

Catalogue Solar systems



**“Our innovative strength
and technological
know-how strengthen
our position on the
market.”**



Foreword

Dear partners,

The use of solar power contributes significantly to sustainability and independence in building operations and plays an important role in the energy transition. We offer you complete solutions for the simple, fast and safe installation of PV systems. Let's work together to harness the full potential of the sun's rays.

We recognised the trend towards photovoltaic energy generation as early as 2006. Together with our Italian subsidiary, our solar experts developed mounting solutions for PV systems. Today, we look back on almost two decades of experience and success in the realisation of solar projects.

From small installations in private homes to large industrial plants, our complete solutions enable you to master any mounting situation when installing PV systems on pitched roofs and on flat roofs. Our portfolio includes systems for different roof types and roofings as well as solar panel arrangements and orientations. Roof hooks, stud screws, rails, brackets and other accessories form the best system solution for solar technicians and providers of PV modules and PV systems. The application is flexible, and installation is quick and easy. Our high product quality ensures the safety and functionality of the PV system throughout its entire service life.

By the way: We also offer ideal solutions for the simple, fast, economical and visually appealing mounting of PV modules for permanently secure solar façades. Please don't hesitate to contact us with your enquiries.

With our comprehensive services, we support you from planning and dimensioning to on-site support on the construction site and the successful completion of your solar and other mounting projects.

We offer you a broad portfolio of products, system solutions, and 360-degree services along the construction value chain. Our engineers, application technicians, and field representatives support you personally and professionally. In addition, we provide training on

products, applications and regulations through a wide range of online and face-to-face courses at our fischer Academy.

As a fastening pioneer, we continue to drive the construction industry forward – with over 75 years of experience and technological expertise. You, our valued customers, are our driving force for innovation. Your wishes, requests and projects inspire us in our new developments and processes. Our shared success is our greatest motivation.

With this catalogue, we offer you a valuable companion in your everyday work and a helpful guide in your search for the best solar mounting solution. Let's work together with our products and services to actively advance the energy transition and make building operations sustainable and cost-effective.

Enjoy reading and using our fastening systems!

Alexander Bässler

Speaker of the Board of Directors at the
fischer Group of Companies



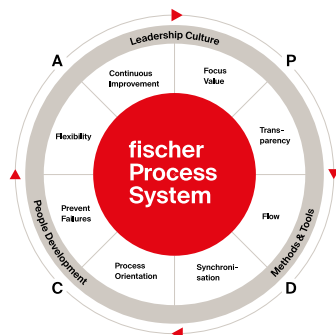
“Whoever chooses fischer receives more than a range of safe products. The aim is to always develop the best solutions for our customers across the globe.”

Besides the innovative products, this predominantly concerns support that is focused on the customer, and services designed to improve customer benefit.

A brand and its promise to perform.

Continuous improvement

The fischer ProzessSystem (fPS) we ensure that we are adapting and optimising our processes in line with customer requirements in a flexible manner and on a continuous basis.

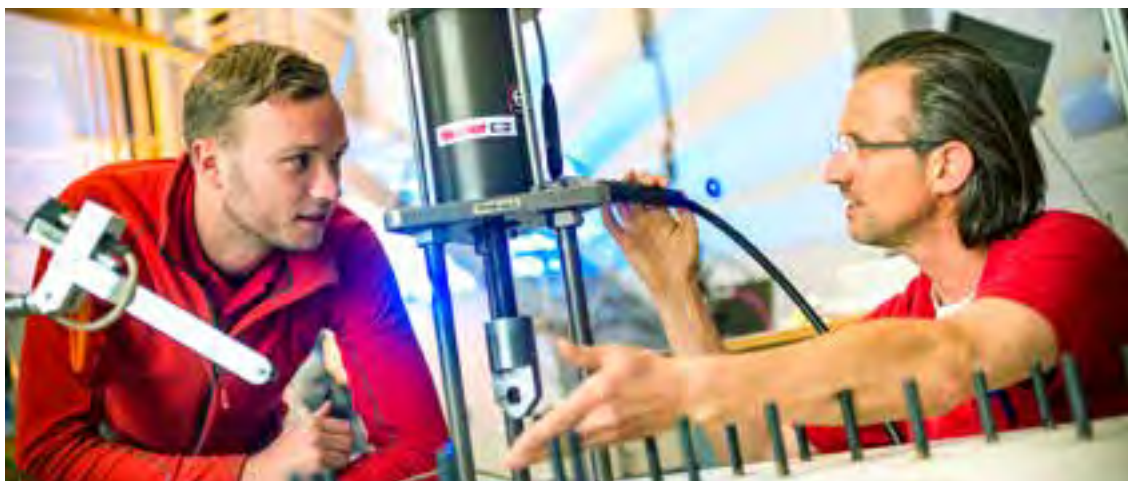


Safety that connects. Decisive quality

We don't make any compromises when it comes to the safety of our products. A whole host of our products are distinguished by comprehensive, up-to-date and international approvals. The fischer product range is well-positioned in all sectors of fixing technology – Steel, Nylon and Chemical fixings. In award-winning quality which continues to impress both professional clients and private customers with equal measure.



International approvals characterise many of our products.





Always on the pulse of time

At fischer, innovation is more than just a sum of the patents. We are open to new things and are prepared for change – always with the aim of offering our customers the greatest possible benefits. Over the years, our own development and production sites have been developing numerous fixing solutions for the most wide-ranging applications. Be it new production procedures or materials, such as renewable raw materials: We are carrying out the research for your safety and will continue to do so in the future. This gives us such great flexibility that we can even develop tailor-made customer solutions. This power to innovate has seen fischer become market leader in anchor technology and the fixing industry.

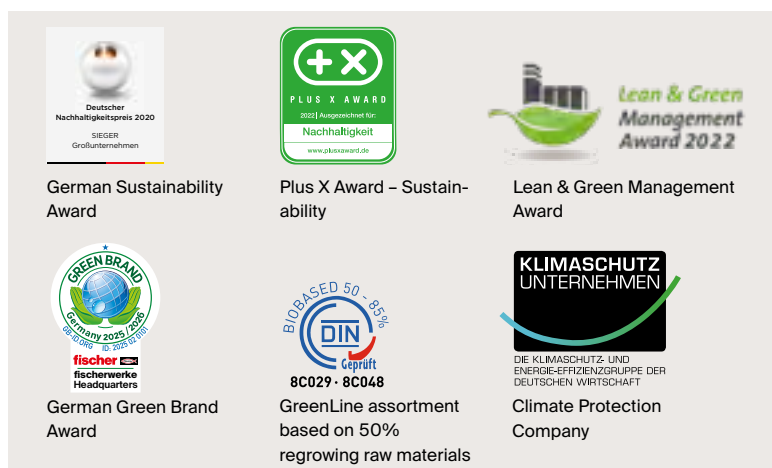
Our service to you

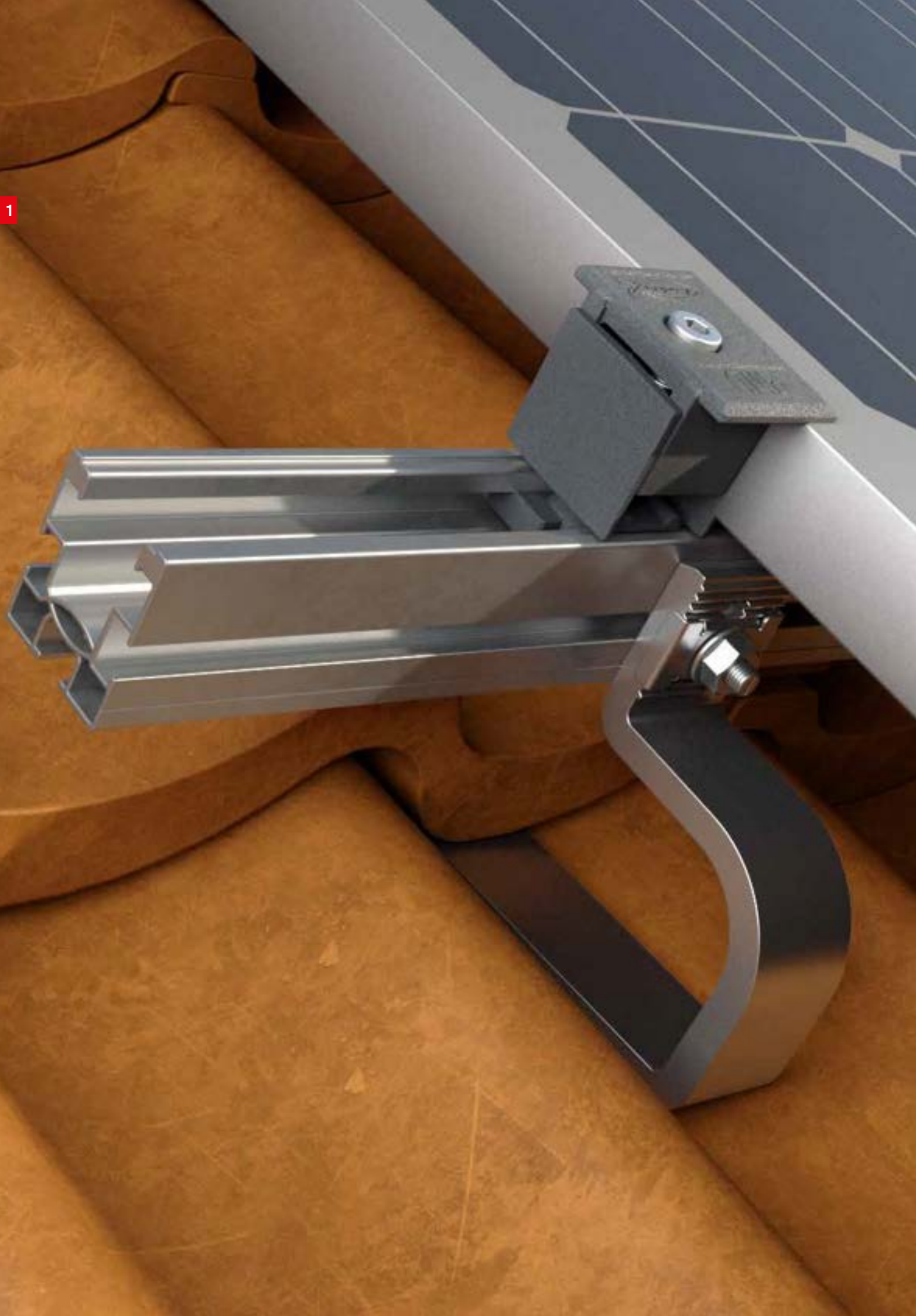
We are a reliable partner, one that will stand at your side and address your individual requirements with advice and action:

- Our products range from chemical systems to steel anchors through to plastic anchors.
- Competence and innovation through own research, development and production.
- Global presence and active sales service in over 100 countries.
- Qualified technical consulting for economical and compliant fastening solutions. Also on-site at the construction site requested.
- Training sessions, some with accreditation, at your premises or at the fischer academy.
- Design and construction software for demanding applications.

We take responsibility

Our active environment management policy means that we are helping to maintain an intact environment for our generation and for those that follow. The environment management policy at the Tumlingen site has been certified in line with DIN EN ISO 14001. It fills us with particular pride that in 2020 we have received the most important and largest award in Europe in the field of sustainability: the German Sustainability Award – category large companies. This was in recognition of our holistic approach and the strategic anchoring of our sustainability management. With our greenline products we have launched the first range of fixings on the market that is based on renewable raw materials to more than 50%.





Innovations that inspire professionals.

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Why fischer Solar systems are the right choice.

Choosing fischer

fischer is one of the most recognized brands in the world. We are a German-based family owned business with headquarter located in Waldachtal, in Germany's Northern Black Forest. fischer specializes in innovative chemical, steel and nylon anchoring systems for the construction industry. We do not only supply high-quality solutions for mounting PV modules, but also have probably the largest range of suitable complementary products for solar installations.

Innovative strength

At fischer, innovation is more than just a sum of patents. We are always open to new things and are prepared for change, with the aim of offering our customers the greatest possible benefits. Over the years, our developers have created numerous fastening solutions for a wide range of applications, such as the new PV-Clip system for modern PV façades.

Quality you can rely on

We do not compromise when it comes to safety. We test and certify our products to comply with international approvals and certifications. As leaders in steel, nylon and chemical fastening, we develop and provide impressive, award-winning solutions that support a variety of applications.

The fischer Solar systems are not limited to innovative system solutions – they are just starting here:

fischer develops and supplies established and robust system components that have been continuously developed for 20 years. As fixing specialists, we offer architects, planners and tradesmen full support from the planning phase to structural calculations and just-in-time delivery to the construction site. The provision of planning software and instruction for fitters are just as much a part of the service as advice on selecting the right systems.

The service offers for fischer Solar systems at a glance

- Comprehensive portfolio for both pitched and flat roofs
- Innovative façade solutions for PV in the façade
- Very large range of matching complementary products
- Central customer portal myfischer
- Intuitive online project planning software SOLARPANEL-FIX
- Wide range of training courses for customers and installers
- Fast and personal advice and dimensioning by our technicians and engineers to help you select the right system components
- Support for architects, planners, civil and structural engineers and contractors in all phases of their construction projects
- Demonstration and instruction by our trained employees
- Worldwide and local representation

Assortment overview.

1

Roof hooks

Hooks in aluminium and steel, available in fixed and adjustable variants, for fastening and supporting photovoltaic and solar systems on pitched roofs.



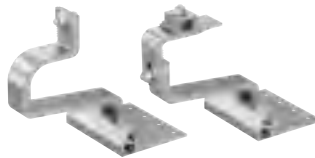
RH AL

Aluminium hook with fixed base for the installation of PV panels on pitched tile roofs without ventilation layer.



RH V AL / RH H AL

Aluminium hook with thin base for the installation of PV panels on pitched tile roofs with ventilation layer of variable thickness.



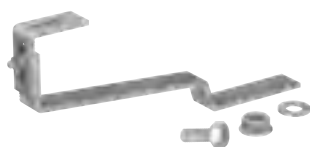
RH VB AL / RH HB AL

Aluminium hook with up to 4 adjustment positions for the installation of PV systems on tiled roofs with ventilation strips of variable thickness.



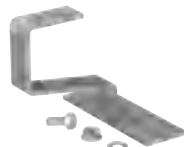
LAB AL

Angle connection bracket for the installation of landscape oriented PV panels on pitched roofs with tiles.



GTPR

Stainless steel hook for building structures for PV systems on roof tiles with a total thickness of up to 30 mm without ventilation strip.



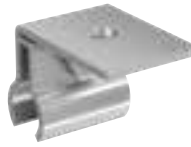
GT

Stainless steel hook ideal to engage the load-bearing part of the support in case of discontinuous structures.



DLA

Stainless steel hook for building structures for PV systems on standing seam roofs. Suitable for flat seaming.



DLAK

Stainless steel hook for building structures for PV systems on standing seam roofs. Suitable for Kalzip standing seam.

Rails

High-performance universal aluminium rails for photovoltaic installations.



SolarFish H33

33 mm high aluminium rail for mounting systems for PV panels, particularly suitable for building structures on pitched roofs with supporting points close to each other.



SolarFish H44

Aluminium rail for building structures for PV systems. The 44 mm high cross-section makes it particularly versatile for systems to be built on both flat and pitched roofs.



SolarFish H83

Aluminium rail with increased 83 mm high cross-section that makes it particularly suitable to optimize the number of supports to the roof in case of heavy stress forces acting.



SolarMetal L

Aluminium rail for building structures for PV systems on trapezoidal metal sheet roofs. The section is optimised for allowing the landscape layout of the panels.



SolarMetal P

Aluminium rail designed to allow PV systems on flat or sloping roofs with trapezoidal metal sheets and with orthogonal fastening (portrait orientation).



SolarFish H33/44 Connector

Rail connectors for SolarFish H33 resp. SolarFish H44. This joint allows to connect two rails making them work together. Quick and easy positioning.



Rail connector CPN AL

Compatible with SolarFish H44 and SolarFish H83, this joint allows to connect two rails making them work together.



PXC AL Plus

Aluminium bracket that allows to connect two overlapping Solar rails with an angle of 90° to create a crossed subframe. Compatible with both SolarFish H33 and SolarFish H44 rails.

Clamps

Universal and pre-assembled clamps in aluminium for PV modules of various thicknesses.



PM U - PMC U

The universal clamps for PV panels from 30 to 50mm thickness. PM C U is used as central clamp, PM U can be used as both final and central clamp.



PM C - PM F

Pre-assembled clamp for PV panels with aluminium frame. Available in different variants depending on the thickness of the PV panel.



MC - MF

Non-assembled clamp, available in different variants depending on the thickness of the PV panel.



Grounding Clip Terragrif

One grounding clip integrates two modules into the potential equalisation. Compatible with all solar rails (except SolarFish H83) and all fischer solar clamps (except PM U).

Double-threaded screws

Double-threaded screws with sealing gasket.



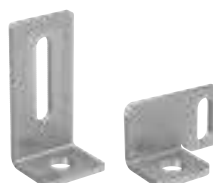
STSI

Double-threaded screw for fastening PV systems on corrugated panel or faux-barrel tile roofs with a steel load-bearing structure.



STSR

Double-threaded screw for PV installations on corrugated panel roofs with a wooden or fibre cement load-bearing structure.



MW

Angle brackets in stainless steel for the connection of the double-threaded screws with the Solar rails or for the connection of two overlapping Solar rails crossed at 90°.



SSP + SSP SPEED Plus

Flat brackets for connecting Solar rails. Both SSP and SSP SPEED are available respectively in two variants with hole for M10 bars or with hole for M12 bars.

Triangles

Pre-assembled triangular frames with variable inclination for fastening PV modules, with either horizontal or vertical layout.



STFS

Compact triangular frame for installing PV systems in a lowered position on flat roofs with panels arranged in a landscape layout.

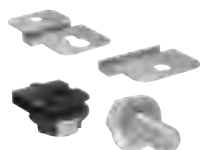


STFN

Triangular frame for flat roofs, suitable also for large PV panels with both portrait and landscape layout. Also available in a railless version.

PV clip system

Quick and easy fixing of PV modules on vertical façades



PV clip system

The fischer PV clip impresses with its versatility and functioning on diverse anchoring surfaces. The concealed fixing opens the possibility of realizing comprehensive façade designs.

Selection guide

for your perfect system.

1

	Hooks								Double-threaded screws			
	RH AL	RH V AL / RH H AL	RH VB AL / RH HB AL	LAB AL	GTPR	GT	DLA	DLAK	STSI	STSR	MW	SSP -SSP Speed Plus
 Roofs												
 Pitched roof with tiles or slate covering	•	•	•	•	•	•	—	—	•	•	•	•
 Pitched roofs with corrugated sheets covering	—	—	—	—	—	—	—	—	•	•	•	•
 Pitched roofs with standing seam covering	—	—	—	—	—	—	•	•	—	—	—	—
 Pitched roofs with trapezoidal metal sheets covering	—	—	—	—	—	—	—	—	•	•	•	•
 Triangles structures for flat roofs	—	—	—	—	—	—	—	—	—	—	—	—
 Steel systems for flat roofs	—	—	—	—	—	—	—	—	—	—	—	—
 Custom solutions for special shapes	—	—	—	—	—	—	—	—	—	—	—	—

Profiles							Clamps			Triangles	
SolarFish H33	SolarFish H44	SolarFish H83	SolarMetal L	SolarMetal P	Rail connectors	PXC AL Plus	PM U - PMC U	PM C - PM F	M C - M F	STFS	STFN
											
•	•	•	—	—	•	•	•	•	•	—	—
•	•	•	—	—	•	•	•	•	•	—	—
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Mounting systems for pitched roofs.

1



Pitched roofs with tile or slate covering

The fischer range for fastening photovoltaic systems on pitched roofs with tiles or slates allows the installation of modules on roofs with or without ventilation strips, thanks to a complete range of hooks and screws.



Pitched roofs with corrugated sheets covering

The fischer fastening system with double thread screws with sealing gasket is ideal for photovoltaic installations on pitched roofs covered with corrugated sheets in different materials like fibre cement.



Pitched roofs with standing seam covering

The fischer system for photovoltaic installations on pitched roofs with standing seam covering involves the use of rails and clamps that guarantee the fastening of the panels both in portrait and landscape orientation.



Pitched roofs with trapezoidal metal sheets covering

The fischer mounting system for trapezoidal metal sheets covering is arranged into a full range of products to ensure the installation of photovoltaic panels on residential, commercial and industrial roofs.

Discover the new SOLARPANEL-FIX calculation software

SOLARPANEL-FIX is an Online module of the FiXperience Suite for the design of mounting systems for photovoltaic panels. It supports professionals in the design of the photovoltaic substructure through a clear and logical flow. The software allows to **automatically calculate the actions of snow and wind loads through the geolocation of the construction site**. In addition, it allows to download the bill of materials to create the substructure, the installation plan and a technical report.



Mounting systems for flat and special roofs.

1



Triangles structures for flat roofs

This system provides fast and long lasting installations thanks to a range of products for low load bearability roofs.



Steel systems for flat roofs

The fischer mounting system for photovoltaic panels with steel profiles allows to create customized structures of any extension and slope.



Customized solutions for special roof shapes

The aluminium customizable system for photovoltaic panels allows to create structures adaptable to any type of roof shape.

The new SOLARPANEL-FIX design software for free.



Find out more information at
<https://software.solar-fix.com>



2

Clamps

Pre-assembled universal clamps
PM U and PMC U

20



Pre-assembled clamps PM C and PM F

23



Non-assembled clamps M C and M F

26



Pre-assembled universal clamps PM U / PMC U

Universal adjustable clamps for PV panels with aluminium frame from 30 to 50 mm thickness.

2



Pitched roof with tiles



Roof with trapezoidal metal sheets covering

Applications

Framed PV panels fastening on Solar rails. Compatible with PV-modules on the following profiles:

- SolarFish H33
- SolarFish H44
- SolarFish H83
- SolarMetal P
- SolarMetal L
- STFNL RL Railless

Certificates / Features



Advantages

- Universal clamps fit all framed PV panels from 30 mm to 50 mm thickness.
- PM U pre-assembled universal clamp is suitable both for end or central use.
- PM C U is the version specific for central use only. Its reduced width allows to optimize rail consumption and minimizes the distance between the panels.
- PM U - PM C U clamps can be quickly installed at any point on the rail just by a rotation of 45°.
- Countersunk head screw avoids shadowing on adjacent PV panels.
- Thanks to the embedded spring, the PM U - PM C U pre-assembled universal clamps stay raised before the fastening, making the PV panels positioning phase easier.
- Ready to install.
- Available also in black anodized version.

