SWISSPEARL

Photovoltaics

Sunskin Photovoltaic System

Use solar energy now with Swisspearl.

Energy costs will continue to rise in the future due to the shortage of oil and natural gas. It therefore makes sense to consider other methods of energy generation. The clever alternative: Solar energy.

Did you know that the sun provides twenty thousand times more energy than we need for our daily lives around the world? This makes it ideal for generating electricity cost-effectively, safely and in the long term.

By using solar energy with a photovoltaic system, you also become an active climate protector, because the environmentally friendly systems emit no CO_2 and are therefore 100% climate-neutral. One example: With a photovoltaic system that supplies a 4-person household, more than 60 tonnes of CO_2 can be saved in 20 years. This corresponds to more than 240,000 kilometres driven by car.

A photovoltaic system is therefore worthwhile for many reasons.
That's the good news. But many homeowners are still unsure. They want to know: Can a photovoltaic system be installed on my existing roof without any major problems? And is the system really economical and affordable?

On the following pages, we explain why it is definitely worthwhile to purchase a photovoltaic system and how you can use solar energy with Swisspearl.

Apartment building, Balzers/Liechtenstein. Sunskin roof. Architecture: Siegbert Kranz Architektur AG, Vaduz/Liechtenstein. Photography: Meraner & Hauser OHG/SNC, Bozen/Italy

Housing estate, Arosa. Sunskin Roof Lap. Architecture: Luzius U. Graf, Chur. Photography: Meraner & Hauser OHG/SNC, Bozen/Italy

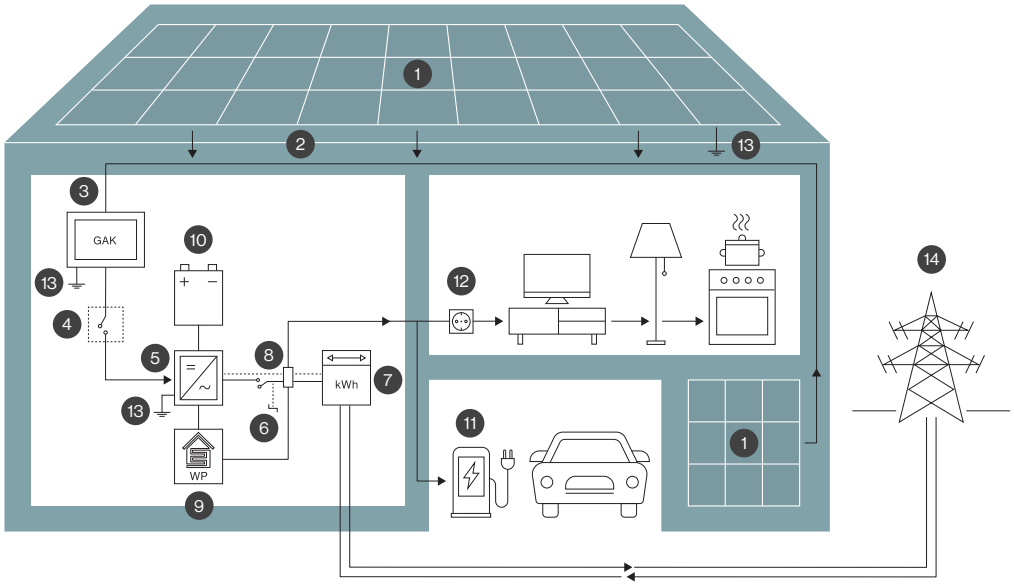
Sunskin Photovoltaic System

Sustainability, aesthetics, efficiency.
Everything from a single source.

Swisspearl Group AG's SUNSKIN photovoltaic system is the fully integrated photovoltaic system solution that transforms roofs and facades into efficient and aesthetic power plants.
We have made it our mission to offer high-quality complete photovoltaic systems, from modules to accessories and inverters. This "one-stop-shop" approach guarantees maximum functional reliability and economic efficiency.
And most importantly: With SUNSKIN photovoltaics, you save energy costs and help to protect our environment.

