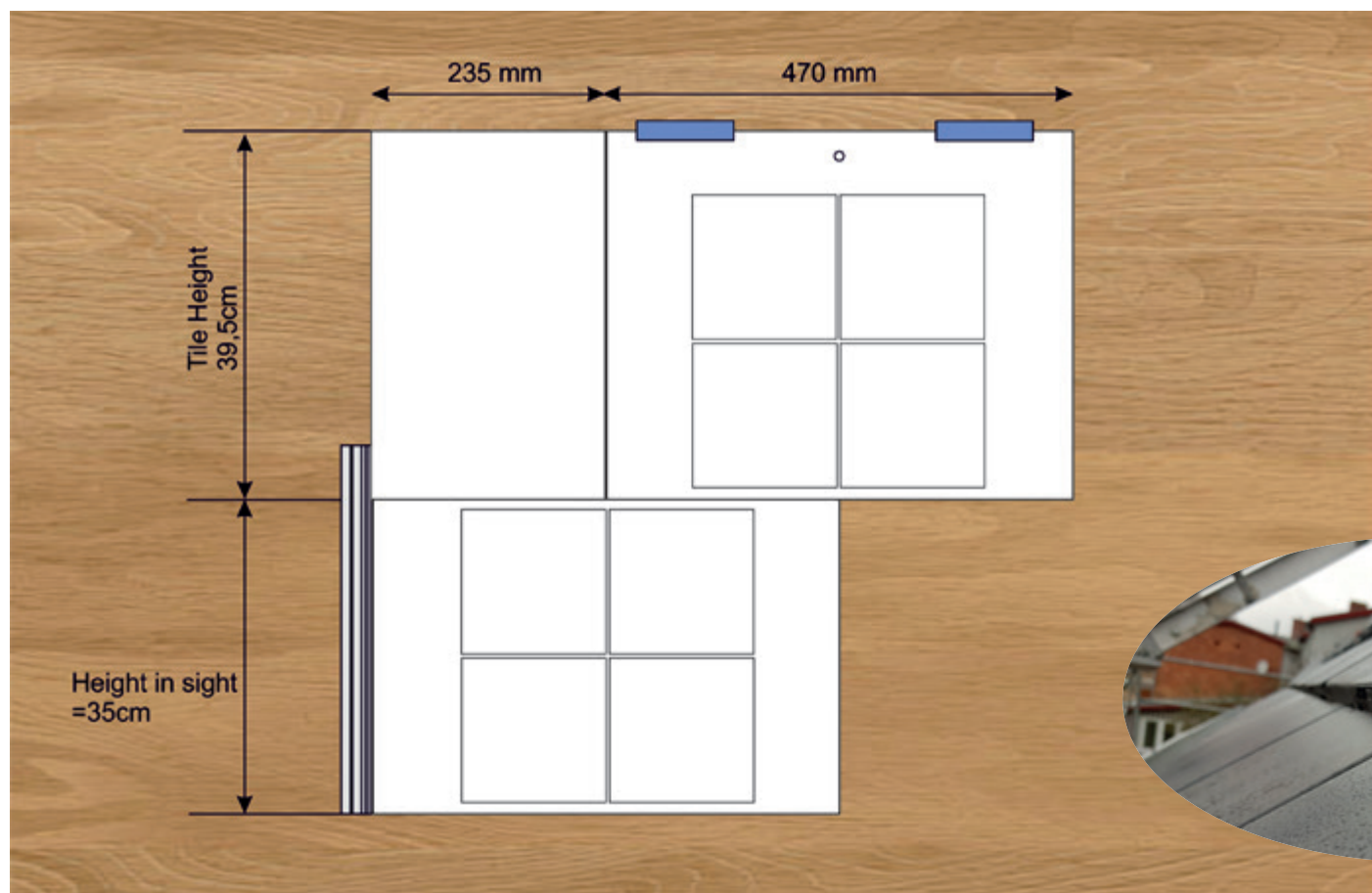
## Direct installation on the plywood - "EASY"

You can place SolteQ-Verea-Solar Roof Tiles same way as you install the clay tiles from Verea



## SolteQ-Interlocking Solar Roof Tiles for Verea Clay Tiles - Pattern

Double-Size, replaces two conventional tiles





## **SolteQ supports the traditional craftsmanship of the roofing industry!**

*As a result of many years of collaboration with our highly skilled roofing partners, we have been able to develop our Infinity range of PV tiles which produce a high quality slate roof in the traditional 60cm x30cm format of real slates, but with the added advantage of solar. The SolteQ Infinity slate look tiles (& façade panels) are the perfect solution for situations where real (passive)slate tiles are required in combination with active PV tiles in order maintain a more traditional look for the house. See the pictures in the appendix. As an alternative option, there is also the SolteQ-Infinity- grey roof tiles (or Façade panel) which can also be used in combination with readily available Eternit/Marley fibre slate roofing tiles or similar products from other manufacturers. The solar function on these roofs is so difficult to see that the roof appears to the naked eye as a conventional passive roof not one that includes a state of the art PV system. The installation is very simple: just one conventional slate hook per tile. The tiles are laid in the traditional double cover method.*

*Other advantages:*

- ▶ *Very long life with >> 50-80 years*
- ▶ *Performance guarantee: 40 years with 80% of the initial performance*
- ▶ *Sturdier than a normal roof*
- ▶ *Aesthetic and high quality*
- ▶ *100% made in Germany*
- ▶ *The SolteQ roof is the cheapest roof in the world: The roof that pays for itself ! and always remember:*

**SolteQ supports the craftsmanship of the traditional roofing trade!**



*Do you see the difference?*









*Here is the resolution:*



**SolteQ-System tile**  
Type: SQ-TG-Anthrazit-Plus



**Braas-Tegalit  
concrete roof tile**



**SolteQ-System tile**

**Braas-Tegalit  
concrete roof tile**



***We have to protect our animals.***

*Foxes are wonderful creatures. It is incomprehensible that they have been persecuted and hunted for centuries. Mostly for fun. Foxes are like our dogs. There are vaccination options against diseases these days.*

*Let us protect our animals instead of fighting them!*





### **SolteQ-System tiles**

*Available for combination with the following conventional concrete / clay roof tiles:*

*Braas/BRAMAC-Tegalit*

*Braas/BRAMAC-Turmalin*

*Marley-Modern-Tile*

*Creaton-Kapstadt*

*Wienerberger-Alegra 8 - 12*

*Wienerberger-Plano*

*Jacobi J11*





*Why are we burning still oil and gas ..*



*... if the energy is available.  
... and clean.  
... and free.*



*Why ?*



SolteQ Interlocking Solar Roof Tiles



# Technical Specifications

## BASIC DATA AND MECHANICAL CONSTRUCTION

Tile type	SolteQ-Interlock-Tiles
Cell material Anthracite:	Monocrystalline / Colored cells: Polycrystalline silicon
Cell size	156 x 156 mm
Tile dimensions	340x380 mm (WxH)
Tiles per m <sup>2</sup>	s. Table
Weight	approx. 1.2 kg
Weight per m <sup>2</sup>	approx. 13.2 kg
Cooling	single module rear ventilation
Connector	MC 4 compatible
Connecting cables	2x approx. 20 cm, 2.5mm <sup>2</sup>
Bypass diodes	1 safety diode in each Tile
Glass thickness / glass type approx.	4 mm, including prismatic (standard) or alternatively wood / slate
Glass certifications	DIN EN 12150-1   2019-08, Glass in construction, Option: DIN EN 14179-1 Single-pane safety glass, thermally toughened and hardened
Mechanical load	8,500 Pa (= 850 kg / m <sup>2</sup> )
Back laminate	UV and weatherproof
Roof pitch:	pitched roof / flat roof / facade 3 - 90 °

## ELECTRICAL DATA\*

Rated power per shingle	S. Table	<b>Monocrystalline (std.) / Polykristallin</b>
Rated power per m <sup>2</sup> (with SLV *)	S. Table	
Efficiency	ca. 16 - 22 %	
Performance tolerance at STC	+ 5%	
Max. System voltage	1000 V DC	
Rated voltage	1.2V	
Rated current	8.75 - 9.0 A.	
Open circuit voltage	1.12 - 1.42 V	
Short-circuit current	8,8 - 9,8 A	
Operating temperature range	-40 °C to +85 °C	
Power 15 years	90% of rated power	
Power 25 years	85% of rated power	
Power 40 years:	80% of rated power	
Estimated Product life time:	> 50 years with > 85% of rated power	
Product warranty:	5 years, expandable to 20 years	
<i>Spare parts guarantee:</i>	<i>30 years</i>	
Performance guarantee: for monocrystalline cells:	40 years with 80% of the installed power	
Performance guarantee: for polycrystalline cells:	25 years with 80% of the installed capacity	

## TEMPERATURE COEFFICIENTS

UOC	- 0,33 ± 0,02% / K
ISC	+ 0,04 ± 0,0015% / K
PMPP	- 0,41 ± 0,05% / K

## STANDARD TESTING CONDITIONS (STC)

E=1000W/m<sup>2</sup> AM=1,5 T=25°C

## Fire classe - Module/Shingle -

Front:	Solarmodule Glass, Tempered, Prismatic
TPT-Foil (Rear):	PYE/PET (Polyethylene Terephthalate)
Specials:	Safety hang up
Certificate-TPT-Foil:	Testet reg. ANSI/UL94 (Tests for Flammability of Plastic Materials for Parts in Devices and Appliances) IEC60695-2-12/13 + IEC60695-10-2, IEC60112, ISO75-2, ISO527-2, ISO178, ISO179-2, ISO180

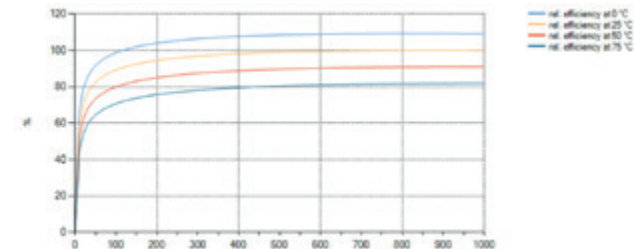
## DATA SAFETY SYSTEM BFA - separate data sheet of the SolteQ-BFA-System -

Max. Count of Modules	no limit
Certificates	TPS Intercert, RETI
Emergency Button Specification	EN54-11, Typ B
Conform to Standards	VDE0100-537, IEC60364-5-537_VDE0100-537 and E VDE-AR-E 2100-712:((2010-09))

## CERTIFICATE / Warranty - Module -

Certificate	CE, TPS Intercert (Technische Prüfstelle für Solartechnik), RETI, IEC61215, Safety IEC EN 61730, Salt corrosion tested IEC EN 61701
Windload	DIN 1055-4
Rain proofness	CEN/TR 15601
Hail class	IEC 61215, Extension Switzerland: Hail resistance class 3
Ammonia corrosion test:	IEC 62716
Protection class	II, IP65
German standards	conform to DIBt Bauaufsichtliche Regelungen and rules of roofers
Safety	konform to the rules of Technischen Baubestimmungen
Fire safety	schwer entflammbar, Fire Class 1 gem. UNI 9177
Breaking safety:	VSG-Safety glass DIN EN 12150, higher beat and burst stability, high breaking stability and strongness, small glas break parts (crumb formation). Certification of the mounting mechnism conform to CSTB Eu conditions

	Num-ber of cells	Perfor-mance per tile	Efficiency /%	Number of tiles per m <sup>2</sup>	Installed Power per m <sup>2</sup>	Effective Power with SLV *)
SQ-SSD-Anthrazit	4	19,72	20,8	8,5	167,62	201,14
SQ-SSD-Schiefer/ Kristall	4	19,72	18,2	8,5	167,62	163,20
SQ-SSD-Silbergrau/ Kristall	4	16,00	18,2	8,5	136,00	163,20
SQ-SSD-Felsgrau	4	16,00	18,2	8,5	136,00	163,20
SQ-SSD-Ziegelrot	4	17,00	17,6	8,5	144,50	173,40



Performance data are approximate values. The performance of the cells changes from batch to batch due to technical progress.

The colors of the delivered products may also differ from the illustrations. Area information is indicative and depends on the final installation.

All illustrations in this catalog are similar. Depending on the production batch, the cells may have a slight dark blue effect with anthracite.

In the case of polycrystalline, colors and structures are always different due to the naturally grown crystal structures. Every shingle is unique.

