

Fastening system for  
mounting structures on roofs  
with EVALASTIC® and EVALON®  
waterproofing

**EVATEC® Solar**  
mounting rail

# EVATEC® Solar – flat roof at work. With solar technology.

The new, patented alwitra EVATEC® Solar mounting rail is a unique fastening system (statically verifiable) for safe installation of solar systems on roof surfaces with EVALASTIC® or EVALON® waterproofing.

The EVATEC® Solar mounting rail is placed on the finished roof waterproofing and fastened directly to the supporting deck with (long) roofing screws. No need for any roof openings. The EVATEC® Solar mounting rail does not require any additional ballast. Effective loads are transferred directly into the supporting deck of the roof and not into the roof waterproofing.

The German technical approval body Deutsches Institut für Bautechnik (DIBt) has granted a **General building authority approval** as well as a **General design approval for EVATEC® Solar, providing additional safety for designers, installers and operators.**



The innovative EVATEC® Solar fastening system is a consistent supplement to the comprehensive and proven alwitra flat roof system.

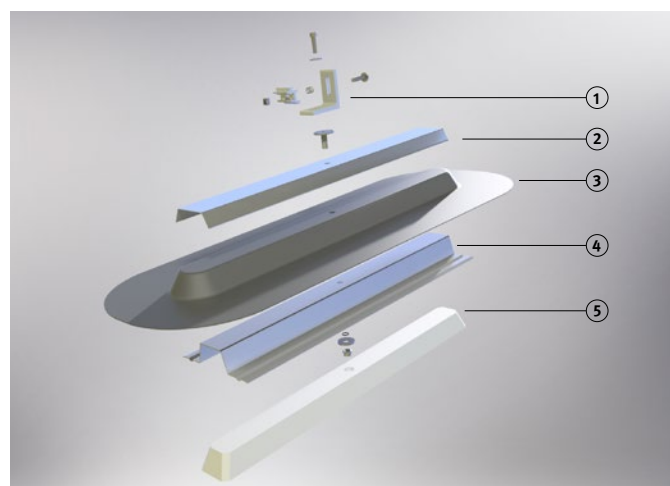
**alwitra. Flat roof at work. With system.**



EVATEC® Solar 450 with one Rapid system connector  
(Rapid system connector not factory-mounted, included in delivery)

## Advantages:

- Easy, safe installation without damaging the roof waterproofing
- Absolutely watertight thanks to proven, homogeneous in material welding to EVALASTIC® or EVALON® waterproofing membranes
- Particularly suitable for roofs with low load-bearing reserves
- Structural safety for elevated PV systems
- No ballast required to ensure position stability
- Load transfer by mechanical fastening to the supporting deck, thus no load transfer via the roof waterproofing
- Simple connection by Rapid system connectors
- Can be used on a wide range of different roof build-ups
- Non-corrosive, stainless materials provide a long service life
- Compared to conventional systems
  - no thermal effects
  - no sliding/slipping of PV generators (caterpillar effect)
- Significantly easier assembly of the PV system with lower maintenance requirements at the same time
- No special tools required
- Clear separation of electrical and roofing sections



Exploded view of the alwitra EVATEC® Solar mounting rail:

- ① Rapid system connector
- ② Aluminium cover rail
- ③ Prefabricated part made of EVALASTIC® or EVALON®
- ④ Aluminium support rail
- ⑤ Insulation core

