

Solar-Fix Systems

Main Catalogue



**Dear Partners,**

fischer is a specialist for secure and efficient construction fixings. Our product spectrum consists of chemical systems and steel anchors up to plastic fixings. fischer has the right solution for any fixing problem: innovative facade systems, a brand new protection against fall from a height system, a comprehensive screw program, special assortments for external thermal insulation composite systems, sanitary, heating, ventilation and electrical installation, adhesives, sealants and foams. We always rely on the highest possible quality, maximum safety and ease of installation. Our goal is to provide the best, fast and flexible technical solution for your application.

fischer caters to customers all around the globe – with 43 foreign subsidiaries and sales partners in over 100 countries. We also develop and deliver customer-specific solutions on request. We strive to produce excellent and innovative products as well as provide an excellent range of services: Qualified field engineers can also be provided at your disposal on site. Our hotline connects you directly to fischer application engineering which offers you quick and professional help for all your fixing tasks. Finally, we also offer internally designed assessment programmes as well as the technical handbooks about special and general applications in case of earthquake-prone areas, for fire protection or numerous other fields of application.

Our catalogue Solar-fix Systems is part of our comprehensive service offering, it is constantly updated and revisited since 2013. The quick overview at the beginning simplifies searching for the desired products. Then 8 different support systems for photovoltaic installations are shown, these quick sections help you finding the right solution and product for the different types of installation you may need.

The *Pitched roof System* is the complete solution for partial integrated photovoltaic installation for pitched residential roofs. The *Flat surface System* offers the fastest solution for flat roofs, while *Solar-Wind System* allows the photovoltaic installations on lightweight flat roof with no fixing. The *Industrial roof System* and *Corrugated roof System* are the easiest solution for partial integrated photovoltaic installations on industrial roofs. The *Special application System* is the tailor-made solution for complex roofs. *Powerskin System* is expressly designed for fixing of photovoltaic ventilated claddings. Finally, *Solar-Field System*, with its 3 versions SPS, SPTS and DFS, is the solution for photovoltaic fields on the ground.

Finally, for each product the complete and detailed technical informations are presented.

were overwritten with the main characteristic features of the products and the text as well as the technical tables were newly structured.

We hope that you enjoy using our Solar-Fix Systems.

Yours, Klaus Fischer



A brand and its promise to perform

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. This does not just mean innovative products, but also user-orientated support and a reliable service.

With the fischer Process System (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.

Always with its finger on the pulse of the times

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.

Safety that connects – Decisive quality

The fischer product range is well-positioned in all sectors of fixing technology – Steel, Nylon and Chemical fixings.

2009 saw a complete range of wooden screws be made available on the market for the very first time.





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. We deal responsibly with energy resources and raw materials. The environment management policy at the Tumlingen site has been certified in line with DIN EN ISO 14001. We are a member of the German Sustainable Building Council (DGNB), and our products have been successively certified in line with the guidelines provided by the Institute for Construction and the Environment (IBU).

Our service to you

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

- global presence and active sales service in over 100 countries
- training sessions, some with accreditation, at your premises or in the fischer ACADEMY – our company's own training and customer service centre
- qualified, technical support and advice regarding economical fixing solutions, taking the latest building materials, standards and guidelines into account; we can even come to your building site if required
- convenient calculations with modern software

