Solar systems by Schweizer:
Information sheet on using Solrif® on arched roofs.

Summary

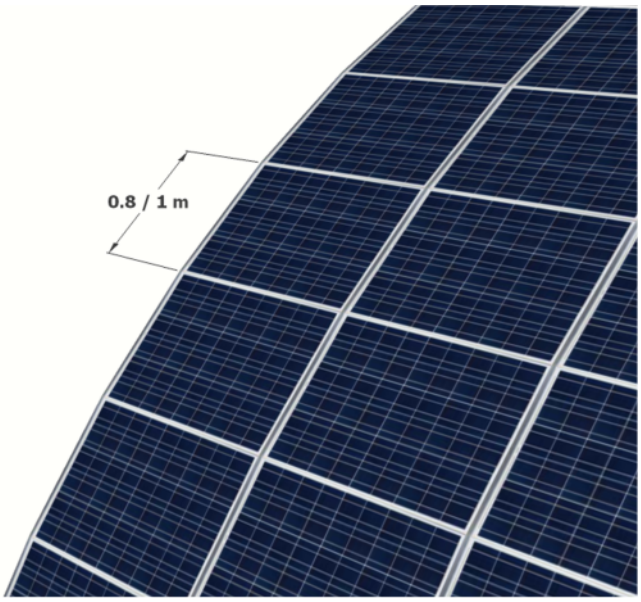
The use of the Solrif® mounting system on arched roofs (barrel roofs) is basically possible from a radius of curvature of 7 m. This document describes the adjustment of the roof batten cross section recommended for the range of 7 - 30 m radius of curvature in dependence on the module height (Grid Size Vertical) and the roof's radius of curvature.

Example of an arched roof: a library in Granada (Spain) with metal substructure

1. Application range for arched roofs

The Solrif® mounting system can be used on arched roofs from a roof radius of 30 m without any adjustments. Smaller radii are also possible, but in this case we recommend slightly bevelling the roof batten cross-sections. By making these adjustments, the mounting brackets of the overlapping module are easier to install and the module is not forced through the brackets in the overlapping area.

For all projects, the static dimensioning with regard to wind and snow loads must be checked separately. With regard to watertightness, the technical note 'Application range of Solrif® with regard to Watertightness' should be observed.



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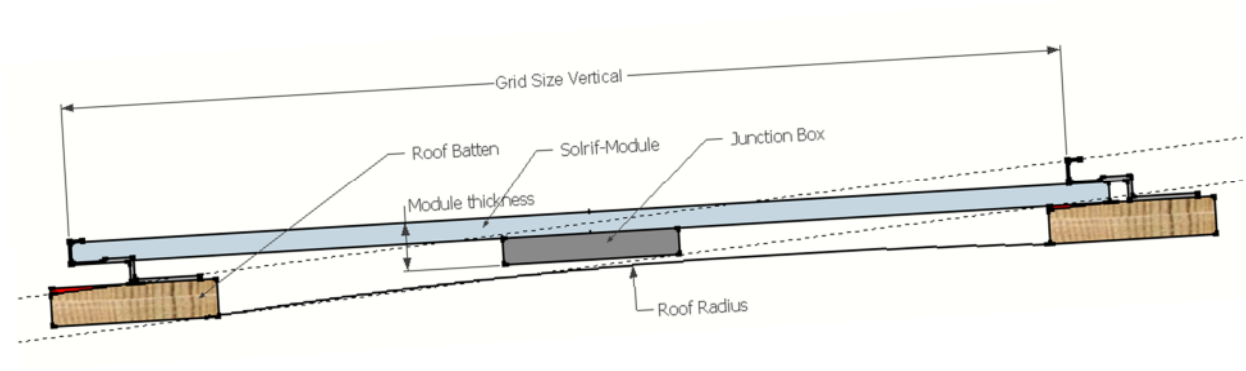
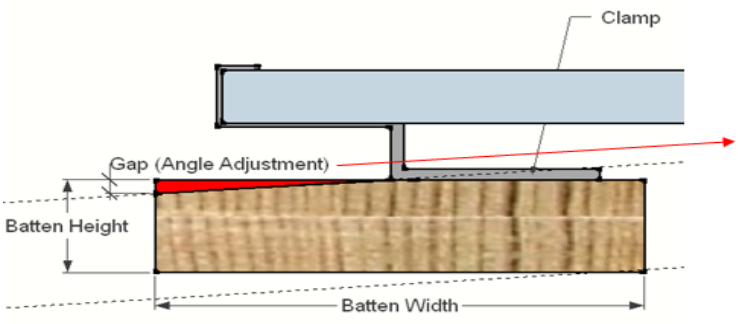
The following illustrations show the installation situation of a Solrif® framed module on a curved roof and the area for adapting the roof battens (marked in red).



Cross-section of a module installed on a curved roof with Solrif® mounting system.



Cross-section of a batten to be adapted with mounted module and bracket.

2. Cross-section of a batten to be adapted for different roof radii

The following table shows the necessary adjustment of the roof batten cross-sections for different roof radii according to the illustration above. In the calculation, the height of the junction box was assumed to be 30 mm and a safety clearance of 5 mm was allowed for.

From roof radius [m]	**7**	**10**	**15**	**20**
Adaptation of the roof batten with 0.8 m module height [mm]	4	3	2	1
Distance between junction box and roof with 0.8 m [mm]	1	4	7	8
Adaptation of the roof batten with 1 m module height [mm]	5	3	2	2
Distance between junction box and roof with 1 m [mm]	- 5	1	4	6

The lower limit for the roof radius with Solrif® is determined by the distance between the junction box (assuming a height of 30 mm) and the roof. For 0.8 m module width the minimum roof radius is 7 m. The distance between the junction box and the roof is then only 1 mm plus the safety clearance of 5 mm. For 1 m module width the lower limit of the roof radius is 10 m. The distance from the roof is then only 0.2 mm. Between 7 and 10 m roof radius the profile brackets are slightly pretensioned.

This information sheet only provides the geometrical boundary conditions for curved roofs. Questions regarding statics and rainproofing must be considered separately.

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