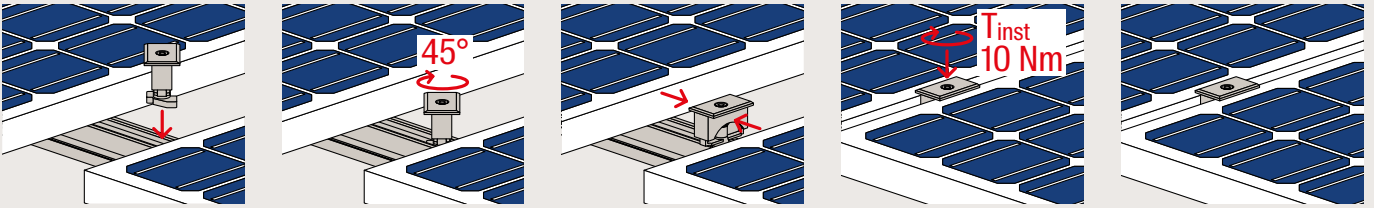
Properties

- Clamp in EN AB 46100 aluminium alloy in accordance with EN 755-2:2013.
- A2-70 stainless steel Allen screw in accordance with EN ISO 3506-1/2:2009.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.
- Black anodized products may show little scratches due to packaging and transport.

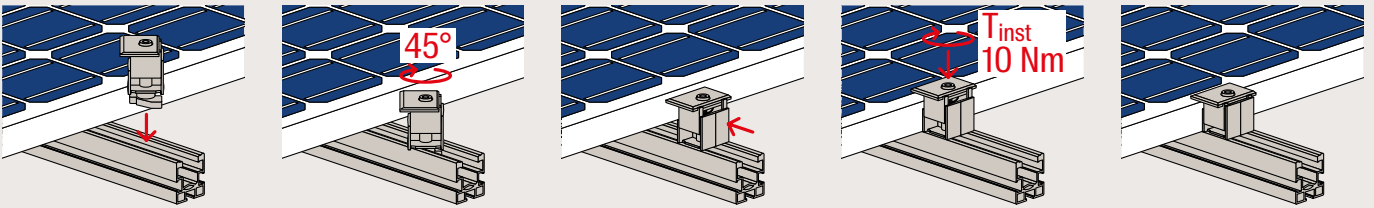
Functioning

- Insert the embedded hammer head nut of the PM U / PM C U pre-assembled universal clamps into the upper side of the rail.
- Turn the PM U universal clamp clockwise to use it as end clamp. Turn it anticlockwise to use it as a central clamp.
- Turn the PM C U universal clamp clockwise.
- Place the PM U / PM C U clamps in contact with the PV panels frame.
- Lock the PV panels in position by tightening the clamp screw with a 10 Nm torque.

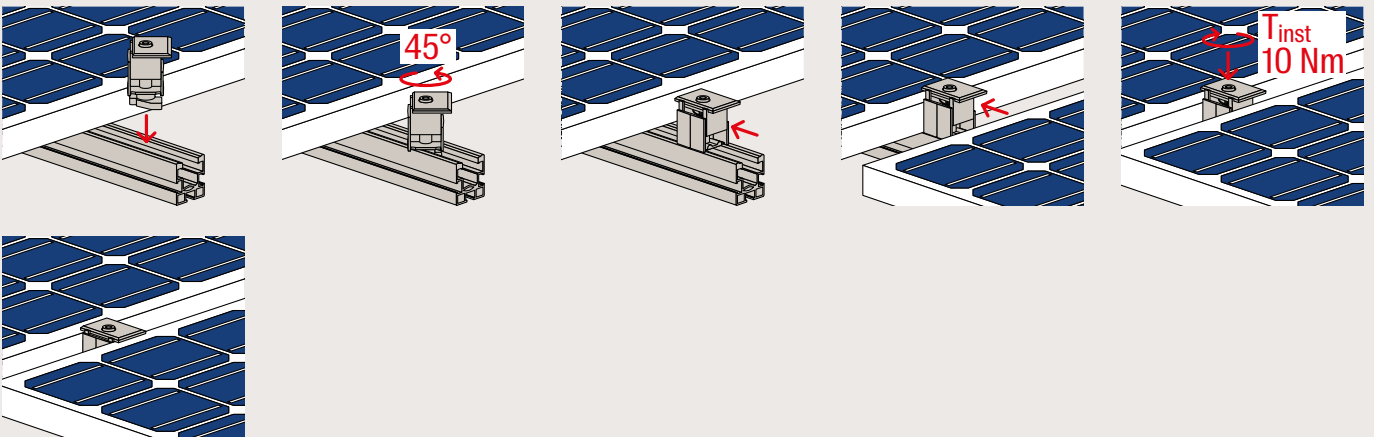
Installation universal clamp PM C U for central use only

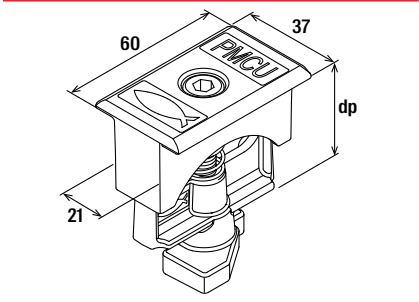


Installation universal clamp PM U usage as end clamp



Installation universal clamp PM U usage as central clamp



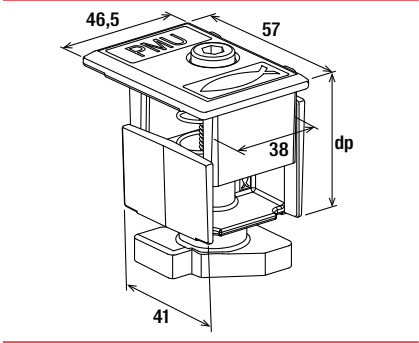


Technical data

Pre-assembled universal clamp PMC U

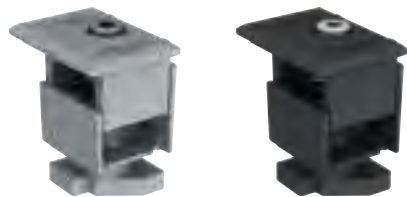


PM C U		PM C U black						
		Weight	Module thickness	Clamp size	Thread	Installation torque	Width across nut (hexagon socket)	Sales unit
	Item no.	[g]	d _p [mm]	[mm]	M	T _{inst} [Nm]	SW [mm]	[pcs]
Item								
PM C U 30 - 50 AL	538880	105	30 - 50	21 x 60	M8	10	6	10
PM C U 30 - 50 AL black	538881	105	30 - 50	21 x 60	M8	10	6	10



Technical data

Pre-assembled universal clamp PM U



PM U		PM U black						
		Weight	Module thickness	Clamp size	Thread	Installation torque	Width across nut (hexagon socket)	Sales unit
	Item no.	[g]	d _p [mm]	[mm]	M	T _{inst} [Nm]	SW [mm]	[pcs]
Item								
PM U 30 - 50 AL	519784	125	30 - 50	38 x 41	M8	10	6	10
PM U 30 - 50 AL black	534352	125	30 - 50	38 x 41	M8	10	6	10

· Clamp size: In case of PM U universal clamp end used consider 38 mm; in case of PM U universal clamp central used consider 41 mm.

Pre-assembled clamps PM C and PM F

Pre-assembled central and end clamps for PV panels with aluminium frame.



Pitched roof with standing seam covering



Roof with trapezoidal metal sheet covering

Applications

Framed PV panels fastening on Solar rails, compatible with:

- SolarFish H33
- SolarFish H44
- SolarMetal P
- SolarMetal L
- STFNL Railless

Certificates / Features



Advantages

- PM C is used as central clamp, PM F is used as final clamp.
- Thanks to the spring, the PM pre-assembled clamps stay raised before the fastening, making the PV panels positioning phase easier.
- Thanks to the plastic element, the clamp clamp stays in position without slipping.
- Ready to install.
- Available also in black anodized version.

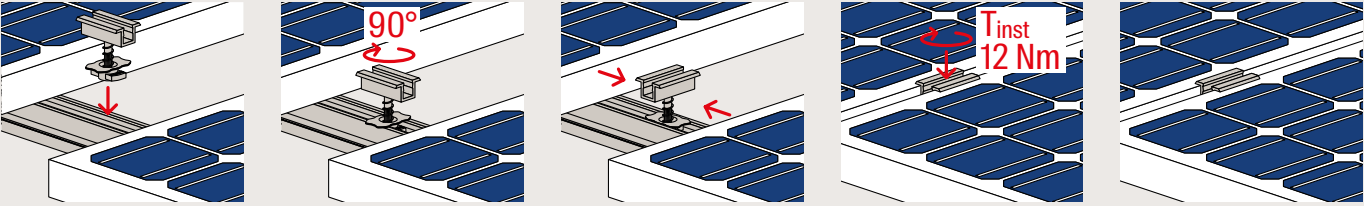
Properties

- PM C and PM F clamps in AW 6060 T66 aluminium alloy in accordance with EN 755-2:2013.
- A2.70 stainless steel Allen screw in accordance with EN ISO 3506-1 / 2:2009.
- FCN AL hammer head nut in AW 6060 T66 aluminium alloy in accordance with EN 755-2:2013 and grey nylon PA6.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.
- Black anodized products may show little scratches due to packaging and transport.

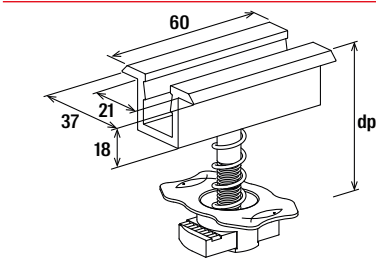
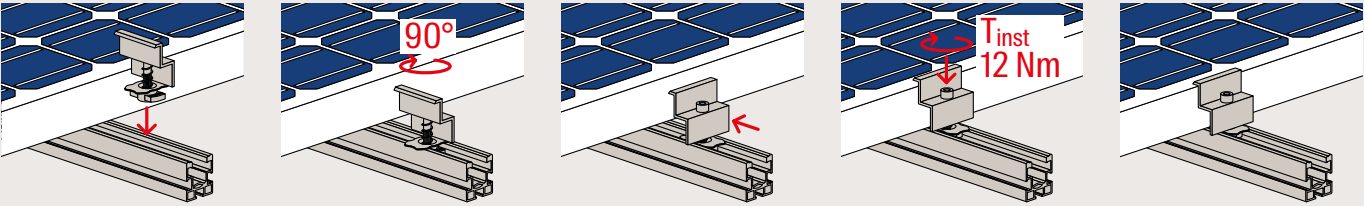
Functioning

- Identify the PV panel thickness and choose the suitable clamp.
- Insert the hammer head nut of the PM pre-assembled clamp into the rail and turn it 90° clockwise.
- Place the PV panels in position.
- Tighten the screw applying a 12 Nm torque.

Installation central clamp PM C



Installation end clamp PM F



Technical data

Clamp PM C

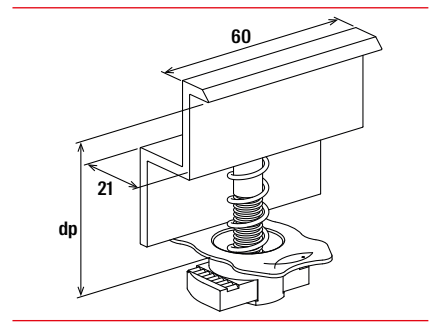




PM C

PM C black

		Weight	Module thickness	Clamp size	Thread	Installation torque	Width across nut (hexagon socket)	Sales unit
	Item no.	[g]	d _p [mm]	[mm]	M	T _{inst} [Nm]	SW [mm]	[pcs]
Item								
PM C 28 - 34 AL	511093	75	28 - 34	21 x 60	M8	12	6	10
PM C 28 - 34 AL black	561722	75	28 - 34	21 x 60	M8	12	6	10
PM C 33 - 39 AL	571214	75	33 - 39	21 x 60	M8	12	6	10
PM C 33 - 39 AL black	520112	75	33 - 39	21 x 60	M8	12	6	10
PM C 38 - 44 AL	571215	75	38 - 44	21 x 60	M8	12	6	10
PM C 38 - 44 AL black	513855	75	38 - 44	21 x 60	M8	12	6	10



Technical data

Clamp PM F								
								
PM F		PM F black						
Item	Item no.	Weight [g]	Module thickness d _p [mm]	Clamp size [mm]	Thread M	Installation torque T _{inst} [Nm]	Width across nut (hexagon socket) SW [mm]	Sales unit [pcs]
PM F 30 AL	554786	75	30	21 x 60	M8	12	6	10
PM F 30 AL black	564390	75	30	21 x 60	M8	12	6	10
PM F 35 AL	571219	75	35	21 x 60	M8	12	6	10
PM F 35 AL black	520113	75	35	21 x 60	M8	12	6	10
PM F 38 AL	571221	75	38	21 x 60	M8	12	6	10
PM F 40 AL	571222	75	40	21 x 60	M8	12	6	10
PM F 40 AL black	513854	75	40	21 x 60	M8	12	6	10

Non-assembled clamps M C and M F

Non-assembled central and end aluminium clamps for PV panels with aluminium frame.

2



Pitched roof with standing seam covering



Roof with trapezoidal metal sheet covering

Applications

Framed PV panels fastening on:

- SolarFish H33
- SolarFish H44
- SolarMetal P
- SolarMetal L
- STFNL Railless

Advantages

- Available in different sizes.

Properties

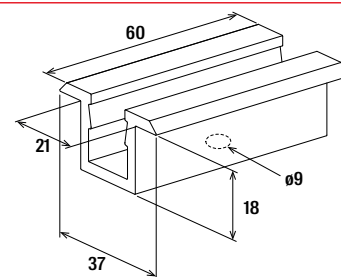
- AW 6060 T66 aluminium alloy clamps in accordance with EN 755-2:2013.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.

Certificates / Features



Functioning

- Identify the PV panel thickness and choose the suitable clamp.
- Assemble the clamp with the correct screw and the FCN hammer head nut.
- Insert the hammer head nut in the aluminium rail and turn it 90° clockwise.
- Place the PV panels in position.
- Tighten the screw applying a 12 Nm torque.



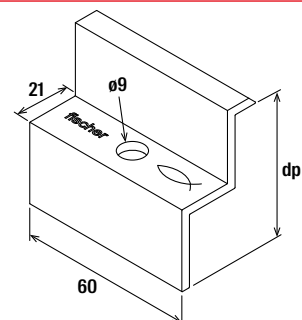
Technical data

Non-assembled clamp M C



M C

		Weight	Module thickness	Screw length	Clamp size	Thread	Installation torque	Sales unit
Item	Item no.	[g]	d _p [mm]	l _s [mm]	[mm]	M	T _{inst} [Nm]	[pcs]
M C 28-56 AL	571134	36	28 - 56	35 - 45	21 x 60	M8	12	10



Technical data

Non-assembled clamp M F



M F

		Weight	Module thickness	Clamp size	Thread	Screw length	Installation torque	Sales unit
Item	Item no.	[g]	d _p [mm]	[mm]	M	l _s [mm]	T _{inst} [Nm]	[pcs]
M F 30 AL	558454	38	30	21 x 60	M8	35	12	10
M F 35 AL	071123	38	35	21 x 60	M8	40	12	10
M F 38 AL	571125	38	38	21 x 60	M8	40	12	10
M F 40 AL	571126	38	40	21 x 60	M8	45	12	10

Accessories non-assembled clamp M

Accessories non-assembled clamp M



TCEI		FCN AL				
		Thread	Length	Width across nut (hexagon socket)	Suitable for use with	Sales unit
		M	l	SW		[pcs]
Item		Item no.	[mm]	[mm]		
TCEI M8 x 35 A2		071277	35	6	For 28-34 mm module thickness in combination with clamp MC	50
TCEI M8 x 40 A2		571139	40	6	For 33-39 mm module thickness in combination with clamp MC	50
TCEI M8 x 45 A2		071278	45	6	For 38-44 mm module thickness in combination with clamp MC	50
FCN AL M8		571165	–	–	TCEI screws	50



3

Rails

Rail SolarFish H33 AL	32	
Rail connector SolarFish H33 AL	34	
Rail SolarFish H44 AL	36	
Rail connector SolarFish H44 AL	38	
Rail SolarFish H83 AL	40	
Rail connector CPN AL	42	
Rail SolarMetal P AL	44	
Rail SolarMetal L AL	49	
Rail TP AL	53	
Rail REP AL	55	
Bracing rail BP AL	57	
Connection bracket PXC Plus AL	59	
Grounding clip Terragrif	61	
Solar cable tie clip	63	

Rail SolarFish H33 AL

33 mm high aluminium rail for PV panels mounting systems.

3



Pitched roof with tiles



Pitched roof with tiles

Applications

- All kinds of pitched and flat roofs.

Certificates / Features



Advantages

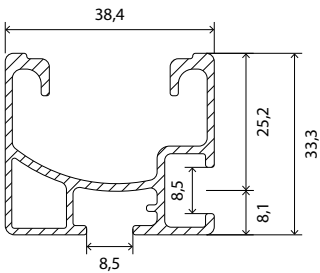
- The cross-section with reduced height optimizes the structure for installations with reduced support spacing.
- The side groove and the bottom groove are compatible with the quick couplings of the hooks or with SKS M8 screws or RHS hammer head screws.
- The 3 sizes available reduce waste and facilitate handling on site.
- Compatible with all kinds of fischer solar clamps.
- Also available as black anodized version.

Properties

- Aluminium alloy AW 6063 T66.

Functioning

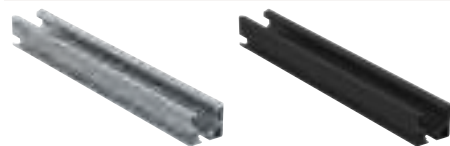
- Identify the correct support system based on the type of roof (e.g., flat tile hooks, barrel tile hooks, triangular frames for flat roofs, standing seam clamps, etc).
- Determine the centre distance of the fasteners according to snow and wind loads (use SOLARPANEL-FiX software to design the system).
- Assemble the SolarFish H33 AL rail on the selected support using the bottom or side grooves.
- To connect two SolarFish H33 AL rails, install a SolarFish H33 AL connector centred between the two rails and complete the installation using RHS 8 screws.
- To limit thermal expansion, it is advisable to create series of rails connected to each other up to a maximum length of 15 m. Beyond this measure it is necessary to interrupt the structure and start again with a new rail disconnected from the previous ones.
- Install the clamps through the upper groove of the rail. The SolarFish H33 AL rail is compatible with all kinds of fischer clamps.
- Fix the PV panels by tightening the clamps.



Technical data

3

Rail SolarFish H33 AL



SolarFish H33 AL SolarFish H33 AL black

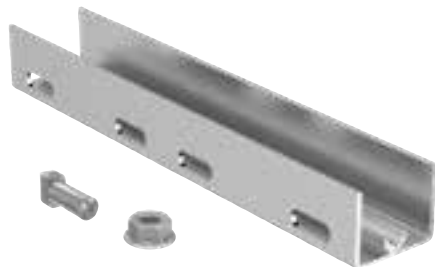
Item	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
SolarFish H33 2.50 m AL	572209	2,500	0.664	1
SolarFish H33 3.65 m AL	572210	3,650	0.664	1
SolarFish H33 4.85 m AL	572211	4,850	0.664	1
SolarFish H33 3.65 m AL black	572451 ¹⁾	3,650	0.664	1

¹⁾ Available on request.

Rail connector SolarFish H33 AL

Aluminium connector for SolarFish H33 AL rails.

3



Installation rail connector SolarFish H33 AL



Flat roof

Applications

All types of pitched and flat roofs.

Certificates / Features



Advantages

- The U section of the connection makes it easy to fit the two rails into it.
- The central scratch helps to identify the correct position of the rails.
- The connection guarantees a solid and safe match between the rails.
- The fixing between the connector and the rails has to be realized with RHS 8 screws and flanged hexagonal nuts MU F M8.

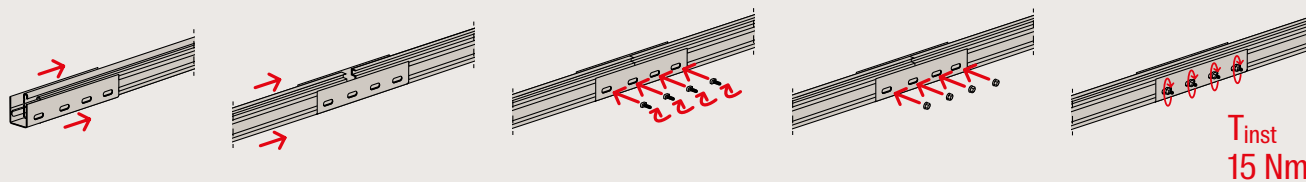
Properties

- Aluminium alloy AW 6063 T66.

Functioning

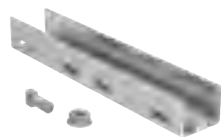
- Position two SolarFish H33 AL rails so that they sit inside the connector by centering them with the scratch.
- Fix the connector to the rails through four RHS 8 screws and four hexagonal flanged MU F M8 nuts by tightening them with a 15 Nm torque.

Installation rail connector SolarFish H33 AL



Technical data

Rail connector SolarFish H33 AL



Connector SolarFish H33 AL

	Item no.	Length L [mm]	Weight [g]	Rail cross section [cm ²]	Sales unit [pcs]
Item					
Connector SolarFish H33 AL	572446	250	167	2.54	10

Rail SolarFish H44 AL

44 mm high aluminium rail for PV panels mounting systems.

3



Pitched roof with tiles



Flat roof

Applications

- Aluminium rail for PV panels mounting systems suitable for the whole clamps range, in combination with tile hooks, double-threaded screws, triangles and standing seam clamps.

Certificates / Features



Advantages

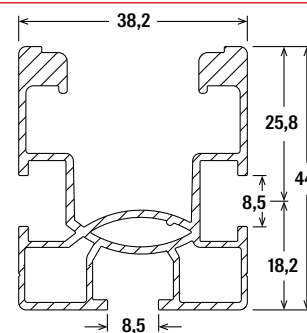
- The 44 mm high cross-section makes SolarFish H44 the ideal solution for the construction of most substructures for photovoltaic systems.
- Different rail lengths optimised for different panel sizes and for different amounts of panels next to each other. Compatible with side and bottom mounting.
- Compatible with all fischer solar clamps.
- Compatible with SKS M8 hexagonal screws or RHS hammer head screws.
- Suitable for the quick couplings of the aluminium hooks.

Properties

- Aluminium alloy AW 6063 T6 in accordance with EN 755-2:2013.

Functioning

- Identify the correct support system based on the type of roof.
- Determine the centre distance of the fasteners according to snow and wind loads (use SOLARPANEL-FIX software to design the system).
- Assemble the SolarFish H44 AL rail on the selected support through the lower or the side grooves.
- To connect two SolarFish H44 AL rails, install a SolarFish H44 AL connector centred between the two rails and complete the installation using RHS 8 screws.
- Alternatively, use two rail connectors CPN AL in combination with two self-drillings screws 3.5 x 9.5mm each.
- To limit thermal expansion, it is advisable to create a series of interconnected rails up to a maximum length of 15 m. Beyond this measure, it is necessary to interrupt the structure and start again with a new rail disconnected from the previous ones.
- Install the clamps through the upper groove of the rail. The SolarFish H44 AL rail is compatible with all kinds of fischer clamps.
- Fix the PV panels by tightening the clamps.