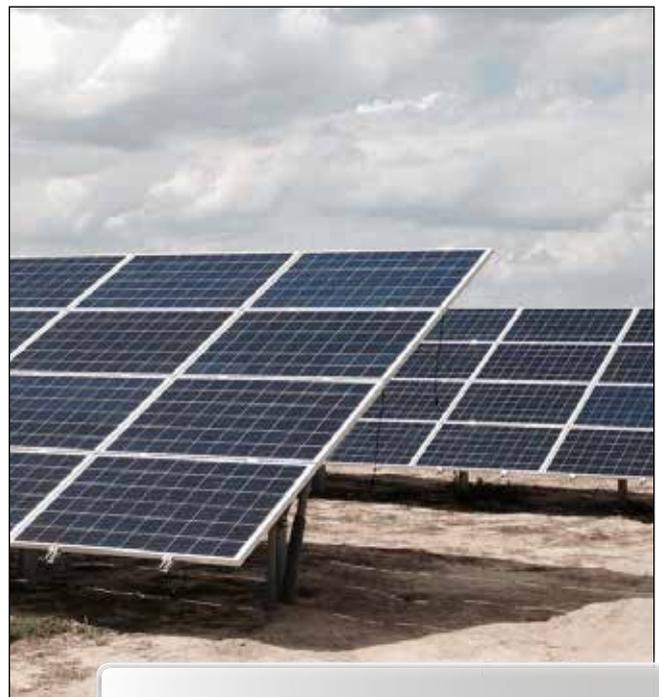
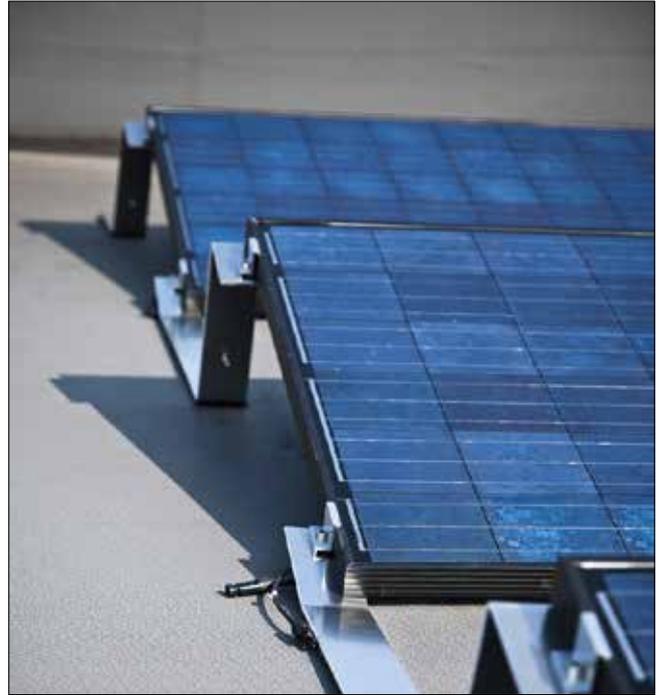


Innovations to inspire professionals



Flat roof Solar-Wind

The best solutions for low loads on the roof, now with 15° South orientation or 10° East-West orientation.



Solar-Field system

Customized solutions for each project and soil type with single and double pole system or aluminium system with concrete ballast.

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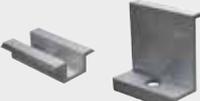
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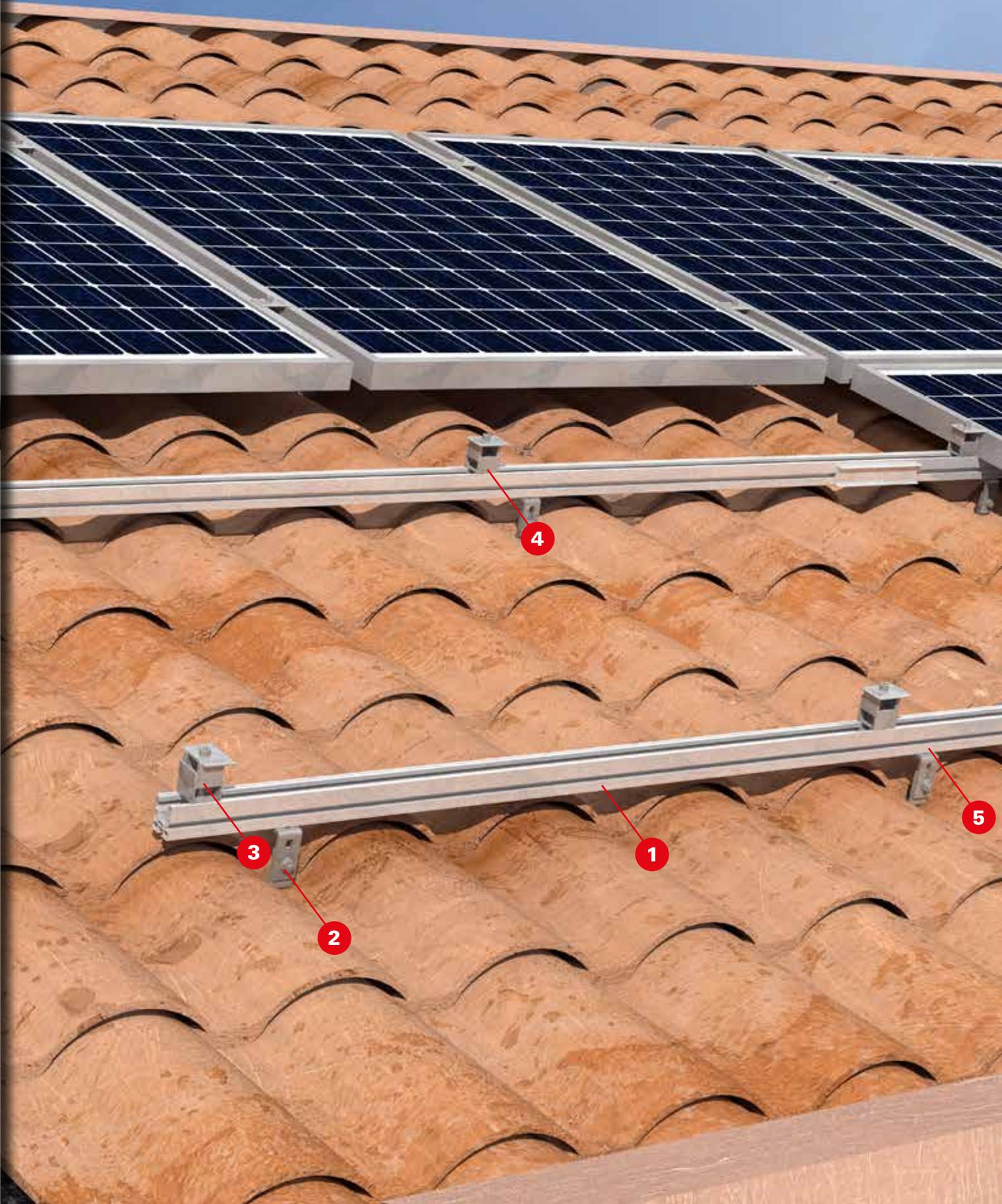
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The comprehensive solution for pitched residential roofs



