

# Solar systems from Schweizer

## Data sheet In-roof PV mounting system Solrif



**Read carefully before use and keep in a safe place.**

All information and illustrations were up to date at the time of publication.

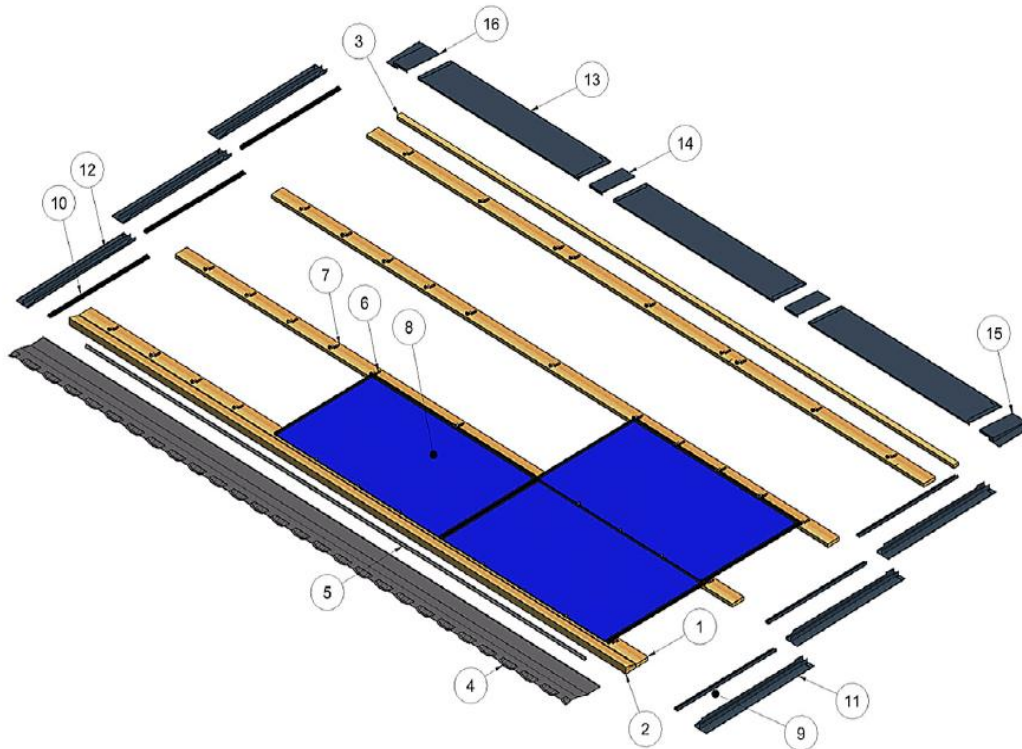
The latest version can be downloaded at any time from [www.solrif.com](http://www.solrif.com).

Subject to technical changes, errors excepted.

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## Overview



- |                    |                          |                          |                         |
|--------------------|--------------------------|--------------------------|-------------------------|
| ① Solrif batten    | ⑤ Eaves profile          | ⑨ Flashing profile right | ⑬ Top flashing          |
| ② Wedge plank      | ⑥ Mounting clamp profile | ⑩ Flashing profile left  | ⑭ Top flashing joiner   |
| ③ Solrif batten    | ⑦ Mounting clamp glass   | ⑪ Side flashing right    | ⑮ Corner flashing right |
| ④ Connecting sheet | ⑧ Solrif PV module       | ⑫ Side flashing left     | ⑯ Corner flashing left  |

### Materials needed for assembly

- Suitable wood screws for fastening the battens
- ① ③ Solrif battens 120 × 30 mm
- ② Wedge plank
- S.P.T project report

### Tools required

- Cordless screwdriver with Torx T20 bit insert
- Hammer
- Measuring equipment (e.g. tape measure and chalk line)
- Mounting gauge (recommended)
- Guide line
- Metal saw
- Metal drill Ø 5.5 mm
- Socket spanner 7 mm

## 1 Limits of use

The system is designed exclusively for the generation of electricity from solar energy and as weather protection. Solrif modules are intended exclusively for in-roof installation.

