

Solar systems by Schweizer:

Tender document – Solrif®.

Tender specification for Solrif® (long version)

Type of photovoltaic mounting system:

Mounting system for PV roof integration. Standard PV modules are supplied with a special frame instead of standard frames and are installed on a wooden substructure very similar to roof tiles. The roof structure corresponds to the common specifications from e.g. ZVDH (Germany) or SIA 232 (Switzerland) with underlay or cover sheeting, counter battens for sufficient rear ventilation and tile or Solrif® battens. The roof foil is required for the drainage of condensation and possible overflow in case of torrential rain, and must be adjusted to the standard roof pitch of 22° according to ZVDH. The minimum roof slope is 10°. The modules are laid loosely and secured with mounting clamp, similar to storm clips for roof tiles. The modules are floating and not clamped. The number of securing or mounting points is shown in a static design for the different wind and snow loads. A distinction is made between mounting clamp that secure frame profiles and those that secure the lower glass edge of the PV modules (profile and glass mounting clamp types). Individual modules can be released by sliding them into the intermediate space of the mounting clamp above. The free lower edge ensures good self-cleaning, which becomes more important with decreasing roof slope. For higher aesthetic demands, powder-coated frames in black are used to match monocrystalline cells with black backsheet. Other colours are possible through the design of the modules (coloured cells or glazing) as well as for the Solrif® frames.

The mounting system forms the water-bearing layer. Drainage takes place over the entire surface of the modules and not via collection channels, as well as through the lateral interlocking and vertical overlapping of the frame profiles. The module field must be sealed all around with suitable connecting plates. The entire roof is still open to diffusion. Due to the very low proportion represented by the frame, a high performance density can be achieved. The area weight of the roof covering (approx. 13 kg/m²) is lower than tiles with a PV system parallel to the roof (approx. 55 kg/m²) or even clay tiles (approx. 40 kg/m²).

The modules have as a minimum a valid test according to IEC 61215. The statics of the entire system is verified according to Eurocode 1 or the national standards DIN EN 1991-1-1:2002-10, DIN EN 1991-1-3:2010-12, DIN EN 1999-1-1:2010-05, DIN EN 1991-1-4:2010-12, DIN EN 1990:2010-12, based on proSolrif software or equivalent calculation methods.

Consisting of:

- Solrif® framed modules
- or equivalent, supply and install
- Mounting brackets for fastening made of stainless spring steel for profile and glass area or equivalent, supply and install
- Eaves apron or equivalent, supply and install
- Connecting plates left, right, top (left, right, centre), corner or equivalent, supply and install
- Roof preparation consisting of wedge plank, Solrif® battens and support batten for ridge sheets. or equivalent, supply and install
- Joist at transition from tile to Solrif® battens if required or equivalent, supply and install

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Tender specification for Solrif® (short version)

Type of photovoltaic mounting system:

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| Roof slope: | Pitched roof (gable roof, monopitch roof), minimum 10° |
| Roof substructure: | analogous to tiled roofs according to roofing guidelines, with roof underlay and rear ventilation |
| Module orientation: | according to roof orientation |
| Fastening: | with mounting brackets (similar to storm clips), floating. |
| Manufacturer's documentation: | Static proof of stability of the entire system, fastening and laying plan |
| Material: | Aluminium, stainless steel |
| System properties: | Modules individually detachable with free module lower edge for self-cleaning and slipping off of snow, coloured design possible, with additional support battens and snow guard system also suitable for high snow loads. |
| Roof mounting properties: | No adjustment work required on the mounting system, transposition of rows in relation to one another possible (ensure professional design of connection plates), |
| Design flexibility: | Fast response due to configuration software |
| Standards/directives to be complied with: | IEC 61215, Eurocode 1 and/or DIN EN 1991-1-1:2002-10, DIN EN 1991-1-3:2010-12, DIN EN 1999-1-1:2010-05, DIN EN 1991-1-4:2010-12, DIN EN 1990:2010-12 |

Consisting of:

- PV module with Solrif® frame or equivalent, supply and install
- Mounting clamp (profile, glass, top if required) or equivalent, supply and install
- Edge connection profiles (left/right) or equivalent, supply and install
- Edge connection plates left, right, top (left, right, centre), corner plates or equivalent, supply and install
- Roof preparation consisting of wedge plank, Solrif® battens and support batten for ridge sheets. or equivalent, supply and install
- Joist at transition from tile to Solrif® battens if required or equivalent, supply and install