Technical data

Rail SolarFish H44 AL



SolarFish H44 AL

SolarFish H44 AL black

Item	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
SolarFish H44 2.50 m AL	576307	2,500	0.9222	1
SolarFish H44 3.65 m AL	569371	3,650	0.9222	1
SolarFish H44 4.45 m AL	558358	4,450	0.9222	1
SolarFish H44 4.85 m AL	569372	4,850	0.9222	1
SolarFish H44 3.65 m AL black	570766 ¹⁾	3,650	0.9222	1

¹⁾ Rails available in black anodized version on request

Accessories Rail SolarFish H44 AL

Accessories Rail SolarFish H44 AL



AK SP black

AK SP grey

Item	Item no.	Weight [g]	Colour	Piece per carton [pcs]	Sales unit [pcs]
AK SP black	520909	7	black	8	8
AK SP grey	071183	7	grey	50	50
Cover cap SolarFish H44 black	576797		black	8	8
Cover cap SolarFish H44 grey	576798		grey	50	50

Rail connector SolarFish H44 AL

Aluminium connector for SolarFish H44 AL rails.

3



Installation rail connector SolarFish



Pitched roof with tiles

Applications

- All types of pitched and flat roofs.

Advantages

- The U section of the connection makes it easy to fit the two rails into it.
- The dovetail joint guides installation by clearly and quickly indicating the correct insertion point of the joint into the rails.
- The central scratch helps to identify the right position of the rails.
- The connection guarantees a solid and safe match between the rails.
- The fixing between the connector and the rails has to be realized with RHS M8 screws, compatible with the majority of solar products.

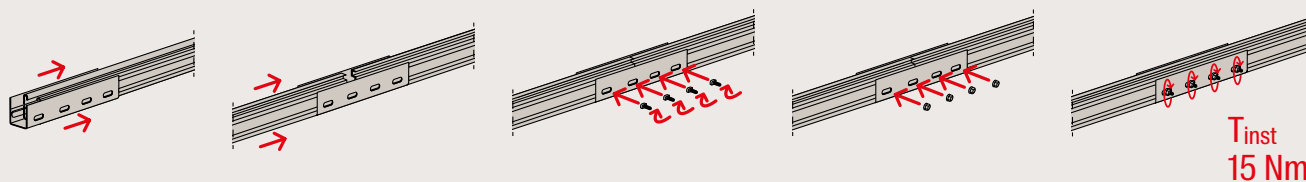
Properties

- AW 6063 T6 aluminium alloy.

Functioning

- Position two SolarFish H44 AL rails so that they sit inside the connector by centering them with the scratch.
- Use the scratch and the dovetail joint to easily position the rails inside the connector.
- Fix the connector to the rails through four RHS 8 screws and four hexagonal flanged MU F 8M nuts by tightening them with a 15 Nm torque.

Installation Profile connector H44 AL



Technical data

Rail connector SolarFish H44 AL



Rail connector SolarFish
H44 AL

		Length L	Weight	Rail cross section	Sales unit
	Item no.	[mm]	[g]	[cm²]	[pcs]
Item					
Rail connector SolarFish H44 AL	572445	250	240	3.62	10

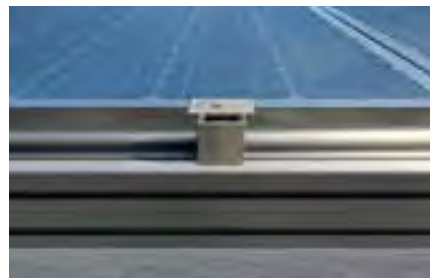
Rail SolarFish H83 AL

83 mm high aluminium rail for PV panels mounting systems.

3



Special structure for flat roofs



SolarFish H83 in combination with Universal clamp PM U

Applications

- Aluminium rail for PV panels mounting systems compatible with PM U / PMC U universal clamps, in combination with triangles for flat roofs and rails for special structures.

Certificates / Features



Advantages

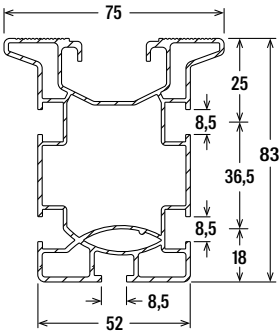
- Increased cross-section to optimize the structure in the case of installations with few roof supporting points and/or particularly heavy forces acting on the structure.
- High load-bearing capacity.
- Two panels can be mounted on a single rail thanks to the wide top surface.
- Compatible with installation both from the side and from the bottom.
- Compatible with SKS M8 hexagonal screws or RHS hammer head screws.

Properties

- Aluminium alloy EN AW 6063 T6 in accordance with EN 755-2:2013.

Functioning

- Identify the correct support components based on the type of roof (e.g. triangular frames for flat roofs, rails for special structures etc).
- Determine the centre distance of the fasteners according to snow and wind loads (use SOLARPANEL-FIX software to design the system).
- Position the selected support components and the rail according to the structure layout.
- Use 2 CPN AL joints on both sides to connect the rails (a complete connection requires 4 CPN AL joints).
- Slide the CPN AL joint until the central stud touches the end side of the rail.
- Every CPN AL joint has to be connected to the rails with eight 3.5 mm x 9.5 mm self-drilling screws (two screws per rail side).
- Consider a thermal break of at least 50 mm every 15 m.
- Position the PV panels and fasten the clamps.



3

Technical data

Rail SolarFish H83 AL



SolarFish H83 AL

		Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item	Item no.			
SolarFish H83 4.85 m AL	569373	4,850	1.95	1

Rail connector CPN AL

Aluminium connector for two Solar rails.

3



Pitched roof with tiles



Flat roof

Applications

- PV panels installation on pitched or flat roofs where a joint between two Solar rails is required.

Advantages

- Compatible with SolarFish H44 AL rails and SolarFish H83 AL rails.

Properties

- AW 6005A T6 aluminium alloy in accordance with EN 755-2:2013.

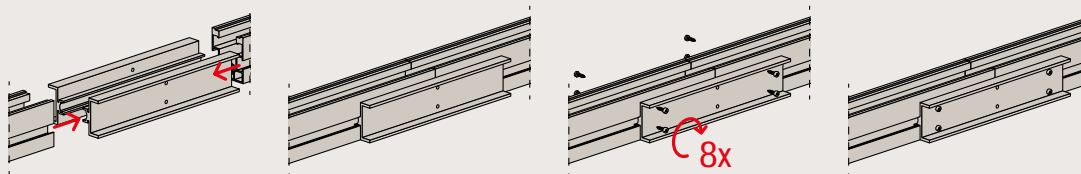
Certificates / Features

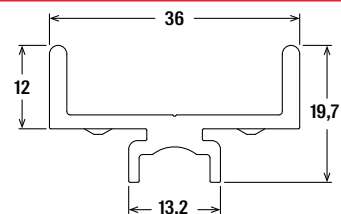


Functioning

- Use 1 CPN AL joint for each lateral groove of the rail.
- Slide the CPN AL joint until the central stud touches the end side of the rail.
- Connect the CPN AL joint to the rail with the right amount of 3.5 mm x 9.5 mm self-drilling screws (according to the selected rail).

Installation rail connection CPN AL





Technical data

3

Rail connector CPN AL



CPN AL

	Item no.	Length L [mm]	Weight [g]	Sales unit [pcs]
Item				
CPN AL	514890	183	80	12

Accessories Rail connector CPN AL

Accessories Rail connector CPN AL



Self-drilling screw 3.5x9.5

	Item no.	Sales unit [pcs]
Item		
3.5 x 9.5 mm A2	571209	100

Rail SolarMetal P AL

Rail for photovoltaic systems on trapezoidal metal sheet roofs. Suitable for panels running along the long side parallel to the trapezoidal rails.

3



Roof with trapezoidal metal sheets covering



Roof with trapezoidal metal sheets covering

Applications

- Installation of portrait oriented photovoltaic panels on trapezoidal sheet roofs.

Certificates / Features



Advantages

- Complete range of: long rails for easy alignment and mounting during installation; short rails for cost optimisation and no problems with thermal expansion.
- Flat and wide base allows two fixing points on each rib.
- Suitable for the entire fischer clamp range.
- The versions SolarMetal P H50 300 mm AL and SolarMetal P H50 400 mm AL are compatible with the installation of photovoltaic optimizers: the 50 mm height help in improving the ventilation of the modules.

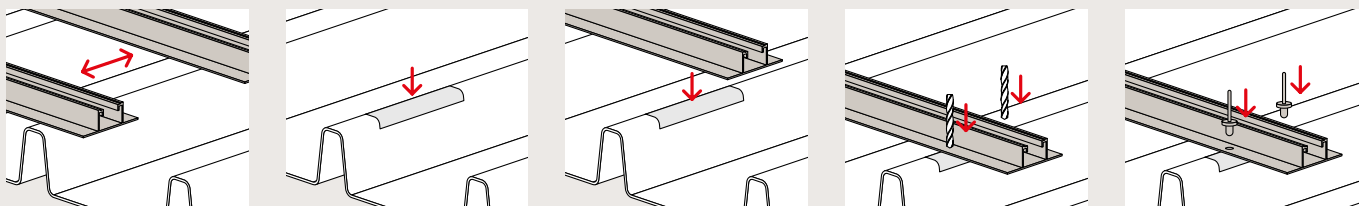
Properties

- Aluminium alloy AW 6060 T6 in accordance with EN 755-2:2013.

Functioning

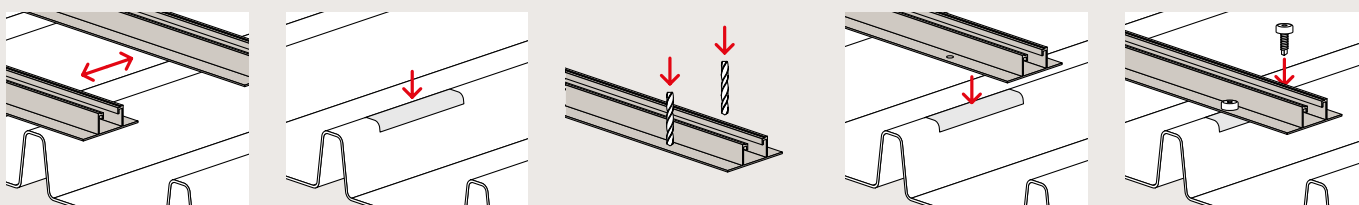
- Choose between long and short rails depending on the installation layout and taking into account thermal expansion.
- Determine the centre distance of the fastenings according to the trapezoidal metal sheet geometry, snow and wind loads (use SOLAR PANEL-FIX software to design the system).
- Stick a layer of CG INT butyl adhesive tape (minimum length 80 mm) on the trapezoidal metal sheet rib before applying and fixing the rail.
- Position the rail on the trapezoidal metal sheet.
- If fixing with ALG rivets, drill the rail and the sheet together with a 5.5mm diameter drill bit.
- For fixing with EPDM self-drilling Solar screw, pre-drill the rail, then place it on the sheet and screw the self-drilling screw through the pre-drilled hole.
- Seal the rivets or screws with fischer SB - Bitumen Sealant.

Installation rail SolarMetal P H25 AL with rivets

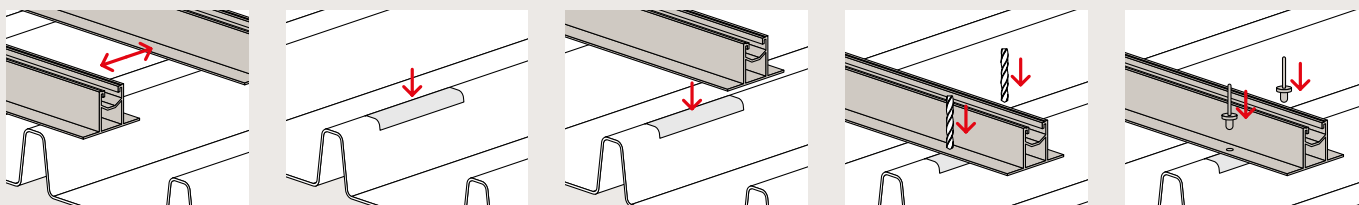


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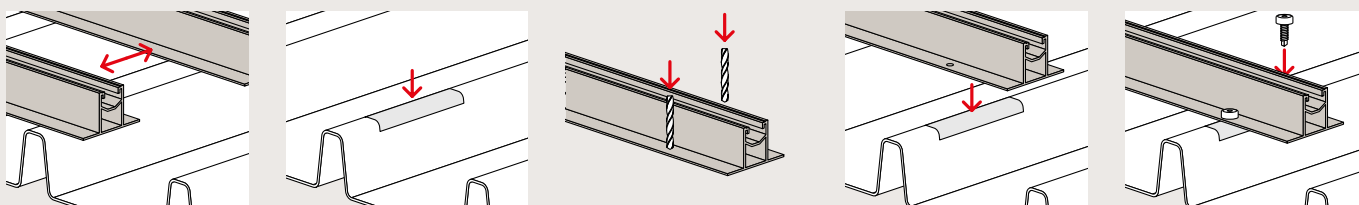
Installation rail SolarMetal P H25 AL with screws

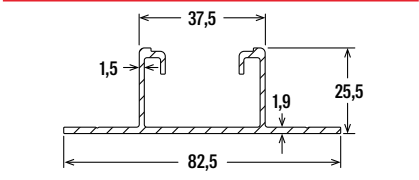


Installation rail SolarMetal P H50 AL with rivets



Installation rail SolarMetal P H50 AL with screws





Technical data

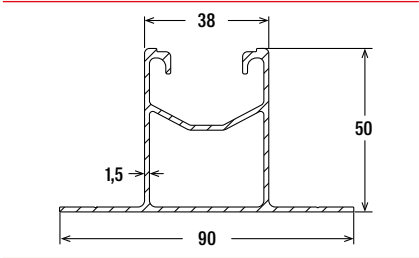
Rail SolarMetal P H25 AL

3



SolarMetal P H25 AL

	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item				
SolarMetal P H25 400 mm AL	512195	400	0.724	50
SolarMetal P H25 4.45 m AL	559873	4,450	0.724	1
SolarMetal P H25 4.85 m AL	569374	4,850	0.724	1



Technical data

Rail SolarMetal P H50 AL



SolarMetal P H50 AL

	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item				
SolarMetal P H50 300 mm AL	574514	300	1.05	30
SolarMetal P H50 400 mm AL	574515	400	1.05	30

Rivet ALG

Rivet ALG



ALG

	Item no.	Diameter d [mm]	Drill diameter d ₀ [mm]	Steel sheet thickness s [mm]	Sales unit [pcs]
Item					
ALG 5.2 x 20 mm	545769	5.2	5.5	0.5 - 3.0	200

Self drilling screw EPDM

Self drilling screw EPDM



		Ap- pro- val	Diameter	Length	Sales unit
Item	Item no.	ETA	d [mm]	l [mm]	[pcs]
Screw 6.0 x 25 mm A2 EPDM	567188	●	6.0	25	100

Butylene tape CG INT

Butylene tape CG INT



3

CG INT

	Item no.	Length l [m]	Width B [mm]	Thickness S [mm]	Piece per carton [pcs]	Sales unit [pcs]
Item						
CG INT	505615	10	80	1.0	2	1

Rail SolarMetal L AL

Rail for photovoltaic systems on trapezoidal metal sheet roofs. Suitable for panels with landscape orientation.



Roof with trapezoidal metal sheets covering



Roof with trapezoidal metal sheets covering

Applications

- Installation of landscape oriented photovoltaic panels on trapezoidal sheet roofs.

Certificates / Features



Advantages

- Complete range of: long rails for easy alignment and mounting during installation; short rails for cost optimisation and no problems with thermal expansion.
- Short rails with pre-assembled EPDM on the bottom ready for the installation.
- Short rails are pre-drilled for installation with either ALG rivets or self-drilling screws.
- The SolarMetal version L H50 110 mm EPDM AL is compatible with the installation of photovoltaic optimizers: the 50 mm height helps improving the ventilation of the modules.

Properties

- Aluminium alloy EN AW 6060 T66 in accordance with EN 755-2:2013.
- EPDM rubber gasket, 2 mm thick.

Functioning

- Choose between long and short rails depending on the installation layout and taking into account thermal expansion.
- For long rails, determine the centre distance of the fastenings according to snow and wind loads (use SOLARPANEL-FiX software to design the system).
- For short rails, use a fastener in each hole.
- Only for long rails, stick a layer of CG INT butyl adhesive tape (minimum length 80 mm) on the trapezoidal metal sheet rib before applying and fastening the rail.
- Position the rail on the trapezoidal metal sheet.

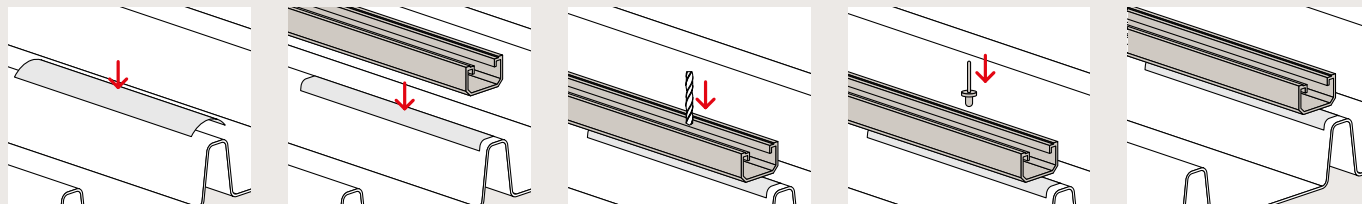
For fastening with ALG rivets:

- Long rail: drill 5.5 mm both the rail and the metal sheet.
- Short rail: drill 5.5 mm the metal sheet.

For fastening with Solar screws:

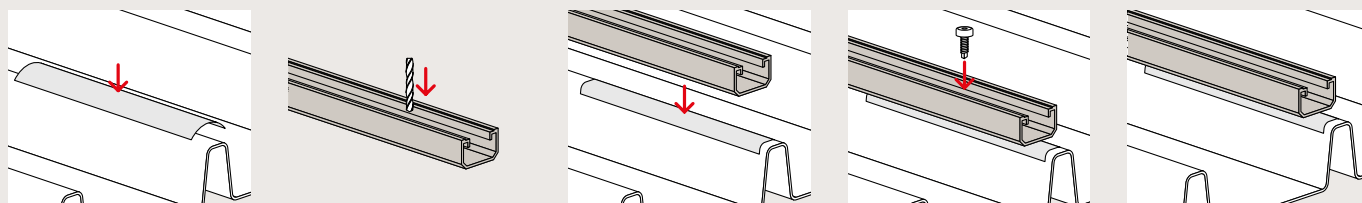
- Long rail: drill 5.5 mm the rail and screw directly into the metal sheet;
- Short rail: screw through the pre-drilled holes.

Installation long rail SolarMetal L H25 AL with rivets

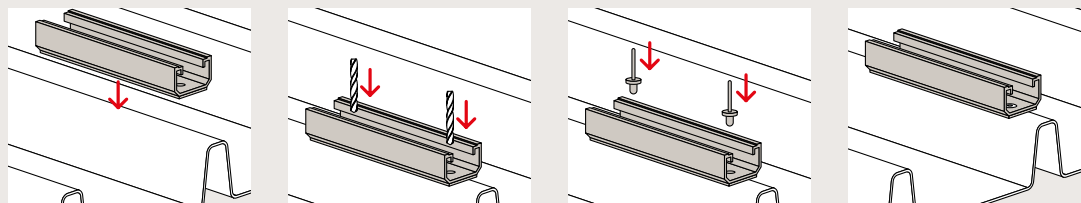


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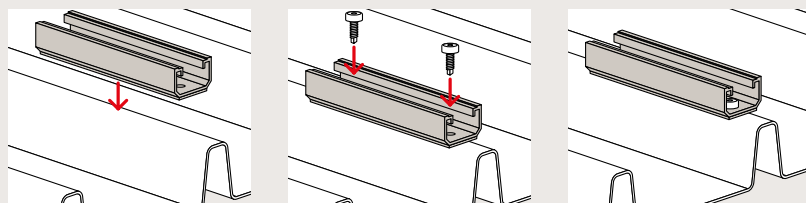
Installation long rail SolarMetal L H25 AL with screws



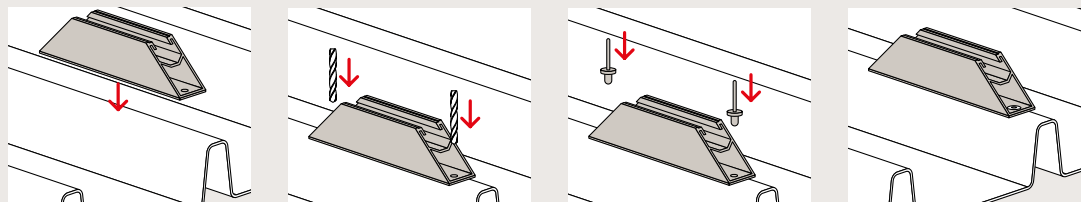
Installation short rail SolarMetal L H25 AL with rivets



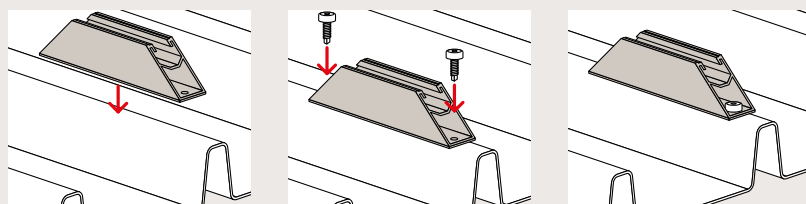
Installation short rail SolarMetal L H25 AL with screws

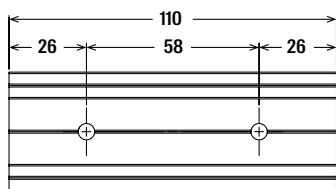


Installation SolarMetal L H50 AL with rivets

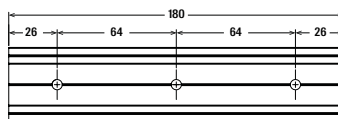


Installation SolarMetal L H50 AL with screws

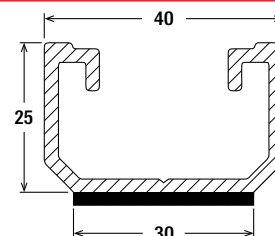




SolarMetal L H25 110 mm EPDM AL



SolarMetal L H25 180 mm EPDM AL

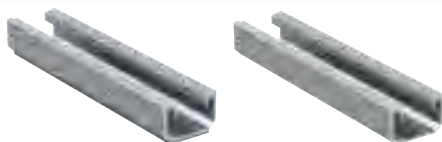


SolarMetal L H25 AL

Technical data

3

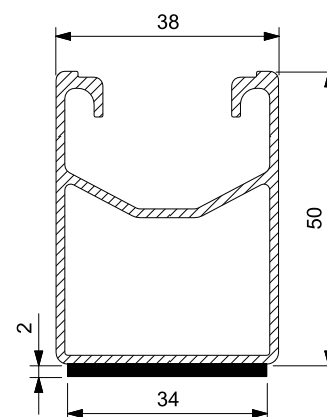
Rail SolarMetal L H25 AL



SolarMetal L H25 EPDM AL

SolarMetal L H25 AL

		Length	Weight	Preassembled EPDM	EPDM thickness	Number of drill holes	Hole-ø	Sales unit
Item	Item no.	L [mm]	[kg/m]				D [mm]	[pcs]
SolarMetal L H25 110 mm EPDM AL	567186	110	0.58	Yes	2.0	2	5.5	50
SolarMetal L H25 180 mm EPDM AL	567187	180	0.58	Yes	2.0	3	5.5	50
SolarMetal L H25 4.45 m AL	567412	4,450	0.58	No	–	–	5.5	1



Technical data

Rail SolarMetal L H50 AL



SolarMetal L H50 EPDM AL

		Length	Weight	Preassembled EPDM	EPDM thickness	Number of drill holes	Hole-ø	Sales unit
Item	Item no.	L [mm]	[kg/m]				D [mm]	[pcs]
SolarMetal L H50 110 mm EPDM AL	574517	210	0.826	Yes	2.0	2	5.5	50

Accessories rail SolarMetal L AL rivet ALG

Accessories rail SolarMetal L AL rivet ALG					
					
ALG					
	Item no.	Diameter d [mm]	Hole-ø D [mm]	Steel sheet thickness s [mm]	Sales unit [pcs]
Item					
ALG 5.2 x 20 mm	545769	5.2	5.5	0.5 - 3.0	200

Accessories rail SolarMetal L AL self-drilling screw

Accessories rail SolarMetal L AL self-drilling screw							
							
	Item no.	Ap- pro- val ETA	Diameter d [mm]	Hole-ø D [mm]	Length l [mm]	Steel sheet thickness s [mm]	Sales unit [pcs]
Item							
Screw 6.0 x 25 mm A2 EPDM	567188	●	6.0	5.5	25	0.5 - 1.0	100

Accessories rail SolarMetal L AL butylene tape CG INT

Accessories rail SolarMetal L AL butylene tape CG INT						
						
CG INT						
	Item no.	Length l [m]	Width B [mm]	Thickness S [mm]	Piece per carton [pcs]	Sales unit [pcs]
Item						
CG INT	505615	10	80	1.0	2	1

Rail TP AL

T-shaped aluminium rail for PV panels mounting systems on special structures.



