Schweizer

Leading in integration for partial- and full roofs: Photovoltaic in-roof mounting system Solrif® by Schweizer.

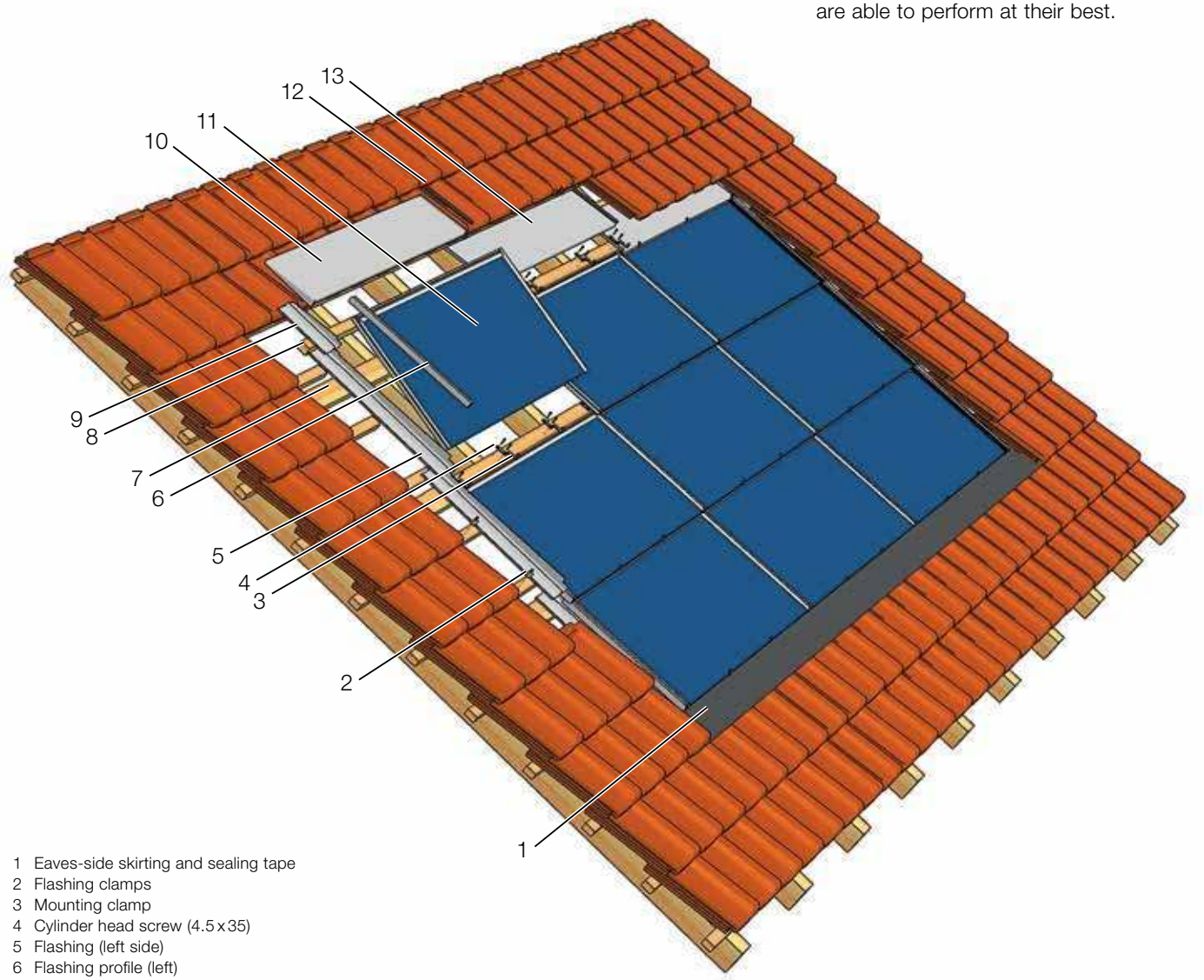
Aesthetically pleasing yet powerful:
Photovoltaic in-roof mounting system Solrif® by Schweizer.