max. snow load	According to the module manufacturer's specifications. Additional battens generally required from 1600 N/m <sup>2</sup> , static design must be observed. Depending on the module, up to 9000 Pa possible.
max. wind suction	According to the module manufacturer's specifications, static design must be observed.
permissible roof pitch	from 10° to 75° (below 22° with additional requirements for the sub-roof; see also data sheet on <b>rain tightness</b> )
min. permissible distance to the seashore when using non-salt-water-resistant mounting clamps	10 km
min. permissible distance to the seashore when using salt-water-resistant mounting clamps	250 m

## 2 Technical data

### 2.1 Certifications and proofs

Requirements	Standard	Certificate no.
Type certification*	CSTB GS no 21	Avis Technique 21/12-22
TÜV Type certification (only Solrif-frame)	TÜV 2PfG1794	TÜV 21229511.002
Load-bearing components and kits for aluminium structures	EN 1090-1	TÜV 0035-CPR-1090-1.01340.TÜVRH.2021.004
Conformity of factory production control	EN 1090-1	TÜV 0035-CPR-1090-1.01341.TÜVRh.2021.004
Fire resistance: Typical: B <sub>ROOF</sub> (t1)*	EN 13501-5	MPA Stuttgart 904 2973 000-2
Fire behaviour: Typical: Kl. E*	EN 13501-1	MNW 230009602-2
Driving rain resistance	CEN/TR 15601	TU Berlin AZ 130208
Corrosion resistance (ammonia)	IEC 62716	TÜV 21220296a_AC
Corrosion resistance (salt fog)	IEC 61701	TÜV 21220296a_SMC
Snow load resistance*	SPF-SUPSI Test specification no. 46 Version 2.2	22-079/A-REP2,
Patent	Europe	EP 2 811 239 B1

\* The classification depends on the module and should be provided by the module manufacturer, as well as the current module standards.

## 2.2 Roof construction requirements

Substructure	Timber substructure: Analogue tiled roof or on vertical counter battens. Timber quality: Strength class C24 (observe standards and local regulations) Continuous and unobstructed rear ventilation must be guaranteed everywhere.
permissible deviation from the flatness of the substructure.	0,5 % (5 mm per meter) Arched roofs: see separate leaflet
Sub-roof	Underlay and underlay membrane against condensation and moisture in accordance with local standards and guidelines for roofs, e.g. ZVDH, SIA 232/1, Temperature resistance up to 80 °C
Roof covering	Flashings suitable for interlocking tiles/roof tiles, Connection to other roof coverings on site.

## 2.3 Modules

Dimensions/Weight of modules	see data sheet of the module manufacturer
Module width	Module and statics dependent, (System components up to 1896 mm possible)
Module height	Module and statics dependent, (System components up to 1749 mm possible)
Modul thickness Solrif N	17 mm
Modul thickness Solrif D	20 mm
Laminate thickness Solrif N	3.2 – 5.2 mm
Laminate thickness Solrif D	max. 8 mm
Colour	RAL 9005 (Schwarz), other colours on request
Module types	glass-glass and glass-foil
	Use of module optimisers and microinverters is possible
Surface area efficiency	up to 203 Wp/m <sup>2</sup>

For modules with a width > 1800 mm, the field width is limited in order to avoid stresses due to dilatation:

Module width	Max. number of modules next to each other
1800 mm	23 modules
1840 mm	13 modules
1900 mm	8 modules