Special structure for flat roofs



Special structure for flat roofs

Applications

- Aluminium rail for PV panels mounting systems suitable for special structures, in combination with REP AL and BP AL bracing rails.

Advantages

- Optimized section for load-bearing structures.
- Easy to work (cut and drill).
- The wide top surface allows stable connection with other system components.

Properties

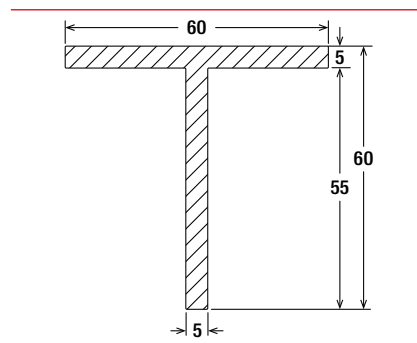
- Aluminium alloy EN AW 6060 T5 in accordance with EN 755-2:2013.

Functioning

- Identify the correct support components based on the type of roof.
- Position the selected support components and the rail according to the structure layout (use SOLARPANEL-FIX software to design the system).
- Assemble the load-bearing structure with A2/A4 stainless steel SKS screws and MU F flanged nuts.
- Place the selected Solar rails on top of TP AL flat surface using A2/A4 M8 stainless steel SKS screws and MU F flanged nuts.

Certificates / Features





3

Technical data

Rail TP AL



TP AL

	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item				
TP AL 60x60x5 mm - 6 m	571185	6,000	1.55	1

Accessories hexagonal screw SKS A2

Accessories hexagonal screw SKS A2



SKS

	Item no.	Length l [mm]	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item					
SKS M8 x 20 mm A2	505614	20	M8	13	100
SKS M8 x 50 mm A2	571208	50	M8	13	100
SKS M10 x 50 mm A2	071181	50	M10	17	100
SKS M10 x 70 mm A2	071182	70	M10	17	100

Accessories flanged hexagon nut MU F A2

Accessories flanged hexagon nut MU F A2



MU F

	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item				
MU F M8 A2	571210	M8	13	100
MU F M10 A2	071952	M10	17	100

Rail REP AL

Rectangular hollow cross-section aluminium rail for PV panels mounting systems on special structures.



Special structure for flat roofs



Special structure for flat roofs

3

Applications

- Aluminium rail for PV panels mounting systems suitable for special structures, in combination with TP AL and BP AL bracing rails.

Certificates / Features



Advantages

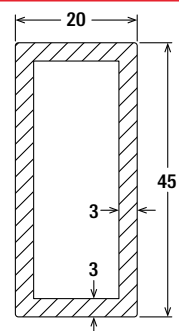
- Optimized section for load-bearing structures.
- Easy to work (cut and drill).
- The wide lateral surface is a suitable connection point for other system components.

Properties

- Aluminium alloy EN AW 6060 T5 in accordance with EN 755-2:2013.

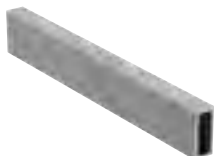
Functioning

- Identify the correct support components based on the type of roof.
- Position the selected support components and the rail according to the structure layout (use SOLARPANEL-FIX software to design the system).
- Assemble the load-bearing structure with A2/A4 stainless steel SKS screws and MU F flanged nuts.



Technical data

Rail REP AL



REP AL

	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item				
REP AL 45x20x3 mm - 6 m	071186	6,000	0.95	1

Accessories hexagonal screw SKS A2

Accessories hexagonal screw SKS A2



SKS

	Item no.	Length l [mm]	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item					
SKS M8 x 20 mm A2	505614	20	M8	13	100
SKS M8 x 50 mm A2	571208	50	M8	13	100
SKS M10 x 50 mm A2	071181	50	M10	17	100
SKS M10 x 70 mm A2	071182	70	M10	17	100

Accessories flanged hexagon nut MU F A2

Accessories flanged hexagon nut MU F A2

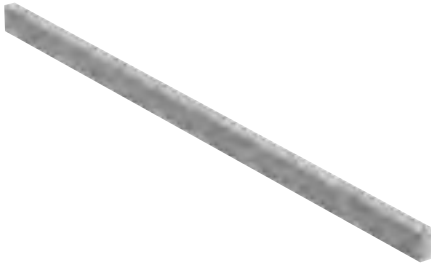


MU F

	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item				
MU F M8 A2	571210	M8	13	100
MU F M10 A2	071952	M10	17	100

Bracing rail BP AL

Aluminium rail for bracing structures for photovoltaic systems.



Flat roof



Mounting detail on a flat roof

Applications

- Bracing of triangular frames for flat roofs or rails for special structures.

Advantages

- Fast installation with self-drilling screws.
- Reduced cross-section optimized for tension forces.

Properties

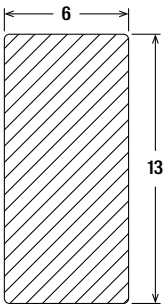
- Aluminium alloy EN AW 6060 T5 in accordance with EN 755-2:2013.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.

Certificates / Features



Functioning

- Define the geometry and the layout of the bracing rails depending on the structure (use SOLARPANEL-FIX software to design the system).
- Fasten the BP AL bracing rails with TE 4.8 x 32 mm self-drilling screws.



Technical data

Bracing profile BP AL				
BP AL				
	Item no.	Length L [mm]	Weight [kg/m]	Sales unit [pcs]
Item				
BP AL	071184	4,000	0.21	1

Accessories

Accessories				
Self-drilling screw 4.8 x 32				
	Item no.	Diameter d [mm]	Length l [mm]	Sales unit [pcs]
Item				
4.8 x 32 mm A2	071285	4.8	32	100

Connection bracket PXC Plus AL

Bracket for 90° connection of two overlapping Solar rails.



Cross connection with connection bracket PXC Plus AL

Applications

- Cross-connection of two overlapping solar profiles.
- Compatible with SolarFish H33 and SolarFish H44 profiles

Certificates / Features



Advantages

- Fast installation of the Solar rail by tightening a single screw.
- The bracket is pre-assembled and ready to be mounted without the need for additional accessories.
- The large contact surface of the PXC Plus AL increases the load-bearing capacity of the connection.

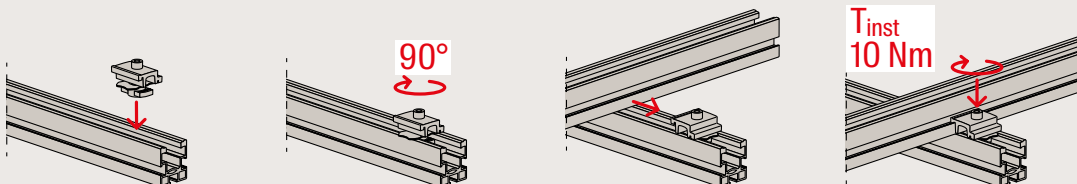
Properties

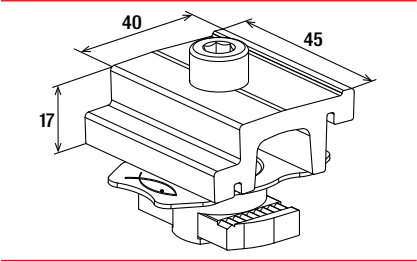
- Connection bracket in AW6063 T6 aluminium alloy in accordance with EN 755-2:2013.
- A2-70 stainless steel Allen screw in accordance with EN ISO 3506-1/2;2009.
- FCN AL hammer head nut in AW 6060 T66 aluminium alloy in accordance with EN 755-2:2013 and grey nylon PA 6.

Functioning

- Insert the FCN AL M 8 nut (preassembled to the bracket) in the upper side of the lower Solar rail and rotate it by 90°.
- Insert the suitable knurl of the bracket (depending on the height of the used profile) into the lateral side of the upper Solar rail.
- Tighten the hexagonal socket screw applying a 10Nm torque to secure the connection.

Cross-connected solar rails





3

Technical data

Connection bracket PXC Plus AL

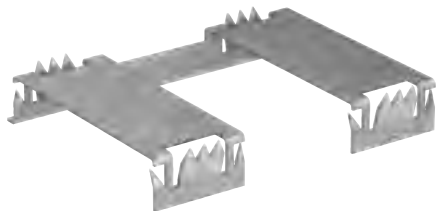


PXC Plus AL

		Weight	Thread	Screw length	Width across nut (hexagon socket)	Sales unit
	Item no.	[g]	M	l_s [mm]	SW [mm]	[pcs]
Item						
PXC Plus AL	574235	65	M8	20	6	10

Grounding clip Terragrif®

Stainless steel clamp for grounding and potential equalisation of photovoltaic systems.



Pitched roof with tiles



Pitched roof with flat standing seam covering

Applications

- Easy integration of PV modules into the potential equalisation.
- The function of Terragrif®QL 0.5 x 52 x 38 is to provide grounding between the anodised aluminium frame (insulating surface) of a photovoltaic module and the solar rail.
- Standards:
- Continuity test in accordance with IEC 61730-2
- Lightning surge test according to IEC 61180
- Salt spray test per IEC 60068
- Climatic effects according to IEC 61215-2

Advantages

- Terragrif® is an essential element for grounding photovoltaic systems, designed for efficient and safe installation.
- It is a stainless steel clamp with integrated claws that is positioned between the PV module and the substructure.
- Thanks to its intuitive design, Terragrif® is easy to install, significantly reducing installation time.
- Despite its simplicity, it ensures a robust and reliable electrical connection, which is essential for surge protection and the overall safety of the photovoltaic system.
- Terragrif® is compatible with all fischer solar rails (except SolarFish H83 and SolarMetal L H25), the universal central clamp PM C U and all the pre-assembled and non pre-assembled central and end clamps.
- One Terragrif® simultaneously includes 2 modules in the potential equalisation.

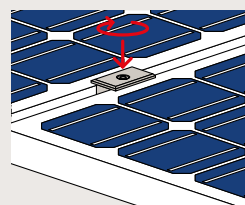
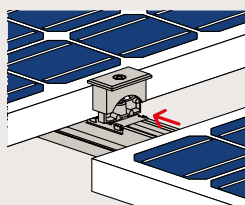
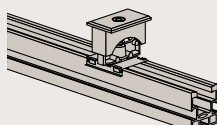
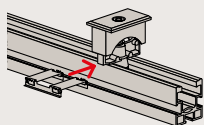
Properties

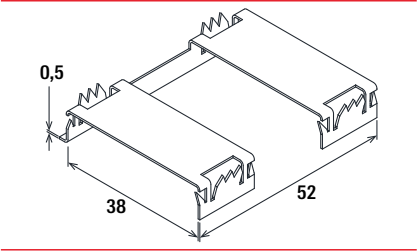
- Material: 301 stainless steel

Functioning

- Position the clamp in the correct position.
- Place Terragrif® on the rail so that the Terragrif® surrounds the middle clamp on the right and left.
- Position the PV modules on the rail and tighten the middle clamp with the specified torque.
- The Terragrif® will penetrate the anodised layer of the module, creating an electrically conductive connection.

Installation grounding clip

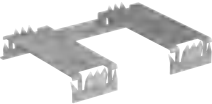




Technical data

3

Grounding clip Terragrif®



Terragrif

		Length L [mm]	Width W [mm]	Height H [mm]	Thickness T [mm]	Weight [g]	Sales unit [pcs]
Item	Item no.						
Grounding clip Terragrif®	576080	52	38	9	0.5	7	100

Solar cable tie clip

Solar cable tie clip



Applications

- Tying down and routing cables.
- Attach the cable tie to the solar rail and secure the cables with the clip.

Advantages

- Installation quick and easy
- Organized cable routing
- Fast and organized cable routing and cable fixing.
- UV-resistant.

Functioning

- Attach the cable tie to the solar rail and secure the cables with the clip.

Technical data

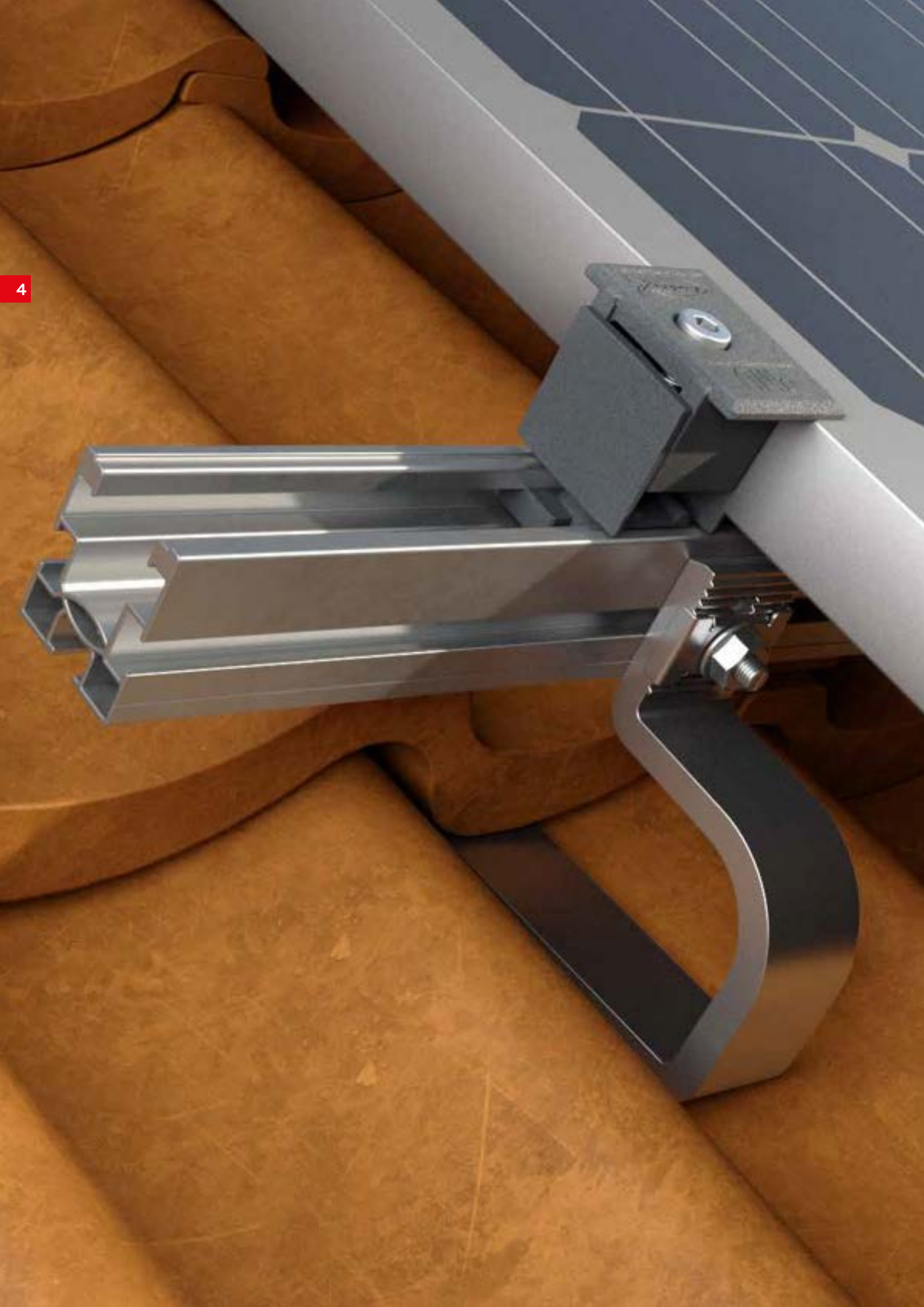
Solar cable tie and clip



SW-II

SW-II Clip

Item	Item no.		Sales unit
			[pcs]
Clip casing clip and cable tie	547049		100
SW-II Clip casing clip	547050		100



4

Hooks

Aluminium hooks with large base RH VB AL/RH HB AL	66	
Aluminium hooks with thin base RH V AL/RH H AL	69	
Bracket for landscape oriented PV panels LAB AL	72	
Aluminium hook with fixed base RH AL	74	
Stainless steel hook with large base RH HB A2	76	
Stainless steel hook with large base GT A2	78	
Stainless steel hook with thin base GTP A2	80	
Stainless steel hook with thin base GTPR A2	82	
Stainless steel hook for barrel tiles GC A2	84	
Stainless steel hook for flat standing seam DLA A2	86	
Stainless steel hook for rounded standing seam DLAK A2	88	

Hooks with large base RH VB AL/RH HB AL

Aluminium hooks with large base for the installation of PV panels on pitched tile roofs with ventilation layer of variable thickness. Horizontally-offsettable fastening point.

4



Pitched roof with tiles - RH VB AL



Pitched roof with tiles - RH HB AL

Applications

- PV panels installation on pitched roofs with tiles with ventilation layers of various thicknesses.

Advantages

- The roof hooks offer several adjustment elements. The lower adjustment element enables adjustment to the tile thickness as well as positioning of the bracket to adapt to the tile shape. The vertical adjustment element allows the distance between the profile and the top of the tile to be adjusted. This is particularly important for old buildings. The upper adjustment option allows the profile to be aligned parallel to the eaves/ridge (RH HB only).
- The great load-bearing capacity allows the use of fewer hooks.
- The hook has a controlled deformation not to bend or damage the tiles.
- The hook is pre-assembled.
- Fastening with A2 PowerFast screws.
- The wide base plate (width: 120mm) allows precise adaptation to the shape of the roof tile and thus leads to a higher flexibility.
- The aluminum roof hook is lightweight and stable to ensure a long service life of the system.

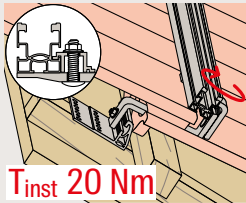
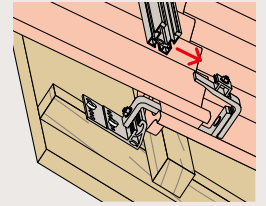
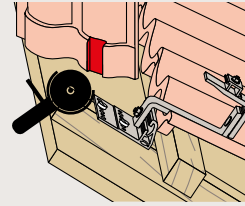
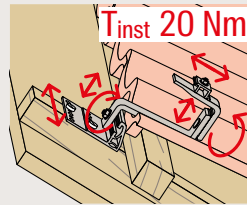
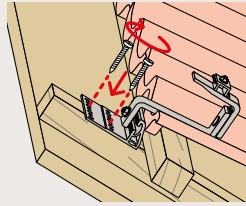
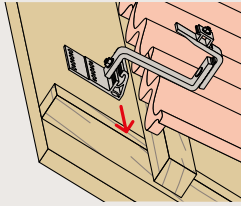
Properties

- Hook in Aluminium alloy AW 6060 T6 and AW 6082 T6 in accordance with EN 2:2016.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Determine the system layout using SOLARPANEL-FIX software.
- Lift the tile and secure the base of the hook.
- Make the height and width adjustments and tighten the screws.
- Grind the upper tile and put it back in position.
- For RH HB AL versions: insert the upper joint on the side of the rail and adjust the rail position and fasten it.
- For RH VB AL versions: connect the Solar rail by inserting the pre-installed screw on the side of the rail and fasten it.
- For landscape oriented PV panels use the LAB bracket with RH VB AL versions.

