Solar systems from Schweizer

Technical data sheet Solrif

Read carefully before use. Keep for future reference.

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.

Subject to technical modifications.

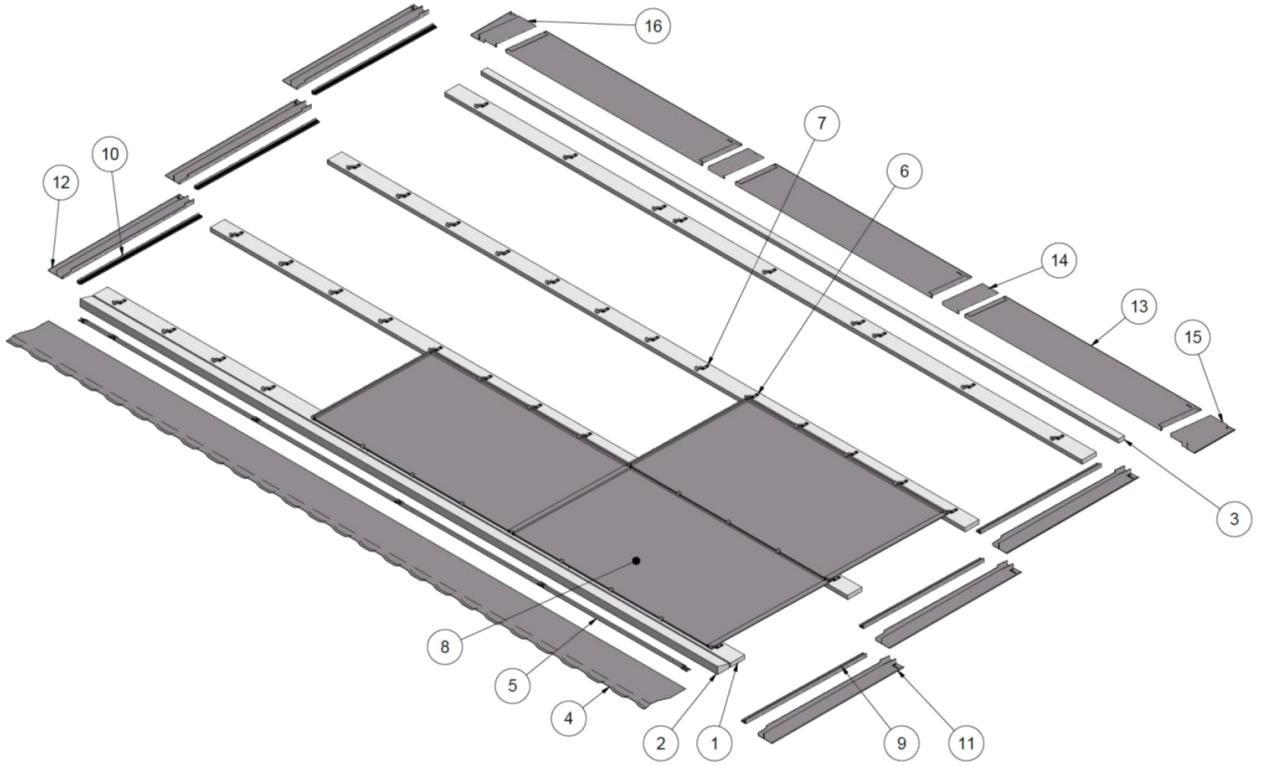
Bahnhofplatz 11
8908 Hedingen
Switzerland

Telefon: +41 44 763 61 11

E-Mail: solrif@ernstschweizer.com

Internet: http://www.solrif.com

Overview



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

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/m², 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° (with additional requirements for the sub-roof; see also information sheet on **Rain tightness**)
min. permissible distance to the seashore when using non-saltwater-resistant mounting clamps	10 km
min. permissible distance to the seashore when using saltwater-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
Conformity of factory production control Load-bearing components and kits for aluminium structures	EN 1090-3	TÜV 0035-CPR-1090-1.01341.TÜVRh.2021.004
Conformity of factory production control Load-bearing components and kits for steel structures	EN 1090-2	TÜV 0035-CPR-1090-1.01340.TÜVRh.2021.004
Fire resistance: Typical: B_{ROOF}(t1)*	EN 13501-5	MPA Stuttgart 902 5821 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 Fact sheet **Special roof shapes**
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^2