- Complete photovoltaic system, Swiss engineered
- Seamlessly integrated into the building envelope
- Can be combined with the Swisspearl roof and facade range

The operating principle of a photovoltaic system is simple. While sunlight falls on the photovoltaic modules, they generate direct current. The generated direct current is then converted into alternating current with the help of an inverter and can be fed directly into the domestic or public power grid.



Sunskin scope of delivery:

1 Photovoltaic generator (all modules)
2 DC line (string lines)
3 Generator connection box (GAK) with overvoltage protection device
4 DC separation point (integrated in the inverter)
5 Inverter

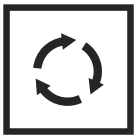
Not included in Sunskin scope of delivery:

6 Photovoltaic system switch
7 Two-way counter
8 Energy management
9 Heat pump
10 Photovoltaic battery
11 Electric car charging station
12 Consumers
13 Protective equipotential bonding conductor
14 Electricity grid (grid operator)

Gesellschaftshaus Löchligaischt, Eschenz. Sunskin Roof Lap. Architecture: Bellwald Architekten AG, Winterthur. Photography: Andreas Mader Fotografie, Winterthur

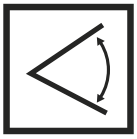
Advantages of the Sunskin photovoltaic system

We ensure safety for your construction project.



Sustainably economical
Swisspearl photovoltaic systems are an extremely economical photovoltaic solution with high value retention from day one thanks to their outstanding features such as functional reliability, ease of installation and high efficiency.

Resilient
Thanks to their double glass structure, the sophisticated Swisspearl photovoltaic modules can withstand heavy loads and can be walked on.



Flat and steeply inclined
The Swisspearl photovoltaic system can be integrated into almost any roof shape. This offers infinite freedom in design and implementation.

Storm-proof
The sophisticated fastening and laying techniques withstand even the strongest storms and make the photovoltaic system more resilient than any other.

Varied
Thanks to the free installation arrangement, Sunskin photovoltaic modules can be seamlessly combined with the Swisspearl roof and facade range.

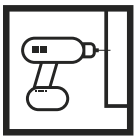
Wide range of design options
Choose colour and size. Swisspearl offers you a wide range of design options for an all-round aesthetic appearance of your building envelope.

Long-lasting safety
Intensive and continuous quality tests ensure that each photovoltaic module meets the highest standards – for safe, efficient power generation for years to come.

Snow and frost resistant
The frost-proof photovoltaic system can be supplemented with a snow guard and safety hook. They can withstand even the heaviest snow loads at all times. This enables weather-resistant photovoltaic solutions to be guaranteed even at high altitudes.

Hail-resistant
Swisspearl photovoltaic modules are extremely robust and tough. This makes them extremely resistant to hail and is another factor in their high sustainability.

Complete system
Swisspearl Sunskin photovoltaics stands for a complete system solution from a single source with high-quality components. They guarantee the highest level of functionality and safety.



Easy to install
The Sunskin photovoltaic system is easy and safe to install. The mounting system impresses with clever simplicity and high-quality accessories.

Swiss engineered
Swisspearl Group AG has developed the Sunskin photovoltaic system design, module design and functional specifications with passion and quality awareness.
Our product stands for safety, functionality and reliability.

Frequently Asked Questions

Facts about photovoltaic systems.

Does the production of a photovoltaic system not require more energy than it can produce in the course of its lifetime?
People often think that more energy is required to produce a photovoltaic system than it can produce itself. However, modern photovoltaic systems pay for themselves very quickly. The Sunskin Roof Lap roofing system from Swisspearl, for example, has a positive energy balance after just 3 years.

What is the service life of a photovoltaic system?
Modern photovoltaic systems, such as those from Swisspearl, can be expected to have an operating time of up to 40 years.

Don't the systems lose their performance quickly?
The average power loss of a photovoltaic system is actually very low. Even after 25 years, they still offer a guaranteed efficiency of at least 80%. It is therefore impossible to speak of a rapid drop in performance.

Does the system work even when the sun is not shining for long periods of time?
The assumption that electricity is only produced when the sun is shining is also incorrect. Even if the electricity yield is lower, even in bad weather conditions, a photovoltaic system can still generate electricity as long as it is bright.

Is the electricity generated actually sufficient to cover the demand?
The key factor here is whether the majority of electricity generation is for grid supply or on-site use. If you want to be independent of large electricity suppliers, it is advisable to install a battery storage system. This means that an autonomy level of around 70% can be achieved.

