Solar energy systems
Information sheet for using Solrif® on curved roofs (barrel roofs)

Summary

The Solrif® mounting system can be mounted on barrel roofs (curved roofs) with a radius of curvature of 7 m or above. This document provides guidelines how to modify battens in relation to module height and the radius of curvature (between 7 and 30 m).
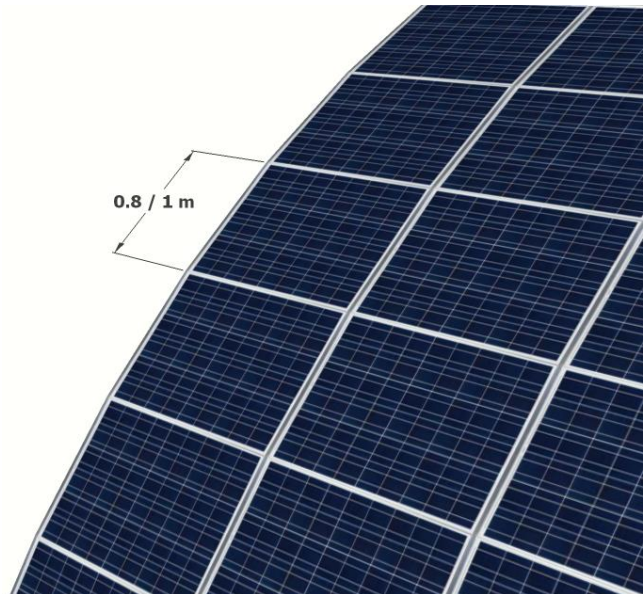
Example of a barrel roof on metal frame structure, library in Granada/Spain

## 1. Range of application on curved roofs

On curved roofs with radius' above 30 m, the curvature can be ignored and Solrif® may be mounted just like on level roof surfaces. On roofs with radius' of curvature below 30 m, we do recommend adjusting the thickness of the battens. This adjustment makes it easier to mount the Solrif® modules and prevents the clamps from exerting a constant tension on the overlapping modules.

In all cases, individual site's structural requirements regarding environmental loading must be determined. Guidelines on weather-tightness can be found in our tech note "Solrif® Range of Application Relating to Weather-tightness". The following images show how Solrif® modules can be installed on a curved roof and the location where the battens should be modified (marked in red).
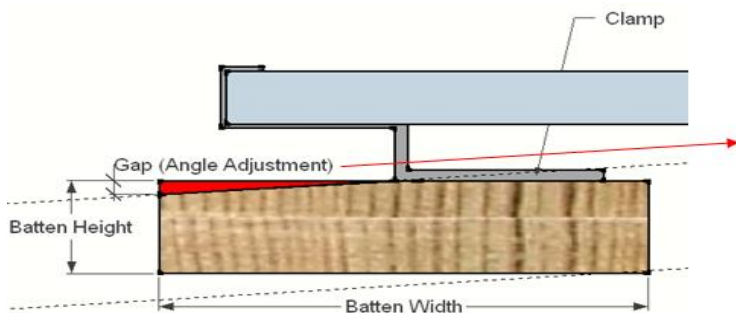

0.8 / 1 m

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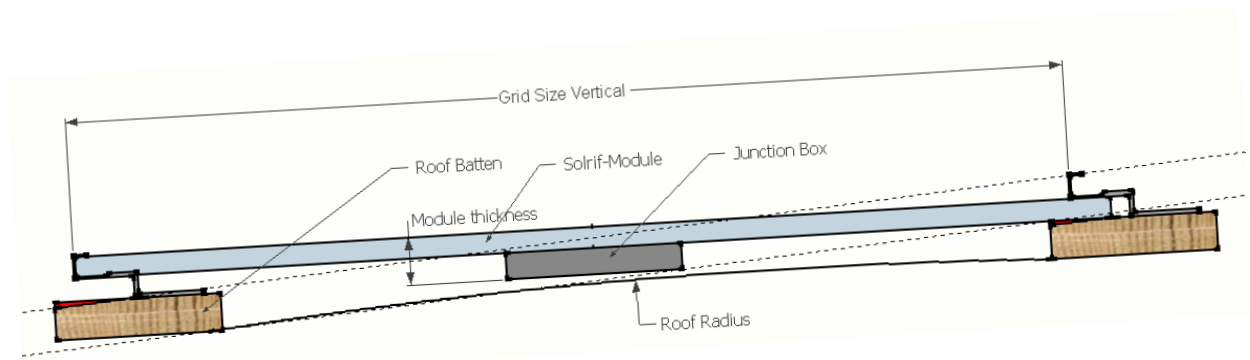
Cross section of Solrif® module mounted on a curved roof.

Cross section of a batten modified for mounting on curved roof, showing mounting clamp and module.

2. Adjusting the thickness for a range of radius' of curvature

The following table lists how much the thickness of the battens should be modified. The modification is shown in the above drawing. These numbers assume the junction box is no thicker than 30 mm (leaving a safety margin of 5 mm).

From radius of curvature [m]	7	10	15	20
Modification of battens for modules vertical length 0.8 m [mm]	4	3	2	1
Gap below junction box for modules 0.8 m [mm]	1	4	7	8
Modification of battens for modules vertical length 1 m [mm]	5	3	2	2
Gap below junction box for modules 1 m [mm]	- 5	1	4	6

The minimum radius of curvature with Solrif® is determined mainly by the thickness of the junction box (30 mm assumed). For Solrif® modules of 0.8 m vertical length the minimum radius is 7 m. The gap underneath the junction box in this case is only 1 mm plus 5 mm margin. For Solrif® modules of vertical length 1.0 m the minimum radius is 10 m. The gap underneath the junction box is only 0.2 mm (excl. margin).
For radius' of curvature between 7 and 10 m, clamps become slightly preloaded.

Technical support

For further questions please contact Mr. Helge Hartwig, Head of PV Mounting Systems, (helge.hartwig@schweizer-metallbau.ch) or Mr. Xavier Breitenmoser, Applications Engineer PV, (xavier.breitenmoser@schweizer-metallbau.ch).

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