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

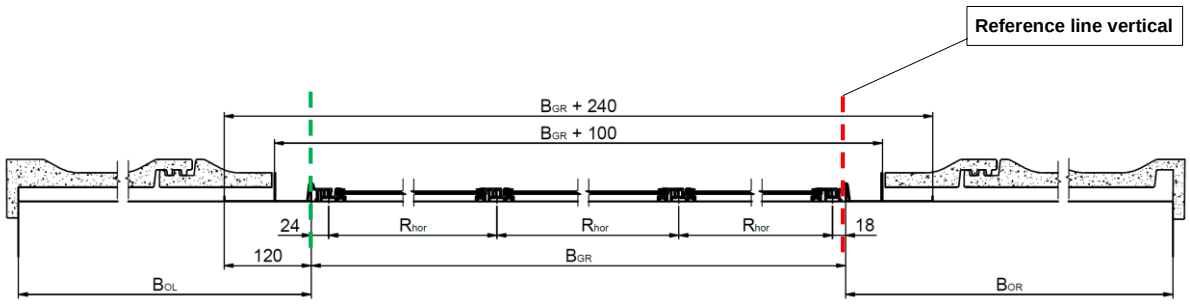
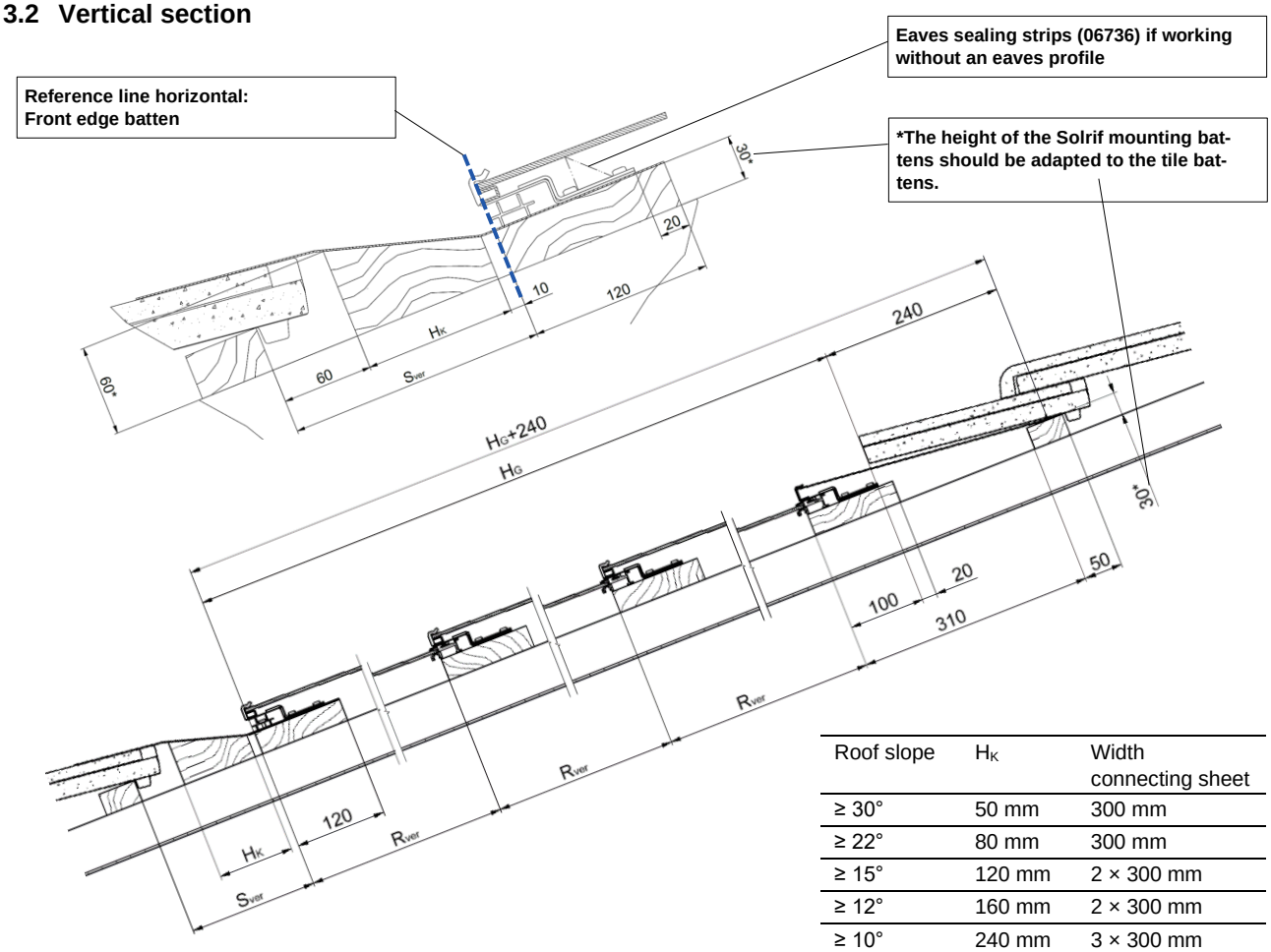