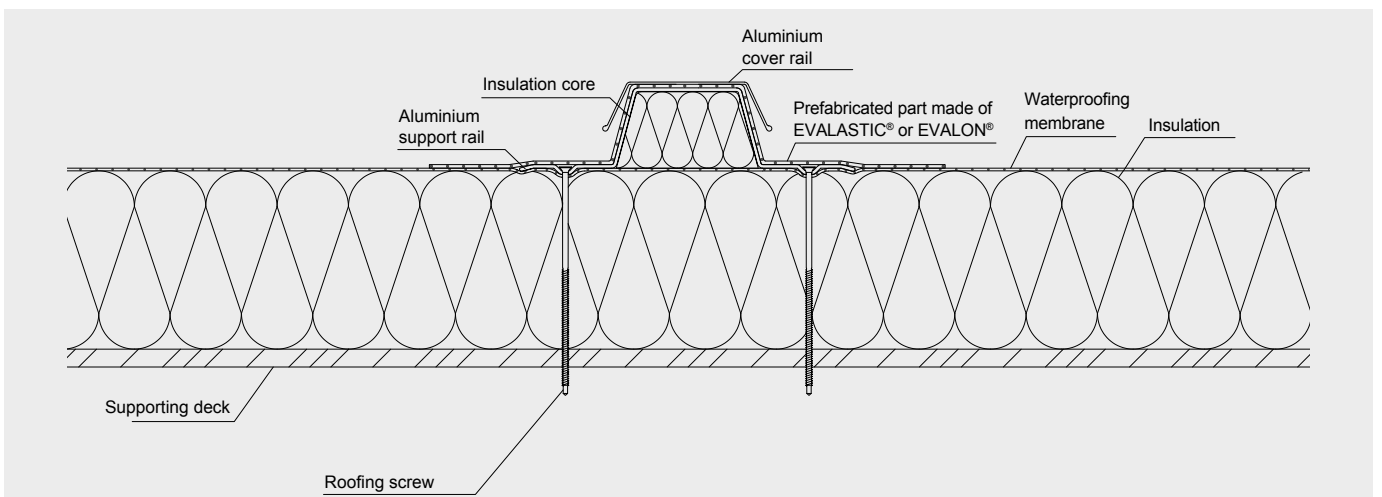
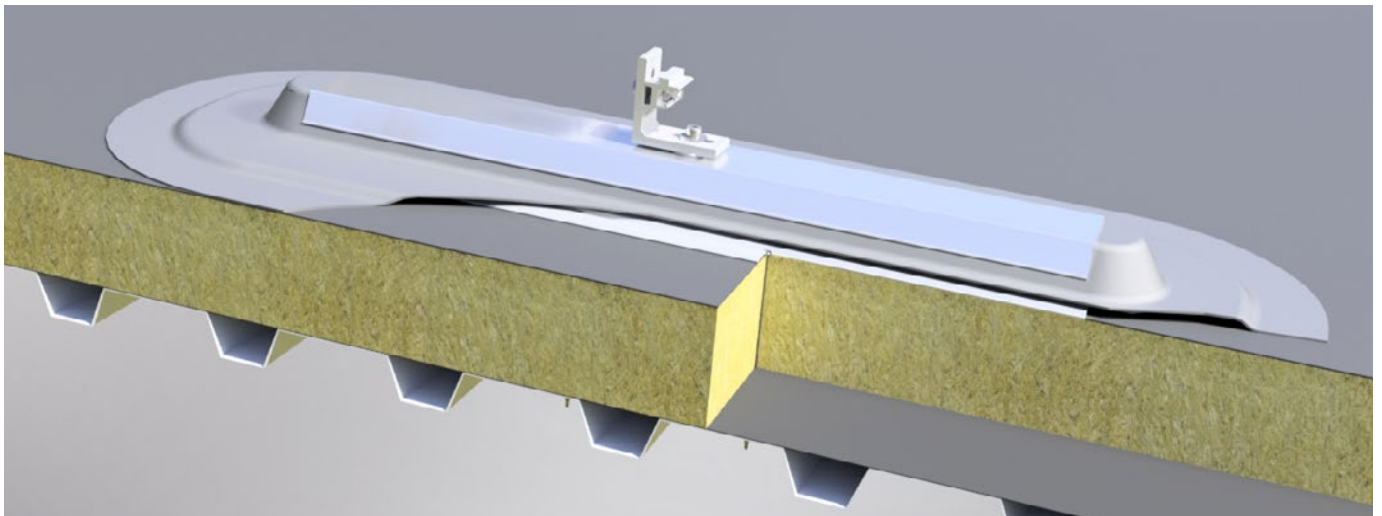
# Prerequisites for a safe PV system and long-lasting roof waterproofing

The effective structural loads and forces exerted by the PV system due to its own weight, wind and snow can be determined for each specific project. The exact amount of EVATEC® Solar mounting rails required can be determined by structural dimensioning.

On roof surfaces with EVALASTIC® or EVALON® waterproofing, the mounting rail is fastened to the supporting deck (e.g. trapezoidal sheet metal, wood or wood-based boards) with approved roofing screws. Proven, homogeneous in material welding of the prefabricated part to the roof surface is carried out, as usual, by using hot air (EVALASTIC® or EVALON®) or solvent welding agent (EVALON® only). For safe absorption and transfer of the effective loads caused by the solar system, the customer is advised to have the roof structure checked in advance. In this context,

issues that need to be paid attention to include load absorption and distribution at the fastening points into the supporting deck, transfer of the forces into the building as well as the required pressure load capacity of the insulation.

Be sure to make early use of our comprehensive alwitra service right from the design phase of your PV system and ask for specific advice from our experienced technical consultants on site. In addition, we can draw up layout plans as well as a design report with structural pre-dimensioning. Upon request, our experienced application technicians will be glad to assist you by providing competent instruction for installation on the roof. Moreover, we will not leave you alone after installation either: Be sure to contact our professional after-sales service!



alwitra EVATEC® Solar mounting rail: easy installation on the roof waterproofing, secure fastening by means of roofing screws

# Installation

The alwitra EVATEC® Solar mounting rail is fastened to the supporting deck with approved roofing screws.

Large roof openings – as required for other rigid fastening systems – are not necessary.

