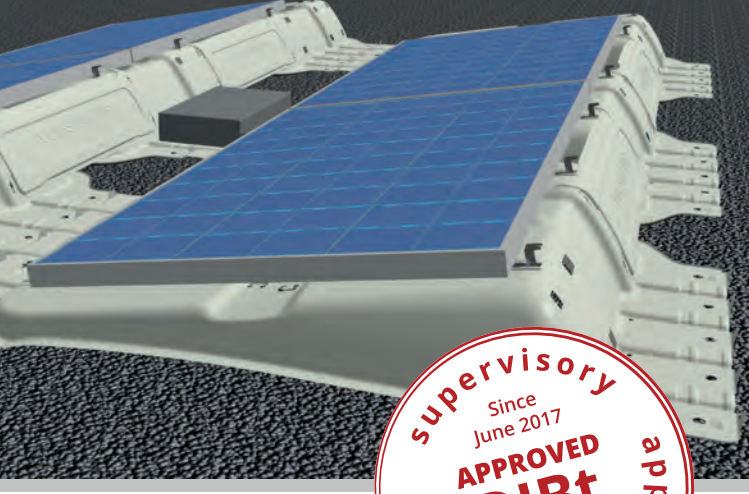


supervisory approval Building
Since June 2017
APPROVED DIBt
Z-14.14.793
Valid only with the iFIX system-lever-clamp

# iFIX

## PV flat roof mounting system

# Installation Manual

english

Based on the ASSEMBLY INSTRUCTIONS
Status February 1st, 2018

# iFIX MOUNTING SYSTEM

## installation video & installation instructions

https://www.ifix-solar.info/en/voestalpine-en/

For Lever-Clamp

For Screw clamp

These and other information can be found on **www.ifix-solar.at**

## iFIX Components

The iFIX mounting system is approved up to a height of 25m.

**Main Element**

**Wind Deflector**

**Lever Clamps**
4 pieces per Main Element

**Screw Clamp**
4 pieces per Main Element

## Required Tools

**Protective Gloves**
EN388 protection class min. 4431

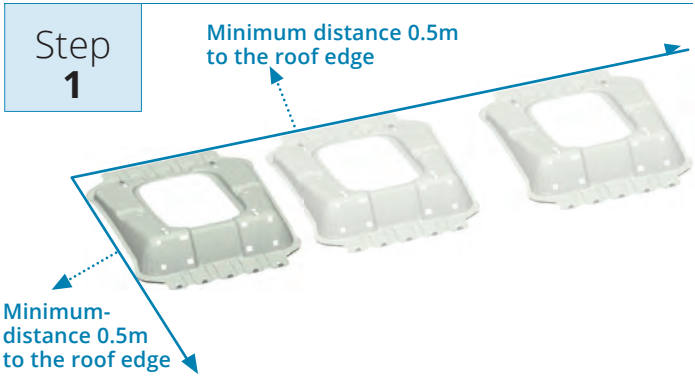
**Measuring tape**

**Chalk line**

**Cable ties**
UV resistant

# Mounting Steps

Step
**1**



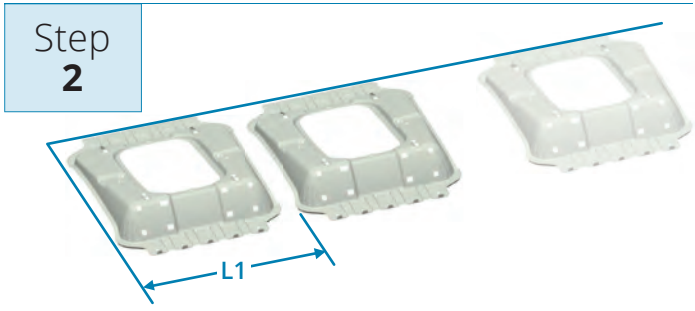

## First Main Element of a series

starting from the south. Mark the leading edge and outer edge (right angle) with the chalk line. Install the main sheet at a specified distance from the edge of the roof.