***Look at the similarity - indistinguishable from a distance!***

***SolteQ-Quad40-Old English Style***



***Let us advise you on how to make energy  
bills a thing of the past.***

***info@SOLTEQ.eu***

***We're here to help !***



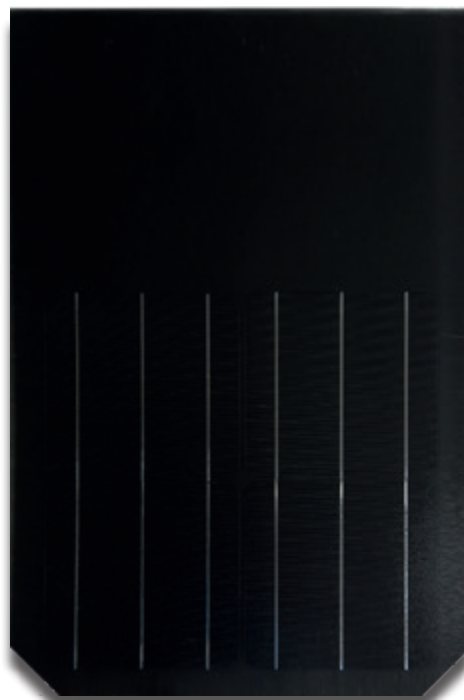


*Our flora and fauna is our most valuable asset.*





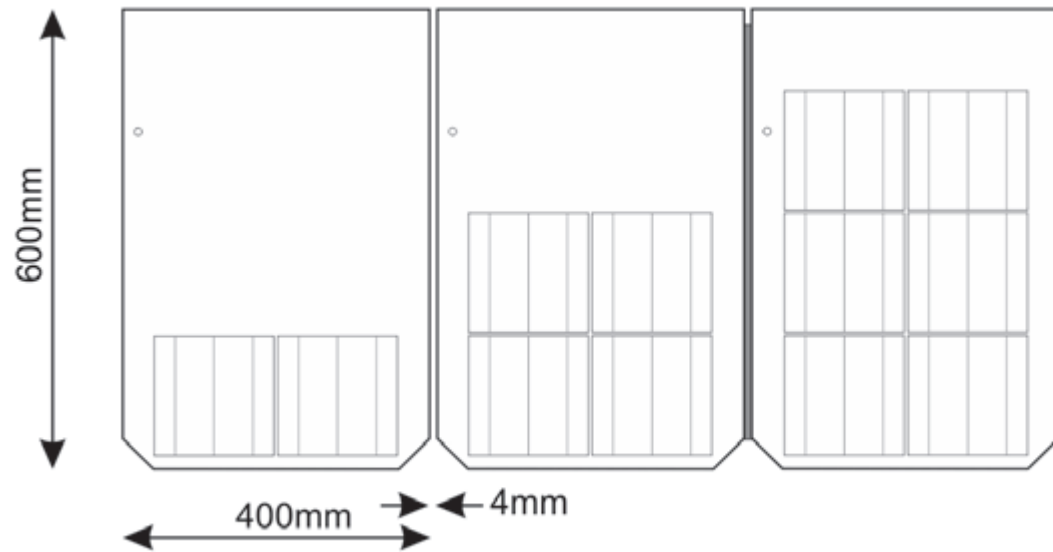
*Universal-Dachschindeln 600x400 Radiant*





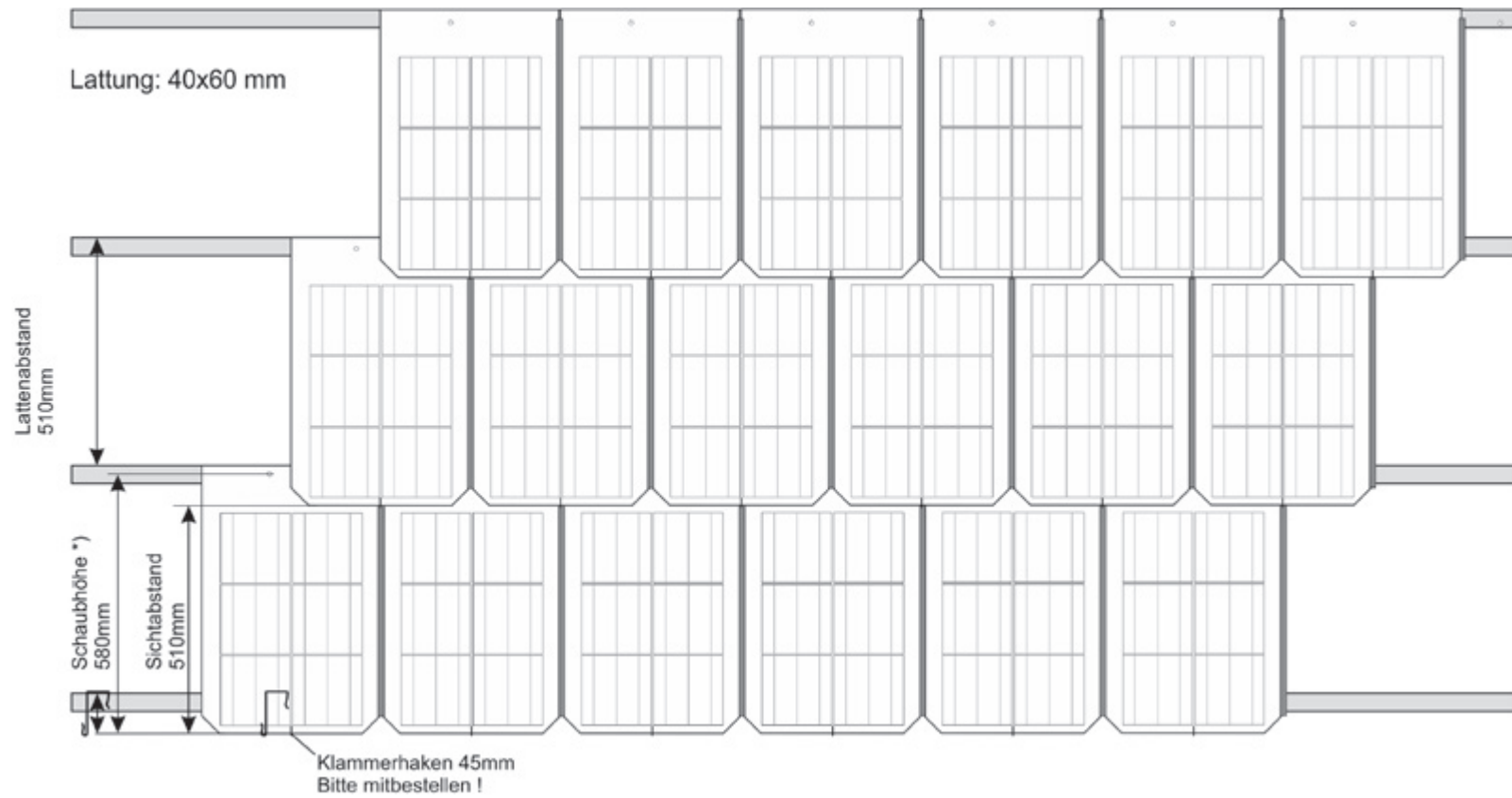
## 600x400-Variants

The solar roof tile 600x400-Radiant has been specially developed to easily replace old asbestos roofs with a modern solar roof.



## 600x400-Radiant - 6Cell

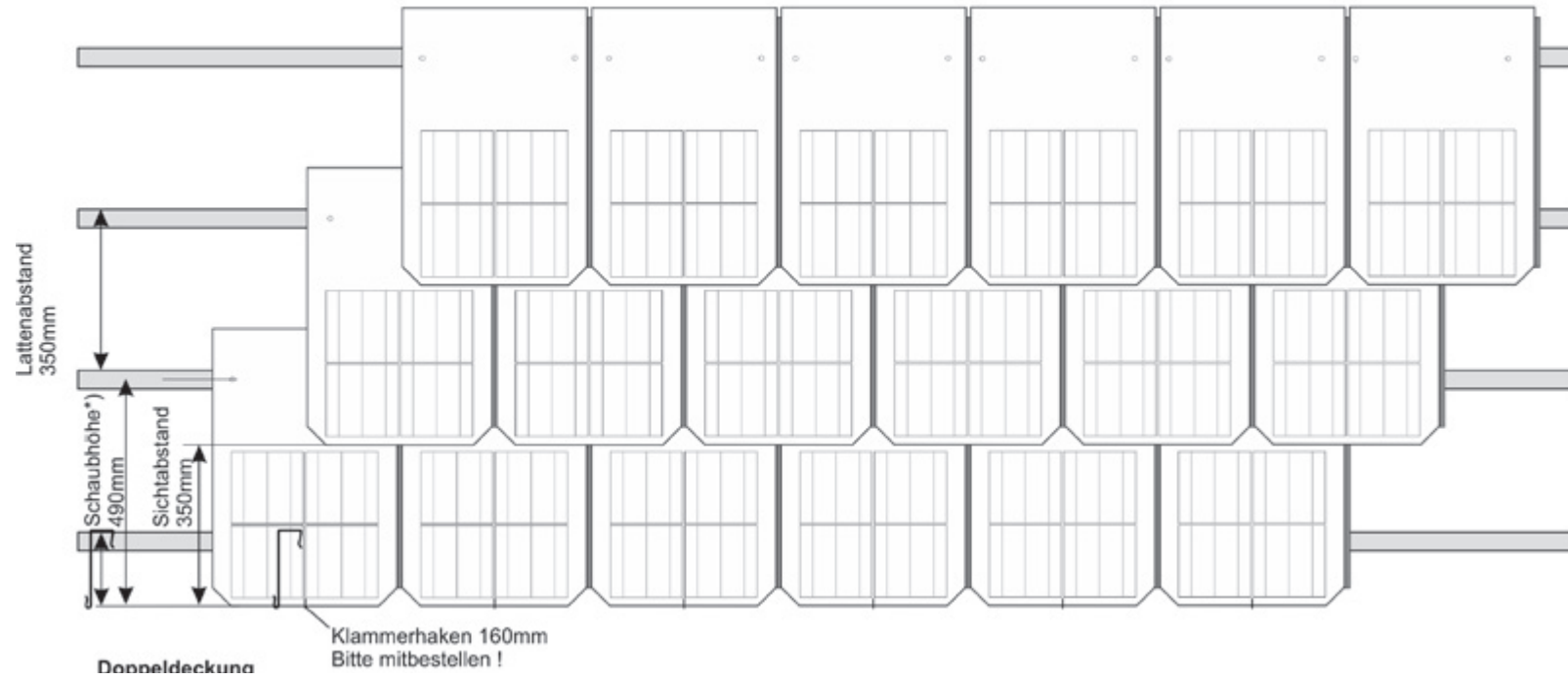
... maximum energy yield





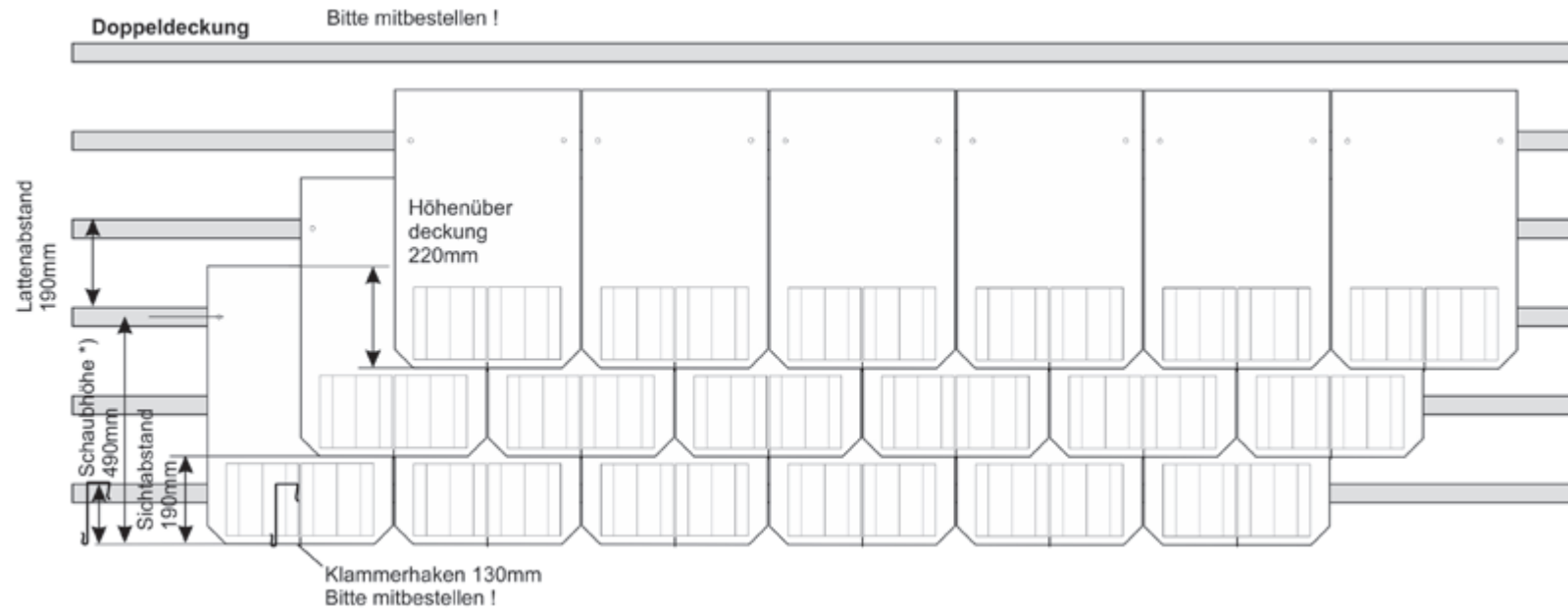
# 600x400-Radiant - 4Cell

... the efficient one



# 600x400-Radiant - 6Cell

... the classic with double coverage





*Life means ...  
life quality*





# Energy Facade Elements

SolteQ



SolteQ



*“We have to protect our nature and our roommates”  
Dennis B., 7 years.*



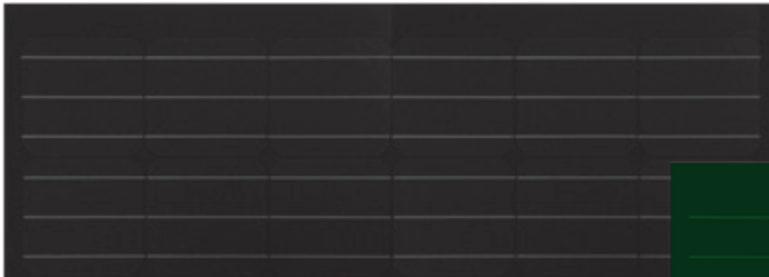
# SolteQ-Facade-Elements 37x98

Design innovation with an unrivalled choice of shapes, sizes and colours is what differentiates SolteQ from other PV tile/facade manufacturers. A façade/tile to suit all situations and customer tastes.