The in-roof system by Schweizer combining excellent solar energy yields with functional aesthetics and simple installation has become market leader first in Switzerland and Europe and increasingly worldwide.

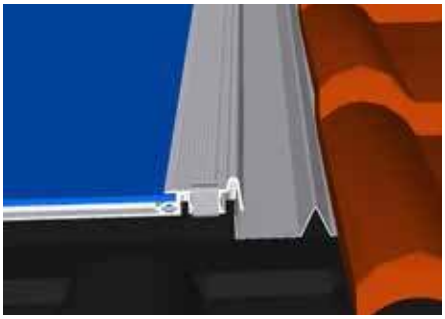
Solrif®, the patented photovoltaic in-roof mounting system by Schweizer, turns a frameless standard module into a solar power generating roof tile; thus, replacing traditional clay roof tiling of pitched roofs. Unlike on-roof systems, this roof integrated mounting system is a true alternative to conventional roof covers. More and more leading manufacturers of photovoltaic module are offering their modules with the simple yet proven Solrif® frame.

As tight as a traditionally tiled roof

Solrif® is suited for new builds and for re-roofing, substituting traditional roof tiles and providing a wide range of advantages: The roof and sub-structure design is very much like with regular tiled roofs. However, the conventional roofing materials are saved as well as a full installation step. Additionally, this system offers significant freedom of design supporting solutions for complete or partial roof covering, including combining with solar thermal collectors or roof penetrations (such as skylights, chimneys, etc.). The special form of the frame facilitates self-cleaning with rainwater and helps snow to slide off. Thus, the solar cells are able to perform at their best.



1 Eaves-side skirting and sealing tape
2 Flashing clamps
3 Mounting clamp
4 Cylinder head screw (4.5 x 35)
5 Flashing (left side)
6 Flashing profile (left)
7 Mounting board 120 x 30 mm
8 Batten for roof tiles
9 Side flashing (upper left)
10 Ridge-side flashing (left corner)
11 Solrif® framed photovoltaic module
12 Ridge flashing joint seal
13 Flashing ridge (centre)



Easy Installation

The modules are held by metal clamps that are mounted to the roof battens. This allows for quick and easy installation.

Optimal Weather-tightness

Frames are shingled from top to bottom and are interlocking left to right much like tiles for optimal weather protection.

Advantages at a glance

- Substitutes conventional roof cladding
- As weather-tight as a traditionally tiled roof
- Aesthetically superior solution
- Tried and tested in thousands of roofs for more than 10 years
- Higher surface yield due to narrow frame profiles
- Short energy pay-back of just 3 years (annual output in central Europe: 1000 kWh/kWp)
- Good ventilation due to sleek frame profile
- Simple and efficient installation
- Weather-protected cabling
- For roof pitches between 10 and 70 degrees (lower slopes require rain-proof or water-tight substructure)
- Tile replacement = smaller carbon footprint
- Easy to service
- Requires no maintenance

Planning made easy:
The new design software proSOLRIF.

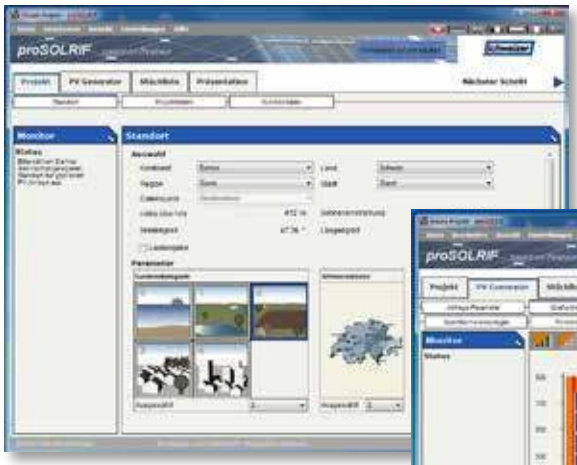
When planning partial or full Solrif® roofs, key parameters such as ridge height, roof pitch, wind- and snow-loading as well as a number of other important details such as roof fittings and module weight need to be considered. proSOLRIF design and planning software makes this easy.