**Material:** Tape measure, chalk line and main element

Note the **layout** and regional **building regulations!**
e. g. minimum distance to parapet, etc.

Step
**2**

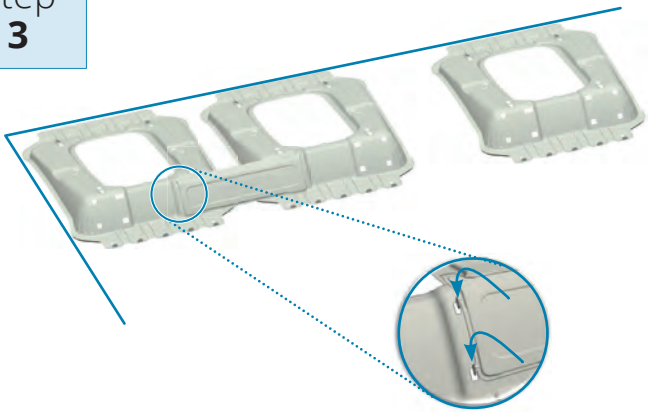



## Second Main Element of a series

Position next to the first one.
Margin:
**L1 = PV-module length – 385mm**
Mark with the chalk line for each additional main sheet up to the full iFIX field size.

**Material:** Tape measure, Main Element and
Protective Gloves

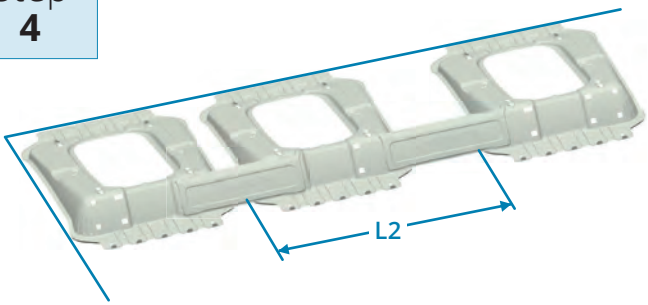
Step
**3**



**First Main Element of a series**
hang from above in the provided rectangular openings of the main panel.

**Material:** Wind Deflector, Protective Gloves

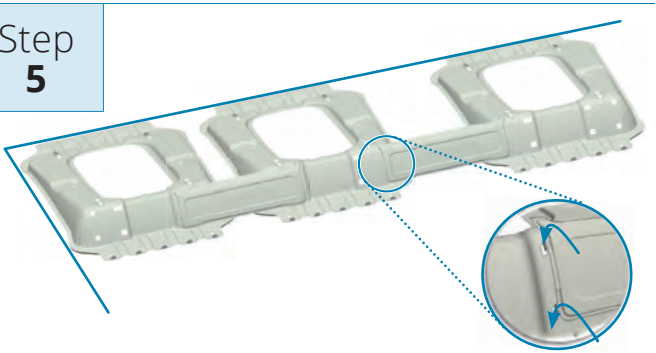
Step
**4**




**Third Main Element of a series**
Position next to the second.
Margin:
**L2 = PV-module length + 10mm**

**Material:** Tape measure, Main Element and Protective Gloves

Step
**5**



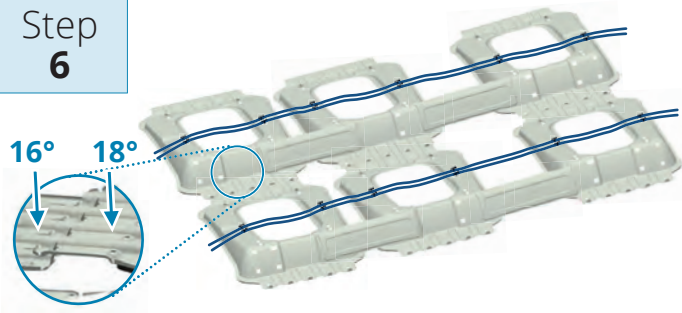
## Second Main Element of a series

hook in from above.