### 3 System properties

#### 3.1 Horizontal section

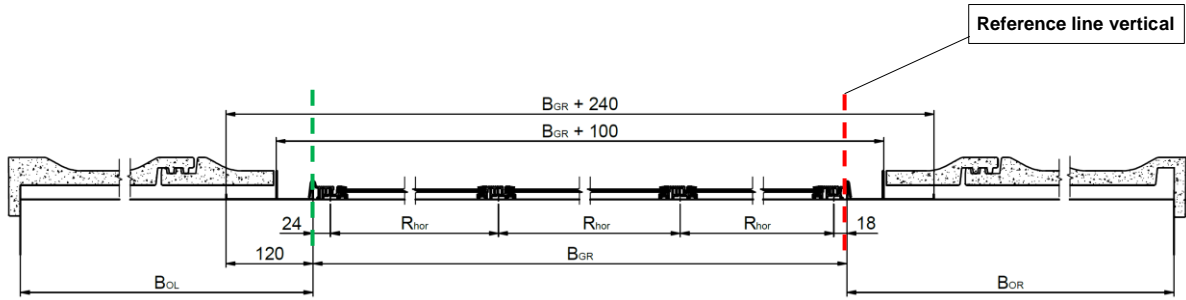


Illustration: Horizontal section Solrif

#### 3.2 Vertical section

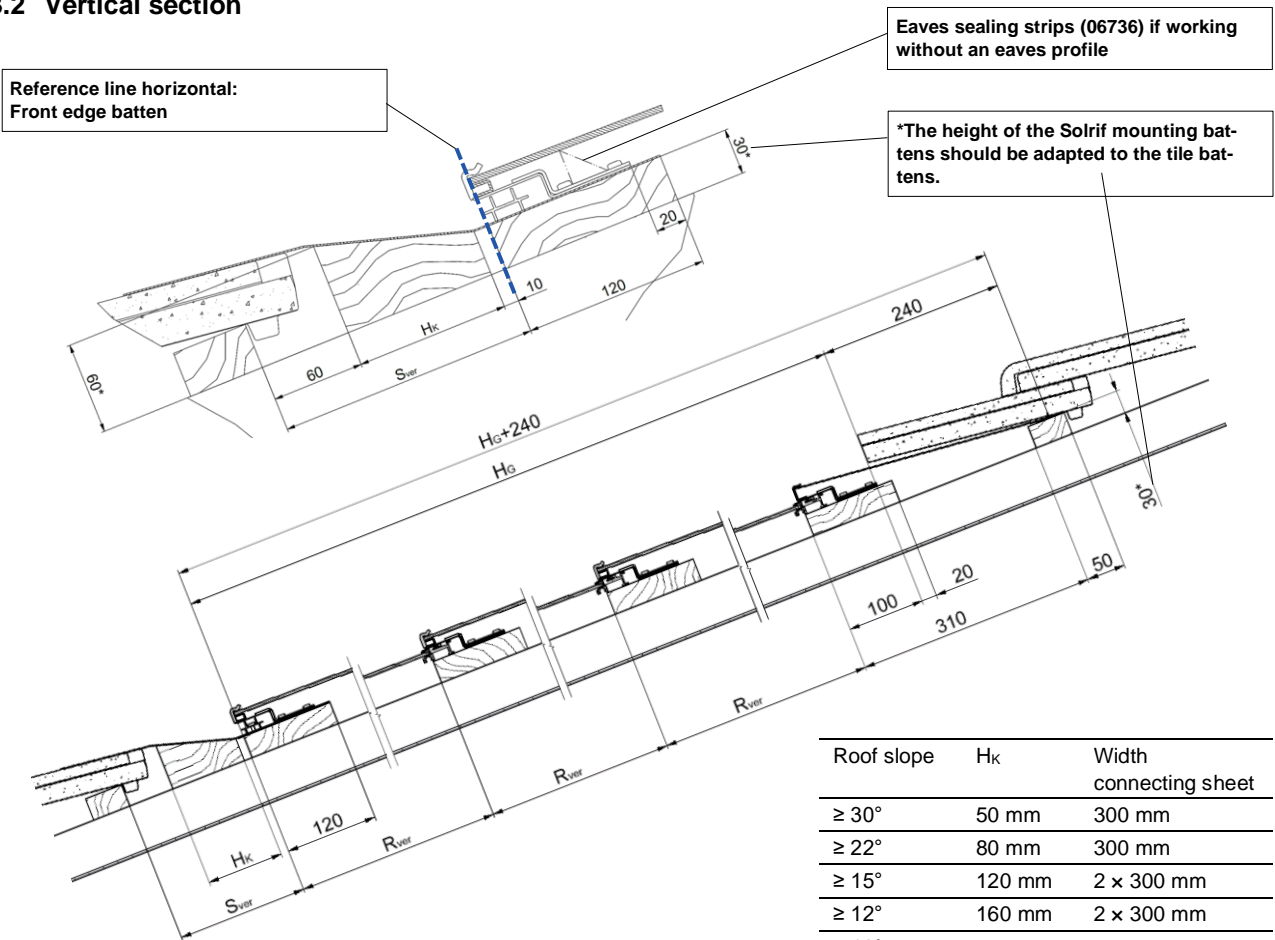



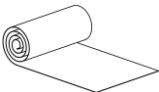
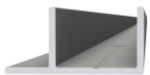



Illustration: Vertical section Solrif

Roof slope	H <sub>k</sub>	Width connecting sheet
≥ 30°	50 mm	300 mm
≥ 22°	80 mm	300 mm
≥ 15°	120 mm	2 x 300 mm
≥ 12°	160 mm	2 x 300 mm
≥ 10°	240 mm	3 x 300 mm

- B<sub>GR</sub>: PV field width = (R<sub>hor</sub> x number of modules horizontal) +42 mm
- B<sub>OL</sub>: peripheral distance left
- B<sub>OR</sub>: peripheral distance right
- H<sub>G</sub>: PV field height = (R<sub>ver</sub> x number of modules vertical) +100 mm
- R<sub>hor</sub>: Horizontal grid measurement = module width -18 mm
- R<sub>ver</sub>: Vertical grid measurement = module height -32 mm
- S<sub>ver</sub>: Distance to 1<sup>st</sup> Solrif batten

#### 4 Components

Illustration	Article denomination	Description	Material	System
	Solrif PV-Module	Customised		Solrif N Solrif D
	Connecting cable, String cable	Customised		Solrif N Solrif D
	Dummy module	Customised, see Factsheet <b>Dummy modules</b>	Aluminium	Solrif N Solrif D
<i>to be provided by the customer</i>	Solrif batten	120 mm x 30* mm x L	Wood, C24	Solrif N Solrif D
<i>to be provided by the customer</i>	Wedge plank	Strength class C24	Wood, C24	Solrif N Solrif D
	Ground connector Cable cross-section 10 mm <sup>2</sup> max.	The grounding clamp can be attached to the upper module frame. The earthing concept can be found in the electrical plan- ning.	Steel Inox	Solrif N Solrif D
	Grounding set Cable cross-section 10 mm <sup>2</sup>	The earthing set can be at- tached to the upper module frame. The earthing concept can be found in the electrical plan- ning.	various	Solrif N Solrif D
	Edge protection profile for dummy modules 5m	Used to cover the cut edges of dummy modules.	EPDM	Solrif N Solrif D