Façades & tiles manufactured in house at our manufacturing facility in Germany, façades & tiles that can even be specifically made to meet individual customer requirements.

## Series Facade 37x98 ECO - Black

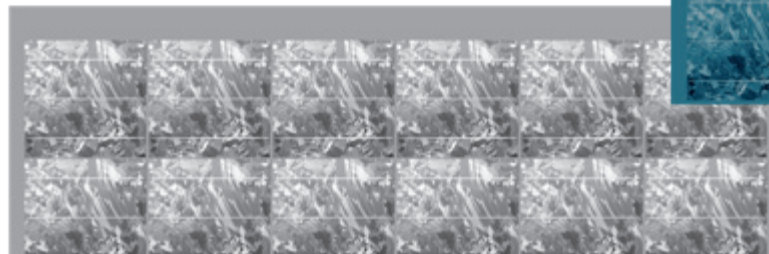
... chic and modern (37x98cm)



Facade 37x98 - Black



Facade 37x98 - Teracotta



Facade 37x98 - Silvergray

## The SolteQ Manufacturing Facility

Because our factory is "in-house", we are able to respond to the most unusual of customer requests. If it is physically and technically feasible, the SolteQ team will make it happen. The illustrations shown are examples of the available colours, other colour variations are available on request

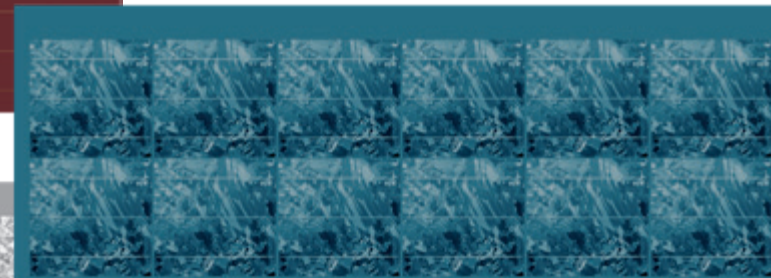
The following attributes can be re-specified to suit individual tastes:

- ▶ Colour tone
- ▶ Dimensions
- ▶ Shape
- ▶ Transparency

Semi-transparent panels are available, made from transparent glass with crystalline cells.



Facade 37x98 - Forestgreen



Facade 37x98 - Petrol





# Quad40

## **SolteQ Quad Series Can be used as a roof or facade**

For details, please refer to the roof chapter.



# INFINITY- as Facade

*Slate look infinity*



*SolteQ-Infinity Anthracite*



*SolteQ-Infinity-Slate look*



*SolteQ-Infinity Silvergray  
in fiber-cement-board look*



# WAVE

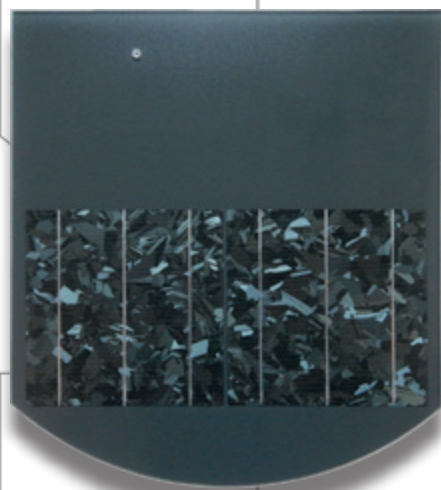
## SolteQ-Facaden-Elements 34x38 - WAVE

Natural shapes and patterns - always timeless, always chic.

Anthracite



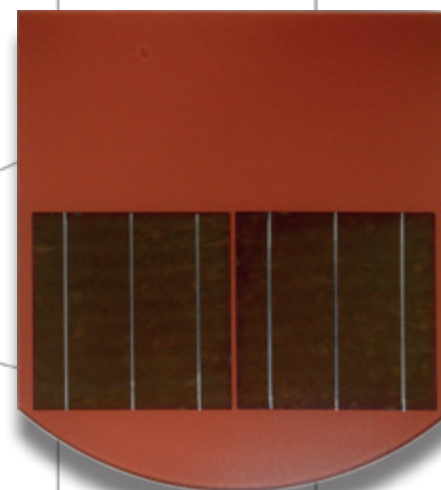
Silver Grey / Slate



Rock grey



Tile red



# BIBER

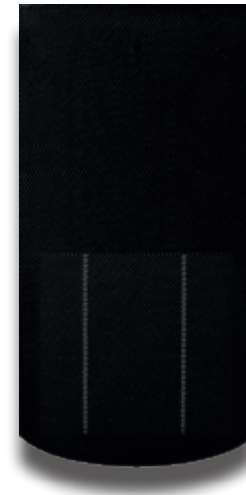
*The classic type:  
SolteQ Biber PV tiles 500x180mm  
or 380x180mm*

*... the perfect slate replacement*



# BIBER - Real double cover

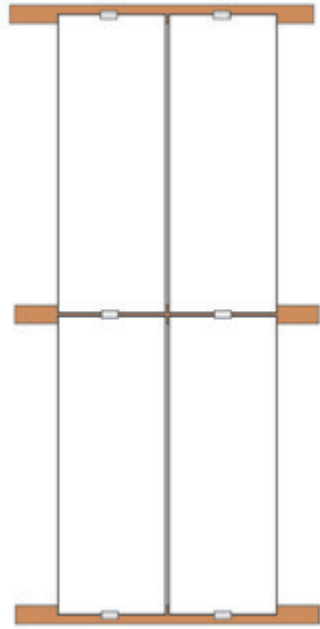
*The classic type:  
SolteQ Biber PV DD tiles 380x180mm  
Plain Tiles without a gasket for classic double  
cover installation.*



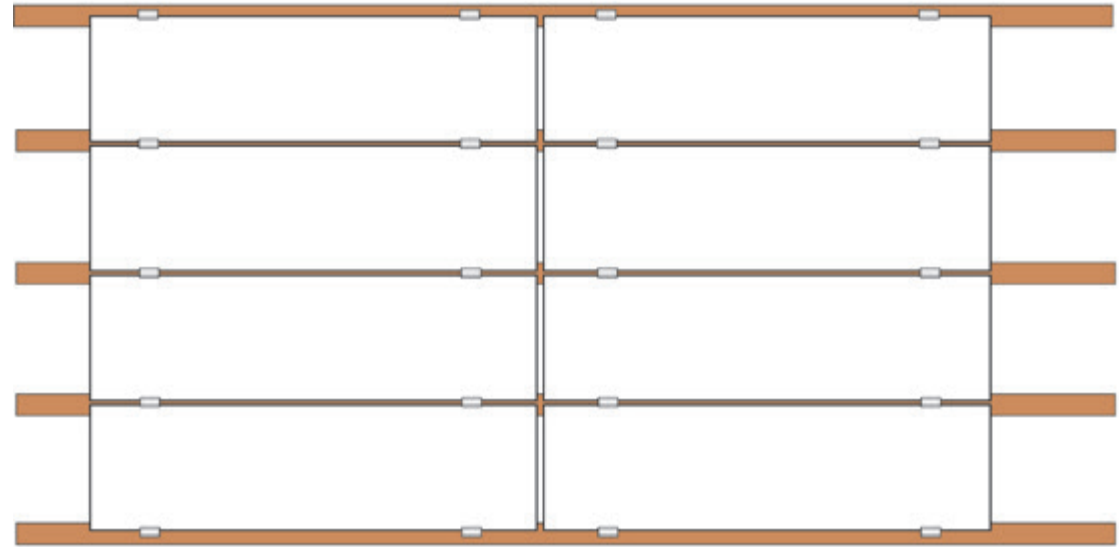


# Facades elements Assembly on butt

Hanging on wood or aluminum substructure  
(Example) elements

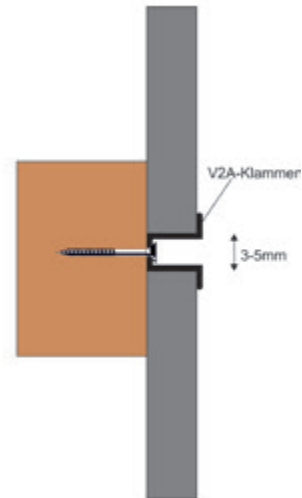


Vertical installation

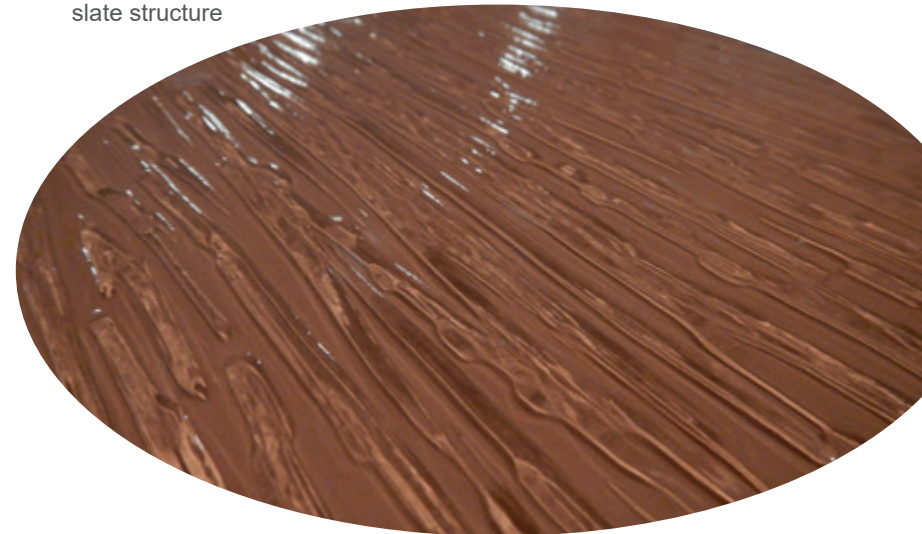


Horizontal mounting

Stable bracket  
on every element

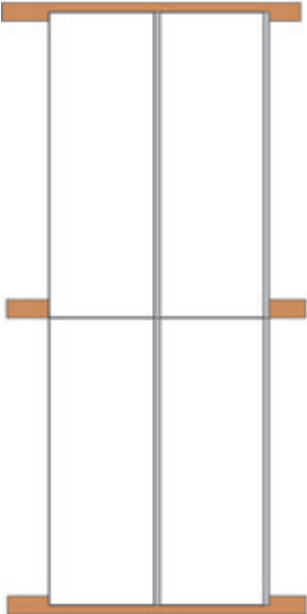


Different surfaces can be realized, e.g.  
slate structure

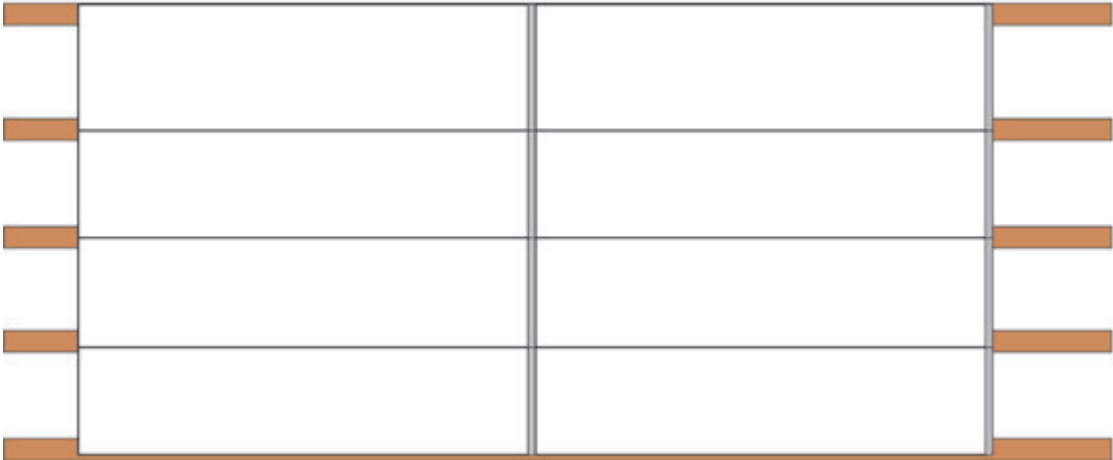


# Installation - overlapping

Suspension overlapping and with intermediate seal made of EPDM, rule-safe on wood. EPDM is weatherproof for 70 years, rot and UV resistant. (Example) elements