Design software proSOLRIF

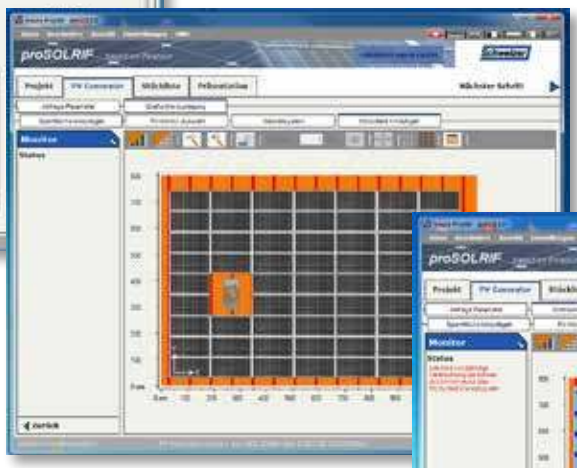
proSOLRIF is free design software for the in-roof photovoltaic mounting system from Ernst Schweizer AG. This software takes building parameters, module designation and site-specific environmental loading parameters to perform structural analysis and determine the number of clamps required according to European Eurocode 1 standard. Additionally, a bill of materials is generated including selected components such as flashings.

Optional upgrade

The new proSOLRIF 6.0 version has been completely revised and is used specifically for designing roofs. The software is now able to handle various types of roofs and blocked areas such as chimneys or skylights and can indicate shading on a monthly or annual basis. proSOLRIF also allows for adding or deleting individual modules. A full featured software package called PVScout may be purchased. It includes all proSOLRIF features but also can be used to size inverters and simulate yield and financial returns.

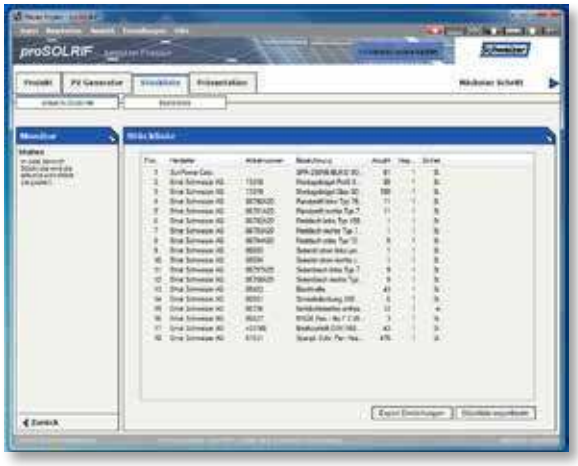


The structural design is performed country-specific based on Eurocode 1.



The software can visualise shading of objects such as chimneys on a monthly or annual basis.

Using this software, the required number of mounting clamps can be determined.



In addition to the structural design, a bill of materials including all additionally selected components such as flashings is generated.

Free Download!
Download the new design configuration software proSOLRIF for free:
www.ernstschweizer.ch > Customer login > Photovoltaic systems

Easy framing:
The Solrif® kit by Schweizer.

Solrif® framed photovoltaic modules for in-roof installation can be purchased from Ernst Schweizer AG ready for installation. For module manufacturers and dealers who wish to assemble Solrif® modules, Schweizer offers documentation and training on framing techniques.

Convenient: The Solrif® kit

Photovoltaic laminates are easily assembled with Solrif® aluminium profiles from Schweizer. At the end of the module production line, either a standard frame or a Solrif® frame is applied. This can be done manually, fully automated or anything in between. Apart from photovoltaic laminates and the Solrif® kit by Schweizer, manual framing simply requires some silicone, a spatula, a support rack, plus a screwdriver, an Allen key and a silicone dispenser.

Suppliers and training

You will find all sources of supply for framing on our website*. Framing of modules can be done by Ernst Schweizer AG – for instance to get you going. Please contact us directly at Ernst Schweizer AG.