Illustration: Horizontal section Solrif

3.2 Vertical section

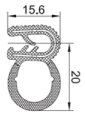
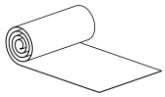
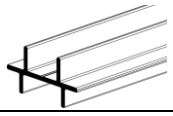
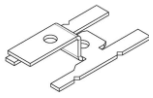
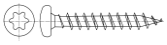


Roof slope	H_K	Width connecting sheet
≥ 30°	50 mm	300 mm
≥ 22°	80 mm	300 mm
≥ 15°	120 mm	2 × 300 mm
≥ 12°	160 mm	2 × 300 mm
≥ 10°	240 mm	3 × 300 mm

Illustration: Vertical section Solrif

- B_{GR}: PV field width = (R_{hor} × number of modules horizontal) +42 mm
- B_{OL}: peripheral distance left
- B_{OR}: peripheral distance right
- H_G: PV field height = (R_{ver} × number of modules vertical) +100 mm
- R_{hor}: Horizontal grid measurement = module width -18 mm
- R_{ver}: Vertical grid measurement = module height -32 mm
- S_{ver}: Distance to 1st 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 **Dummy modules**	Aluminium	Solrif N Solrif D
to be provided by the customer	Solrif batten	120 mm × 30* mm x L	Wood, C24	Solrif N Solrif D
to be provided by the customer	Supporting batten	50 mm × 30* mm x L	Wood, C24	Solrif N Solrif D
to be provided by the customer	Wedge plank	Strength class C24	Wood, C24	Solrif N Solrif D
	Grounding clamp	The grounding clamp can be attached to the upper module frame. The earthing concept can be found in the electrical planning.	Stainless steel	Solrif N Solrif D
	Grounding-cable set 10 mm^2	The earthing set can be attached to the upper module frame. The earthing concept can be found in the electrical planning.	Cu - 10mm^2	Solrif N Solrif D
	Edge protection profile	Used to cover the cut edges of dummy modules.	EPDM	Solrif N Solrif D
	Connecting sheet	Transition from lower field edge to tile.	Aluminium Butyl	Solrif N Solrif D
	Eaves profile	Supports the bottom row of mounting clamps. Length 1200 mm	Aluminium	Solrif N Solrif D
	Sheet metal clamps (to eaves profile)	Fixing for eaves profile	Stainless steel A2	Solrif N Solrif D
	Chipboard screw, pan head A2, hexagon socket T20	Ø 4 x 35 mm	Stainless steel A2	Solrif N Solrif D