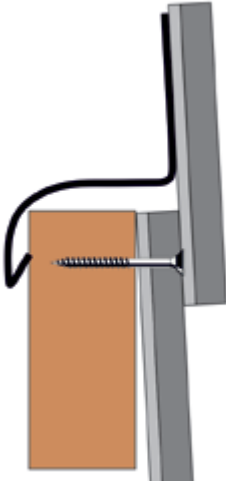


Vertical installation

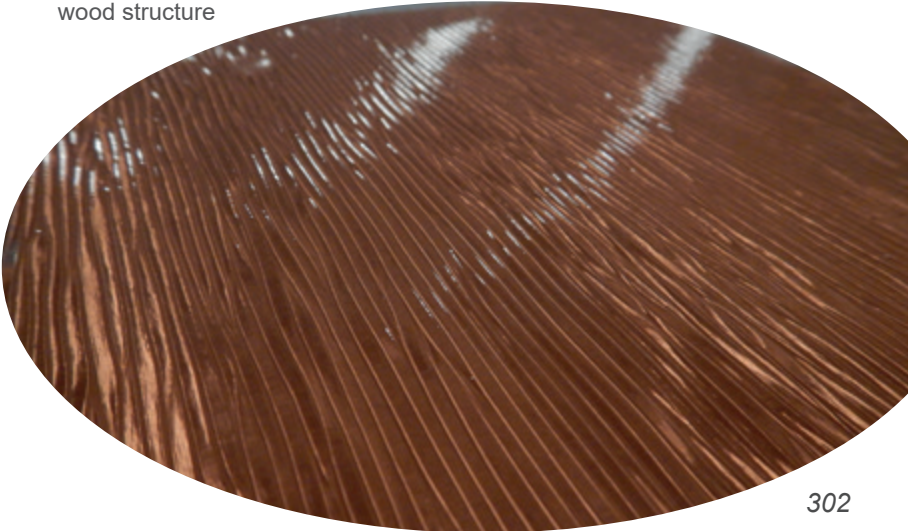


Horizontal mounting

Stable storm hook on every element



Different surfaces can be realized, e.g. wood structure





## SolteQ facades elements Standard items or custom made

Because our facades (and tiles) are manufactured “in-house” it is possible for us to respond to specific requests from both customer’s and architects. Please don’t hesitate to contact us if you have a specific requirement in mind.

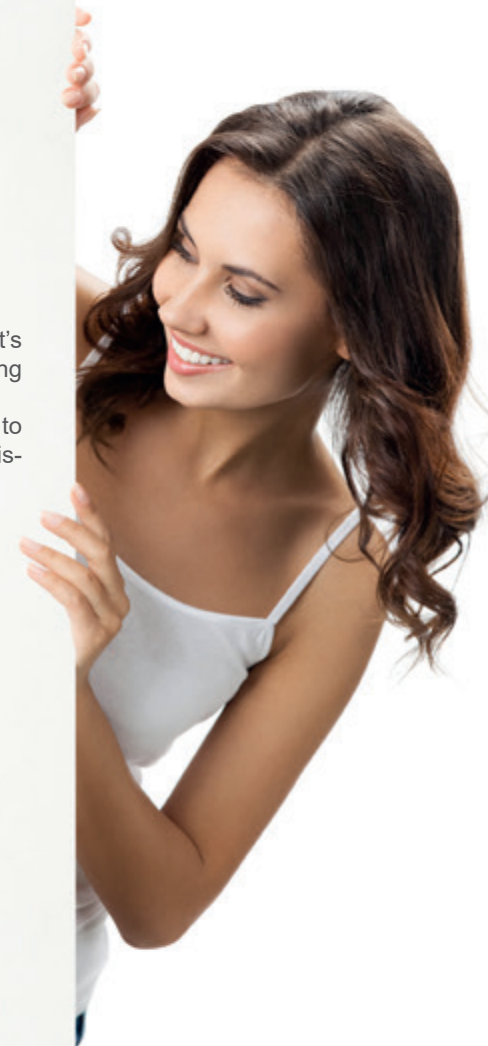
### Brand quality from SolteQ

SolteQ roof and façade panels are used both for roofing and building cladding, providing the building with a great look that’s also full of energy. The solar energy from the façade can then be utilised for meeting building electricity demand and heating demand. Energy generation from roof and facade - this is the energy solution of the future! Available now!

Another advantage of using both tiles and façade panels is that when combined they provide clean transitions from the roof to the face of the building which enhances the overall look of the building. The facades are made of the same high quality, prismatic, impact resistant, toughened glass that our PV tiles are made of.

Other advantages and features are:

- Weathering and frost resistant
- Resistant to rot and corrosion
- Anti-adhesive surface for moss and lichen
- Pest resistant
- Durable
- Permanent colour
- Shock-resistant
- UV-resistant
- Open to diffusion
- Humidity regulating
- Insulating against heat and cold
- Preventive fire protection factory installed
- Flame retardant, hard roofing acc. DIN4102
- Breakage behaviour: Laminated safety glass DIN EN 12150, increased impact and impact resistance
- Hail protection class 3: tested with 35mm hailstones
- Manufacturer warranty: 5 years, extendable to 20 years
- Performance Guarantee: 40 years with 80% performance
- Due to the low weight, the panels are easy to install making them ideal for renovation projects
- Conforms to all the requirements of the German roofing trade



## The SolteQ Energy Facade: Curtain and ventilated facade - the advantages

A façade is an ideal way to protect a building from the elements whilst at the same time providing a system that ensures good ventilation, thereby protecting against moisture. The inclusion of a façade in the design of a building offers unlimited design options and is the best choice in terms of building physics. Hardly any other wall structure can more economically meet the increasing requirements for heat, moisture, sound and fire protection. It is often used both in new construction, as well as in the renovation of old buildings.

Probably the most commonly used façade is the Curtain Ventilated Facade:

The principle

- Forms a protective outer skin
- Keeps weather and climate loads from the actual building structure
- Moisture is dissipated by circulation in a ventilation space
- Walls and insulating materials stay dry
- Very good insulation properties

And a curtain facade looks great.

In addition to the above, imagine a facade that also produces electricity.

### **Facade systems work better in winter**

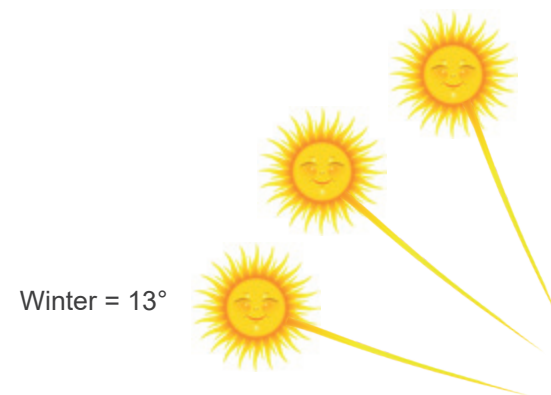
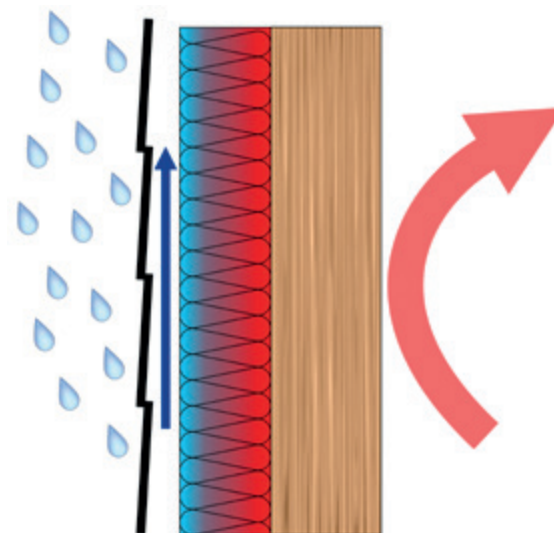
*The low position of the sun in winter is ideal for facade installations. Add to this the colder air, which cools the cells perfectly. On a winter's day with plenty of sun and cold air, a PV system can bring more yield than on a hot summer's day. Lots of sun and cold is the perfect combination for solar energy.*

*A curtain ventilated façade is the perfect addition to any house or building, as is the SolteQ Energy Roof which acts like a curtain ventilated façade but in a different orientation.*

### **Dry**

Moisture is the greatest danger to a home.

With a protective layer, the building remains dry.



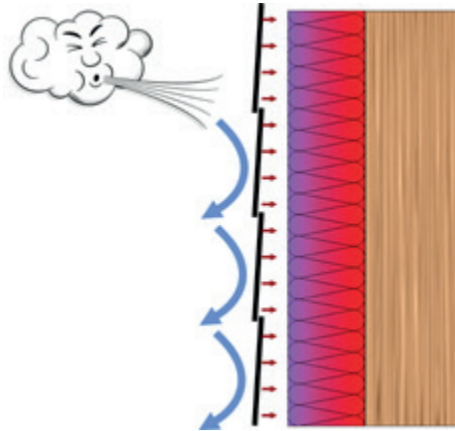


## Perfect insulation and protection against moisture and weather conditions for your house!

... the best addition to any house or building is a curtain-walled, ventilated façade.

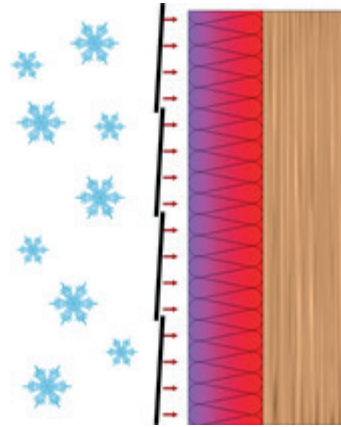
### Protection against wind

Wind cools the building. A curtain wall in itself provides excellent protection against windy conditions.



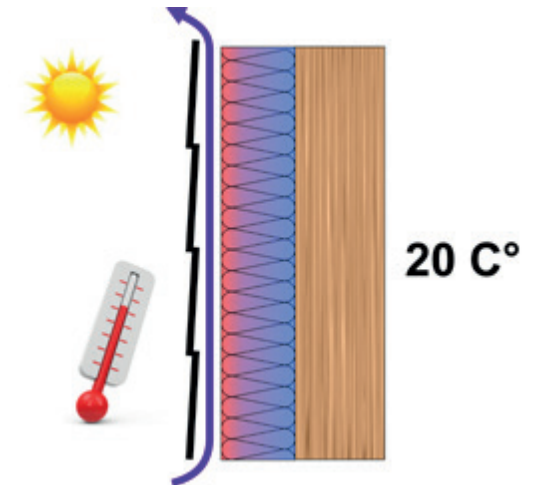
### Protection against cold

A SolteQ energy façade with active panels ensures excellent and additional protection against the cold due to the inherent heat (radiant heat) generated by electricity production.  
-> less heating costs!



### Protection against heat

A curtain and ventilated facade also provides protection against heating of the building due to direct sunlight.  
-> no air conditioning needed!



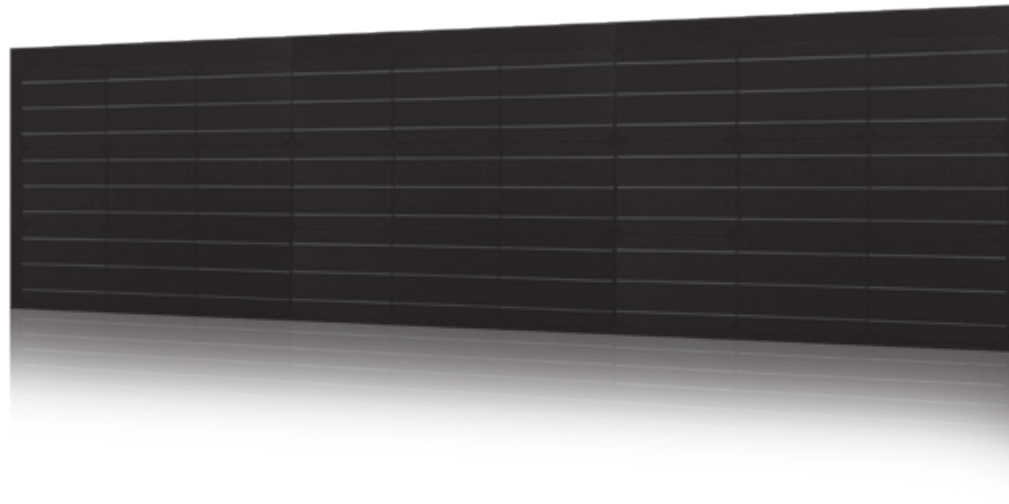
SolteQ Energy Concepts  
... with feel-good guarantee!