Single-family house, Bazenheid. Architecture: Bern University of Applied Sciences. Photography: Zuberbühler Fotografie AG, Zuzwil

Is it really worth buying a photovoltaic system if the roof is not facing south?
In Central Europe, a photovoltaic system oriented to the east and west offers even greater advantages in terms of own consumption than a south-oriented system. This is because it achieves its maximum output during the main consumption times in the morning and evening. In contrast, a south-facing photovoltaic system reaches its maximum output at around midday, when consumption is rather low. Only roofs facing north-west, north-east or north do not achieve optimal yields.

What does a photovoltaic system cost?
This varies from case to case and also depends on how many people in the household are to be supplied with free solar energy. Swisspearl offers solutions for a complete roofing system. Our photovoltaic experts will be happy to help you with project-related advice at any time.

Does a photovoltaic system need to be maintained?
The system should be inspected and maintained at least once a year to ensure maximum yield. Although the modules are practically self-cleaning through rain and snow, additional maintenance or cleaning may be necessary depending on the environment. Any mechanical damage, such as glass breakage, can also be detected through regular inspections. For the maintenance of the photovoltaic system, the system installer can be contacted and cyclical maintenance can be defined in advance during commissioning via so-called maintenance contracts.

Are subsidies available?
Many cities, districts or federal states have promotional programmes that offer grants and low-cost loans for a photovoltaic system. Their new Swisspearl photovoltaic system will pay for itself even faster due to possible feed-in tariffs.

Sunskin

The photovoltaic system of the future.

Sunskin Roof Lap

The photovoltaic system of the future.

Our roof-integrated photovoltaic system Sunskin Roof Lap is a first-class system for the free generation of energy. Swisspearl's highly efficient modules convert the free energy from the sun into electricity, which is fed into the building's energy supply.

In less than three years, the system will have generated more energy than was needed to produce it. This is not only good from a financial point of view, but also from an environmental and sustainable resource perspective.

However, the Swisspearl roofing system is not only extremely efficient, but also highly aesthetic - making it a real alternative to conventional roofing systems. While other photovoltaic products are installed on top of the existing roof structure, Sunskin Roof Lap is an integrated solution. The frameless, flat modules blend in perfectly with the roof landscape without looking like an intrusive foreign object.

Sunskin Roof Lap meets all requirements for high-quality roofing and is also equipped with an advanced rear ventilation system. A rear-ventilated roof system provides better control of humidity and temperature in the building, resulting in improved energy efficiency, comfort and durability of the roof. Thanks to their impressive resistance, the double-glazed modules can also withstand heavy snow loads and hail storms effortlessly. The solid construction also makes it safe to walk on the modules for maintenance work.

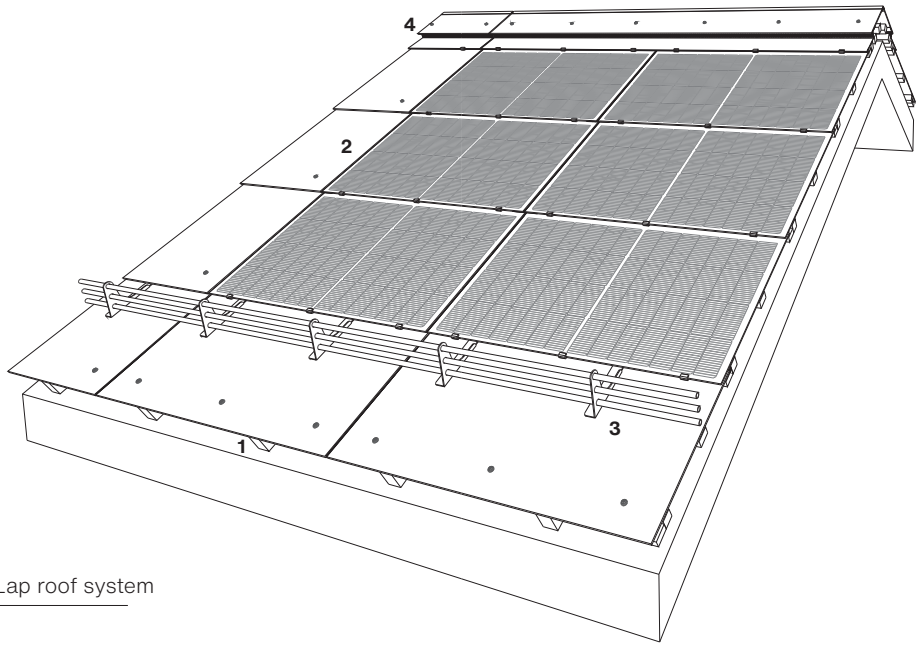
Top: Single-family house, St. Gallen. Architecture: Forma Architekten AG, St. Gallen. Photography: Meraner & Hauser OHG/SNC, Bozen/Italy
P. 12/13: Daycare centre, Ried Brig. Sunskin Roof Lap. Architecture: COMAMALA ISMAIL, Delémont. Photography: DMK Architecture Photography, Lausanne