So continue the construction of the series to the end, with the last main sheet to be set at the same shortened distance as the second main sheet.

**Material:** Wind Deflector, Protective Gloves,
Protective Gloves

Step
**6**

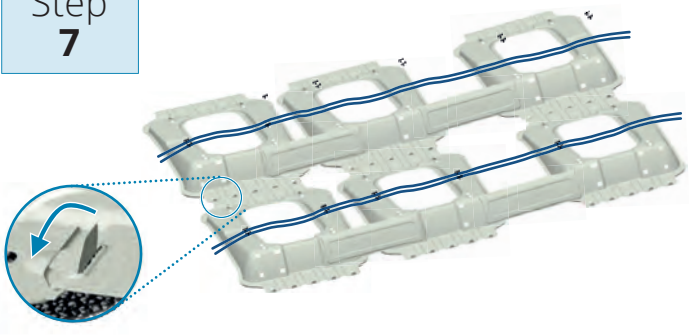



## Placing the Main Element of the second row, connection, cable routing

Place the main plates on the flaps of the previous row by means of oblong holes (select the row of slots according to the desired shading angle). Lay cables.
**Mounting the rows slightly offset from each other is not allowed!**

**Tip:** In order to be able to correct construction errors, do not bend the tabs yet!

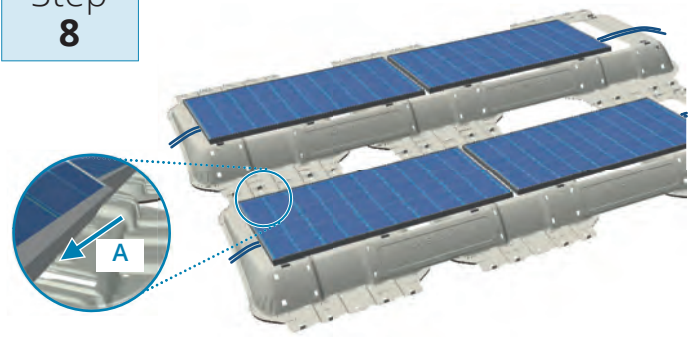
Step
**7**



## Connection of all iFIX Main Elements

Per Main Elements
**Bend each one of the five flaps towards the south.**
Flap connections can be opened and closed up to 3 times. Afterwards the iFIX main sheet.has to be replaced.

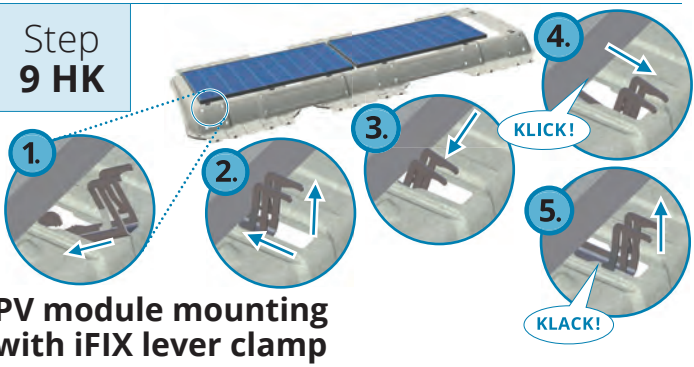
Step
**8**




## Apply and fix the PV modules

Position the PV modules on the lower positioning aid **[A]**, establish the cable connection, lay the cable in the designated channel of the sheet metal and cover it all over. Starting at the low longitudinal edge of the PV module, insert the module clamps.