	Connecting sheet Roll 5m black or red	Transition from lower field edge to tile.	PIB	Solrif N Solrif D
	Eaves profile black	Supports the bottom row of mounting clamps.	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Screw Pan Head 4x35		Stainless steel V2A	Solrif N Solrif D

\* The height of the Solrif battens must be adapted to the tile battens.





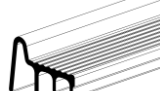
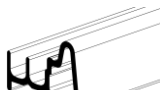
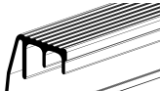

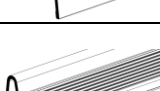














Illustration	Article denomination	Description	Material	System
	Mounting clamp top long (for flat sheet metal connections)	Standard N, bare	Stainless steel V2	Solrif N
		Sea water resistant, bare	Stainless steel V4	Solrif N
		Standard, bare	Stainless steel V2	Solrif D
	Mounting clamp profile	Standard, black	Stainless steel V2	Solrif N
		Sea water resistant, bare	Stainless steel V4	Solrif N
		Standard, black	Stainless steel V2	Solrif D
	Mounting clamp glass	Standard, black	Stainless steel V2	Solrif N
		Sea water resistant, bare	Stainless steel V4	Solrif N
		Standard, bare	Stainless steel V2	Solrif D
	Mounting gauge	Specific for each module width, Lacquered orange (RAL 2004)	Aluminium EN-AW 5005	Solrif N Solrif D
	Flashing profile left	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium EN AW-6063 T66	Solrif N
	Flashing profile right	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium EN AW-6063 T66	Solrif N
	Flashing profile left 40 mm	Lacquered black (RAL 9005) Length: Module height + 0.5 mm (e.g. for direct connection to verge)	Aluminium EN AW-6063 T66	Solrif N
	Flashing profile right 40 mm	Lacquered black (RAL 9005) Length: Module height + 0.5 mm (e.g. for direct connection to verge)	Aluminium EN AW-6063 T66	Solrif N
	Flashing profile left	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium EN AW-6063 T66	Solrif D
	Flashing profile right	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium EN AW-6063 T66	Solrif D