# PowerRoof

SolteQ

*The energy roof for industry, commercial buildings and stables*



SolteQ



## The lightweight roofing solution

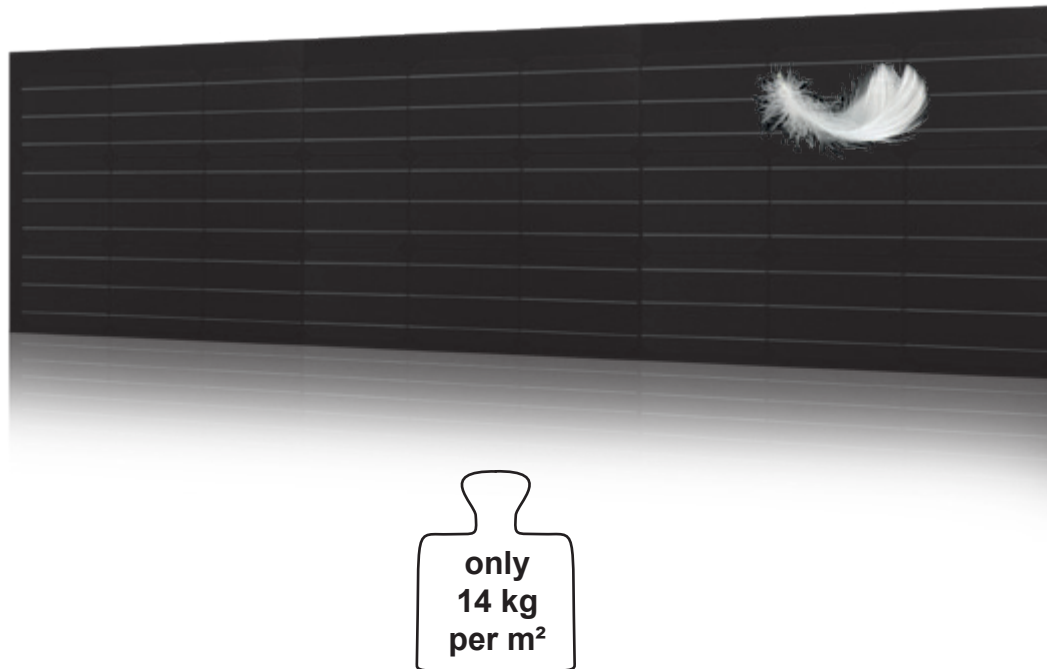
### Roofing and photovoltaics in one.

With a weight of only 14 kg/m<sup>2</sup> combined with its ease of installation the SolteQ PowerRoof is the sensible choice for commercial roofing applications where weight, aesthetics and the added functionality of a highly efficient PV system are all available in one great product. The tiles are also particularly well suited to installations in alpine areas due to their ability to withstand high snow loads.

The SolteQ PowerRoof is made of the same top-quality materials as our Quad Energy Roof which guarantees a roof that is not only stylish looking but also full of energy.

Great looking, strong, light and full of energy... and excellent for halls with large, cantilevered roofs.

In regions where designers/specifiers are struggling to meet the requirements associated with high roof loads or increased snow loads, the SolteQ PowerRoof becomes the logical choice by which mandatory planning/building permissions can be met. The minimal weight of the PV roof tiles together with the added functionality of the "defrost mode" make the whole construction lighter which results in snow loads no longer being a problem.



Cells: monocrystalline  
Color: anthracite  
Depending on the production batch, the cells may have a slight dark blue effect.  
Dimensions: 1610x700/510mm  
Efficiency: approx. 20.2%  
Power: ca. 74 Wp  
or 185 Wp/m<sup>2</sup>  
with SLV/LLE: ca. 222 Wp/m<sup>2</sup>  
Voc: 17,28 V  
Isc: 8.8 A  
Product warranty: 5 years  
Performance guarantee: 40 years with 80% of the installed capacity

SLV /LLE= low light behavior (please note this figure varies depending on location)  
Depending on the production batch, the cells may have a slight dark blue tinge.

## Easy construction

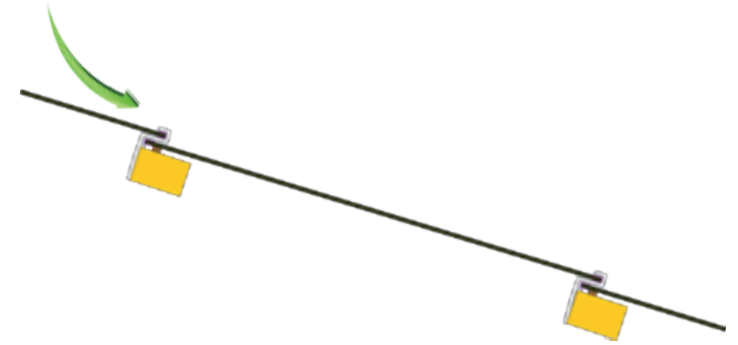
The roof tiles can be installed on normal roof battens (for example 40x60mm) or as an alternative aluminium profiles can be used. Due to the roofs very low weight/ m<sup>2</sup>, we only need a lightweight and cost-effective support structure. The PV tiles are attached to the cross battens by means of aluminium hooks factory fitted to the back of each tile. The system is even suitable for flat roofs (providing there is an adequate fall for water drainage).

## Roof lights

Take advantage of the daylight, it costs nothing

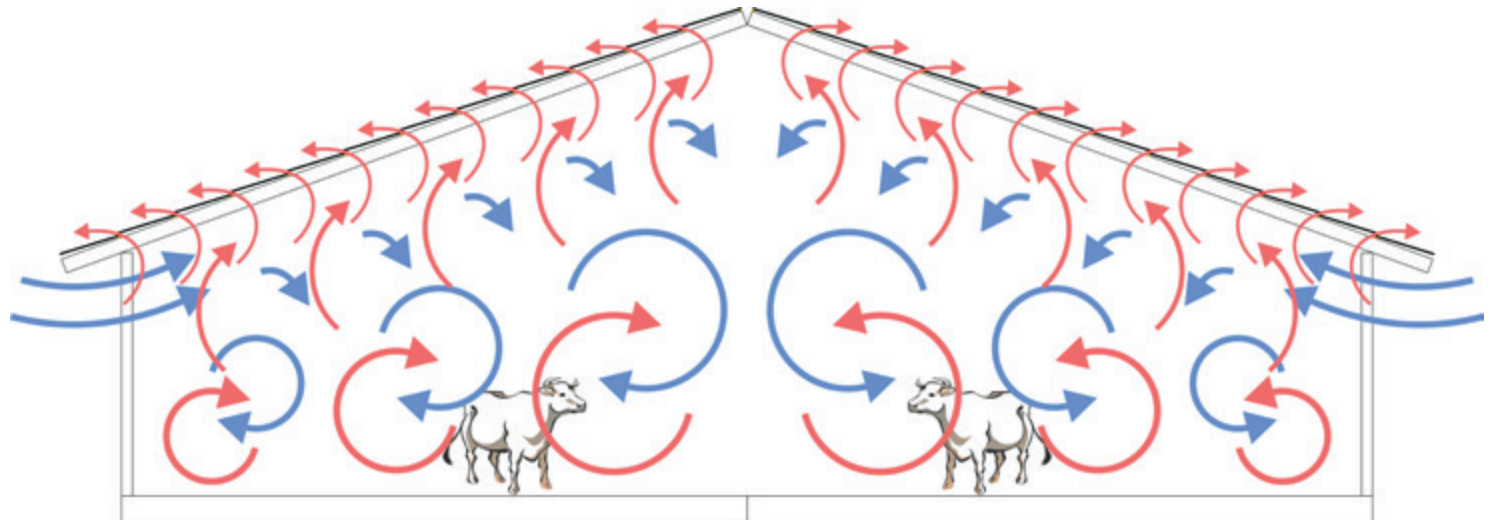
The PowerRoof can incorporate individual or rows of passive transparent tiles in order to allow light into the building. Another option is for active transparent PowerRoof glass elements to be specified which generate electricity as well as allowing light into the building.

The advantage of the PowerRoof system is that it is a roofing solution that utilises the whole roof area and can accommodate varying options of active, passive and transparent roof elements with no need for system transition elements such as roof hatches, etc. The result is a holistic roofing solution tailored to customers individual requirements that looks fantastic and is full of energy



## Specially developed for animal stables (Cow, Chicken)

As a direct roof covering with energy generation, the entire roof area of the hall is used effectively, so that an energetically self-sufficient stable for e.g. Horse, cattle or chicken husbandry arises. It also has the additional advantage of rear ventilation. Natural convection ensures that the used air moves upwards and escapes over the entire roof area. The homogeneous ventilation ensures a very healthy air circulation without drafts. This also saves the purchase and running costs for an electrical ventilation system.





*Quality of life means ...  
satisfaction*



# Energy Storage

SolteQ

*Electricity storage as the solution to total utilisation of your PV System. All housed in a great looking glass fronted cabinet.*



SolteQ



## Generate your energy with excess

### 1. The SolteQ energy roof uses the area perfectly and provides plenty of excess electricity.

Your own needs are covered and you have so much, or much more free energy available. You can feed them in and earn money, charge your electric car, or simply operate your sauna and pool for free. Electricity costs you nothing more!

### 2. As a second, important function, the energy roof also produces thermal energy via the thermal heat from the roof.

In addition to power generation, your roof area also represents a huge thermal area. You can use this solar thermal function of the SolteQ energy roof to generate all of your heating needs for your heating and hot water yourself and completely independently. No more oil or gas!

Ask about the heating package from SolteQ.

### A normal roof without PV costs money, the money is gone!

A normal roof without PV is the most senseless thing that can only be done in the future. Let your roof make money!

### The SolteQ roof costs you nothing!

### ... and even brings in money - every month!

You make a plus from the start.

The larger the active area, the greater the yield, regardless of the amount of the cost of the roof. So zero euro costs, on the contrary: income from the start.

The SolteQ energy roof is easier to install than a rooftop PV system with a substructure.

And you don't break your roof by flexing and cutting the roof tiles! Only 4 panels per m<sup>2</sup>, simply hang in, one screw in, done! 100% rainproof.

The SolteQ vision: Every house must have an energy roof!

The roof of the future will generate energy - that's a fact!

Of course, the roof costs money! But you do not have to pay these costs, it runs in the background. You even have a plus in the checkout every month!



### Treat yourself to a sauna!

... with the saved and earned money for electricity.

The operation does not cost you anything with the free electricity from the roof.





## The future belongs to the electric cars

Most car journeys are within a short distance of home. The current generation of electric models provide up to 400 km range on a full battery. That's enough for the trip to work, for shopping and also for excursions. The batteries are recharged overnight. How much do you spend on fuel a month? With a SolteQ Energy Roof you could also make fuel bills a thing of the past, no more fuel costs, drive for nothing. What more do you want?

SolteQ's vision is to provide each client with an optimal energy solution whilst simultaneously contributing to a cleaner planet. In order to achieve this it's not just the product that needs to be right, but the price has to be right as well. Anyone who can afford a clay tile roof can afford a SolteQ Energy Roof. Invest in your roof where your rate of return will be far better than the return from your savings account. The cost savings to be made by no longer having to pay ever increasing electricity, heating and even car fuel bills are significant and become more and more significant with the passage of time.







Sun is life,  
Sun is energy,  
Sun is SolteQ.

## 100% self-sufficient in energy

With optimal design by our design team, you will get a system that will enable you to be self-sufficient in energy, so you will no longer be burdened by having to pay ever increasing energy bills.  
-> Your complete energy demand met by your roof - we make it possible!

### Optimally adapted to your needs

Each SolteQ energy storage system is designed to optimise your SolteQ energy roof and your needs. If required, the system can also be upgraded due to its modular construction. Long service life and reliability - these are the characteristics of the SolteQ system!

### Increase of the debt serviceability by own use

The elimination of electricity and fuel bills is a major step towards the reduction in ongoing Household bills, which can be achieved quite simply by Investing in the roof of your house. This investment not only serves to improve the value of your home but also saves you a significant amount of money over your lifetime, which provides quite a compelling justification when engaging with your bank in order to obtain finance for your new roof.



*Why you should do that?  
Because intelligent people use to do that!*



## SolteQ Energy Storage

For a self-sufficient energy supply, energy storage is necessary. For this purpose, the public network (where applicable) can also be used as a “storage” by the surplus energy fed into the grid during the day, and pulled out of the network at night. However, the cost ratio is not in favour of the consumer, because the feed-in tariff is much lower than the electricity price that you pay when you use the mains again. Storage of self-generated energy is much more useful and cheaper in the long term. With an optimally designed SolteQ energy storage system, you will have access to your own supply of electricity around the clock.

Save the power of the Sun ...with SolteQ

### Performance data

#### 1 or 3-phase operation

Whether your existing electric supply is single phase or three phase we can provide you with an appropriate battery storage solution.