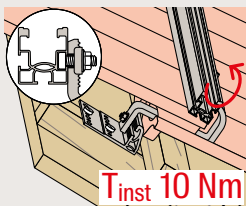
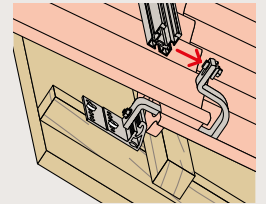
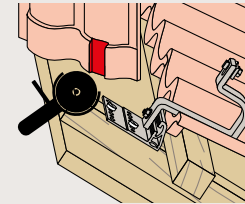
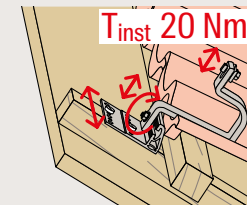
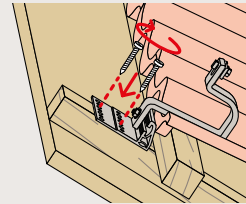
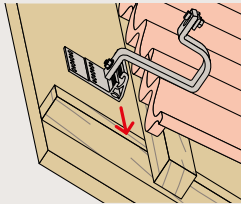
Installation hook RH HB AL



T_{inst} 20 Nm

4

Installation hook RH VB AL



T_{inst} 10 Nm

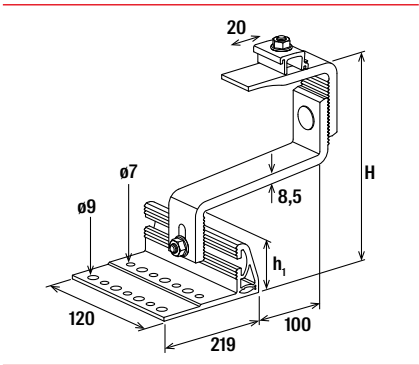
Technical data

Aluminium hooks with large base RH HB AL



RH HB AL

		Weight	Thickness	Base plate width	Height under bracket	Total height	Depth	Width across nut	Installation torque	Sales unit
	Item no.	[kg]	S [mm]	[mm]	h ₁ [mm]	H [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item										
RH 40-52 HB AL	571745	0.61	8.5	120	40 - 52	119.5 - 149.5	100	13	20	10
RH 52-67 HB AL	571747	0.62	8.5	120	52 - 67	131 - 164	100	13	20	10



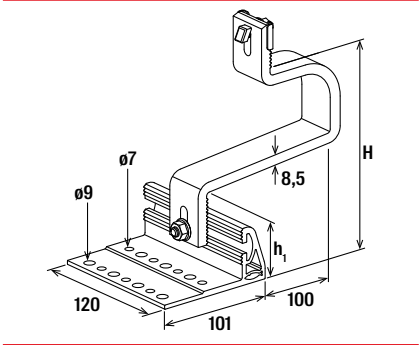
Technical data

Aluminium hooks with large base RH VB AL



RH VB AL

		Weight	Thickness	Base plate width	Height under bracket	Total height	Depth	Width across nut	Installation torque	Sales unit
	Item no.	[kg]	S [mm]	[mm]	h ₁ [mm]	H [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item										
RH 40-52 VB AL	571746	0.58	8.5	120	40 - 52	120 - 147	100	13	20 / 10	10
RH 52-67 VB AL	571748	0.6	8.5	120	52 - 67	132 - 162	100	13	20 / 10	10



The total height dimension is referred to the distance between the base of the hook and the lower side of the rail.

Hooks with thin base RH V AL/RH H AL

Aluminium hooks with thin base for the installation of PV panels on pitched tile roofs with ventilation layer of variable thickness.



Pitched roof with tiles - RH V AL



Pitched roof with tiles - RH H AL

Applications

- PV panels installation on pitched roofs with tiles with ventilation layers of various thicknesses.

Advantages

- Multiple adjustments to adapt the hook to different tiles and ventilation.
- The roof hooks offer several adjustment elements. The lower adjustment element enables adjustment to the tile thickness. The vertical adjustment element allows the distance between the profile and the top of the tile to be adjusted. This is particularly important for old buildings. The upper adjustment option allows the profile to be aligned parallel to the eaves/ridge (RH H only).
- The great load-bearing capacity allows the use of fewer hooks.
- The hook has a controlled deformation not to bend or damage the tiles.
- The hook is pre-assembled.
- Fastening with A2 PowerFast screws.
- The aluminum roof hook is lightweight and stable to ensure a long service life of the system.

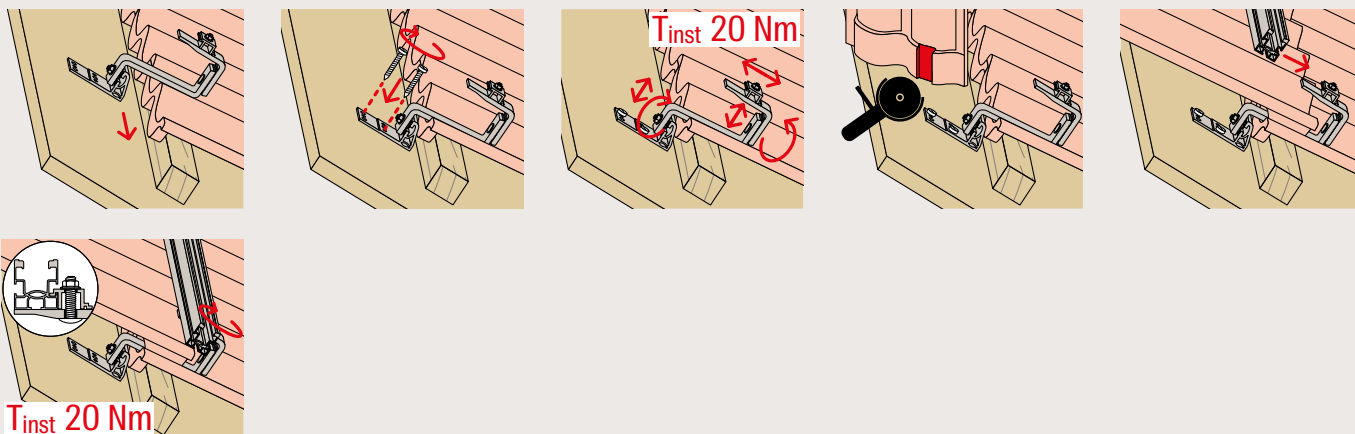
Properties

- Hook in Aluminium alloy AW 6060 T6 and AW 6082 T6 in accordance with EN 2:2016.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

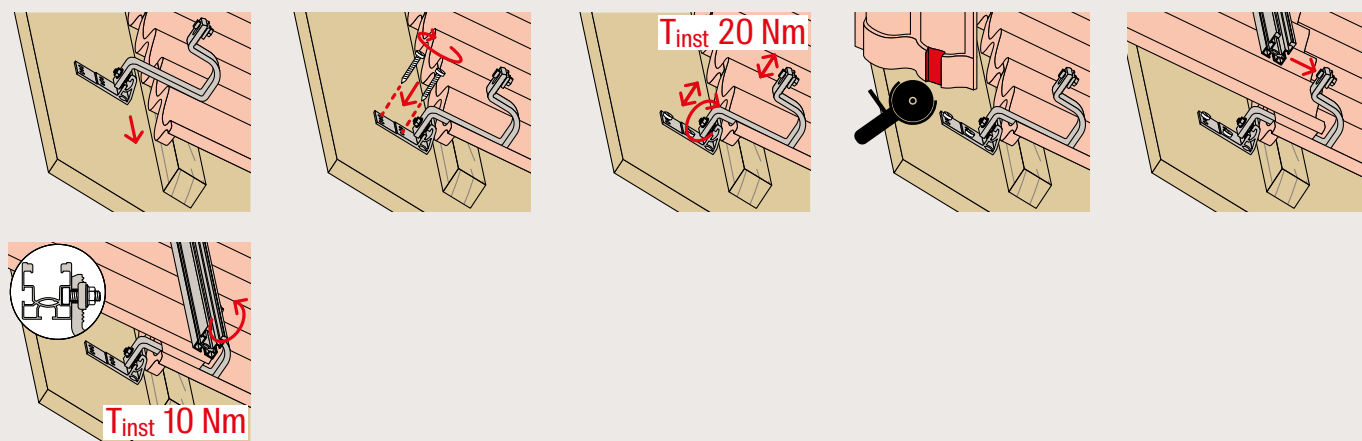
Functioning

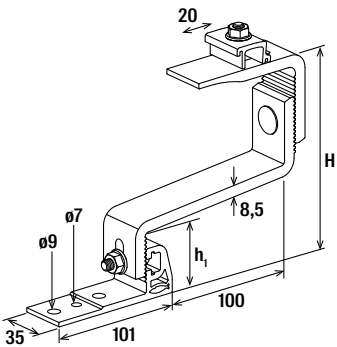
- Determine the system layout using SOLARPANEL-FIX software.
- Lift the tile and secure the base of the hook.
- Make the height and width adjustments and tighten the screws.
- Grind the upper tile and put it back in position.
- For RH H AL versions: insert the upper joint on the side of the rail and adjust the rail position and fasten it.
- For RH V AL versions: connect the Solar rail by inserting the pre-installed screw on the side of the rail and fasten it.
- For landscape oriented PV panels use the LAB bracket with RH V AL versions.

Installation hook RH H AL



Installation hook RH V AL





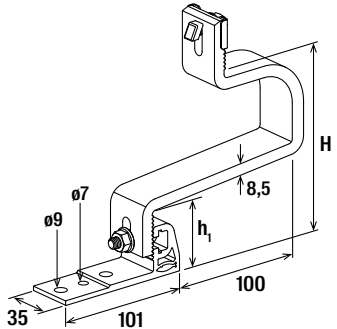
Technical data

Aluminium hooks with thin base RH H AL



RH H AL

		Weight	Thickness	Base plate width	Height under bracket	Total height	Depth	Width across nut	Installation torque	Sales unit
	Item no.	[kg]	S [mm]	[mm]	h ₁ [mm]	H [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item										
RH 40-52 H AL	571742	0.42	8.5	35	40 - 52	119.5 - 149.5	100	13	20	10
RH 52-67 H AL	571744	0.43	8.5	35	52 - 67	131 - 164	100	13	20	10



Technical data

Aluminium hooks with thin base RHV AL



RH V AL

		Weight	Thickness	Base plate width	Height under bracket	Total height	Depth	Width across nut	Installation torque	Sales unit
	Item no.	[kg]	S [mm]	[mm]	h ₁ [mm]	H [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item										
RH 40-52 V AL	571741	0.4	8.5	35	40 - 52	120 - 147	100	13	20 / 10	10
RH 52-67 V AL	571743	0.4	8.5	35	52 - 67	132 - 162	100	13	20 / 10	10

Bracket for horizontal PV panels LAB AL

Angle connection bracket for the installation of landscape oriented PV panels on pitched roofs with tiles.

4



Pitched roof with tiles and landscape oriented PV panels



Pitched roof with tiles

Applications

Landscape oriented PV panels installation on pitched roof with tiles covering, in combination with RH VB AL and RH V AL hooks.

Advantages

- Connection screw and nut are included in the package.
- The bracket design perfectly fits the hook shape and helps keeping the screw in position while fastening the nut.

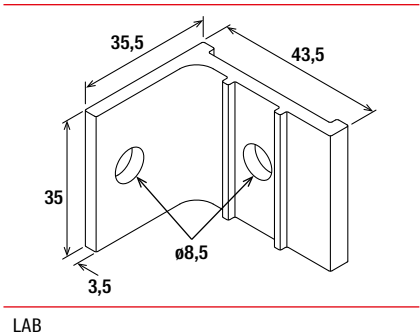
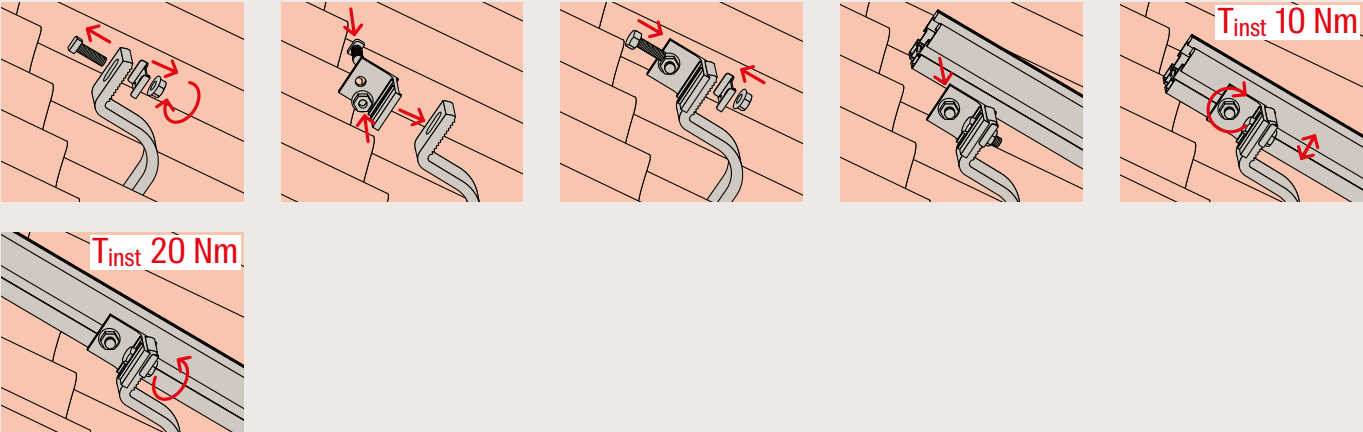
Properties

- Bracket in Aluminium alloy EN AW 6060 T66.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Remove the RHS 8x20 A2 hammer head screw, the hexagonal MU F nut and the anti-slip plate pre-mounted on the hook.
- Position the LAB bracket to the flat upper part of the hook and adjust the height according to the configuration needs.
- Fit the screw head between the LAB ribs, place the anti-slip plate and the MU F nut on the knurled side of the hook and tighten the nut.
- Connect the Solar rail to the hook through the RHS 8 x 20 A2 hammer head screw.
- Fasten the MU F nut applying a 10 Nm torque.

Installation bracket LAB AL with RH hook



Technical data

Bracket for landscape oriented PV panels LAB AL



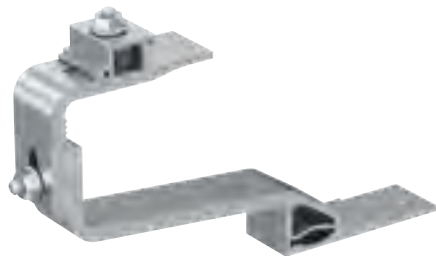
LAB

Item	Item no.	Weight [g]	Width across nut SW [mm]	Installation torque T_{inst} [Nm]	Contents	Sales unit [pcs]
LAB AL	571788	26	13	10 / 20	1x Bracket LAB 1x Flanged nut MU F M8 A2 1x Hexagon head screw SKS M8 x 30 A2	20

Aluminium hook with fixed base RH 30 H AL

Aluminium hook with fixed base for the installation of PV panels on pitched tile roofs without ventilation layer.

4



Pitched roof with tiles



Pitched roof with tiles - RH 30 H AL

Applications

- PV panels installation on pitched roofs with tiles without ventilation layer.

Advantages

- The multiple adjustments allow to adapt the hook to different tiles: the vertical adjustment allows to record the distance of the rail from the top of the tile; the higher adjustment allows to horizontally align the rail.
- The great load-bearing capacity allows the use of fewer hooks.
- The hook has a controlled deformation and it's designed not to bend or damage the tiles.
- The hook is pre-assembled and ready to be mounted without the need for additional accessories.
- The hook is lightweight and made of aluminium to last the entire life of the system.
- The quick connection joint can fit both with SolarFish H33 and SolarFish H44 rails by a 180° rotation.

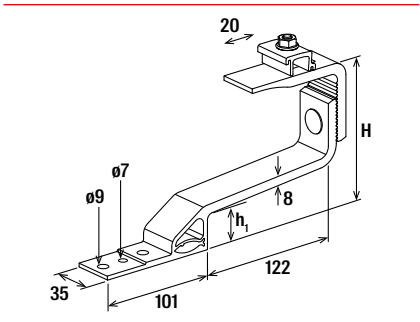
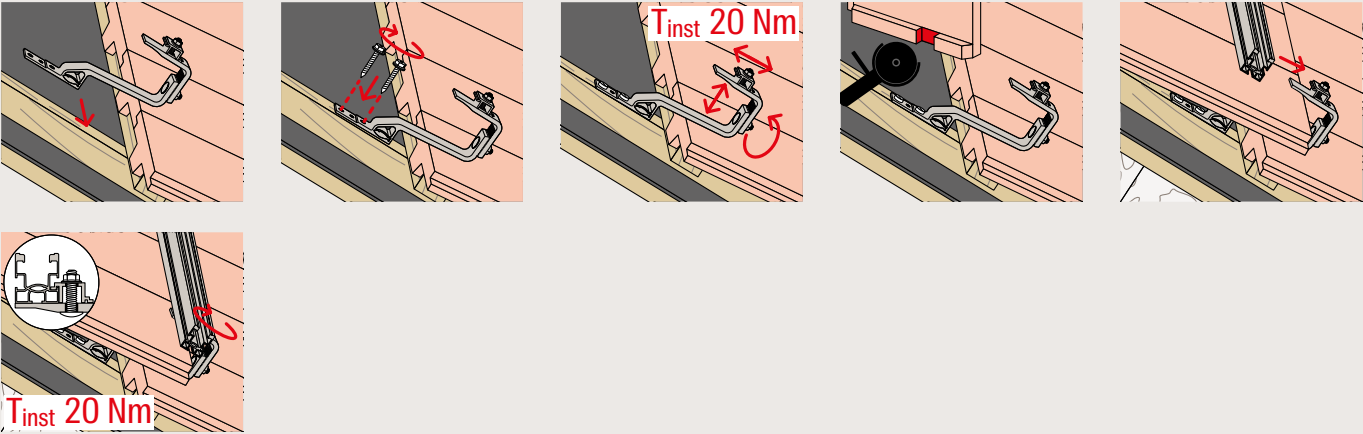
Properties

- Hook in Aluminium alloy AW 6060 T6 and AW 6082 T6 in accordance with EN 2:2016.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the tile and secure the base of the hook using the appropriate anchor determined according to the type and layers of the load-bearing support.
- Make the height adjustment required by the type of roofing and tighten the screws of the adjustment applying a 20Nm torque to lock the hook in position.
- Grind the upper tile to fit the hook shape and put it back in position.
- Insert the upper joint on the side of the selected rail and adjust the rail position (the joint can be rotated by 180° to adapt to SolarFish H33 or SolarFish H44 rails). Fasten the connection joint nut applying a 20 Nm torque.

Installation hook RH 30 H AL



Technical data

Aluminium hook with fixed base RH H AL



RH 30 H AL

		Weight	Thickness	Base plate width	Height under bracket	Total height	Depth	Width across nut	Installation torque	Sales unit
	Item no.	[kg]	S [mm]	[mm]	h ₁ [mm]	H [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item										
RH 30 H AL	571749	0.33	8.0	35	30	106 - 124	122	13	20	10

Hook with large base RH HB A2

Stainless steel adjustable hook with large base for the installation of PV panels on pitched tile roofs with ventilation layer.

4



Pitched roof with tiles



Pitched roof with tiles - RH HB A2

Applications

- PV panels installation on pitched roofs with tiles with ventilation layer.

Advantages

- The roof hook offers several adjustment elements: the lower vertical adjustment allows the hook to be adapted to different thicknesses of tiles and ventilation layers. The vertical adjustment element at the top allows adjustment of the distance between the profile and the top of the brick. The upper adjustment option allows the profile to be aligned parallel to the eaves / ridge.
- The 5 mm thickness allows a reduced tile grinding.
- Made of resistant stainless steel.
- The accessories for connecting to the Solar rails are included in the package.

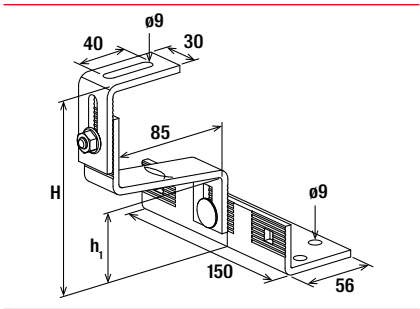
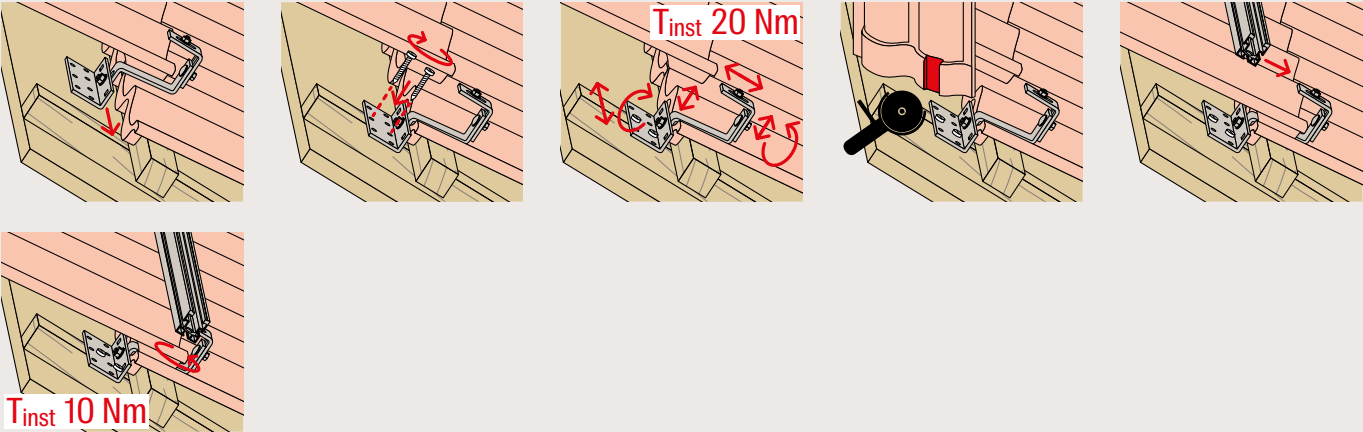
Properties

- X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the tile and secure the base of the hook using the appropriate anchor determined according to the type and layers of the load-bearing support.
- Make the height and width adjustments required by the type of roofing and tighten the screws of the adjustments applying a 20 Nm torque to lock the hook in position.
- Grind the upper tile to fit the hook shape and put it back in position.
- Use the existing slot in the higher part of the hook to adjust the selected rail position.
- Fasten the rail tightening the screw with a 10 Nm torque.

Installation hook RH HB A2



Technical data

Stainless steel hook with large base RH HB A2



RH HB A2

		Weight	Thickness	Total height	Depth	Under tile height	Width across nut	Installation torque	Contents	Sales unit
	Item no.	[kg]	S [mm]	H [mm]	D [mm]	h ₁	SW [mm]	T _{inst} [Nm]		[pcs]
Item										
RH 40-54 HB A2	071526	0.83	5.0	110 - 143	85	40 - 54	13	20 / 10	10 x Hook RH HB A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10

Hook with large base GT A2

Stainless steel hook with fixed height and large base for the installation of PV panels on pitched tile roofs with ventilation layer.



Pitched roof with tiles



Pitched roof with tiles

Applications

- PV panels installation on pitched roofs with tiles with ventilation layer with a total thickness of 43 mm or 68 mm.
- Version for roofs exposed to heavy snow loads available (RH 43 HB W A2).

Certificates / Features



Advantages

- The large base plate provides a wider fastening surface for an easier connection to the load-bearing structure and allows to offset the fastening point from the exit point of the hook from the tile.
- The GT hooks are available in two heights (130 and 150 mm) for a full compatibility with different types of tiles and ventilation layers.
- The higher adjustment allows to horizontally align the rail.
- The 5 mm thickness versions allow a reduced tile grinding.
- The 8 mm thickness version (RH 43 HB W A2) makes the hook suitable for high snow loads.
- Made of resistant stainless steel.
- The accessories for connecting to the Solar rails are included in the package.