Sunskin Roof Lap – Structure

Complete solution for maximum functionality.

Sunskin Roof Lap not only looks good, but also impresses as a user-friendly system solution. The mounting system impresses with its clever simplicity: It consists of three module holders per element and a high-quality joint profile.

With its tightness, Sunskin Roof Lap also offers reliable protection against thunderstorms. Sunskin Roof Lap is a complete system in which the entire set is supplied from modules and profiles to snow hooks.



Structure of the Sunskin Roof Lap roof system

1 Counter batten
Ensures rear ventilation space between the subroof and the roof envelope.

2 Sunskin Roof Lap roof envelope
Sunskin Roof Lap photovoltaic modules for clean electricity production and as a water-carrying layer. Aura supplementary plates can be machined on the roof and provide permanent weather protection.

3 Sunskin Roof Lap snow guard
Snow guard hooks adapted to the system reduce snow slippage.

4 Sunskin Roof Lap ridge construction with ridge plates and ridge connection sheet
Ensures air outlet for stable rear ventilation of the PV system.

Sunskin Roof Lap

Energy is precious. We capture it.

Aesthetic, first-class and highly efficient. Sunskin Roof Lap is the sustainable system solution for photovoltaic systems on building roofs. With their frameless, flat shape, the Sunskin Roof Lap photovoltaic modules blend perfectly into the roof landscape. They are suitable for almost any roof shape and their frameless shape prevents dirt from accumulating on the edges. A combination of supplementary plates to the Sunskin Roof Lap System thus enables an aesthetic and sustainable roof design.

Farm building, Meggen. Architecture: Lötscher Architektur GmbH, Meggen. Photography: Meraner & Hauser OHG/SNC, Bozen/Italy

Product details

Formats

XL: Module outer dimensions 1940 × 857mm

L: Module outer dimensions 1380 × 857mm

M: Module outer dimensions 1010 × 857mm

Custom designs available on request.

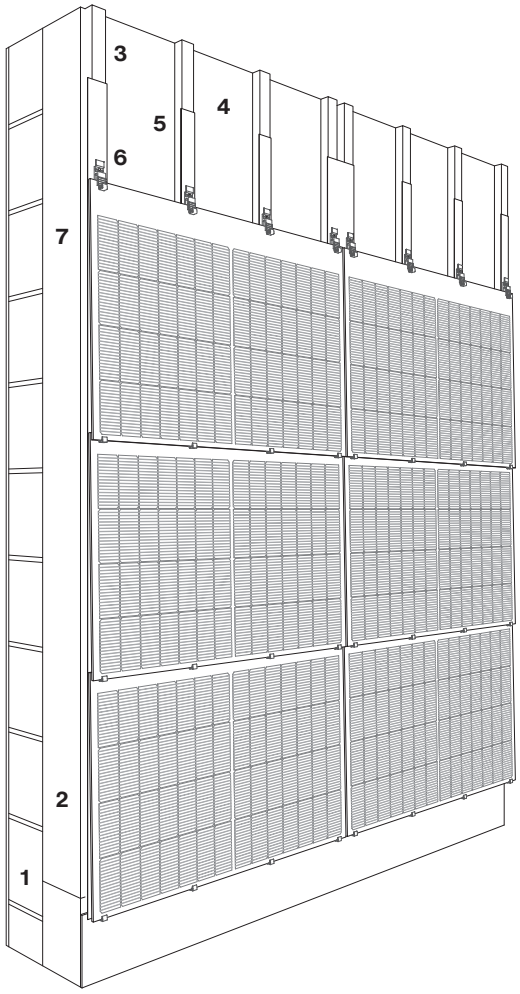
Module structure
Glass-glass

Application
Photovoltaic in-roof system suitable for many roof shapes; straight or offset joints possible.