There is no load transfer via the waterproofing membrane.



Subsequently, the alwitra EVATEC® Solar mounting rail is connected by homogeneous in material welding to the EVALASTIC® or EVALON® waterproofing.

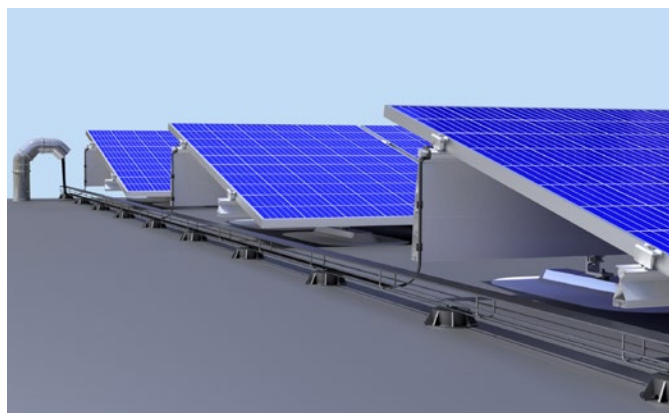


Module support profiles for holding solar modules are fastened directly to the EVATEC® Solar mounting rail using the Rapid system connector.



Photovoltaic systems on flat or low slope roofs can be designed using different elevation systems / mounting systems (additionally inclined to the south, east-west or parallel to the roof).

The selection of a specific system is based on the roof slope, the supporting deck, the orientation, the desired type of elevation for the solar modules as well as the effective loads and forces.



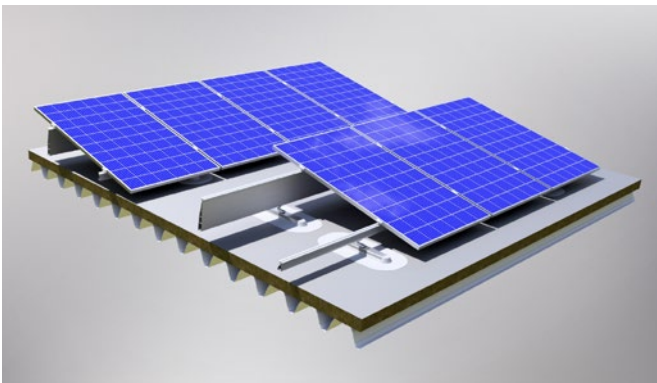
EVATEC® Solar avoids inadmissible load transfer via the roof waterproofing as well as well-known sliding / slipping of elevated solar generators (caterpillar effect).

# Application examples

By mounting PV systems on EVATEC® Solar mounting rails, no further ballast is required to ensure position stability – ideal conditions for roofs with low load-bearing reserves.

The specified system weights per unit area of the following installation examples are average and may vary due to specific project conditions.

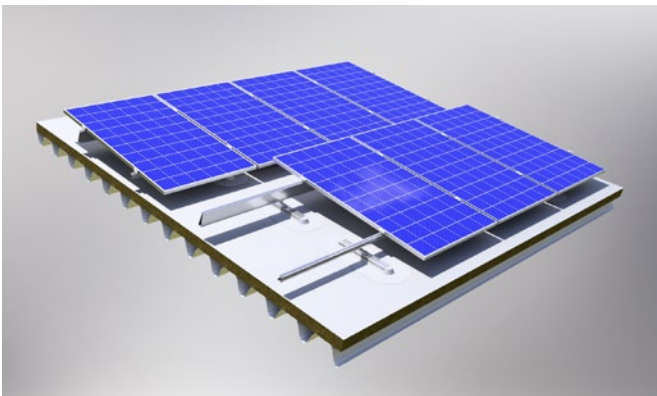
## Roofs with waterproofing 0° to 5° roof slope:



FixZ-15

Installation of a PV system with an **additional inclination of 11° to 15°** (depending on the module length) with regard to the roof inclination using **FixZ-15** module support profiles for mounting on **EVATEC® Solar mounting rails** by means of Rapid system connectors. The additional roof load is about 16.5 kg/m<sup>2</sup>.

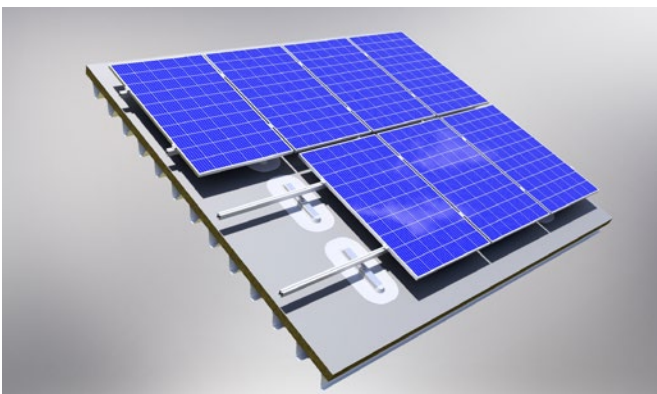
## Roofs with waterproofing 0° to 10° roof slope:



FixZ-7

Installation of a PV system with an **additional inclination of 5° to 7°** (depending on the module length) with regard to the roof slope using **FixZ-7** module support profiles for fastening to **EVATEC® Solar mounting rails** by means of Rapid system connectors. The additional roof load is about 15 kg/m<sup>2</sup>.