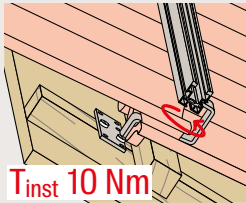
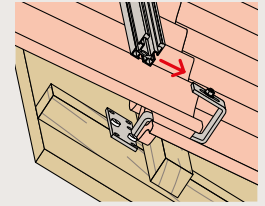
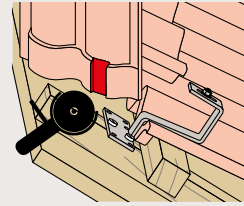
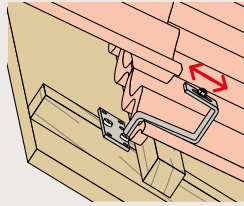
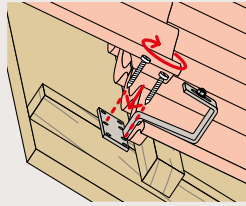
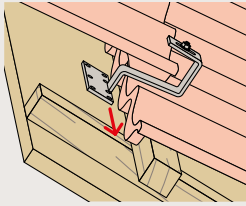
Properties

- X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

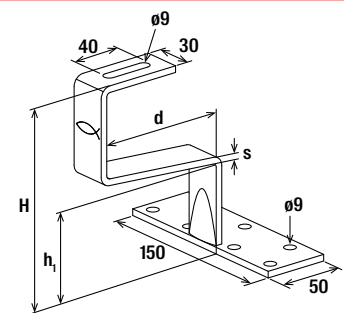
- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the tile and secure the base of the hook using the appropriate anchor determined according to the type of the load-bearing support.
- Grind the upper tile to fit the hook shape and put it back in position.
- Use the existing slot in the higher part of the hook to adjust the selected rail position.
- Fasten the rail tightening the screw with a 10Nm torque.

Installation stainless steel hook with large base GT A2



$T_{inst} \ 10 \text{ Nm}$

4



Technical data

Stainless steel hook with large base GT A2



GT A2

		Weight	Thickness	Total height	Depth	Under tile height	Width across nut	Installation torque	Contents	Sales unit
	Item no.	[kg]	S [mm]	H [mm]	D [mm]	h_1	SW [mm]	T_{inst} [Nm]		[pcs]
Item										
GT 130 A2	071198	0.57	5.0	130	96	43	13	10	10 x Hook GT A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10
RH 43 HB W A2	071422	0.73	8.0	130	90	43	13	10	10 x Hook RH 43 HB W A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10
GT 150 A2	571136	0.6	5.0	150	97	68	13	10	10 x Hook GT A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10

Hook with thin base GTP A2

Stainless steel hook with fixed height for the installation of PV panels on pitched tile roofs without ventilation layer.

4



Pitched roof with tiles



Pitched roof with tiles

Applications

PV panels installation on pitched roofs with tiles without ventilation layer with a total thickness of up to 30 mm.

Certificates / Features



Advantages

- The higher adjustment allows to horizontally align the rail.
- The 5 mm thickness allows a reduced tile grinding.
- The GTP A2 hook allows installation with up to 18 cm overlapping tiles.
- Made of resistant stainless steel.
- The accessories for connecting to the Solar rails are included in the package.

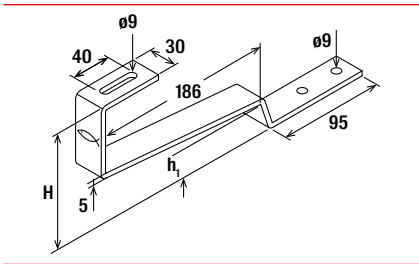
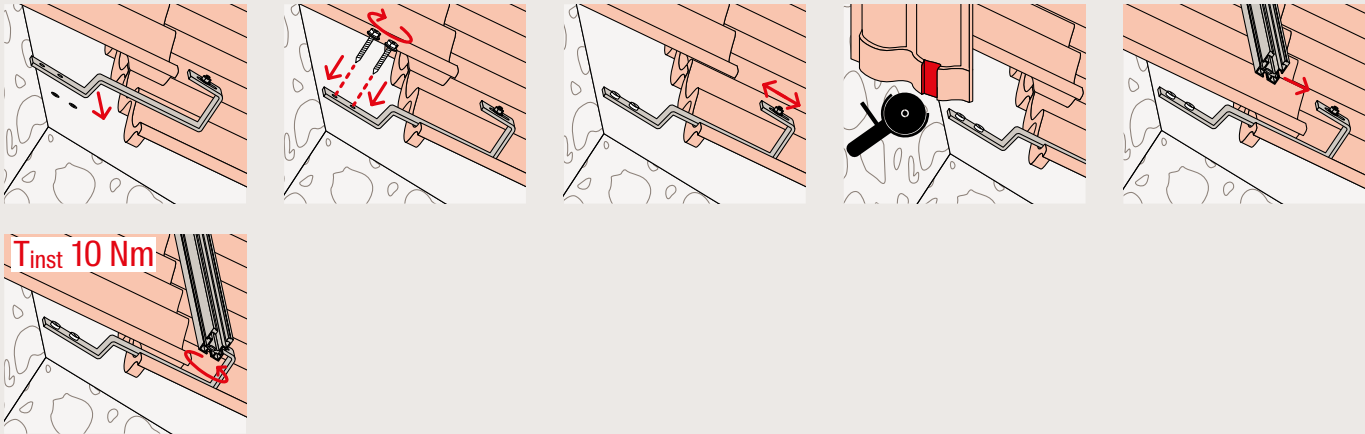
Properties

- X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the tile and secure the base of the hook using the appropriate anchor determined according to the type of the load-bearing support.
- Grind the upper tile to fit the hook shape and put it back in position.
- Use the existing slot in the higher part of the hook to adjust the selected rail position.
- Fasten the rail tightening the screw with a 10 Nm torque.

Installation stainless steel hook with thin base GTP A2



Technical data

Stainless steel hook with thin base GTP A2										
GTP A2										
	Item no.	Weight [kg]	Thickness S [mm]	Total height H [mm]	Depth D [mm]	Under tile height h ₁	Width across nut SW [mm]	Installation torque T _{inst} [Nm]	Contents	Sales unit [pcs]
Item										
GTP A2	071199	0.52	5.0	120	186	30	13	10	10 x Hook GTP A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10

Hook with thin base GTPR A2

Stainless steel adjustable hook for the installation of PV panels on pitched tile roofs without ventilation layer.

4



Pitched roof with tiles



Pitched roof with tiles

Applications

PV panels installation on pitched roofs with tiles without ventilation layer with a total thickness of up to 30 mm.

Certificates / Features



Advantages

- The multiple adjustments allow to adapt the hook to different tiles: the vertical adjustment allows to record the distance of the rail from the top of the tile; the higher adjustment allows to horizontally align the rail.
- The 5 mm thickness allows a reduced tile grinding.
- The GTPR A2 hook allows installation with up to 18 cm overlapping tiles.
- Made of resistant stainless steel.
- The hook is pre-assembled and the accessories for connecting to the Solar rails are included in the package.

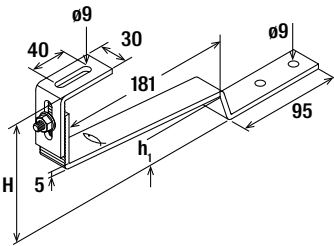
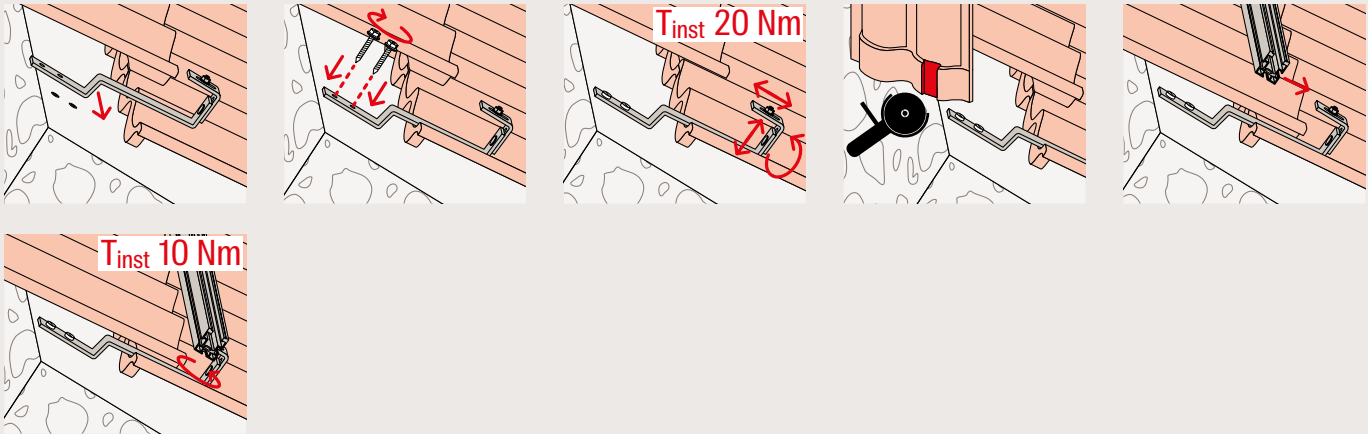
Properties

- X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the tile and secure the base of the hook using the appropriate anchor determined according to the type of the load-bearing support.
- Make the vertical adjustment required by the type of the roof and tighten the screws of the adjustment applying a 20 Nm torque to lock the hook in position.
- Grind the upper tile to fit the hook shape and put it back in position.
- Use the existing slot in the higher part of the hook to adjust the selected rail position.
- Fasten the rail tightening the screw with a 10 Nm torque.

Installation of stainless steel hook with thin base GTPR A2



Technical data

Stainless steel hook with thin base GTPR A2										
GTPR										
	Item no.	Weight [kg]	Thickness S [mm]	Total height H [mm]	Depth D [mm]	Under tile height h ₁	Width across nut SW [mm]	Installation torque T _{inst} [Nm]	Contents	Sales unit [pcs]
Item										
GTPR A2	519667	0.57	5.0	110 - 138	181	30	13	20 / 10	10 x Hook GTPR A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10

Hook for barrel tiles GC A2

Stainless steel adjustable hook for the installation of PV panels on pitched barrel tile roofs.

4



Pitched roof with barrel tiles



Pitched roof with barrel tiles

Applications

PV panels installation on pitched roofs with barrel tiles.

Certificates / Features



Advantages

- The multiple adjustments allow to adapt the hook to different barrel tiles: the lower vertical adjustment allows to adapt the hook to different thicknesses of tiles; the higher adjustment allows to horizontally align the rail.
- The 5 mm reduced thickness easily fits the barrel tiles.
- Made of resistant stainless steel.
- The hook is pre-assembled and the accessories for connecting to the Solar rails are included in the package.

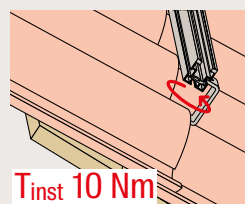
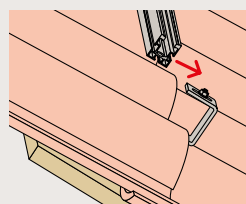
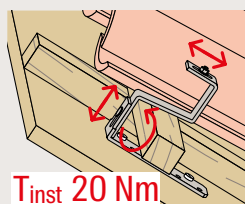
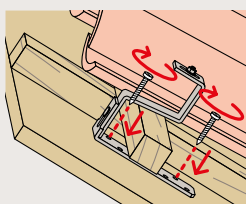
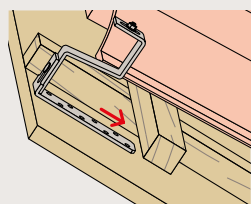
Properties

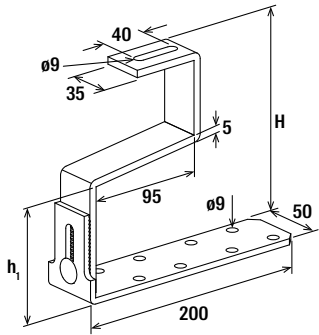
- X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.
- Class A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the load-bearing structure and system layout.
- Lift the barrel tiles and secure the base of the hook using the appropriate anchor determined according to the type of the load-bearing support.
- Make the vertical adjustment required by the type of the roof and tighten the screws of the adjustment applying a 20 Nm torque to lock the hook in position.
- Use the existing slot in the higher part of the hook to adjust the selected rail position.
- Fasten the rail tightening the screw with a 10 Nm torque.

Installation Hook GC





Technical data

Stainless steel hook for barrell tiles GC A2

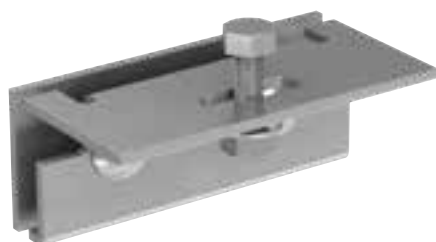


GC

Item	Item no.	Thickness	Total height	Depth	Under tile height	Width across nut	Installation torque	Contents	Sales unit
		S [mm]	H [mm]	D [mm]	h ₁	SW [mm]	T _{inst} [Nm]		
GC A2	571137	5.0	176 - 205	95	91 - 120	13	20 / 10	10 x Hook GC A2 10 x Hexagon head screw SKS M8 x 20 A2 10 x Hexagon nut MU F M8 A2	10

Hook for flat standing seam DLA A2

Stainless steel hook for the installation of PV panels on standing seam sheets. Suitable for flat seaming.



4



Pitched roof with flat standing seam covering



Pitched roof with flat standing seam covering

Applications

PV panels installation on pitched roofs with standing seam with flat seaming.

Certificates / Features



Advantages

- The accessories for connecting to the Solar rails are included in the package.
- Thanks to its design, the hook perfectly fits the flat standing seam.
- Thanks to its material selection with a thickness of 3 mm, the bracket is very robust.

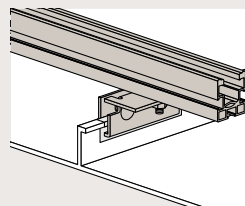
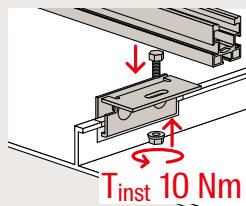
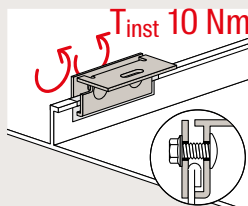
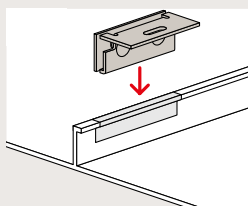
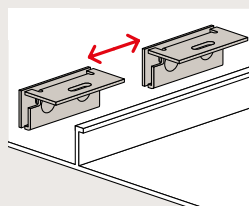
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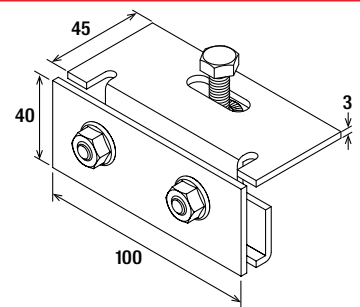
- Hook in stainless steel X5CrNi 18-10 according to EN 10088-2:2005.
- Bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the conformation of the standing seam.
- Position a layer of CG INT butyl adhesive tape on the sheet at the points where the hooks will be installed.
- Position the hook on the seam.
- Fasten the hook by tightening the flange nut on the pan head screw.
- Use the existing slot in the higher part of the hook to fasten the selected rail tightening the screw with a 10 Nm torque.

Installation stainless steel hook for flat standing seam DLA A2





Technical data

Stainless steel hook for flat standing seam DLA A2



DLA

		Weight	Thickness	Width across nut	Installation torque	Contents	Sales unit
Item	Item no.	[kg]	S [mm]	SW [mm]	T _{inst} [Nm]		[pcs]
DLA A2	071556	0.33	3.0	13	10	10 x Hook DLA A2 10 x Hexagon head screw SKS M8 x 20 A2 30 x Hexagon nut MU F M8 A2 20 x Panhead screw M8 x 20 A2	10

Butylene tape CG INT

Butylene tape CG INT



CG INT

		Length	Width	Thickness	Piece per carton	Sales unit
Item	Item no.	l [m]	B [mm]	S [mm]	[pcs]	[pcs]
CG INT	505615	10	80	1.0	2	1

Hook for rounded standing seam DLAK A2

Stainless steel hook for the installation of PV panels on standing seam sheets. Suitable for rounded seaming (e.g. Kalzip).



Pitched roof with rounded standing seam covering



Pitched roof with rounded standing seam covering

Applications

PV panels installation on pitched roofs with rounded standing seam (e.g. Kalzip).

Certificates / Features



Advantages

- Thanks to its design, the hook perfectly fits the rounded standing seam.
- Quick attachment of the hook to the standing seam by tightening a single screw.

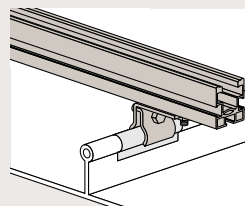
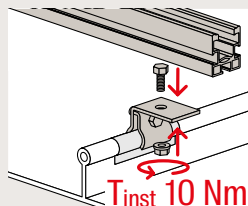
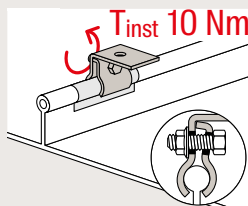
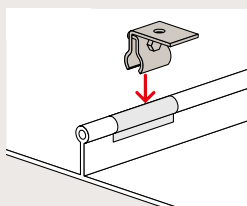
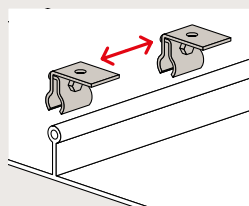
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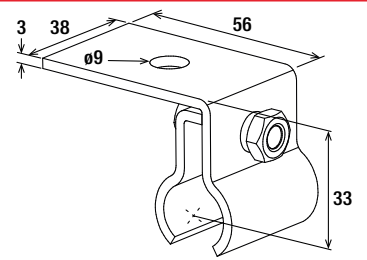
- Hook in stainless steel X5CrNi 18-10 according to EN 10088-2:2005.
- Bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2010.

Functioning

- Determine the centre distance of the hooks according to the snow and wind loads in the installation area (use SOLARPANEL-FIX software to design the system) and according to the conformation of the standing seam.
- Position a layer of CG INT butyl adhesive tape on the sheet at the points where the hooks will be installed.
- Position the hook clamping the seam.
- Fasten the hook by tightening the flange nut on the screw.
- Use the existing hole in the higher part of the hook to fasten the selected rail tightening the screw with a 10 Nm torque.

Installation hook DLAK A2





Technical data

Stainless steel hook for rounded standing seam DLAK A2



DLAK

	Item no.	Weight [kg]	Thickness S [mm]	Width across nut SW [mm]	Installation torque T _{inst} [Nm]	Sales unit [pcs]
Item						
DLAK A2	536782	0.25	3.0	13	10	50

Accessories hexagonal screw SKS A2

Accessories hexagonal screw SKS A2



SKS

	Item no.	Length l [mm]	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item					
SKS M8 x 20 mm A2	505614	20	M8	13	100

Accessories flanged hexagon nut MU F A2

Accessories flanged hexagon nut MU F A2



MU F

	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item				
MU F M8 A2	571210	M8	13	100

Butylene tape CG INT

Butylene tape CG INT



CG INT

4

	Item no.	Length l [m]	Width B [mm]	Thickness S [mm]	Piece per carton [pcs]	Sales unit [pcs]
Item						
CG INT	505615	10	80	1.0	2	1



5

Stud screws

Stud screw STSI A2	94	
Stud screw STSR A2	96	
Connection bracket MW A2	100	
Flat connection bracket SSP A2	102	
Flat connection bracket SSP Speed Plus A2	104	

Stud screw STSI A2

Double-threaded screw for fastening photovoltaic systems on roofs with a steel load-bearing structure covered by corrugated panels, faux panels or tiles.



5



Pitched roof with corrugated sheets covering



Roof with trapezoidal metal sheet covering

Applications

- Installation of PV panels on roofs with a steel load-bearing structure covered by corrugated panels, faux panels or tiles.

Certificates / Features



Advantages

- The STSI double-threaded screw is supplied pre-assembled with EPDM gasket and pair of nuts for connection to the MW or SSP brackets.
- The roofing does not need to be removed during installation.
- Thanks to the EPDM gasket, waterproofness of the roof is maintained.

Properties

- Stud and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009.

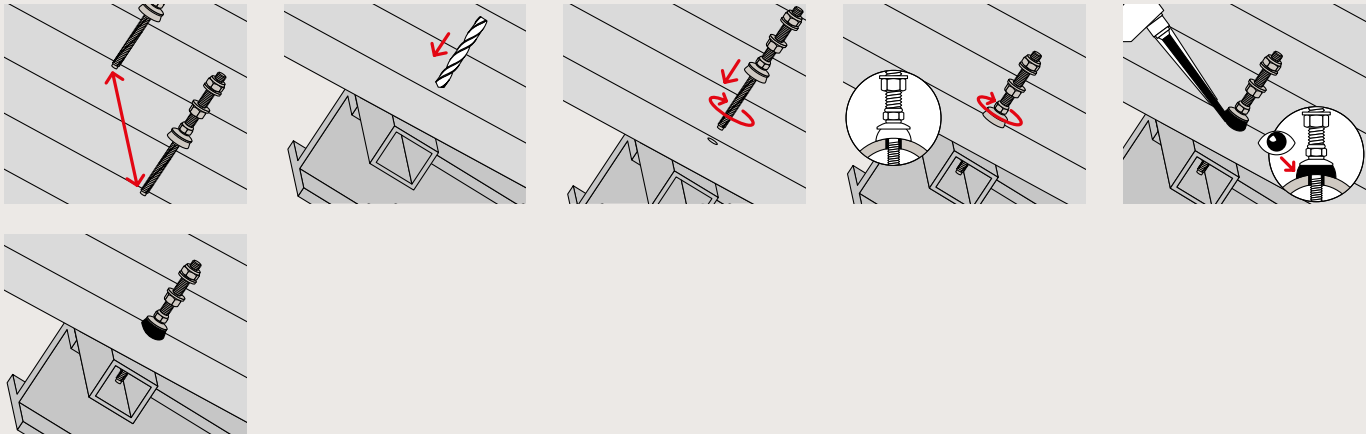
Functioning

- Determine the centre distance of the STSI double-threaded screws according to the snow and wind loads of the system installation area and inclination of the roof.
- Identify the position of the STSI double-threaded screws depending on the load-bearing structure and the layout of the installation (use SOLARPANEL-FIX for the design).
- Drill the support according to the diameter of the screw.
- Tighten the STSI double-threaded screw until the gasket is fully in contact with the roof covering.
- Carefully seal the exit point of the screw from the roof with bituminous sealant in order to improve waterproofness.
- Connect the Solar rail to the upper part of the screw by inserting SSP or MW connection plates, adjusting their height using the MU nuts.

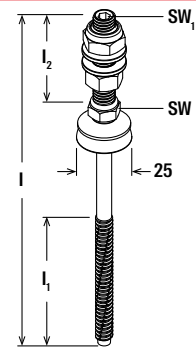
Building materials

- Steel beams.