#### Emergency power supply

The power supply of the house is safe and guaranteed without any interruptions, even if it comes to failures on the network side. Please ask, we will put together the right system for you.

#### Batteries

Standard are AGM or lead-gel batteries, or alternatively on request we can also provide lithium-ion battery storage options.

#### We recommend:

We recommend AGM batteries (lead-gel-based) with the following advantages:

- spill and explosion proof
- Favourable additional purchase after the lifetime (typically 7-10 years)

#### What many do not know:

It's not the type of battery that is important when considering the life of a battery, its having a good charge management system that is critical to battery life. Good battery charge management ensures that the charge is as gentle as possible, and deep discharge is avoided. This can be achieved quite simply with our preferred AGM battery system. The equipment specified by SolteQ for our installations is always from well-established reputable manufacturers and are perfectly matched to your SolteQ energy system design and long service life. SolteQ promotes the energy transition. For each energy roof, SolteQ calculates a perfectly tailored power storage for your needs and your roof.

**Attention - actions!**  
**store promotion**  
**from SolteQ**  
**80% storage promotion**



Save the sun ...  
with SolteQ

SolteQ promotes the energy transition.

For each energy roof, SolteQ calculates a perfectly tailored power storage for your needs and your roof.

KfW funding depends on many factors. With the simultaneous purchase of a SolteQ energy roof with 60m<sup>2</sup> active area, EVERY-ONE gets the SolteQ support for the SolteQ power storage.

**24h**



**New: Version 3.0** complete with a purpose built cabinet and high-quality glass front.  
Energy storage by SolteQ

... so that the sun shines for you even at night

**SolteQ**



Performance classes	Phases	Battery-type	Number Batteries	Ah per Battery	Max. Storage capacity / kWh	Utilization	Usable nominal storage capacity/ kWh, ca
SQES-4.800	1	AGM/LI	4	100	4,8	80 %	3,84
SQES-4.803	3	AGM/LI	4	100	4,8	80 %	3,84
SQES-7.600	1	AGM/LI	4	120	7,6	80 %	7,22
SQES-7.603	3	AGM/LI	4	120	7,6	80 %	7,22
SQES-9.600	1	AGM/LI	8	100	9,6	80 %	7,68
SQES-9.603	3	AGM/LI	8	100	9,6	80 %	7,68
SQES-14.400	1	AGM/LI	12	100	14,4	80 %	11,52
SQES-14.403	3	AGM/LI	12	100	14,4	80 %	11,52

Components: Battery inverter, manufacturer SMA Sunny Island 6.0H / 8H, Kaco or equivalent  
 1x SMA Home Energy Manager (option)  
 Batteries: AGM lead / gel batteries, e.g. Panasonic, Sony, Varta etc.  
 Alternative: Li-ion batteries (LiFeYPO4), (Option for an extra charge)  
 lifespan of batteries:  
 AGM batteries: at least 5,000 cycles with approx. 70% discharge  
 Lithium Ion Battery: at least 8,000 cycles with approx. 80% discharge

**Note on batteries:**

AGM batteries have the following advantages:

- they do not burn
- do not explode
- do not run out

The important thing with a storage solution is not necessarily the latest battery technology, but a good charge management. This achieves the same service life with AGM batteries as the LI battery.

The big advantage: The additional purchase after the life of about 7-10 years is relatively cheap with AGM batteries.

higher capacities on request

**Energy storage by SolteQ**

*... so that the sun shines for you even at night*



## Uninterruptible power supply

A solar roof only really makes sense with a battery power storage system. During the day, the electricity generated by the solar roof can be used directly. However, if you also want to use self-generated electricity in the evening, this must be generated and stored during the day. The solar roof must be sufficiently dimensioned for this. Then you can also use solar power when the sun has already set.

A battery storage system has another advantage: network independence. Power failures are no longer a problem at all. If the solar system and battery capacity are sufficiently dimensioned, no more electricity is drawn from the grid anyway, the excess is even fed in. If the mains voltage fails, you don't even notice it anymore.

Power failure? No matter !



For our  
**FUTURE**

What do we need for that?

- a) a battery inverter
- b) battery packs
- c) Mains isolating switch

Number of batteries per batt-pack: 4x AGM  
Lithium-ion possible for a surcharge

Fig right:  
Example  
with PV  
inverter  
and battery  
inverters



Example with 4 batt-packs,  
Total output: 28.8kWh



Example with 16 batt packs,  
Total output: 116kWh



Example with 110 batt packs,  
Total output: 792kWh





# SolteQ heating systems

## *Heating with excess from the roof*

*The great thing about the SolteQ vision is that we can use the energy of our sun with the greatest possible effectiveness.*

### **1. Clean heating energy generation**

*Without oil or gas or any other "fuel".*

*No matter whether new or existing, old radiators or underfloor heating. Everything is possible.*

### **2. CO2 free**

*We no longer have anything to do with CO2*

### **3. Warmth with excess**

*Do not use high-quality insulation of the house, e.g. Thermal composite panel systems made of air-impermeable styrofoam. Avoid mold, congested indoor air, „thermos flask climate“.*

*Save the money and invest it in your roof.*

*Air Sis 5 times a day! Even in winter. Because nothing is healthier than fresh air and healthy, breathing masonry without mold in the house.*

*Heating for free!*

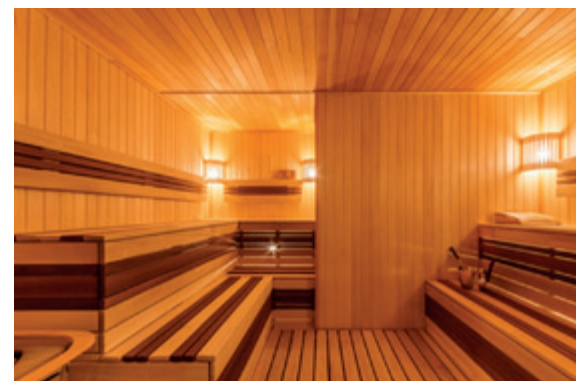
*Clean and free.*

*Heat your house, your pool with excess, afford a sauna and heat it for free, heat your winter garden and more ...*

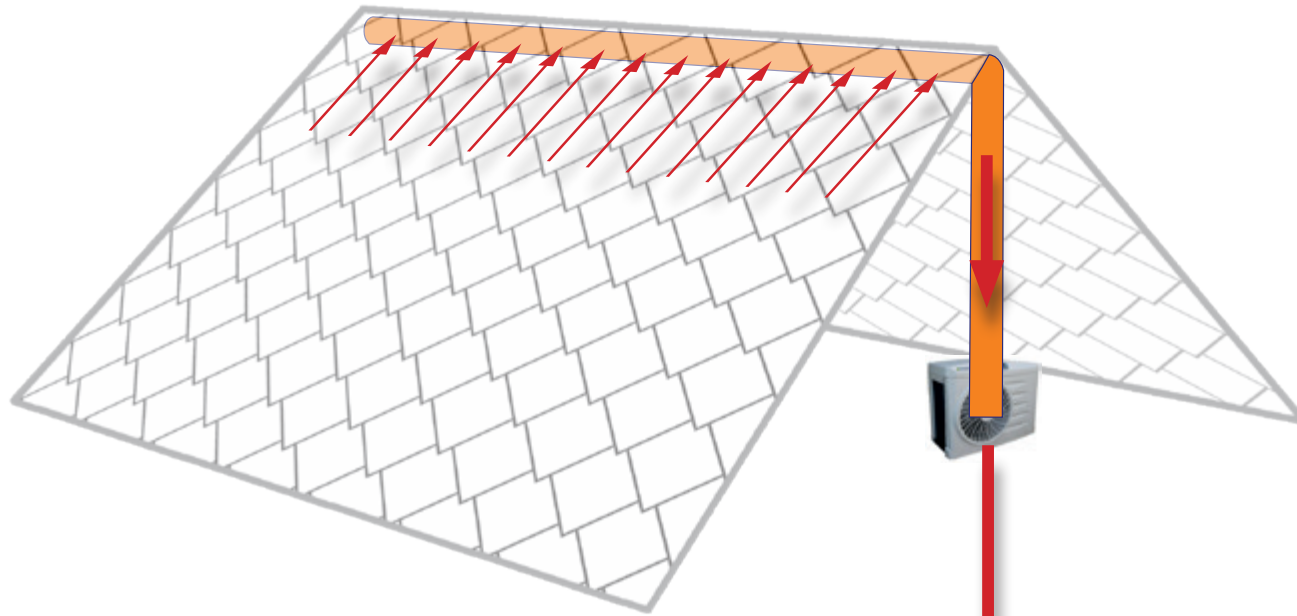
*Free, environmentally neutral, clean.*



*Sun is life,  
Sun is energy,  
Sun is SolteQ.*



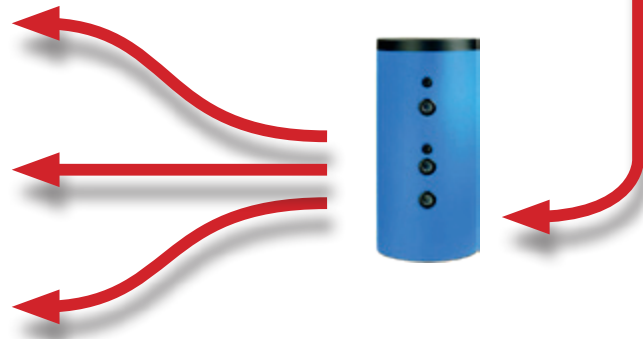
**Possibility Number 1:**  
**Heating energy using an air / water heat pump over the roof**



- Existing heating system / radiators

- Water-based underfloor heating

- and any existing one  
Heating system with heating buffer storage,  
or direct feeding without buffer storage





**Possibility 2:  
Chic infrared heaters**

Chubby comfort by infrared.  
Benefits:  
Durable, no wear, no maintenance, no losses.  
And they are also chic.  
Just awesome.

The material is high-quality quartz glass, optionally glossy or matt, anti-reflective.

The motif is printed on the back so that it is permanently protected.

The motif can be selected from our diverse picture motifs.

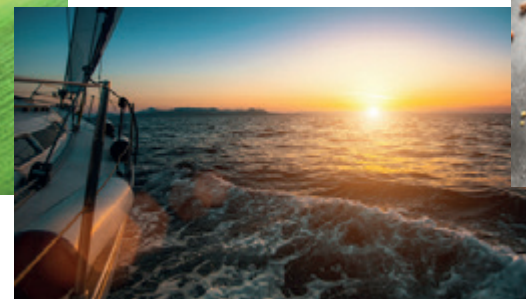
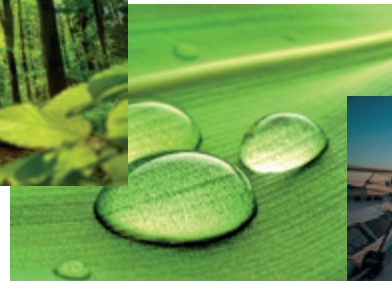
The hammer:

You can also choose your own picture and send it to us.

Choose your own motif  
Send us your family photo



As thin as a real picture



**variants**

Type	Leistung	Maße
Elegance 400	400W	70x60 cm
Elegance 530	530W	130x40 cm
Elegance 560	560W	90x60 cm
Elegance 800	800W	120x60 cm

230V/50Hz, Dicke: 38-43mm







**Only in campaign periods!  
Please ask.**



## The „SolteQ old roof premium“ up to 3.000, - Euro for your old roof

*„I recently covered my roof again, if I had known that before“*

*Do not worry, even for this case we have a good solution for you!*

*SolteQ writes 100% of the paid-EK cost of your existing roof tiles good (max.3.000, - Euro), when ordering a new, turnkey SolteQ energy roof from 100sqm active area. You can still keep the „old“ bricks and sell them privately.*

*Example: House with saddle roof, 60m<sup>2</sup> active area + 60m<sup>2</sup> passive area*

*- Clay shingles cost 20, - Euro / m<sup>2</sup>, so 120 x 20, - = 2.400, - Euro*

*-> Customer gets 2,400, - € for the old clay shingles as a credit to his new SolteQ roof*

*- SolteQ takes over the dismantling of the old clay or concrete bricks free of charge (disposal container is provided by the customer)*

*- Free adaptation of the battens and occupancy with new SolteQ PV roof shingles*

*Conditions:*

*- roof age max. 5 years*

*- Applies only in connection with a purchase of a new SolteQ energy roof with at least 100m<sup>2</sup> active area and with installation*

*- premium max. 3,000, - Euro*

*Thus, you have no loss, at most, the lathing is corrected, and we take over for you. In the case of a new battens to be created at most these costs will apply to you, provided that the under-roof is perfectly functional and usable.*

**Only in campaign periods!  
Please ask.**



## **Battery Storage Promotion**

### **- Up to 80% storage support**

beim Kauf einer gesamten SolteQ-Dacheindeckung für Ihr Haus ab 60m<sup>2</sup> aktiver Fläche.

### **- FREE BATTERY STORAGE**

when buying an entire SolteQ roof covering for your house from 100m<sup>2</sup> active + 100m<sup>2</sup> passive area.