## Roofs with waterproofing from 5° roof slope:



Pro50 / Pro70 / SoloPlus




Installation of a PV system **parallel to the roof** (without additional inclination) using **Pro50 / Pro70 / SoloPlus** module support profiles for fastening to **EVATEC® Solar mounting rails** by means of Rapid system connectors. The additional roof load is about 14 kg/m<sup>2</sup>.

EVATEC® Solar – flat roof at work. With solar technology.







# Technical characteristics

## alwitra EVATEC® Solar mounting rail:

	<p>non-corrosive, static support and fastening elements made of aluminium EN AW 6063 and stainless steel</p> <p>integrated prefabricated part made of EVALASTIC® or EVALON® as a sealing element</p>
<p><b>Dimensions / Weight</b></p>	<p><b>EVATEC® Solar 450:</b>            Length: 450 mm (incl. prefabricated part made of EVALASTIC® or EVALON® approx. 750 mm)            Width: 190 mm (incl. prefabricated part made of EVALASTIC® or EVALON® approx. 380 mm)            Height: 60 mm without Rapid system connector (incl. Rapid system connector approx. 130 mm)            Weight: approx. 1.9 kg (incl. Rapid system connector)</p>
<p><b>Fastening to the roof surface</b></p>	<p>by means of approved roofing screws to the supporting deck (e.g. trapezoidal sheet metal or wood or wood-based boards)</p>
<p><b>Waterproofing</b></p>	<p>homogeneous in material welding of the integrated prefabricated part made of EVALASTIC® or EVALON® to the EVALASTIC® or EVALON® waterproofing membrane using hot air or solvent welding agent* (*EVALON® only)</p>
<p><b>Rapid system connector</b></p>	<p>with Schletter clamping block for holding module support profiles</p>
<p><b>Module support profiles</b></p>	<p>The module support profiles and holders shown in this brochure (<b>Pro50 / Pro70 / SoloPlus, FixZ-15, FixZ-7, Rapid system connectors</b>) are <b>approved</b> photovoltaic module <b>fasteners</b> from Schletter Solar GmbH, to be used in connection with the alwitra EVATEC® Solar mounting rail.</p>
<p><b>DIBt approval</b></p>	<p>General building authority approval /            General design approval (No. Z-14.4-921)</p> <div style="display: flex; align-items: center; justify-content: flex-end;"> <div style="margin-right: 10px;"> <p>Deutsches Institut für Bautechnik</p> </div>   </div>

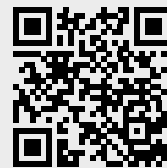
## Accessories:

	<p><b>alwitra load distribution pad</b>            made of aluminium,            approx. 420 mm x 270 mm,            to absorb increased compressive forces or to reduce compressive forces impacting the insulation</p>
	<p><b>alwitra mounting base</b>            made of glass-fibre reinforced (recycled) plastic, Ø 120 mm, height 35 mm,            incl. weldable mounting adapter made of EVALASTIC® or EVALON®            as well as fixing screw for cable duct</p>
	<p><b>EVASTEEL media feed-through set 110</b>            made of stainless steel V4A, DN 100 (OD 110 mm),            with EVALON® or EVALASTIC® coated flange made of special V4A coated stainless steel sheets            for direct welding of EVALON® or EVALASTIC® connecting flanges            (connecting flange included in delivery),            incl. stainless steel pipe bend set consisting of 3 x 45° stainless steel pipe bends V2A</p>
	<p><b>Roofing screw</b>            EJOT JT3-ST-2-6.0</p>

## #unitedontop

The information, technical details or installation instructions contained in this document have been compiled to the best of our knowledge and are believed to be correct at the time of publication. alwitra is committed to continuous improvement and therefore reserves the right to change or amend the product specifications without prior notice, particularly, if required to do so by law. No rights may be derived from this document. Changes reserved; typesetting and printing errors excepted.

This version replaces all previous versions. To get the latest version of this document, please scan the QR code or follow this link:  
[www.alwitra.de/en/downloads](http://www.alwitra.de/en/downloads)



Version 1. 06/2024

alwitra GmbH

54229 Trier · Germany · Phone: +49 651 9102-0

export@alwitra.de · [www.alwitra.de](http://www.alwitra.de)