Illustration	Article denomination	Description	Material	System
	Side flashing left	Lacquered black (RAL 9005) Length, depending on module	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Side flashing right	Lacquered black (RAL 9005) Length, depending on module	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Corner flashing left	Lacquered black (RAL 9005)	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Corner flashing right	Lacquered black (RAL 9005)	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Top flashing	Lacquered black (RAL 9005) Length, depending on module	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Top flashing joiner	Lacquered black (RAL 9005)	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Side flashing IL	Lacquered black (RAL 9005) Length, depending on module	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Side flashing IR	Lacquered black (RAL 9005) Length, depending on module	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Corner flashing IL	Lacquered black (RAL 9005)	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Corner flashing IR	Lacquered black (RAL 9005)	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Valley sealing strip	Option for additional sealing	various	Solrif N Solrif D
	Fixing for flashing	For fastening various sheets	Aluminium EN AW-6063 T66	Solrif N Solrif D
	Roofing nail DIN1160 2.5x25mm		Steel, hot-dip galvanised	Solrif N Solrif D

## 5 Further informations

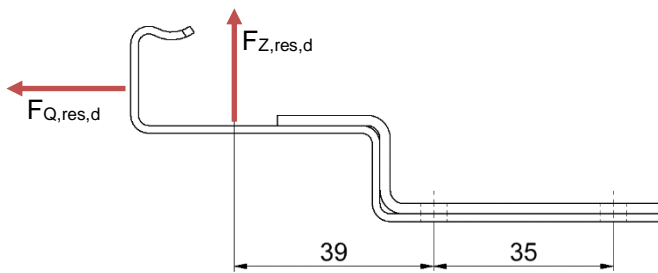
Further information can be found on the Solrif homepage ([www.solrif.com](http://www.solrif.com)) in the following documents:

- Leaflet Application area of Solrif with regard to **Rain tightness**
- Leaflet **Lightning protection**
- Leaflet **Fire safety** requirements with Solrif in Switzerland
- Leaflet Use of Solrif for high **Snow loads**
- Leaflet **Handling with dummy modules**
- **Mounting instruction**
- **Mounting instruction of inner corners**



## 6 Rated resistance Solrif Mounting clamps profile and glass

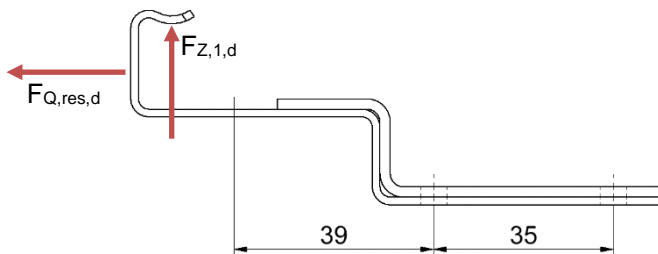
### 6.1 Mounting clamps within the field



Rated resistance to tensile force  $F_{Z,res,d}$ : 536 N (standard 1.4310), 374 N (sea water resistant 1.4404)

Rated resistance to shear force  $F_{Q,res,d}$ : 720 N (standard 1.4310), 550 N (sea water resistant 1.4404)

### 6.2 Bottom row of mounting clamps



Rated resistance to tensile force  $F_{Z,1,d}$ : 268 N (standard 1.4310), 187 N (sea water resistant 1.4404)