

Solar systems by Schweizer:

Information sheet – Application range of Solrif® with regard to water tightness and minimum requirements for the subroof.

Summary

This document describes the application range of Solrif® with regard to different roof slopes and the minimum requirements for the subroof. The subroof has the function of safely draining off moisture condensation or water entering through the tile-like arrangement in adverse weather conditions, thus preventing structural damage.

The parameters are determined on the basis of:

- Specifications of SIA 232/1 'Inclined Roofs' [Swiss Society of Engineers and Architects]
- Rain tests at the CSTB (Centre Scientifique et Technique du Bâtiment [Scientific, Technical and Buildings Centre], France)
- Rain tests according to CN/TR 15601

Requirements for the subroof with different roof slope

For Solrif®, the following range of application has been defined with regard to rain tightness *)

Roof slope	Minimum requirements
10°	General lower limit for the use of Solrif®.
10° - < 22°	Water-tight subroof for exceptional requirements (dynamic pressure > 50 mm dynamic height); see below.
22° - 32°	Subroof for increased requirements (dynamic pressure up to 50 mm dynamic height); see below.
≤32°	Subroof for normal requirements.
70°	General upper limit for the use of Solrif®

*) Scope of application: For Germany, the rules of the Zentralverband des Deutschen Dachdeckerhandwerks e.V. (ZVDH) [Central Association of the German Roofing Trade] apply. A special information sheet on the subject is available.

Subroof for exceptional requirements

The characteristic feature of a subroof for exceptional requirements is the watertight design of the surface including the seam and butt joints. On watertight subroofs, the counter battens are integrated into the watertight design. Intersections, mounting parts and connections must all be fitted to be watertight. The mounting of the roof foil should be carried out in the upper third of the horizontal overlap. The waterproofing must be run over the counter battens. So, the fixation of the bearing battens penetrated the counter battens at the highest point. The greater water load on the subroof is expected, the higher counter battens should be selected. Wood should not be covered on all sides by diffusion-resistant sheets, because humidity that has seeped in and is enclosed cannot be guaranteed to dry out. Alternatively, humidity-resistant materials can be used for the counter battens.

Subroof for increased requirements

The characteristic feature of a rainproof subroof is the watertight design of the surface, including the seam and butt joints. On rain-tight subroofs, the counter battens are not integrated. Intersections, mounting parts and connections must all be fitted to be rain-proof. The mounting of the roof foil should be carried out in the upper third of the horizontal overlap. The entry of blown snow and rain through ventilation openings is unavoidable in ventilated systems.

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Illustration 1: Rain-proof roof underlay (after ZVDH)

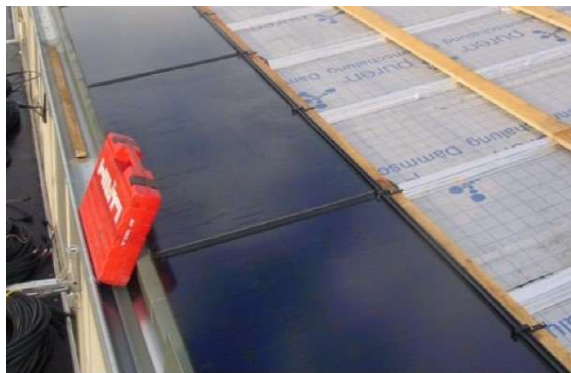


Illustration 2: Roof underlay for exceptional requirements

Additional remarks:

Drainage: We recommend draining the roof foil into the rain gutter.

The French market

As varying requirements for roofs underlay are not common in France and the specifications in the ATEC (Avis Technique: 21/12-22) refer to tests without a subroof CSTB has set a lower limit for the roof slope of 15°. With the measures referred to above, Solrif® can be used with a roof slope of up to 10°.

Increased structural requirements

Special climatic conditions, exposed location of the building, structural peculiarities and large distances between ridge and eaves (> 8 m) require additional rain-proofing measures, such as use of a counter-batten made of moisture-resistant materials or a raised counter-batten.

Requirements for the roof foils

Due to the temperatures that occur, foils with a temperature resistance of up to 80°C must be used when designing a subroof to be water-tight. Suppliers, see e.g.: Product declarations for roof underlay products, Gebäudehülle Schweiz [Swiss Building Envelope Cooperative].

Technical support

Contact for technical support: solrif@ernstschweizer.ch