Installation stud screw STSI



5



Technical data

Stud screw STSI										
										
STSI										
	Item no.	Weight [kg]	Length l [mm]	Steel thread length l ₁ [mm]	Metric thread length l ₂ [mm]	Thread M	Diameter d [mm]	Width across nut SW [mm]	Width across nut (hexagon socket) SW ₁ [mm]	Sales unit [pcs]
Item										
STSI M10 x 181 mm A2	533376	0.103	181	70	50	M10	8.0	13	5	10
STSI M10 x 250 mm A2	533426	0.141	250	70	50	M10	8.0	13	5	10

Technical data

Accessories				
				
MU F				
	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item				
MU F M10 A2	071952	M10	17	100

Stud screw STSR A2

Double-threaded screw for fastening photovoltaic systems on roofs with wooden, concrete or hollow bricks and concrete load-bearing structure, covered by corrugated panels, faux panels or tiles.



5



Pitched roof with corrugated sheets covering



Pitched roof with tiles covering

Applications

Installation of PV panels on roofs with wooden, concrete or hollow bricks and concrete load-bearing structure, covered by corrugated panels, faux panels or tiles.

Certificates / Features



Advantages

- The STSR double-threaded screw is supplied pre-assembled with EPDM gasket, tightening nut and pair of nuts for connection to the MW or SSP brackets.
- The roofing does not need to be removed during installation.
- Thanks to the EPDM gasket, waterproofness of the roof is maintained.

Properties

Stud and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009.

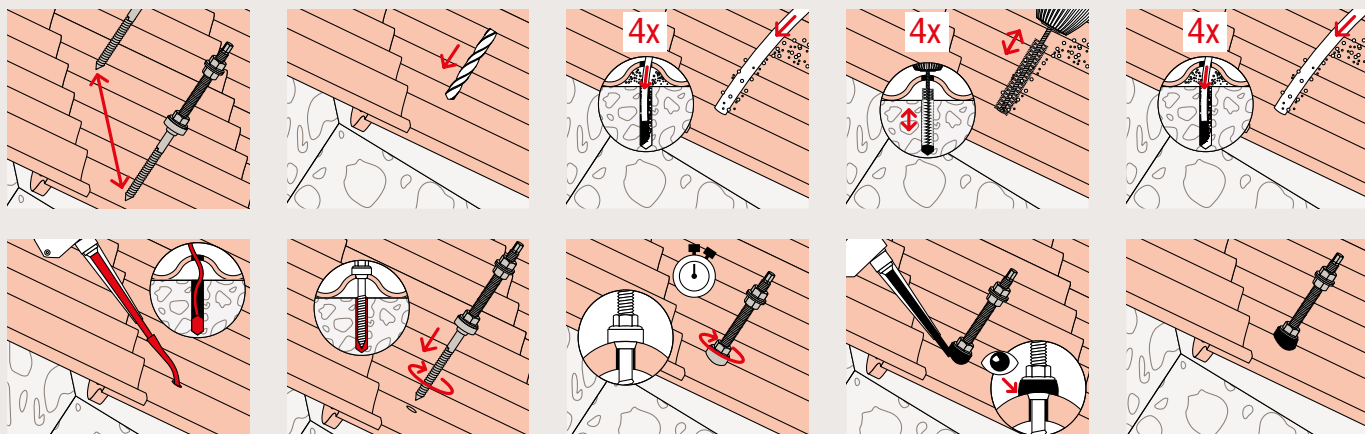
Functioning

- Determine the centre distance of the STSR double-threaded screws according to the snow and wind loads of the system installation area and inclination of the roof (use SOLARPANEL-FIX for the design).
- Drill the support according to the diameter of the screw and the type of support.
- In case of concrete, fasten the STSR double-threaded screw into the structure using a chemical injection mortar.
- In case of hollow bricks covered by concrete, fasten the STSR double-threaded screw into the structure using a chemical injection mortar and FIS HK injection anchor sleeve.
- In case of wooden beams, fasten the STSR double-threaded screw into the structure after pre-drilling it.
- Tighten the STSR double-threaded screw until the gasket is fully in contact with the roof covering.
- Carefully seal the exit point of the screw from the roof with bituminous sealant in order to improve waterproofness.

Building materials

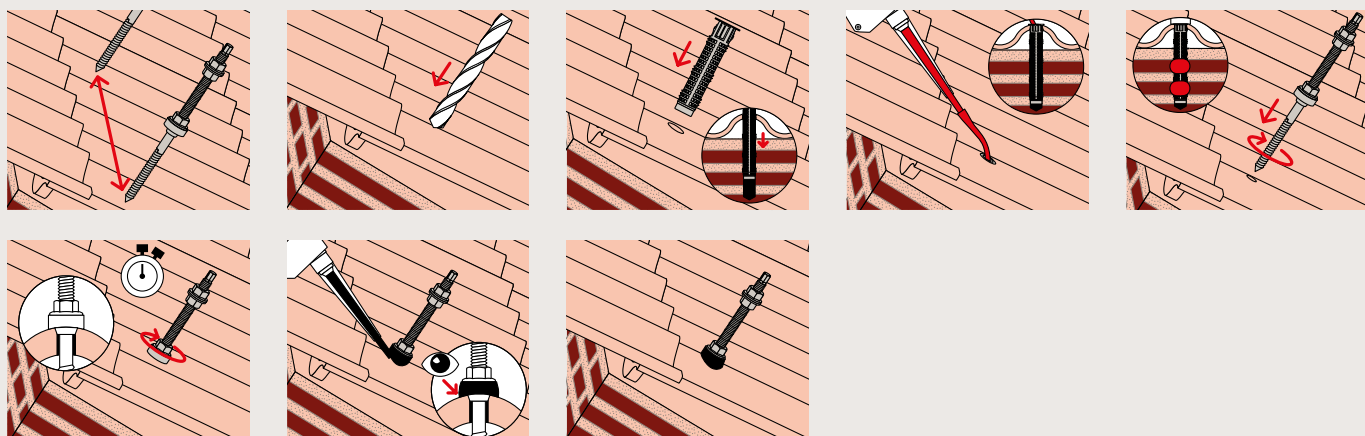
- Concrete beams and slabs.
- Hollow brick and concrete slabs.
- Wooden beams.

Installation stud screw STSR in concrete substructure

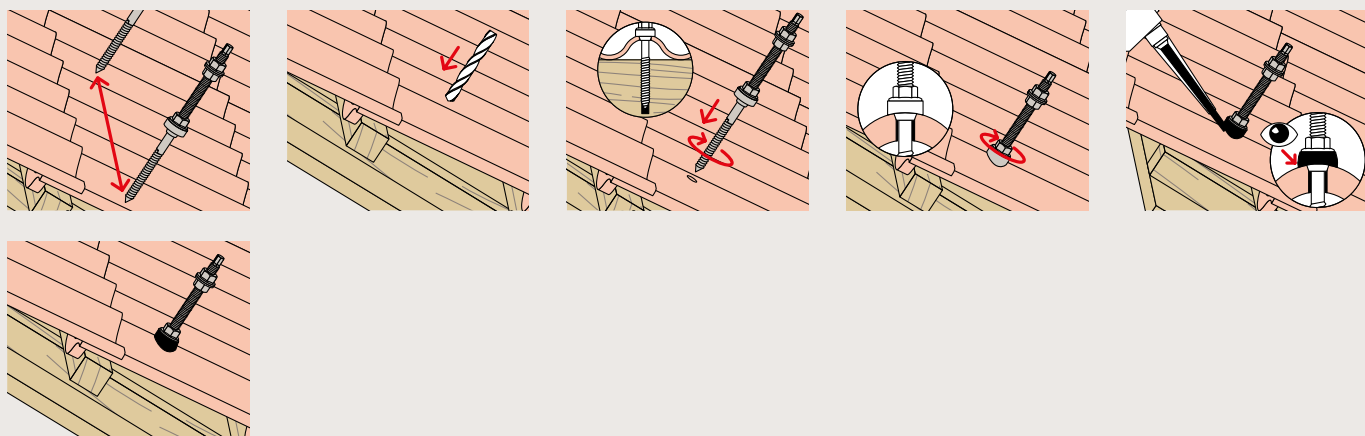


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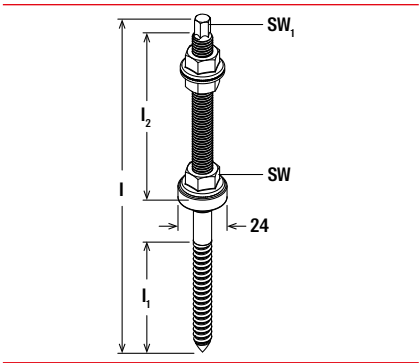
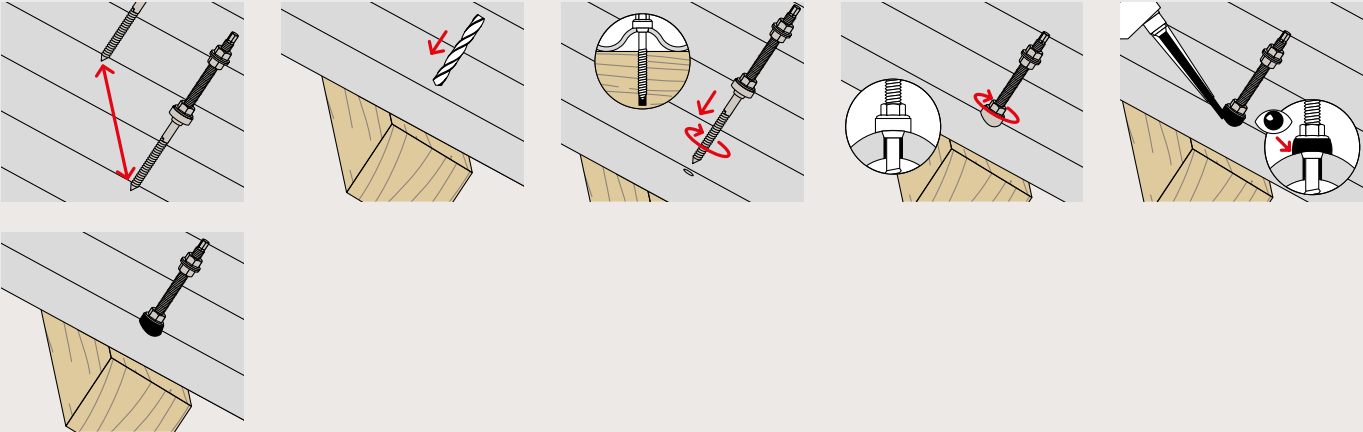
Installation stud screw STSR in hollow brick substructure



Installation stud screw STSR in wood substructure



Installation stud screw STSR on fibre cement board cladding with wood substructure



Technical data

Stud screw STSR										
STSR										
Item	Item no.	Weight [kg]	Length l [mm]	Wood thread length l ₁ [mm]	Metric thread length l ₂ [mm]	Thread M	Diameter d [mm]	Width across nut SW [mm]	Width across nut SW ₁ [mm]	Sales unit [pcs]
STSR M10 x 200 mm A2	071202	0.130	200	67	85	M10	9.0	15	7	25
STSR M10 x 250 mm A2	071203	0.160	250	67	85	M10	9.0	15	7	25
STSR M10 x 300 mm A2	570692	0.220	300	100	150	M10	11.0	15	7	25
STSR M12 x 300 mm A2	071204	0.280	300	100	150	M12	11.0	18	9	25
STSR M12 x 350 mm A2	570113	0.320	350	100	195	M12	11.0	18	9	25

Technical data

Washer G EPDM				
G EPDM				
Item	Item no.	Diameter d [mm]	Thickness S [mm]	Sales unit [pcs]
G EPDM M10	071748	24	7.5	50

Technical data

Flanged hexagonal nut MU F



MU F

	Item no.	Thread M	Width across nut SW [mm]	Sales unit [pcs]
Item				
MU F M10 A2	071952	M10	17	100
MU F M12 A2	071749	M12	19	100

5

Technical data

Injection mortar FIS V Plus



FIS V Plus 410 C

	Item no.	Approval			Contents	Sales unit
		ETA	DIBt	ICC		[pcs]
Item						
FIS V Plus 410 C	558780	●	●	●	1 x Cartridge 410 ml, 2 x Static mixer FIS MR Plus	1

Technical data

Injection anchor sleeves



FIS H K

FIS HK

	Item no.	Ap- pro- val ETA	Min. drill hole depth h_1 [mm]	Max. drill hole depth [mm]	Sales unit [pcs]
Item					
FIS H 16 x 130 K	041905	–	140	–	50
FIS H 20 x 130 K	046703	●	135	140	20
FIS H 20 x 200 K	046704	●	205	210	20
FIS H 18 x 130/200 K	045707	●	140	340	10

Connection bracket MW A2

Angle bracket for the connection between Solar rails and double-threaded screws.

5



Pitched roof with tiles covering



Roof with trapezoidal metal sheet covering

Applications

PV panels installation on roofs in combination with STSR and STSI double-threaded screws. Compatible with SolarFish H33, SolarFish H44 and SolarFish H83 rails.

Advantages

- Fast connection to STSR and STSI double-threaded screws thanks to the bottom hole.
- Adjustable rail height thanks to the slotted side hole.

Properties

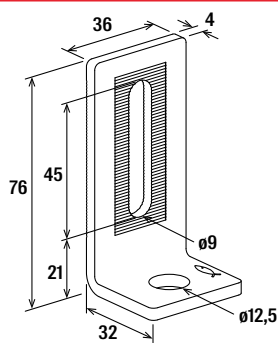
X5CrNi 18-10 stainless steel hook in accordance with EN 10088-2:2005.

Functioning

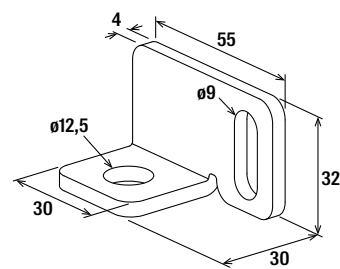
- Insert the MW A2 angle bracket between the two nuts of the STSR/STSI double-threaded screw, adjust the position of the bracket and tighten the nuts.
- Connect the Solar rail to the MW A2 bracket through the slotted hole using SKS M8 x 20 A2 or RHS M8 x 20 A2 screws and MU F M8 flanged hex nut.

Certificates / Features





MW SA



MW SU

Technical data

5

Angle bracket MW



MW SA



MW SU

		Weight	Thickness	Hole-ø	Installation torque	Sales unit
	Item no.	[g]	S [mm]	D [mm]	T _{inst} [Nm]	[pcs]
Item						
MW SU A2	522676	65	4.0	12.5	10	10
MW SA A2	518952	94	4.0	12.5	10	10

Accessories

Accessories



SKS



RHS



MU F

		Thread	Length	Width across nut	Sales unit
	Item no.	M	l [mm]	SW [mm]	[pcs]
Item					
SKS M8 x 20 mm A2	505614	M8	20	13	100
RHS M8 x 20 mm A2	071207	M8	20	–	50
MU F M8 A2	571210	M8	–	13	100

Flat connection bracket SSP A2

Flat bracket for the connection between Solar rails and double-threaded screws.



5



Pitched roof with corrugated sheets covering



Pitched roof with corrugated sheets covering

Applications

- PV panels installation on roofs in combination with STSR and STSI double-threaded screws.
- Compatible with SolarFish H33, SolarFish H44 and SolarFish H83 rails.

Advantages

- Easy installation thanks to the slotted hole that allows to adjust the positioning of the rail.
- Two versions available to fit all the STSR and STSI double-threaded screws variants.

Properties

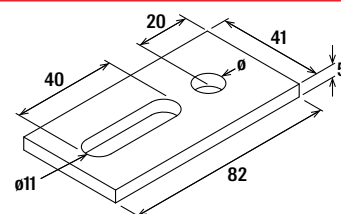
- Plates in stainless steel X5CrNi 18-10 (A2) according to EN 10088-2:2014.

Functioning

- Insert the bracket between the stud screw STSR/STSI two nuts through the circular hole.
- Use the stud screw STSR/STSI lower nut for adjusting the bracket position.
- Tighten the two nuts.
- Connect the Solar rail to the bracket and adjust its position through the slotted hole using SKS M8 x 20 A2 or RHS M8 x 20 A2 screws and MU F M8 flanged hex nut.

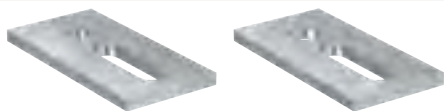
Certificates / Features





Technical data

Flat connection bracket SSP



SSP 10 A2

SSP 12 A2

Item	Item no.	Weight [g]	Thickness T [mm]	Hole-Ø D [mm]	Installation torque T _{inst} [Nm]	Sales unit [pcs]
SSP 10 A2	071205	100	5	11	10	25
SSP 12 A2	071206	100	5	13	10	25

Accessories

Accessories



SKS

RHS

MU F

Item	Item no.	Thread M	Length L [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M8 x 20 mm A2	505614	M8	–	13	100
RHS M8 x 20 mm A2	071207	M8	20	–	50
MU F M8 A2	571210	M8	–	13	100

Flat connection bracket SSP Speed Plus A2

Connector for connecting STSR or STSI hanger bolts and the SolarFish H33 and H44 solar rails.



Pitched roof with corrugated sheets covering



Installation rail with SSP Speed Plus A2

Applications

- Corrugated sheet metal and fibre cement roofing with steel (STSI stud screws) or timber (STSR stud screws) roof substructures.

For use with:

- SolarFish H33
- SolarFish H44

Advantages

- The slotted hole allows for greater tolerance when mounting the rail.
- SSP Speed Plus is supplied pre-assembled and connected to the rail by tightening a single screw.
- The SSP Speed Plus connection facilitates the pre-positioning of the rail for quick installation.

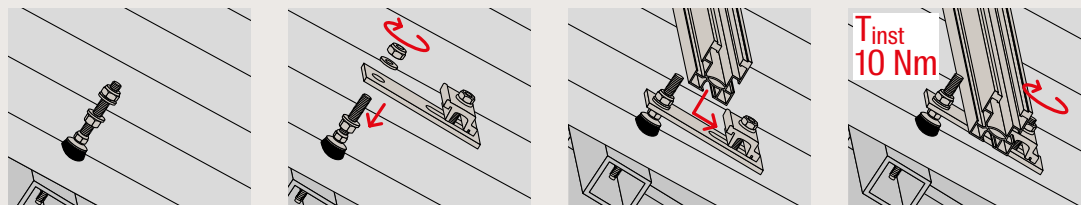
Functioning

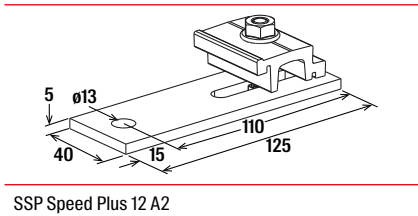
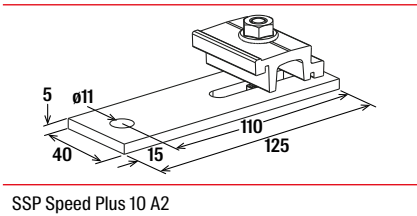
- Insert the SSP Speed Plus flat connection bracket between the two nuts of the STSR/STSI stud screw.
- Use the nuts on the STSR/STSI socket head bolts to adjust the position of the SSP Speed Plus flat connection bracket. Tighten both nuts.
- Insert the quick coupling of the SSP Speed Plus into the side rail groove of the solar rail. Align the swivelling quick coupling according to the use for SolarFish H33 or SolarFish H44. Then tighten the nut (torque 10 Nm).

Certificates / Features



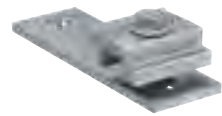
Installation SSP Speed Plus A2





Technical data

Flat connection bracket SSP Speed Plus A2



SSP Speed Plus A2

		Weight	Thickness	Hole-ø	Width across nut	Installation torque	Sales unit
	Item no.	[g]	T [mm]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
Item							
SSP Speed Plus 10 A2	576442	251	5	11	13	10	25
SSP Speed Plus 12 A2	576443	251	5	13	13	10	25



6

Triangles

Pre-assembled triangular frame STFS	108	
Pre-assembled triangular frame STFN	110	
Triangular frame STFN RL AL	113	

Pre-assembled triangular frame STFS

Pre-assembled triangular frame for the installation of PV panels in a lowered position on flat roofs. Suitable for landscape layout installation.



6



Flat roof



Flat roof

Applications

- Landscape oriented PV panels installation on flat roofs. PV panels inclination of 10° or 13°.

Certificates / Features



Advantages

- The STFS triangular frame is pre-assembled and all the accessories for the connection to the Solar rails are included in the package.
- Adjustable angle 10°-13°.
- The lowered design allows an only 30 cm high installation (suitable for a reduced visual impact and wind protection).

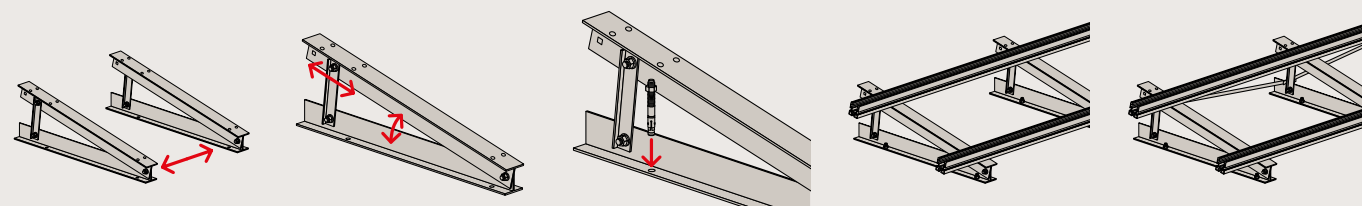
Properties

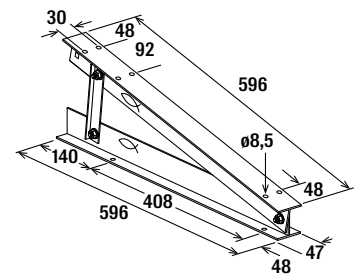
- Triangular structure in AW 6063 T66 or AW 6060 T66 aluminium in accordance with EN 755-2:2013.
- A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2009.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.

Functioning

- Determine the centre distance of the triangular frames according to the snow and wind loads in the installation area (use the SOLARPANEL-FIX software).
- Select the desired angle and fasten the diagonal strut in the corresponding position.
- Fasten the base with the appropriate anchor depending on the building material of the roof.
- Connect the Solar rail to the triangular frame using the screws supplied in the package.

Installation flat roof triangle STFS





Technical data

Pre-assembled triangular frame STFS



STFS

Item	Item no.	Weight [kg]	Rail cross section [cm ²]	Moment of inertia I _y [cm ⁴]	Section modulus W _y [cm ³]	Hole-ø D [mm]	Width across nut SW [mm]	Installation torque T _{inst} [Nm]	Contents	Sales unit [pcs]
STFS 10° - 13°	512625	1	3.04	7.23	1.97	8.5	13	10	5 x STFS triangle 20 x RHS M8 x 20 A2 hammer head screw 20 x MU F M8 A2 flanged nut	5

Accessories

Accessories



SKS

RHS

MU F

Item	Item no.	Thread M	Length l [mm]	Width across nut SW [mm]	Sales unit [pcs]
SKS M8 x 20 mm A2	505614	M8	20	13	100
RHS M8 x 20 mm A2	071207	M8	20	–	50
MU F M8 A2	571210	M8	–	13	100

Pre-assembled triangular frame STFN

Pre-assembled triangular frame for the installation of PV panels on flat roofs. Suitable for portrait or landscape layout installation.