### ***SolteQ supports kinder gardens! SolteQ in-house grants for kinder gardens!***

*SolteQ promotes safety in kindergartens with in-house subsidies of up to 20%.  
Contact us.  
More safety for our little ones!*





## 100% rainproof and 100% waterproof with waterproof bottom foil and special seal

### The SolteQ energy roof is 100% rainproof

Each of our Quad range of tiles has a patented special seal on the side with multiple sealing lips, which reliably prevents the ingress of water at these points. The PV tiles provide protection from the elements and mechanical protection to the building and its occupants. The only area that is open to the elements is the small rear ventilation opening at the lower round edge of the tile. Only in extreme stormy conditions is there a small possibility that water is pushed up through the vent. This also happens with a normal tile roof, and is even good for the roof, because some moisture is good for the battens. These small amounts are absorbed by the underlay.

### The SolteQ energy roof is also 100% waterproof

With the inclusion of the recommended waterproof membrane the SolteQ Energy Roof the roof is guaranteed to be 100% waterproof. Alternatively, any conventional underlay or bituminous sheet may be used, to ensure the building remains watertight. Thus, the new energy roof is 100% waterproof.

We recommend the following waterproof membranes to be used in conjunction with our Energy Roof:

(or other manufacturers)

PREMIUM-QUALITÄT

### Delta-ALPINA

breathable, tearproof  
universal roof foil



Highly tearproof,  
PES special  
fleece with top  
and bottom PU  
coating

### Delta-EXXTREM

Highly UV and temperature proof,  
breathable, universal roof foil



Highly tear-  
proof,  
PES special  
fleece with  
waterproof  
dispersion  
coating and  
integrated  
glueing zones  
on both bor-  
ders



# DÖRKEN

# Safety SolteQ-BFA



**The energy roof with factory built security and preventive fire protection**

*The SolteQ BFA safety system makes the energy roof safe.*

## Emergency fire (fire station)

- + Cleaning - Maintenance
- + Overtemperature protection
- + Automatic flood shutdown
- + Laminated safety glass

### Emergency - Fire - Fireman

In an emergency, the fire brigade are able to take control of the situation in the knowledge that there are no residual high voltages present within the PV system. This safe state is guaranteed due to the SolteQ BFA safety shutdown system, a system that is included as standard with all SolteQ Energy Roofs.

For more detailed information please refer to our "SolteQ-BFA" brochure.

### Easy cleaning and extra yield

The built-in safety shutdown system (BFA), enables the PV system to be switched off and switched on again as and when required. The isolation ensures there are no live voltages present from the tiles to the inverter, rendering the system safe for cleaning or maintenance activities. The generated voltages of the PV system are completely eliminated at the push of a button. The system is activated again quite simply by the turn of a key. Keep yields at their peak - up to 30% more every year!

### Arc detection

The BFA system ensures that all arcs produced by the PV system are extinguished automatically, which is of great benefit in an emergency situation, since even fire fighters are unable to extinguish an arc by normal means. Such an arc is the number one source of danger in photovoltaic systems. Arcs are not a problem to the SolteQ BFA.



### Thermal protection:

Automatic switch-off when a predetermined temperature is exceeded. Because the SolteQ Energy Roof is an integral part of the building fabric our engineers do not leave anything that has the potential to compromise personal safety to chance. All our roofs include a temperature sensor that is used to permanently measure the roof temperature. In the event of the roof temperature exceeding a pre-defined temperature e.g. 90 ° C (adjustable), the system is switched off immediately. At the same time, a fault message is generated to notify the house owner of the fault condition.

### VSG - safety glass

The glass breaks into many, small splinters and does not shatter, the splinters stick to the tile. The entire PV tile is a composite, all components including glass are permanently glued together with high-quality materials and offer laminated safety glass properties.

### Accessories

To further increase your safety, we offer a range of accessories, such as

- Smoke detectors
- Arc detectors
- Temperature sensors
- Remote shutdown by free mobile app
- Water sensor for flood protection and much more.

We recommend that all houses with PV systems whether in-roof or on-roof should be fitted with smoke detectors as a precautionary measure. With the SolteQ range of Energy Roofs, the shut-off occurs immediately after the first smoke is detected.

For more detailed information on any of the above please request the "SolteQ-BFA" brochure or download it from our homepage, which also describes our range of accessories in more detail.

Perfect preventive fire protection + perfect safety shutdown

The SolteQ Energy Roof ... just perfect!

Certified by





## Optional Accessories for your Energy Roof

### The mobile app

Turn on your SolteQ Energy Roof and up to 3 other devices easily with your smart-phone and the free SolteQ app. In case of an emergency, the fire brigade can also simply switch off the system via SMS, even if you are away from the house. Just tell the local fire department the number of your system and you will have the highest level of fire security.

#### **Lightning protection / surge arrester**

To protect against over-voltages, we offer surge arresters that are specific to each object, both for the DC system and for the data lines.

#### **Cuttable and walk-on tile elements**

Walk-on tile elements are available that will be matched to the look of your chosen energy roof. The walkable and cuttable tile elements are made of sturdy 3mm thick, powder-coated aluminium, that can be used universally and adapted to a variety of roofing applications. Hooks for broom ladders, steps, snow guards, etc. are all easily incorporated into the roof design. By utilising these tile elements, dormer windows, chimneys etc can be incorporated perfectly into the roof design.

- Easy to cut, for adjustments to corners, chimney, window dormers etc.
- Roof steps, climbing steps
- Sanitary ventilation
- Roof adaptor for antenna and satellite dish etc.
- Roof adaptor for air conditioners
- Lifting points
- Snow guard system

Available as finished elements for easy installation

#### **Edge covers for ridge and verge**

The edge covers consist of powder or polyester-coated aluminium sheet profiles, which are made according to local requirements



SolteQ iPhone App



GPS/SMS-Box for remote switching





*Integrated sanitary ventilation with or without an active fan*

*Invisible and elegantly integrated*

*Available for systems:*

*Quad - all variants*

*System tiles - all variants*

*Infinity - all variants*



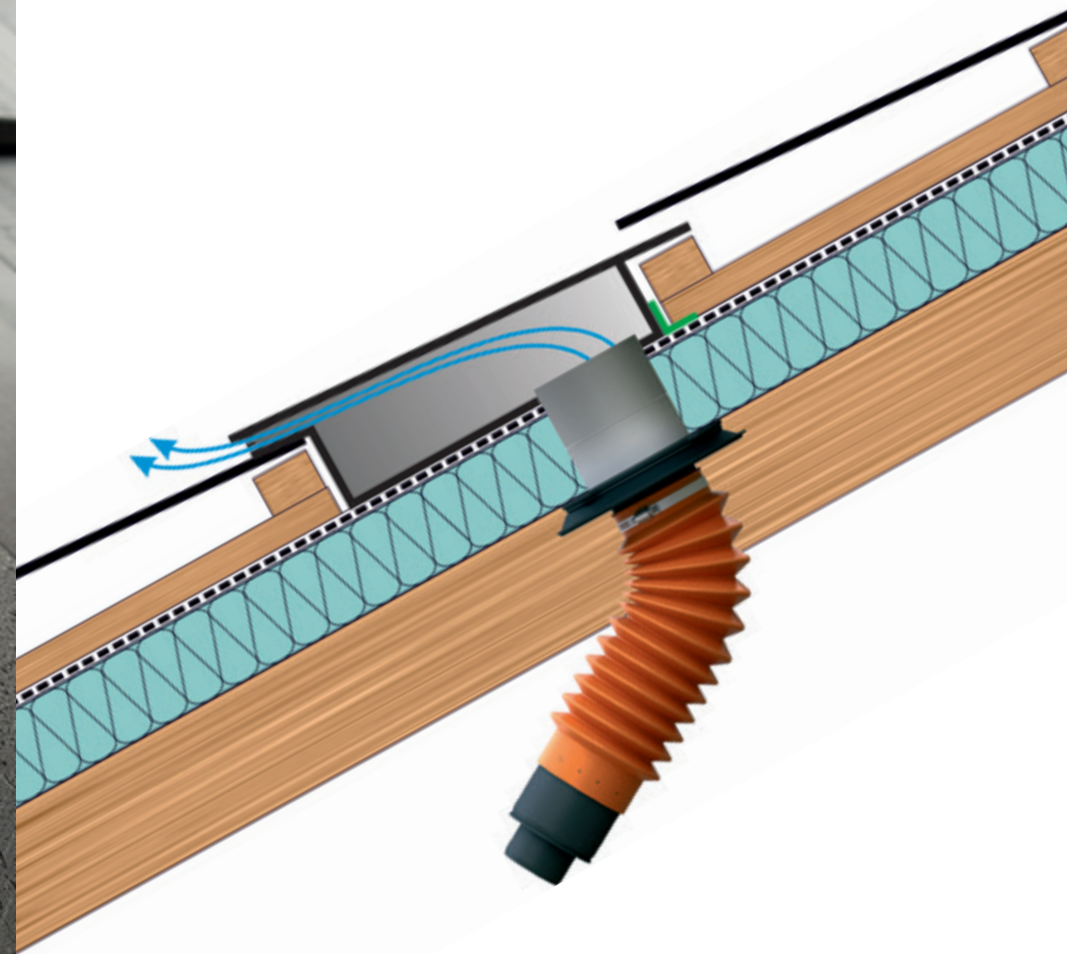


## ***Integrated SolteQ ventilation element***

***Perfectly and invisibly integrated***

*The integrated SolteQ ventilation element is integrated absolutely invisibly into the roof surface, just like a normal solar tile. Available with or without an integrated fan. Available as a glass or aluminum element without active solar cells.*

*Connection via flexible connection hose DN100.*



## Ventilation elements for exhaust air and supply air

Ready-to-use ventilation elements for all SolteQ Energy Roofs in the matching colour of your roof.

Short ventilator set DN 100

The ventilation set is mounted on the matching roof tile of your chose roof.

- Integrated condensate drainage
- Improved exhaust air values
- Installation parallel to the roof surface, optimised for use with installation ducting.
- Available in colour to match all SolteQ roof tiles.
- Optionally as a thermally insulated design for improved sound insulation properties.



Flex connection hoses Klöber-DN 100

Material:	embrittlement-free, UV-insensitive special PVC
Pressure losses with air flow:	4 pa at 15 l / sec, 16 pa at 30 l / sec, 66 pa at 60 l / sec
Ventilation cross section (LQ):	78.5 cm <sup>2</sup>
Roof pitch:	adjustable
General resistance:	rot-proof, weather-, frost- and aging-resistant
Temperature resistance:	-20 ° C / + 80 ° C
	Building material class B2

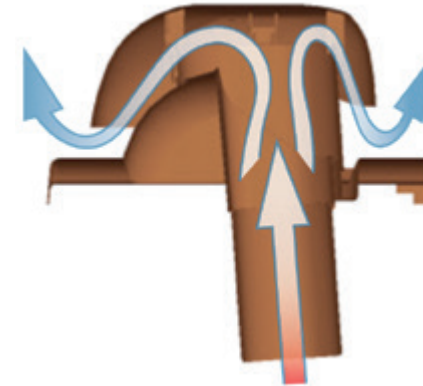
Datasheets and installation instructions can be downloaded at <http://www.kloeber.de>



**Aerodynamisches Design**  
Optimierte Strömungseigenschaften bei Abluft und Zuluft



**Integrierte Kondensatabführung**  
Eventuell anfallendes Kondensat kann sicher über die Dachdeckung nach außen abgeleitet werden



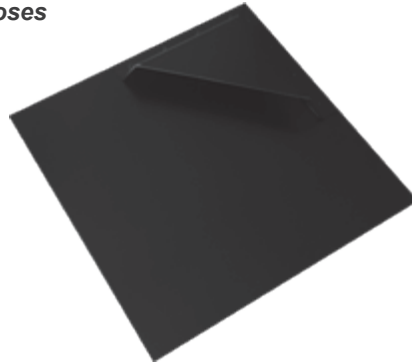
Vent pipe collar  
Sealing collar for penetrations



Bonding with Permo® TR plus or similar  
The versatile, transparent adhesive tape

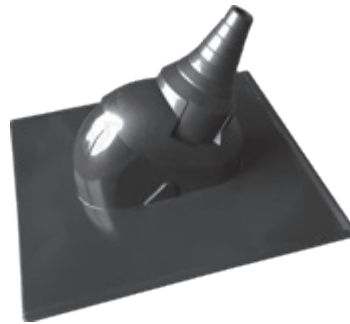


*Universal feedthrough, e.g. for air conditioning hoses*



*Integrierte Sanitär-Lüftung  
mit oder ohne gehört Ventilator*

*Passage for satellite dish mast  
Tilt adjustable*



*Hooking points  
For protection during roof work*



*Treads  
For mounting on aluminium tiles*



*Of course, everything is delivered in  
the right color for the roof.*



## System Certificate

For every Energy Roof purchased we create a system passport for the system which includes plant data, yield fore-casts and uvm measurements. The certificate also records information relating to the commissioning and acceptance of the installed equipment in accordance with relevant local standards. On request, additional TPS system certification can be provided.