Sunskin Facade Lap – Structure

Complete solution for maximum functionality.

The mounting system of Sunskin Facade Lap is largely identical to a fibre cement facade. Swisspearl Group AG's extensive expertise in this area was therefore used to develop the detailed solutions. Sunskin Facade Lap can also hold its own against a conventional facade in terms of wind loads and statics. Sunskin Facade Lap is a complete system that includes the entire set of modules, profiles and fibre cement supplementary plates.



Structure of the Sunskin Facade Lap facade system

1 Load-bearing structure (structure)
The outer wall is responsible for the load bearing capacity.

2 Heat insulation
Keeps the room warm in winter, cool in summer and saves energy.

3 Substructure
The connection between the load-bearing wall and the envelope.

4 Rear ventilation compartment
Vertical supporting battens/profiles form a breathing channel that reliably wicks away building and usage moisture.

5 EPDM tape

6 Module holder
With glass support and cable guide.

7 Sunskin Facade Lap module

Sunskin Facade Lap

When the southern side of the facade also plays a part.

Thanks to Sunskin Facade Lap, the traditional use of solar energy can be extended beyond the roof and all the incoming energy of the sun can be used. The frameless shape of Sunskin Facade Lap makes it an excellent match with Swisspearl's facade solutions for the other, sun-facing sides of the building.

Single-family house, Berlingen. Sunskin Facade Lap. Architecture: Bauatelier Metzler, Fraunefeld. Photography: Jan Keller Photography, Pfyn

Product details

Formats

XL: Module outer dimensions 1940 × 830 mm

L: Module outer dimensions 1380 × 830 mm

M: Module outer dimensions 1010 × 830 mm

Module structure

Glass-glass

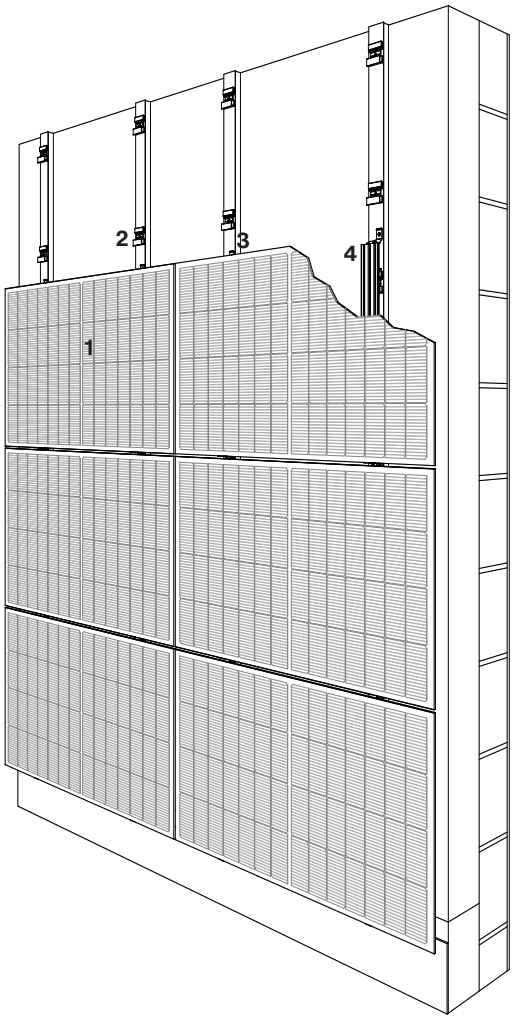
Application

Photovoltaic facade system, with largely identical mounting system to that of a fibre cement facade

Sunskin Facade Flat – Structure

Energy generation redefined.