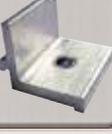
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Assembly instructions



STEP 1

- Select hooks position based on roof structure, wind and snow load calculations and required panel layout.
 - Remove tile and fasten hook with appropriate anchor.
 - If necessary, adjust the hook to fit the geometry of the tile / arabic tile and tighten screws with a torque of 10 Nm.
 - Replace the tile correctly in order to maintain waterproofing of the roof. Machining a clearance slot in the tile may be required.
- ⚠ Use always a minimum of 2 of the existing holes supplied in each hook.

STEP 2

- Install the profiles using the hex head bolts and MU nuts provided with the hooks.
 - For vertical adjustment use bracket XC or PXC (GTU, GTUB, GTL, GTLB).
 - Do not tighten the screws until completion of the row of profiles.
- ⚠ The maximum overhang of the profile from the last hook must not exceed 1/3 of the hooks spacing.



STEP 3

- If necessary, connect more profiles with a pair of joints CPN AL. Insert the joints into the sides of the profile. The small protrusion indicates a full assembly. The next profile can then be pushed in place.
 - After placing all profiles, tighten the connecting screws to the hooks with a torque of 10 Nm.
- ⚠ To avoid problems related to thermal expansion we recommend a maximum length of 15 m per row.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.
- ⚠ Do not join profiles in the projecting section.



STEP 4

- Put the final and middle clamps on the profiles with a gap equal to the width of the panel.
- To avoid the panels sliding during installation, use the FV-PS supports in the top profile.



STEP 5

- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.