Step
**9 HK**

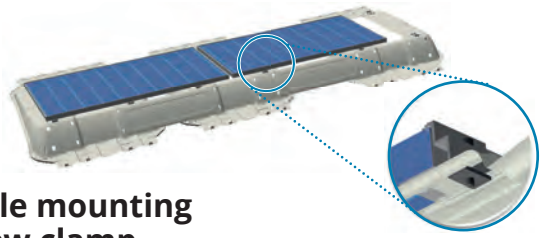



## PV module mounting with iFIX lever clamp

**Only with this Lever clamp can the approval by the general building supervision be obtained!!**
Thread in lever clamps and pull up to the click sound.

**Material:** 4x lever clamps per Main Element

Step
**9 SK**



## PV module mounting with screw clamp

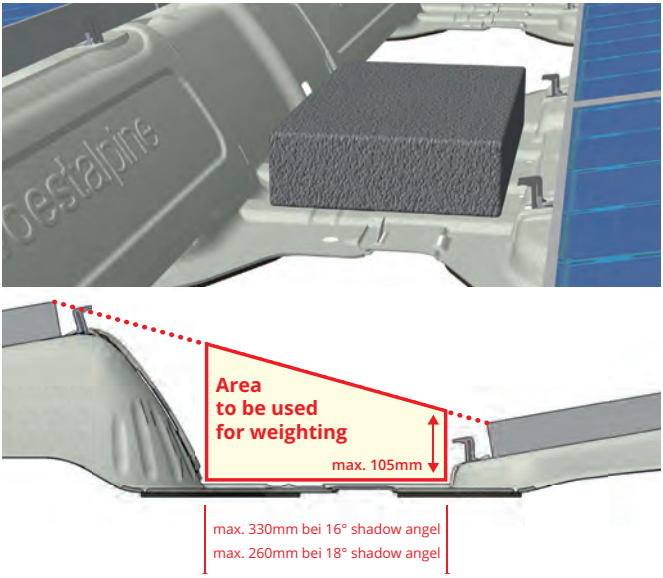
**NO VALID general building authority approval with screw clamps!**
**This connection IS NOT lightning current sustainable!**
Please observe the lightning protection directive.
Thread in the screw clamp and tighten with a screwdriver.

**Ensure correct clamping!**
**Grounding ONLY with special earthing clamp!**
Use Joint clamp / Dehn&Söhne Art. No. 365 200/S - Assembly 25Nm torque

**Material:** 4x screw clamps per Main Element

Step
**10**

## Apply the weighting




The weight for each floor surface of the main sheet is given by the weighting plan.

The surface shown is intended for weighting. The weighting should be applied without sliding movement and must not shadow the PV modules due to their height.

The iFIX ballast plan is binding!

You can request your ballast plan at
https://www.ifix-solar.info/en/ifix-check_en/

# General Information

Detailed information can be found in the assembly instructions.

## Safety Regulations

**In particular, the following should be noted:**

- Wear safety clothing (especially protective helmet, work shoes and gloves - EN388 protection class 4431)
- When working on the roof, the regulations for roofwork must be observed (eg use of fall protection, scaffolding with catching device from an eaves height of 3 m, etc.).
- The presence of two people is mandatory for the entire assembly process to ensure quick assistance in the event of an accident.
- Required work on the roof must be carried out by a roofer.
- AC / DC wiring has to be done by an electrician. Please note: DIN VDE 0100 Part 712 - Installation of low-voltage systems.

## Installation Instructions

**Before installing the PV system, ensure that:**

- Roof seal complies with DIN 18531.
- Compatibility of the roof surface with iFIX
- iFIX on gravel - no building protection mat (BSM)
- iFIX on bituminous roofing - BSM
- iFIX on plastic film - aluminum-laminated BSM

## Cutting the iFIX sheet metal parts

- Stability must not be impaired.
- Treat cutting edges and corners in such a way that no damage to persons or roofing can occur.
- Bend tab connections can be opened and closed a maximum of 3 times. After that replace the iFIX main panel.

## PV Modules

- Observe the installation instructions of the PV module manufacturer.