Our flush-mounted photovoltaic system for the facade sets standards in energy production. With an innovative design, it integrates seamlessly into the architecture while efficiently capturing solar energy. The mounting system of the Sunskin Facade Flat photovoltaic system is largely identical to the mounting system of a fibre cement facade. The photovoltaic facade is therefore as robust as a conventional facade in terms of wind loads and statics.



Structure of the Sunskin Facade Flat facade system

1 Sunskin Facade Flat module

2 U-clip S8

3 Migration protection Flat

4 Backrail

Sunskin Facade Flat

An aesthetically integrated photovoltaic solution for the curtained rear-ventilated facade.

The fully integrated Sunskin Facade Flat photovoltaic system guarantees permanent energy input and acts as a fully fledged, protective facade envelope. The elegant, frameless modules integrate aesthetically and seamlessly into the facade thanks to the invisible Sigma 8 Pro mounting system.

Product details

Formats

XL: Module outer dimensions 1940 × 780 mm

L: Module outer dimensions 1380 × 780 mm

M: Module outer dimensions 1010 × 780 mm

Modular structure

Glass-glass

Application

Photovoltaic facade system, with largely identical mounting system to that of a fibre cement facade

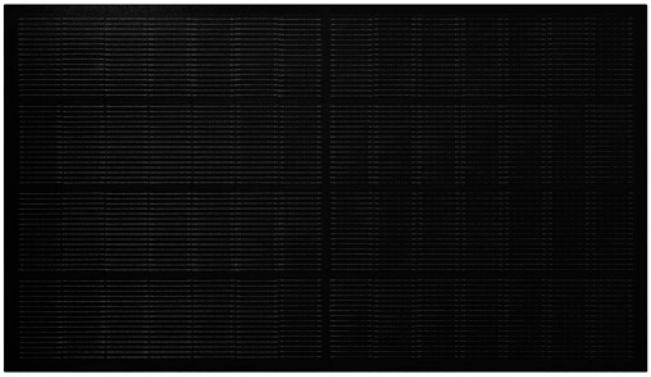
Design variants

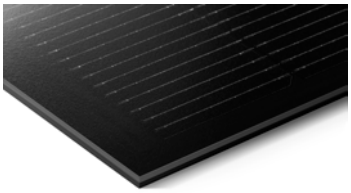
Black modules. Maximum yield.

The SUNSKIN photovoltaic modules cover a wide range of differently combinable formats and are available as standard modules with high-quality photovoltaic glass or as matte modules with satin-finished glass.

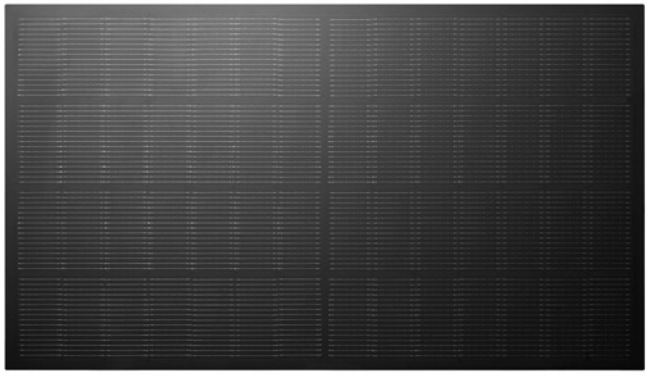
Combine Sunskin Roof Lap and Sunskin Facade Lap Modules with the Swisspearl facade and roof product of your choice or with the standard supplementary plate in elegant black to create a harmonious overall architecture.

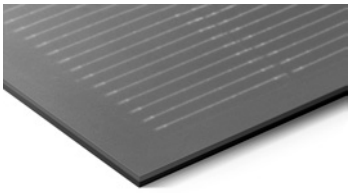
Standard module: Maximum yield
Sunkin module with colourless photovoltaic front glass.





Matte module: Low-glare photovoltaic surfaces
Sunskin module with satin front glass.





Further information
swisspearl.com/de-ch/produkte/Photovoltaik

P. 22: Apartment building, Hüttwilen. Sunskin Roof Lap. Architecture: Bauatelier Metzler GmbH, Frauenfeld. Photography: Jan Keller Photography, Pfyn

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