TPS – Technical Testing Centre for solar technology.

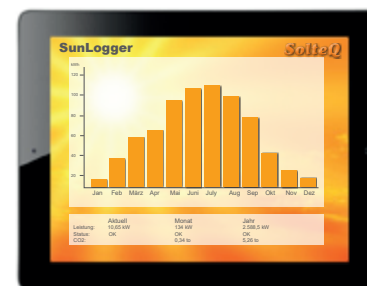


## Shielding

PV-Roof-Tiles are available with a protective mesh laminated on the back which provides shielding against electromagnetic fields.

## Monitoring

Monitoring is available with your mobile phone or PC .Anytime and anywhere, you can recall the data from your roof (or solar-panelsystem).



Use your smartphone as Remote Control

Switch with your smartphone easily:

- Garden watering
- Garden illumination
- Garden gate
- Alarm system etc...





## Shielding against HF and E-field with up to 99,999%

Novel EMC and HF shielding fabrics are made from patented high-tech fibers. They offer extremely high shielding performance over a wide frequency range.

Each active SolteQ solar roof tile can be optionally ordered with integrated shielding. Only the highest quality shielding braids are used. These high-quality shields are u.a. also used in the military and medical sector. With a high-quality EMC shielding you are well prepared against any kind of electromagnetic radiation.

### EMC tissue

#### Damping 20dB

Air permeable, rot-proof, frost-resistant, stable and breathable  
 Can be easily laid in directly the roof under SolteQ shingles.  
 The effect is like a Faraday cage.



### EMC and HF shielding fabric Ultra Shield

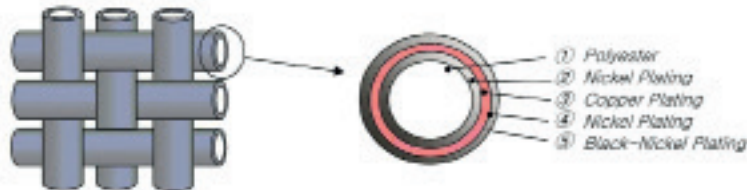
#### Damping 70dB

Air permeable, rot-proof, frost-resistant, stable and breathable  
 Non-oxidizing, stainless, tear-resistant  
 Excellent surface conductivity  
 EMC and HF Shielding Fabric Ultra Shield is made from patented high-tech fiber.

Ultra Shield provides additional shielding against general electrosmog, especially in the mid-GHz range, e.g. Mobile, microwave, flight radar, military stations etc.

Made in Germany:

All shields are developed in Germany and manufactured individually for us. This guarantees the highest quality standards and reliability.

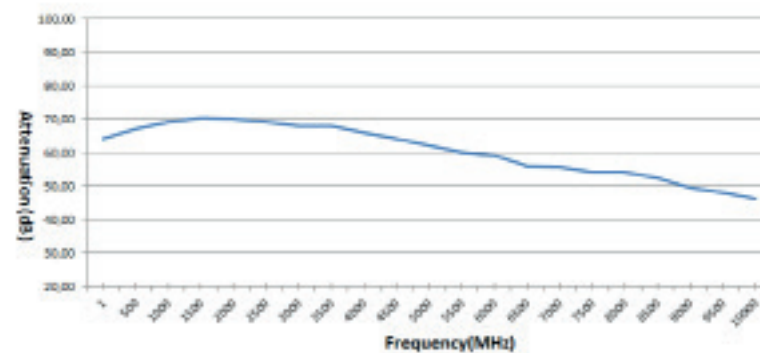


High attenuation factor of 65dB at 1MHz, 70dB at 1 GHz and 46dB at 10GHz (tested to ASTM D 4935-10)

Material thickness: 0.085mm  
 Mesh size / inch: 200  
 Weight: approx. 34g / m<sup>2</sup>  
 Material: high performance copper / nickel / polyester compound

These high-quality shields are u.a. also used in the military and medical sector.

Transmissionsdämpfungskurve 0,01-10GHz



Tests gemäß ASTM D-4935-10

### Genuine metal braid

The EMC fabric is laminated firmly into the solar shingle during production.





A happy family consisting of a father, a mother, and a young daughter are standing in a lush green field of daisies. The father is carrying the daughter on his shoulders. In the background, a two-story house with a brown roof and grey stone walls is visible under a bright blue sky with wispy clouds.

### *A happy family*

- *A SolteQ Energy Roof*
- *No electricity costs*
- *No household heating costs*
- *No domestic hot water heating costs*
- *No fuel costs for their e-car*
- *+ Income per month*

# The SolteQ Building Energy Consulting

*If you are on the market for a new roof, whether it for a new build or a renovation project then please come and talk to us. We can advise you on how to maximise the potential from your new roof. Come and talk to us today, no pressure, no sales talk, just good honest advice!*



Let us advise you, and if you are happy with what you here then you can order your personal building energy plan.

We're here to help !



SolteQ



## Contact

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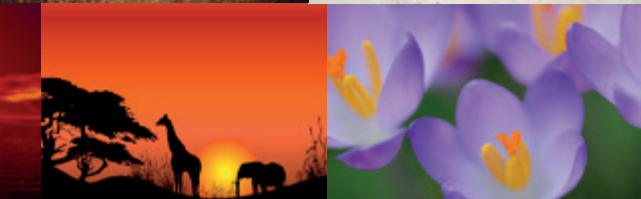
Mantas Memys: +37060030340

LT-89227 Lithuania

Mažeikiai, Litauen









*We have already found it:*

*The most beautiful planet in the universe!*









SERVICE • QUALITY • COMPETENCE

---

FROM GERMANY






**Quality from  
GERMANY**

*We have to protect the Earth !*

*... from us.*





A close-up portrait of a woman with dark hair pulled back. Her face is split vertically down the middle. The left side of her face is painted to look like a human skull, with white base paint, black eye sockets, a black nose, and a wide, toothy grin. The right side of her face is her natural skin tone. She has bright red lipstick on her lips, which are slightly parted. Her right hand is raised to her chin, with fingers resting against her cheek. Her nails are painted black with white polka dots. She is wearing small gold hoop earrings. The background is a textured, light blue-grey wall.

*The stupidest saying ever:  
„Make the earth a subject“.  
... and man takes the word literally ...*

*It would be better:  
„Watch and protect your planet  
and your fellow creatures „*

*... what kind of monsters are we ...*



LIONS HAVE GONE FROM **450,000**  
TO AS FEW AS **20,000**  
IN JUST **50 YEARS**





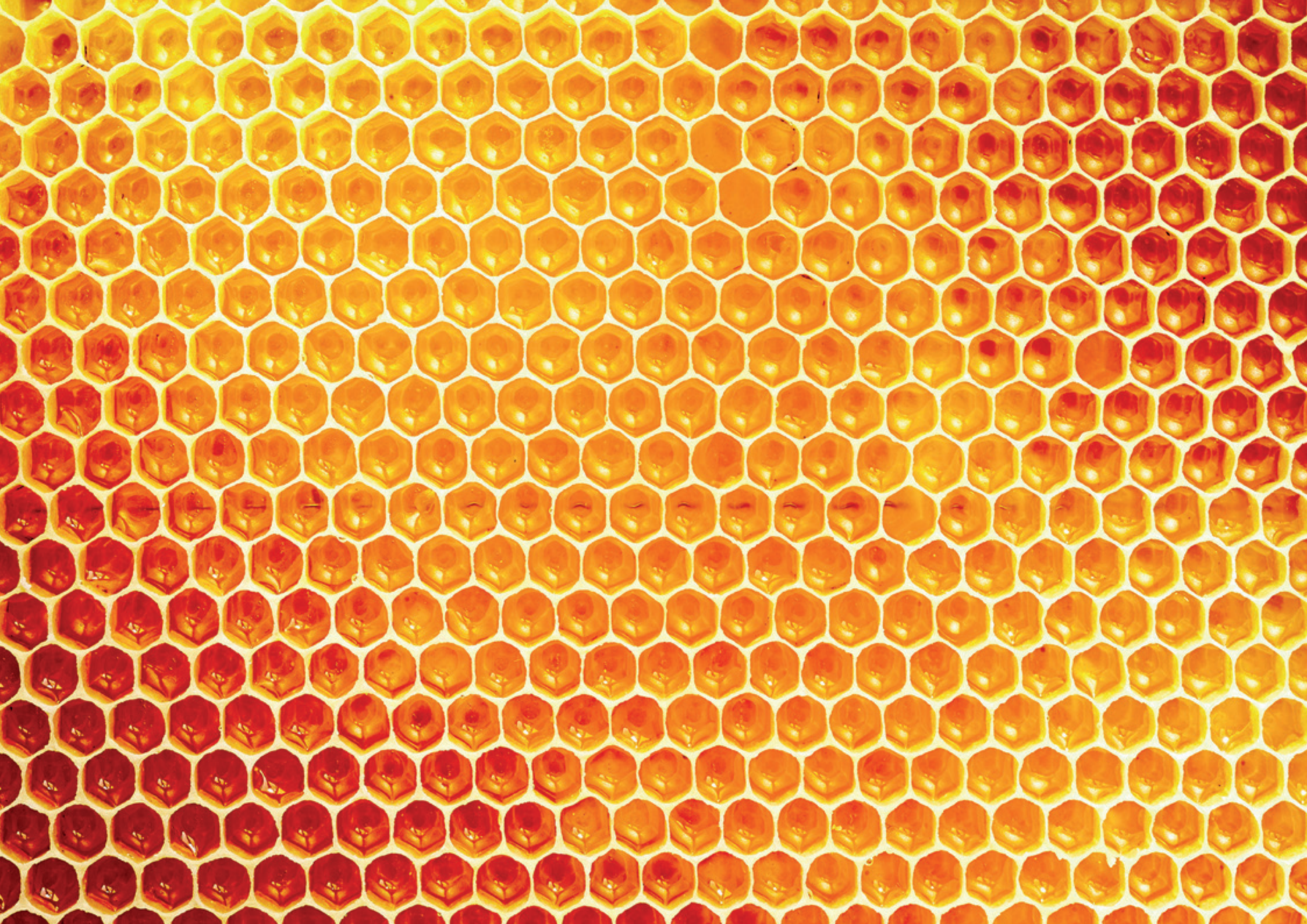


*Because all of our fellow creatures also have families.  
We have no right to deprive them of their living space.*

*But there is hope.  
There are many good people.*









# SolteQ and the bees ...



## SolteQ Beekeeping

**Our beautiful little elves: The honey bees.**

Meanwhile, we have learned that without our bees, the entire ecological world collapses. No dusting, no fruit, no more plants. That's why we have to do something! On its own lands and meadows SolteQ operates its own beekeeping and breeding. Our industrious bees are cared for, nurtured and cared for by professional beekeepers throughout the year. Fields and fallow land have been transformed into natural flower meadows. The whole thing is financed by the charitable donation of the founding family on organization of „One-Euro-Donations-diligent elves collect a lot of honey in tireless work. This is how in-house honey from regional production is produced and sold. The proceeds go back 100% to the organization, which in turn supports our bee colonies and other environmental projects.



[www.EinEuroSpende.eu](http://www.EinEuroSpende.eu)



***Your contribution to the environment:***

***With each SolteQ solar roof becomes one  
planted fruit tree***

*This will be*

*a) a tree planted for the environment*

*b) created habitat and food for our bees*





*Why do we do it all?*

*Because we enjoy doing good!*



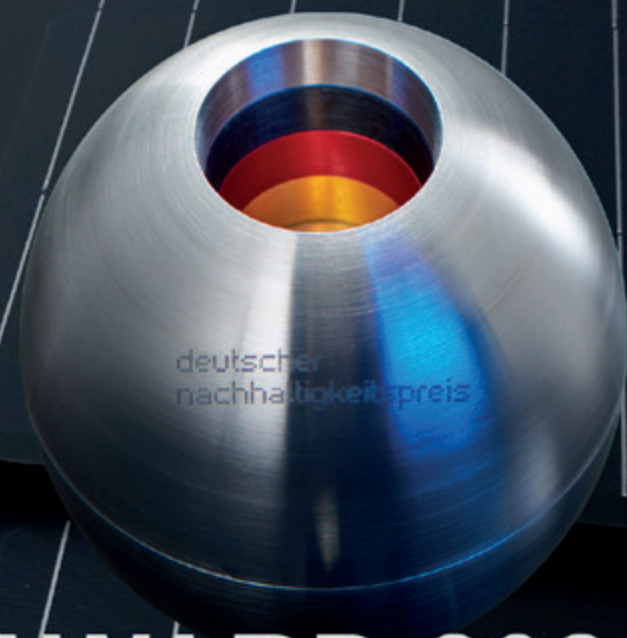




**Solteq**

**SOLARROOFS**

The ENERGY of the FUTURE



**WINNER OF  
GERMAN SUSTAINABILITY AWARD 2021**



Clean energy production.  
Life quality.  
SolteQ.





# SolteQ

Your Energydesigner

The energy source of the future: your roof.

*Clean and free energy for electricity and heating*

With Quality Guarranty !



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