6



Flat roof



Flat roof

Applications

Portrait or landscape oriented PV panels installation on flat roofs. PV panels inclination of 10°-15° or 25°-30°-35°.

Advantages

- The STFN triangular frame is pre-assembled and all the accessories for the connection to the Solar rails are included in the package.
- Adjustable angle 10°-15° or 25°-30°-35°.
- Suitable both for portrait or landscape PV panels orientation.
- Two versions available: traditional and for long PV panels up to 2150 mm.

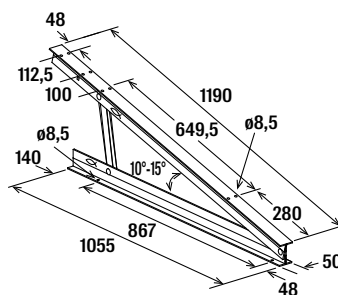
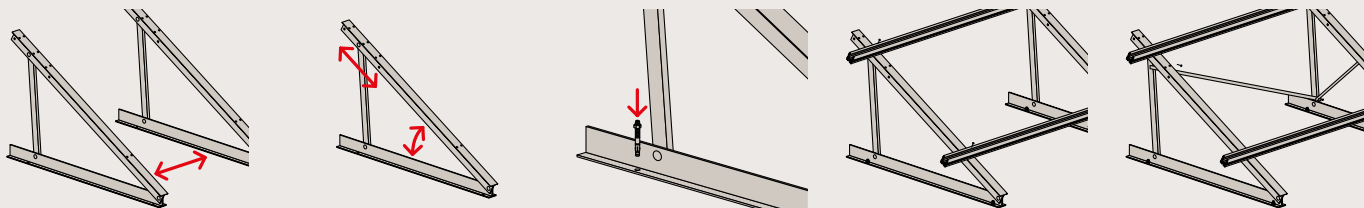
Properties

- Triangular structure in AW 6063 T66, AW 6060 T5, AW 6060 T6 or AW 6060 T66 aluminium in accordance with EN 755-2:2013.
- A2-70 stainless steel bolts in accordance with EN ISO 3506-1/2:2009.
- Please note: any oxidation stains are considered characteristic of aluminium. This in no way impairs the functionality of the product and is not covered by the warranty.

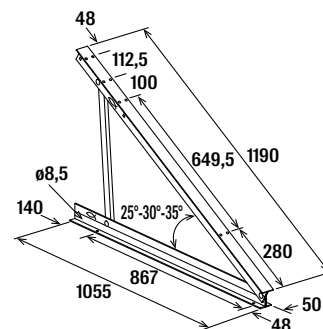
Functioning

- Determine the centre distance of the triangular frames according to the snow and wind loads in the installation area (use the SOLARPANEL-FIX software).
- Select the desired angle and fasten the diagonal strut in the corresponding position.
- Fasten the base with the appropriate anchor depending on the building material of the roof.
- Connect the Solar rail to the triangular frame using the screws supplied in the package.

Installation flat roof triangle STFN



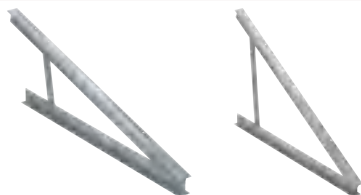
STFN 10°-15°



STFN 25°-30°-35°

Technical data

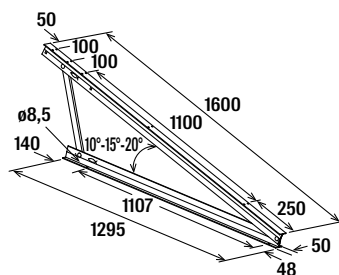
Pre-assembled triangular frame STFN for portrait and landscape installation of PV panels



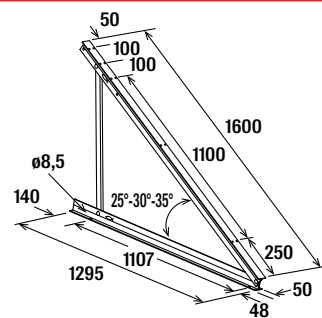
STFN 10° - 15°

STFN 25° - 30° - 35°

Item	Item no.	Weight [kg]	Rail cross section [cm ²]	Hole-ø D [mm]	Width across nut SW [mm]	Installation torque T _{inst} [Nm]	Contents	Sales unit [pcs]
STFN 10°-15°	524335	2.05	3.78	9	13	10	5 x STF triangle 20 x RHS M8 x 20 A2 hammer head screw 20 x MU F M8 A2 flanged nut	5
STFN 25°-30°-35°	511874	2.53	3.78	9	13	10	5 x STF triangle 20 x RHS M8 x 20 A2 hammer head screw 20 x MU F M8 A2 flanged nut	5



STFN 200 10°-15°-20°



STFN 200 25°-30°-35°

Technical data

6

Pre-assembled triangular frame STFN 200 for portrait installation of PV panels up to 2150 mm length



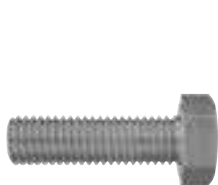
STFN 200 10° - 15° - 20°

STFN 200 25° - 30° - 35°

		Weight	Rail cross section	Hole-ø	Width across nut	Installation torque	Contents	Sales unit
	Item no.	[kg]	[cm ²]	D [mm]	SW [mm]	T _{inst} [Nm]		[pcs]
Item								
STFN 200 10°-15°-20°	558500	3.4	3.78	10.5	13	10	5 x STFN 200 triangle 20 x RHS M8 x 20 A2 hammer head screw 20 x MU F M8 A2 flanged nut	5
STFN 200 25°-30°-35°	558501	4	3.78	10.5	13	10	5 x STFN 200 triangle 20 x RHS M8 x 20 A2 hammer head screw 20 x MU F M8 A2 flanged nut	5

Accessories

Accessories



SKS



RHS



MU F

		Thread	Length	Width across nut	Sales unit
	Item no.	M	l [mm]	SW [mm]	[pcs]
Item					
SKS M8 x 20 mm A2	505614	M8	20	13	100
RHS M8 x 20 mm A2	071207	M8	20	–	50
MU F M8 A2	571210	M8	–	13	100

Triangular frame STFNL AL

Pre-assembled railless triangular frame for installing large PV panels on flat roofs, suitable for landscape layouts.



Flat roof installation

6

Applications

- Installation of PV panels on flat roofs with landscape layout.
- Adjustable angles.
- The PV panel can be supported by two or three pre-assembled triangles, depending on the loads.

Advantages

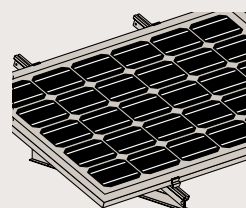
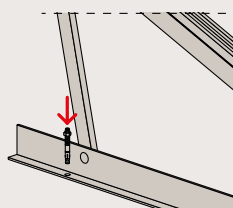
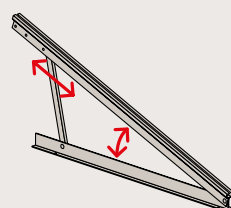
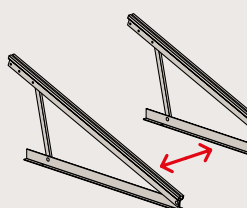
- The STFNL AL triangle is provided pre-assembled.
- Adjustable angles.
- Suitable for large panel sizes up to 2.500 mm x 1.350 mm.

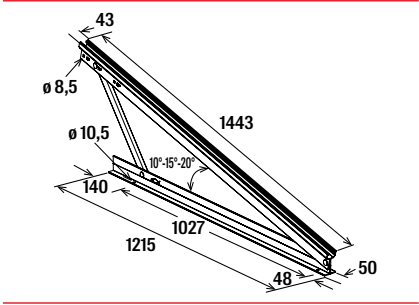
- The panels are fastened directly onto the triangle without the need to install rails.
- The railless STFNL system is compatible with the whole fischer solar clamps assortment.

Functioning

- Determine the centre distance of the triangular frames according to the snow and wind loads in the installation area (use the SOLARPANEL-FIX software).
- Identify the position of the triangular frames according to the load-bearing structure and layout of the system.
- Select the desired angle of the triangle and fasten the diagonal strut in the corresponding position.
- Fasten the base of the triangular frame with the appropriate anchor depending on the building material of the roof.

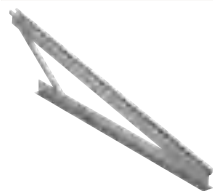
Installation STFNL AL





Technical data

Triangular frame STFNL RL AL



STFNL RL AL

		Weight	Rail cross section	Hole-ø	Width across nut	Installation torque	Sales unit
Item	Item no.	[kg]	[cm²]	D [mm]	SW [mm]	T _{inst} [Nm]	[pcs]
STFNL RL 10°-15°-20° AL	576434	3.32	467	9	13	10	3

Accessories

Accessories



		Thread	Length	Width across nut	Sales unit
Item	Item no.	M	l [mm]	SW [mm]	[pcs]
SKS M8 x 20 mm A2	505614	M8	20	13	100
RHS M8 x 20 mm A2	071207	M8	20	-	50
MU F M8 A2	571210	M8	-	13	100



7

Façade fixing

PV clip system

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PV clasp system ATK103PV

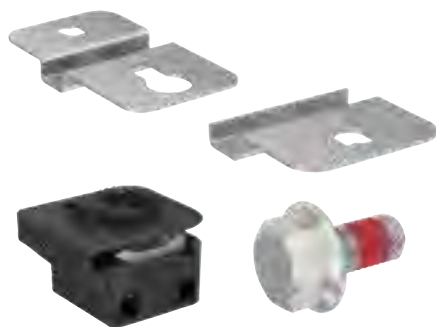
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7

PV clip system

For quick and easy fixing of PV modules on vertical façades.



System illustration PV clip system installed directly to concrete for framed PV modules



Façade cross-section FLH R with ATK100 and PV clip system on framed PV modules

Applications

- PV clip for mounting PV modules on façades

Certificates / Features



Advantages

- The practical sliding nut enables quick and constraint-free installation.
- The simple stainless steel plug-in system is highly weather-resistant thanks to the high corrosion protection class III.
- Suitable for all types of framed PV modules with mounting holes.
- The system enables fixing to various wall substrates and also to different substructures.
- The modular system enables the construction of contiguous module arrays with adjustable joint sizes.
- The start/end clip can be used both as a start clip and as an end clip, thus minimizing the number of products required.
- Pre-applied thread locker on screws.
- Integrated potential equalisation.

Properties

Stainless steel with high corrosion protection class III

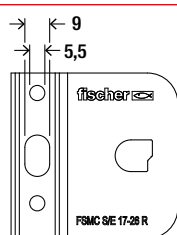
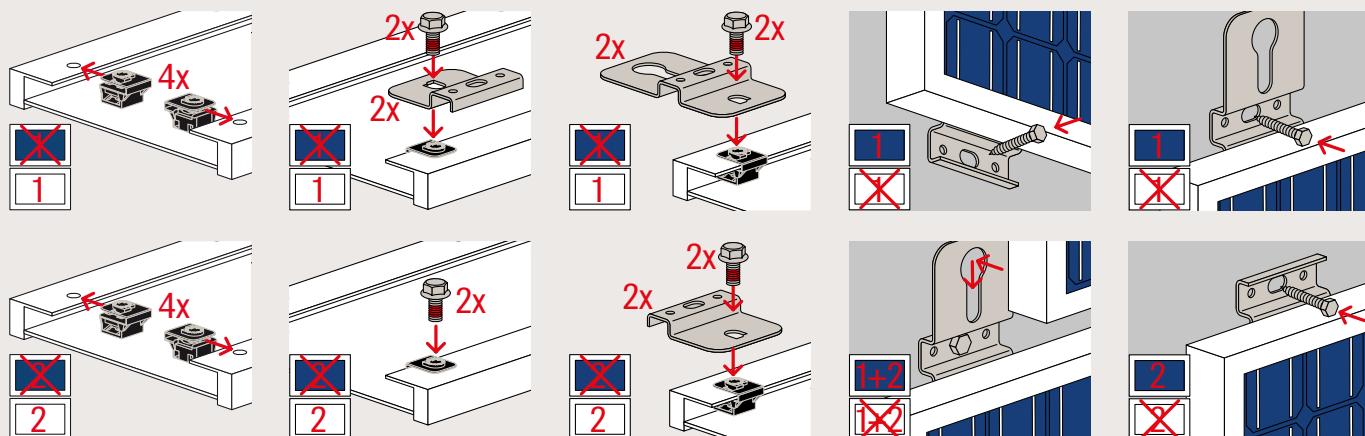
Functioning

- Push sliding nuts FSMN II R onto all mounting holes on the back of the module.
- Attach fischer PV clip FSMC S/E on one side of the starting module, using pre-applied screw locking device SKS M8x16 A4. Attach fischer PV clip FSMC M on the other side of the starting module, using the screws with integrated thread locker for installation.
- Fix the PV clips FSMC S/E and FSMC M to the building substrate using plugs, wood screws etc.
- On further modules, mount screws on one side and attach to FSMC M from the start module. Attach FSMC M with screw on the opposite side and fix to the building substrate using wood screws, plugs etc..
- Pre-applied thread locker on SKSK screws does not require additional securing of the screw connections.

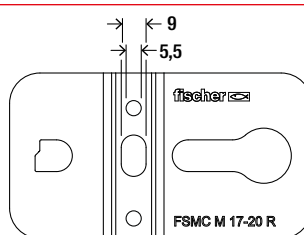
Building materials

- Various building substrates (concrete, wood, masonry, steel, trapezoidal sheet metal)
- Various substructures (aluminum profiles, steel profiles, wooden battens)

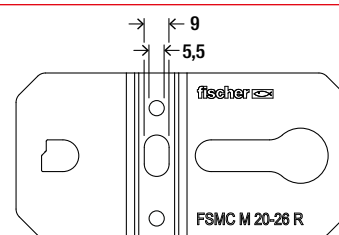
Installation PV clip system



FSMC S/E 17-26 R



FSMC M 17-20 R



FSMC M 20-26 R

Technical data

PV-Clip FSMC



FSMC S/E 17-26 R

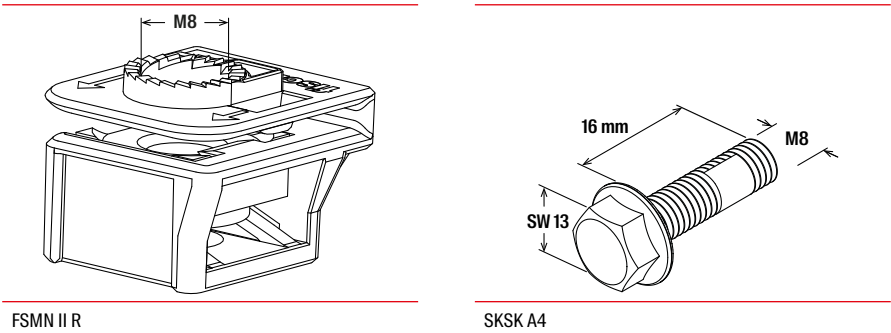


FSMC M 17-20 R



FSMC M 20-26 R

Item	Item no.	Width W [mm]	Height H [mm]	Sales unit [pcs]
FSMC S/E 17-26 R	573440	60	60	20
FSMC M 17-20 R	573441	110	60	50
FSMC M 20-26 R	573442	120	60	50



Accessories FSMN II R / SKSK

Sliding nut FMSN II R



FSMN II R

SKSK A4 serrated with pre-applied screw lock

Item	Item no.	Width across flats	Sales unit
		AF [mm]	[pcs]
FSMN II M8 R	576836	–	100
SKSK M8x16 A4	574239	13	100

PV clasp system ATK103PV

For quick and easy installation of PV modules on vertical façades using the ATK103PV horizontal suspension system.



System illustration ATK100+103 and clasp system ATK103PV for framed PV modules



Façade cross section FLH R with ATK100+103 and clasp system ATK103PV for framed PV modules

7

Applications

- As a suspension element ATK103 PV for fixing PV modules to rear-ventilated rainscreen façades using horizontal suspension systems with clasps.

Certificates / Features



Advantages

- The clasps can be pre-assembled, which saves time on the construction site.
- Quick and easy installation of façade panels thanks to the coordinated geometries of the clasps and horizontal profiles.
- Serrated hexagon head screw with pre-applied screw locking device.
- Lifting and displacement protection as well as integration of the PV module into the potential equalisation through the safety screw.

Properties

- Aluminium (e. g. EN AW 6063, 6061)

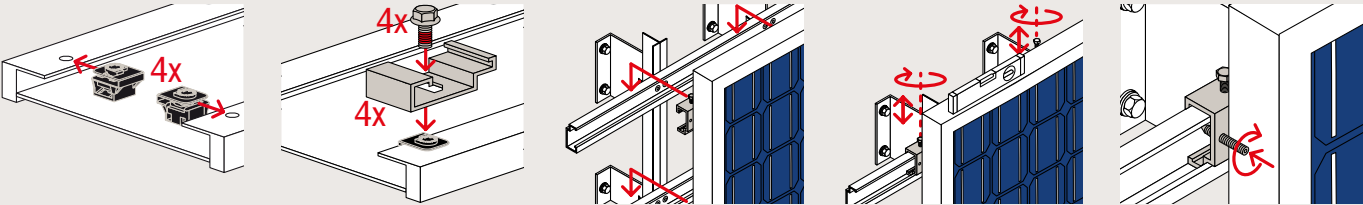
Functioning

- Attach the sliding nuts FSMN II R onto all mounting holes on the back of the module.
- Attach the FHC-PV FP clasp with adjustment screw and M6 threaded holes to the FSMN II R sliding nut on one of the mounting holes on the upper side of the PV module. Install the clasp by screwing in the serrated hexagon head screw with preapplied screw locking device SKSK M8x16 A4. Initial screwing in of the safety screw on the fixed point clasp.
- Attach the FHC-PV F-SP clasp with adjustment screw on the FSMN II R sliding nut to the remaining mounting hole on the upper side of the PV module.
- Attach the two FHC-PV F-SP clasps without adjustment screw to the FSMN II R sliding nuts of the two mounting holes on the lower side of the PV module.
- Suspending the module in the ATK103 horizontal subframe.
- Adjusting the adjustment screws to align the PV module.
- Screw in the safety screw onto the horizontal profile.

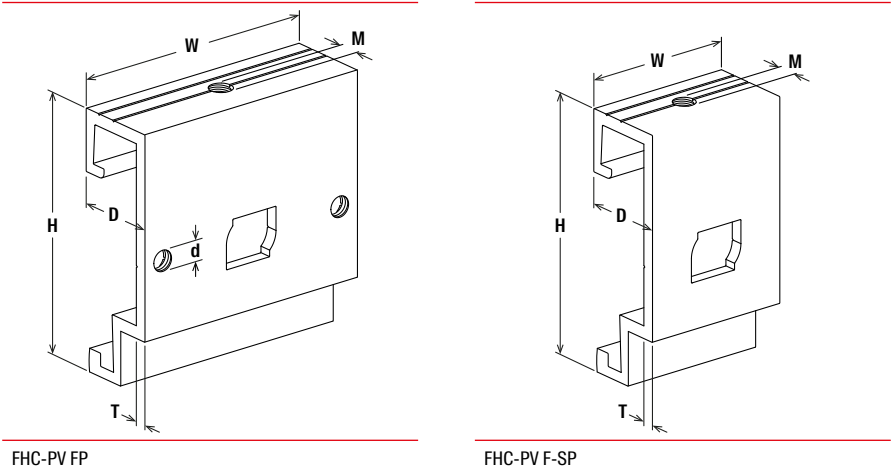
Building materials

- Framed PV modules with suitable mounting holes and frames.

Installation PV clasp system ATK103PV

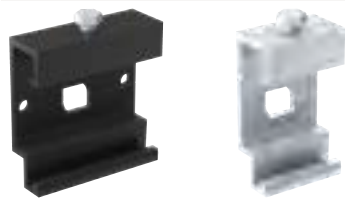


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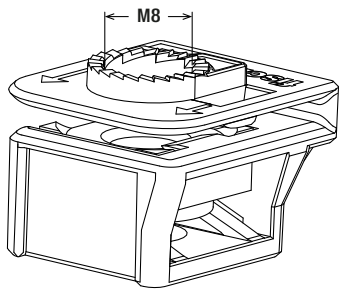


Technical data

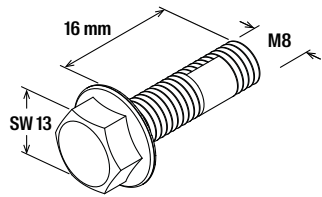
PV-clasp system FHC PV



Item	Item no.	Depth D [mm]	Thickness T [mm]	Width W [mm]	Height H [mm]	Thread M	Dimensions d [mm]	Contents	Sales unit [pcs]
FHC-PV 20x3, 60/2x5, black, FP, AL	576923	20	3	60	62	M6	–	1x Clasp 1x Safety screw 1x Adjusting screw M6 x 15	20
FHC-PV 20x3, 36, F-SP, AL	576924	20	3	36	62	M6	6	3x Clasp 1x Adjustment screw M6 x 15	60



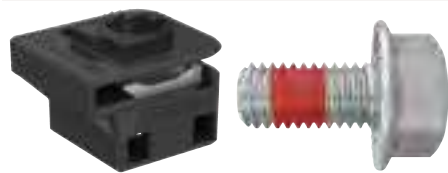
FSMN II R



SKSK A4

Accessories FSMN II R / SKSK

Sliding nut FMSN II R



FSMN II R

SKSK A4 serrated with pre-applied screw lock

Item	Item no.	Width across flats	Sales unit
		AF [mm]	[pcs]
FSMN II M8 R	576836	–	100
SKSK M8x16 A4	574239	13	100



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Service

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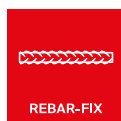
INSTALL-FIX

For the design and dimensioning of MEP installation systems.



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For the design of façade fixings with timber sub-structure.



REBAR-FIX

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fischer design software

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Find out more information at
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8

Intensive support. fischer advises on your construction site.

fischer field specialists

- We support our customers on site at the construction site. We advise and help to fasten everything professionally. Tensile tests and fastening tests on site provide additional safety.
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- The training offered for customers and their employees provides targeted support for daily applications and imparts specialised knowledge.

fischer specialists on the technical hotline

- The same applies on the phone: the engineers and technicians who answer the questions have many years of practical experience and know-how to correctly assess the trade-specific requirements.
- We are reliable contacts for our customers on the phone when it comes to building materials, loads, anchor dimensions, anchoring topics, approvals or the design of connecting parts.
- Major projects require fastening know-how to a particularly high degree. On request, one of the fischer experts can become a permanent part of the construction site management team.

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- We support planners and structural engineers to effectively save time and costs which has an impact on all phases of construction.
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If no detailed performance specifications are given for certain articles and types, please contact our Technical Service Department for advice.

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