

Technical Data Sheet

FLECK Solar support tile

with adjustable stainless-steel
bracket



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Product Description

The FLECK Solar support tile is a TÜV-tested roof tile made of highly weather-resistant PVC and equipped with an adjustable stainless-steel support bracket. Its large bearing surface and multiple elongated mounting holes allow virtually all common PV mounting rails and sub-structures to be securely attached.

The support bracket is fully pre-assembled and can be installed independently of the rafter position within the roof covering. It is supplied UV-resistant coated to match the existing roof covering.

No mechanical modification of adjacent roof tiles is required. The roof tile is supplied complete with a load-bearing steel plate on the rear, to which a Z-profile for wind uplift protection is attached.

- TÜV-tested load-bearing values (see page 2)
- Compliant with applicable technical roofing regulations for pitched roofs with a roof pitch of 10° or more
- Suitable for both new-build and existing roofs
- No mechanical modification of adjacent roof tiles required
- Inclination and height of the stainless-steel support bracket are adjustable

Applications

- Product for the on-roof installation of substructures for PV modules on pitched roofs with roof pitches from 10° to 60° *.

Material Specifications

- Main components made of weather-resistant, durable special-grade rigid PVC.
- Angled rear support plate and Z-profile for wind uplift protection made of galvanized steel
- Stainless-steel hexagon-head screws (13 mm)
- External solar mounting interface made of high-strength V2A stainless steel **

Fire classification

- B2 in accordance with DIN 4102-4 (PVC-U roof tile)
- A1 in accordance with DIN 4102-4 (all load-bearing metal components)

Technical Advices

- The required roof batten dimensions (30 × 50 mm or 40 × 60 mm) must be specified when ordering.
- Additional battens corresponding to the existing roof batten dimensions are required for installation.
- Mounting rail systems and their fasteners are not included
- The structural verification for a roof-mounted solar installation must be carried out on the basis of the manufacturer's specifications for PV or solar thermal systems by a suitably qualified structural engineering office or engineering consultant.
- The use of sheet-metal screws for fastening the roof tile is recommended. Screws are included in the scope of delivery.

* Please contact FLECK if the roof pitch differs from the specified range.

** V2A stainless steel may not be suitable for use in regions with particularly high levels of salty air.

Additional Information



Installation Instructions –
Roof Batten Dimensions
fleck-dach.de/downloads



Solar support tile compatibility
fleck-dach.de/services

Sketches / Tables

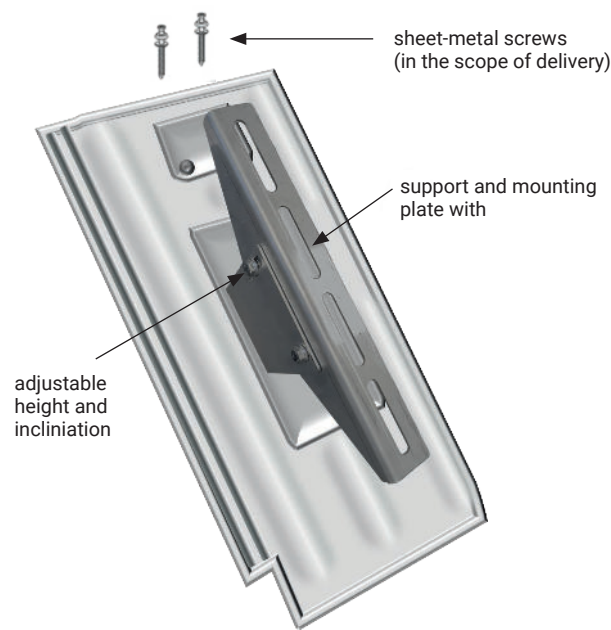


Fig. 1: Schematic illustration of the front side

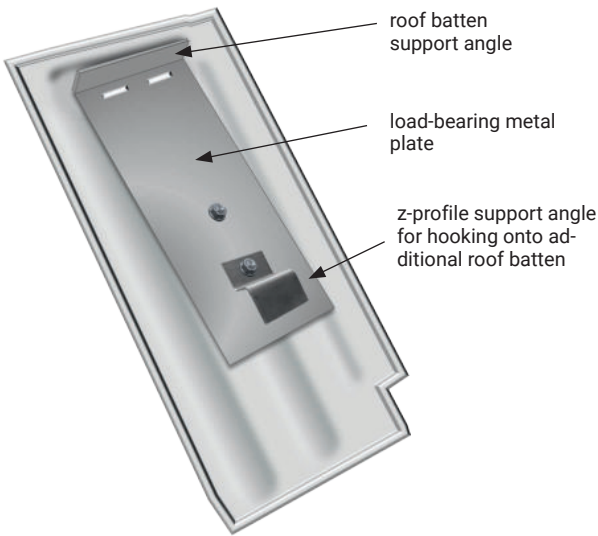


Fig. 2: Schematic illustration of the back side

Load-bearing capacity

Roof pitch angle (°)	N _{Rd} kN	V _{Rd} kN	F _{Rd} kN
10	4,62	1,48	4,62
15	4,62	1,48	4,24
20	4,62	1,48	3,73
25	4,62	1,48	3,27
30	4,62	1,48	2,90
35	4,62	1,48	2,59
40	4,62	1,48	2,35
45	4,62	1,48	2,16
50	4,62	1,48	2,00
55	4,62	1,48	1,87
60	4,62	1,48	1,77

Source: TÜV-Süd

N_{Rd} (Uplift) = Normal force component = **2,58 kN**
(wind uplift perpendicular to the roof surface)

V_{Rd} = Shear force component (parallel to roof surface, ridge direction) = **1,40 kN**

$$F_{Rd} = \left[\left(\frac{\cos \alpha}{N_{Rd}} \right)^2 + \left(\frac{\sin \alpha}{V_{Rd}} \right)^2 \right]^{-0,5}$$

N_{Rd} = Normal force component (compression perpendicular to the roof surface)
V_{Rd} = Shear force component (parallel to roof surface, eaves direction)
F_{Rd} = Design coefficient for the respective roof pitch

The applicable generally accepted technical rules and standards for roofing work must be observed when installing the substructure. When installing the additional roof batten, which must be of load-bearing batten quality, ensure that it positively engages with the Z-profile. The minimum batten spacing between the additional batten and the supporting roof battens can be determined depending on the selected roof tiles and the roof covering gauge. The required dimensions are available in the download section of www.fleck-dach.de or can be measured directly on site. The angled metal plate on the rear of the roof tile and the Z-profile are positively engaged with the supporting and additional roof battens. This ensures the transfer of the calculated compressive and wind uplift loads. Please use the supplied roofing screws to fasten the product.