## For Weighting

- Used materials must not shade the PV module surface.
- When using gravel for weighting, make sure that it does not cover the ventilation openings in the low area of the PV modules.
- A „BSM strip“ is to be placed under the first weighting surface of the first row.

The following standards must be observed:

- [VDS 2023] Electrical installations in structures with predominantly combustible building materials - Guideline for damage prevention.
- [DIN 4102] Reaction to fire of building materials and components.
- [DIN 1860] Drainage systems for buildings and property.
- Must be done according to iFIX ballast plan!

## Grounding / potential equalization:

All internal system connections of the iFIX system must be executed with sufficiently defined electrically conductive cross sections corresponding to a standard earthing. When using the iFIX stainless steel lever clamp, the PV system's internal potential connection is fully guaranteed for each continuous row. Between the rows an electrically conductive connection must be made. In contrast to other systems with conventional middle end clamps, the PV module frame is conductively integrated into the frame with iFIX due to the use of toothed stainless steel clamps. For the integration of the frame in the equipotential bonding it is therefore sufficient to connect the field at one point with a ground conductor of sufficient cross-section and to lead this ground conductor to the equipotential bonding rail of the building. **Caution:** When using aluminum screw terminals, equipotential bonding is not guaranteed because the aluminum oxide layers of the terminal and the PV module frame do not make good contact. In this case, ensure an electrically conductive, sufficiently low-resistance connection between the PV module frame. When using the optionally available variants made of painted zinc-coated sheet steel, a low-resistance connection of the iFIX wind deflectors with

the iFIX main plates must be ensured.
When laying cables under the PV modules, cable loops should be avoided.

## Lightning current carrying capacity:

The lightning protection of a PV system or of the underlying building must always be planned by a lightning protection specialist.
The term lightning current carrying capacity is used for connections, terminals, etc., which must actively divert lightning currents as part of the lightning protection system.
Each of these components must be tested and certified as part of a separate test.
The lightning current carrying capacity of a rack system is in general not relevant, since the support system is not used as arrester or arrester bar in the context of external lightning protection.
The lightning protection system is normally completely independent of the PV system.
As a rule, a defined separation distance between the PV system and the lightning protection system must be observed.

In certain cases, it is possible to connect the rack system to the lightning protection system, but the coupling of partial lightning currents into the electrical system has to be taken into consideration.

In this case, it is relevant that the internal potential connections of the frame are correspondingly low-resistance and with a sufficient cross-section.

In the case of the iFIX system, this has been proven by an independent check of the lightning protection carrying capacity according to DIN EN 50164-1 and DIN EN 62305-3.

Please note the separately available „iFIX Directive lightning protection“, available in our iFIX Download-Area.
Attention: The verification of the **lightning current carrying capacity** is **only** valid for the aluminium zinc coated type type of **main plate with lever clamps made of stainless steel**.

Standards to be followed for the design and installation of lightning protection, earthing and equipotential bonding are:

| | |
|---|---|
| DIN EN 62305 | lighting arrester |
| DIN VDE 0185 Teil 1-4 Blitzschutz | part 3 supplement sheet 3 |
| DIN VDE 0100 | part 410 earthing |
| DIN VDE 0105 | operation of electrical systems |
| DIN VDE 0298 | electrical cables |

All relevant national standards must also be observed!

Disassembly of the system is carried out in reverse order by means of the assembly steps.

If you disregard our assembly and/or safety instructions or when installing or adding components of competitors, we cannot be made liable and reserve the disclaimer.


Industrial Representation Europe:
**iFIX-SOLAR GmbH**

Photovoltaic Wholesale
Gewerbepark 19
A-4101 Feldkirchen / Donau
T. +43 (0)7233 / 80 57 050
office@ifix-solar.at
www.ifix-solar.at

Manufacturer contact:

**voestalpine Automotive Components Schwäbisch Gmünd GmbH & Co.KG**
Marcus Wiemann

T. +49/7171/972-360
marcus.wiemann@voestalpine.com
www.voestalpine.com\ifix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