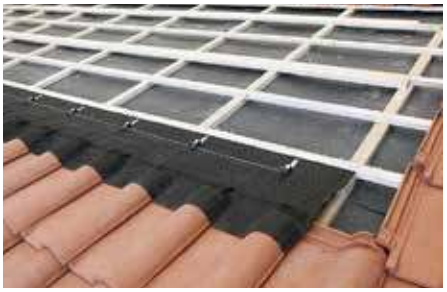
* www.ernstschweizer.ch > Partner > Photovoltaic mounting systems

Quick and flexible installation:
The in-roof system for various roof types.

The Solrif® mounting system is suited for various roof types. It can be used in complete or partial photovoltaic roofing, including in combination with solar thermal collectors or roof penetrations (such as skylights, chimneys, etc.). The flexible design options of Solrif® allow for simple and quick installation.

Sequence of installation

First prepare the roof structure: Rafters and counter battens should be in good condition and the roof sub-structure requires an underlay to protect against condensation and any other moisture. First, Solrif® mounting boards (similar to roof battens) and the eaves-side skirting (transition to roof tiles below) are installed. Then mounting clamps are fastened and the module is inserted. The installation is carried out from right to left and from bottom to top. Modules are usually mounted in «landscape» orientation.



1 Prepare skirting and first row of mounting clamps.

3 Fix the next rows of mounting clamps using the mounting gauge.

2 Insert modules from right to left and from bottom to top.

4 Insert modules.

Solrif® by Schweizer:
The secure and efficient mounting system for pitched roofs.

Materials
(Example for laminate size
of approximately 1600 x 800 mm)
Aluminium: approximately 1,5 kg
Stainless Steel: < 0,1 kg
Silicone/RTV:
approximately 30 ml/m
Highly weather resistant polyester powder coating: 23 g (painted model)

Dimensions
Frame edge length: 500 – 2000 mm
Surface area: from 1,0 m^2 to 1,7 m^2

Technical requirements
Thickness of laminate: up to 5,2 mm
(measured 6 mm inward from edge)
Roof pitch: 10 – 70 degrees (with roof sub-structure that has underlay)
Wooden roof substructure: like for regular tiled roof or can attach onto vertical counter battens

Patent
European Patent EP 1 060 520 B1

Certifications
IEC 61215/61730
CSTB
TÜVdotCOM
MCS

System components
The in-roof system consists of the following components:
– Mounting clamps: stainless steel, 16 mm wide; framing clamps: uncoated or black-finish; glass clamps: uncoated or black-finish with protective shrink tubing; top clamps: for upper module uncoated
– Flashing adapter profiles: aluminium profiles, surface either highly weather resistant powder coated RAL 9005 or uncoated, versions for left and right edge
– Flashing: 7 types for side and ridge flashing of highly weather resistant, powder coated aluminium, 1,0 mm, surface finish uncoated or RAL 9005;
left and right sides flashing: width + 110 mm x 121 mm;
upper left and right side flashing: 281 mm x 121 mm;
left and right ridge flashing: length + 54 mm x 281 mm;
centre ridge flashing: length + 32 mm x 281 mm
– Other accessories: flashing clamps and roofing nails for flashing clamps, ridge flashing joint seal, sealing foam tape, screws for mounting clamps, grounding cable set, 1,8 m length.

Please read installation manual before installing!

Everything you need for building and renovating:
Other solar energy systems by Schweizer.

For more than 35 years, Ernst Schweizer AG has been committed to ecological construction and sustainable management. Schweizer is an important supplier of systems for the generation of heat and electricity using solar energy.

Photovoltaic systems
– In-roof photovoltaic mounting system Solrif®
– PV mounting system for flat roofs south
– PV mounting system for flat roofs MSP-FR-EW
– PV mounting system for pitched roofs MSP-PR
– Complete photovoltaic systems
– Combination in-roof systems

Solar thermal collector systems
– Solar collector FK1 for roof integration
– Flat roof solar collector FK2
– DOMA FLEX large surface collector
– Solar-Compactline
– Complete system eco
– Combination in-roof system
– Collector arrays with integrated skylight

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