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

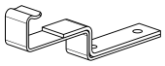
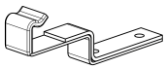
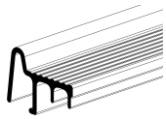
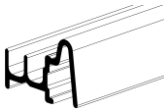
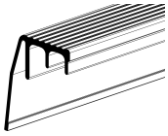
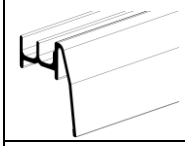
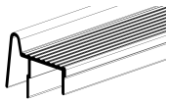
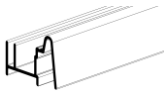
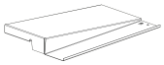
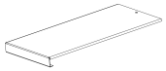
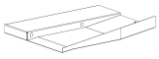
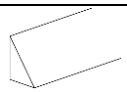
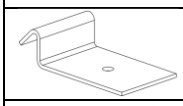
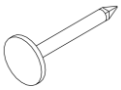
Illustration	Article denomination	Description	Material	System
	Top mounting clamp for flat sheet metal connections	Standard N, blank	1.4310	Solrif N
		Seawater resistant N, blank	1.4404	Solrif N
		Standard D, blank	1.4310	Solrif D
	Mounting clamp Profile	Standard N, burnished	1.4310	Solrif N
		Seawater resistant N,	1.4404	Solrif N
		Standard D, burnished	1.4310	Solrif D
	Mounting clamp Glass	Standard N	1.4310	Solrif N
		Seawater resistant N	1.4404	Solrif N
		Standard D	1.4310	Solrif D
	Mounting gauge	Specific for each module width, Lacquered orange (RAL 2004)	Aluminium	Solrif N Solrif D
	Edge profile standard left	Lacquered black (RAL 9005) Length: Modul height + 0.5 mm	Aluminium	Solrif N
	Edge profile standard right	Lacquered black (RAL 9005) Length: Modul height + 0.5 mm	Aluminium	Solrif N
	Edge profile left 40 mm	Lacquered black (RAL 9005) Length: Modul height + 0.5 mm (e.g. for direct connection to verge)	Aluminium	Solrif N
	Edge profile right 40 mm	Lacquered black (RAL 9005) Length: Modul height + 0.5 mm (e.g. for direct connection to verge)	Aluminium	Solrif N
	Edge Solrif D left	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium	Solrif D
	Edge Solrif D right	Lacquered black (RAL 9005) Length: Module height + 0.5 mm	Aluminium	Solrif D
	Side flashing left	Lacquered black (RAL 9005) Length, depending on module	Aluminium	Solrif N Solrif D

Illustration	Article denomination	Description	Material	System
	Side flashing right	Lacquered black (RAL 9005) Length, depending on module	Miscellaneous	Solrif N Solrif D
	Corner flashing left	Lacquered black (RAL 9005)	Aluminium	Solrif N Solrif D
	Corner flashing right	Lacquered black (RAL 9005)	Aluminium	Solrif N Solrif D
	Top flashing	Lacquered black (RAL 9005) Length, depending on module	Aluminium	Solrif N Solrif D
	Top flashing joiner	Lacquered black (RAL 9005)	Aluminium	Solrif N Solrif D
	Side flashing IL	Lacquered black (RAL 9005) Length, depending on module	Aluminium	Solrif N Solrif D
	Side flashing IR	Lacquered black (RAL 9005) Length, depending on module	Aluminium	Solrif N Solrif D
	Corner flashing IL	Lacquered black (RAL 9005)	Aluminium	Solrif N Solrif D
	Corner flashing IR	Lacquered black (RAL 9005)	Aluminium	Solrif N Solrif D
	Eaves sealing strip	Option for additional sealing	PU foam antrazite	Solrif N Solrif D
	Metal retainer	For fastening various sheets	Aluminium	Solrif N Solrif D
	Clout nail DIN1160	Ø 2.5 x 25 mm	Steel, hot-dip galvanised	Solrif N Solrif D

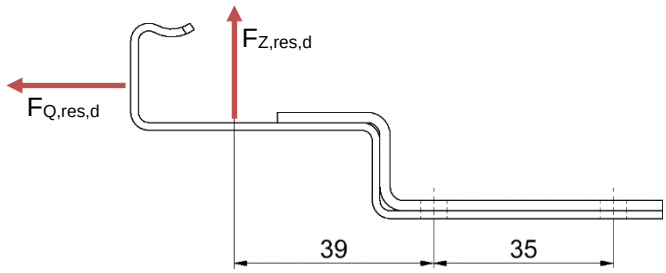
5 Further information

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

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

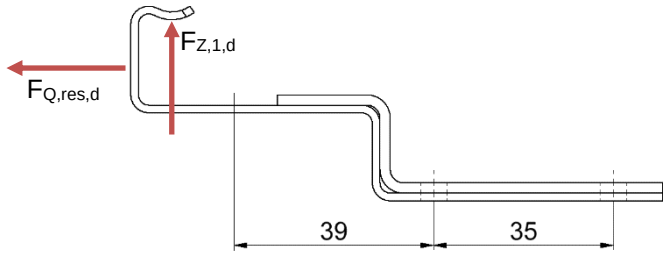
6 Rated resistance Solrif Mounting Clamps Profile and Glass

6.1 Mounting clamps within the field



Rated resistance to tensile force $F_{Z,res,d}$: 536 N (standard 1.4310), 374 N (seawater resistant 1.4404)
Rated resistance to shear force $F_{Q,res,d}$: 720 N (standard 1.4310), 550 N (seawater 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 (seawater resistant 1.4404)