STEP 6

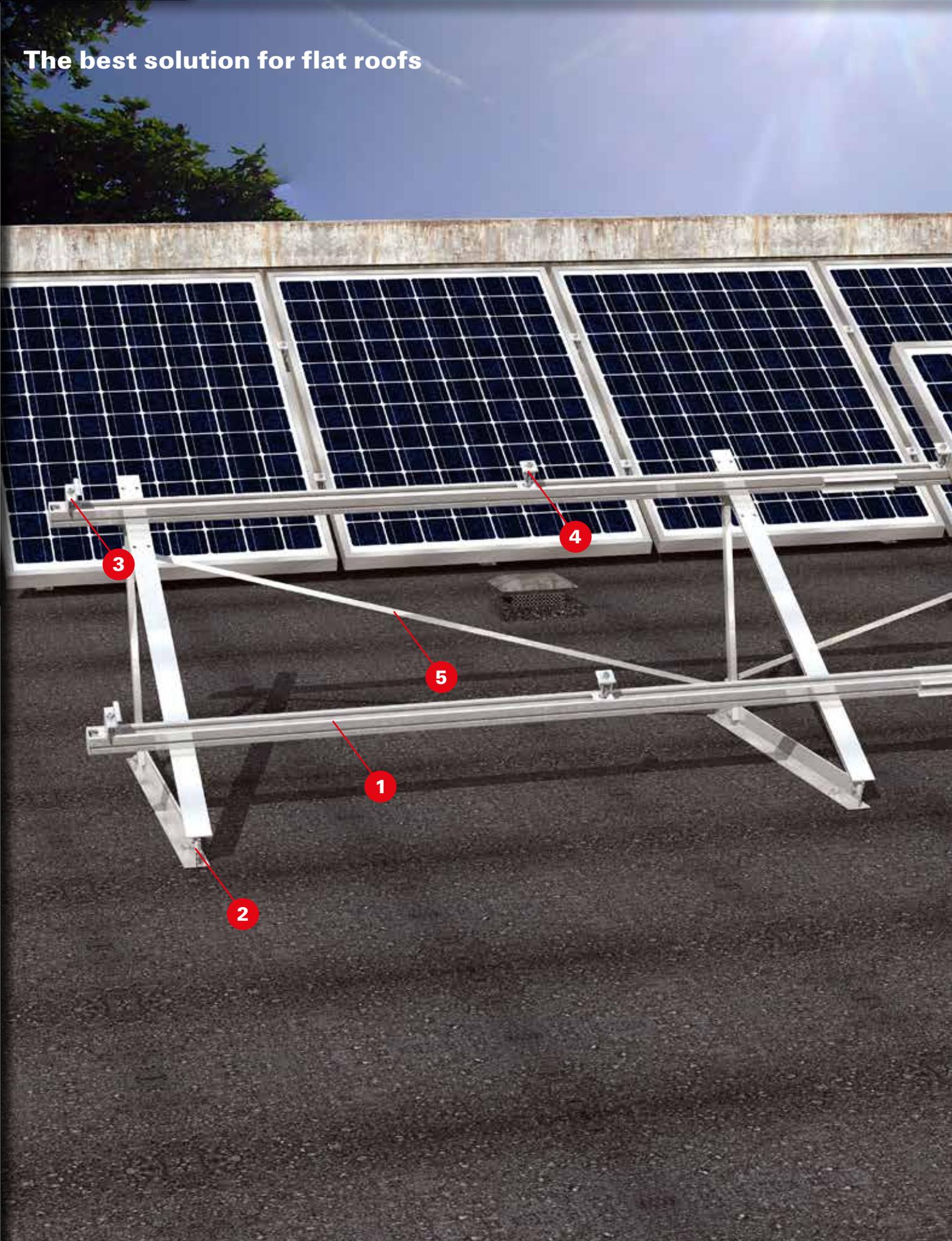
- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.

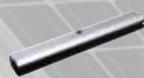


The best solution for flat roofs

Solar-fix Systems

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5 PROFILES		Ch.	2	Page					
Bracing profile BP AL				58					

Assembly instructions



STEP 1

- Select triangular frames position based on roof structure, wind and snow load calculations and required panel layout.
 - Fasten triangular frame base with the appropriate anchors.
 - Adjust the angle of the triangular frame by the holes on the diagonal profile.
 - Tighten the screws with a torque of 10 Nm.
- ⚠ Fix the frame to the support using at least one of each of the pair of holes provided.

STEP 2

- Place Solar-Fish profiles using only the holes available on the frame.
 - Assemble fischer Solar profiles linking them to the triangular frame with Hex head screws and MU nuts already included in the package.
 - Do not tighten the screws until completion of the row of profiles.
 - Cut bracings for triangular frames and fix them using self drilling screws to vertical strut of the triangular frame.
- ⚠ The maximum allowable cantilever of the profile from the support is equal to 1/3 of the supports spacing.



STEP 3

- If necessary, connect more profiles with a pair of joints CPN AL. Insert the joints into the sides of the profile. The small protrusion indicates a full assembly. The next profile can then be pushed in place.
 - After placing all profiles, tighten the connecting screws to the triangular frame with a torque of 10 Nm.
- ⚠ To avoid problems related to thermal expansion we recommend a maximum length of 15 m per row.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.
- ⚠ Do not join profiles in the projecting section.



STEP 4

- Put the final and middle clamps on the profiles with a step equal to the width of the panel.
- To avoid the panels sliding during installation, use the FV-PS supports in the top profile.



STEP 5

- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.

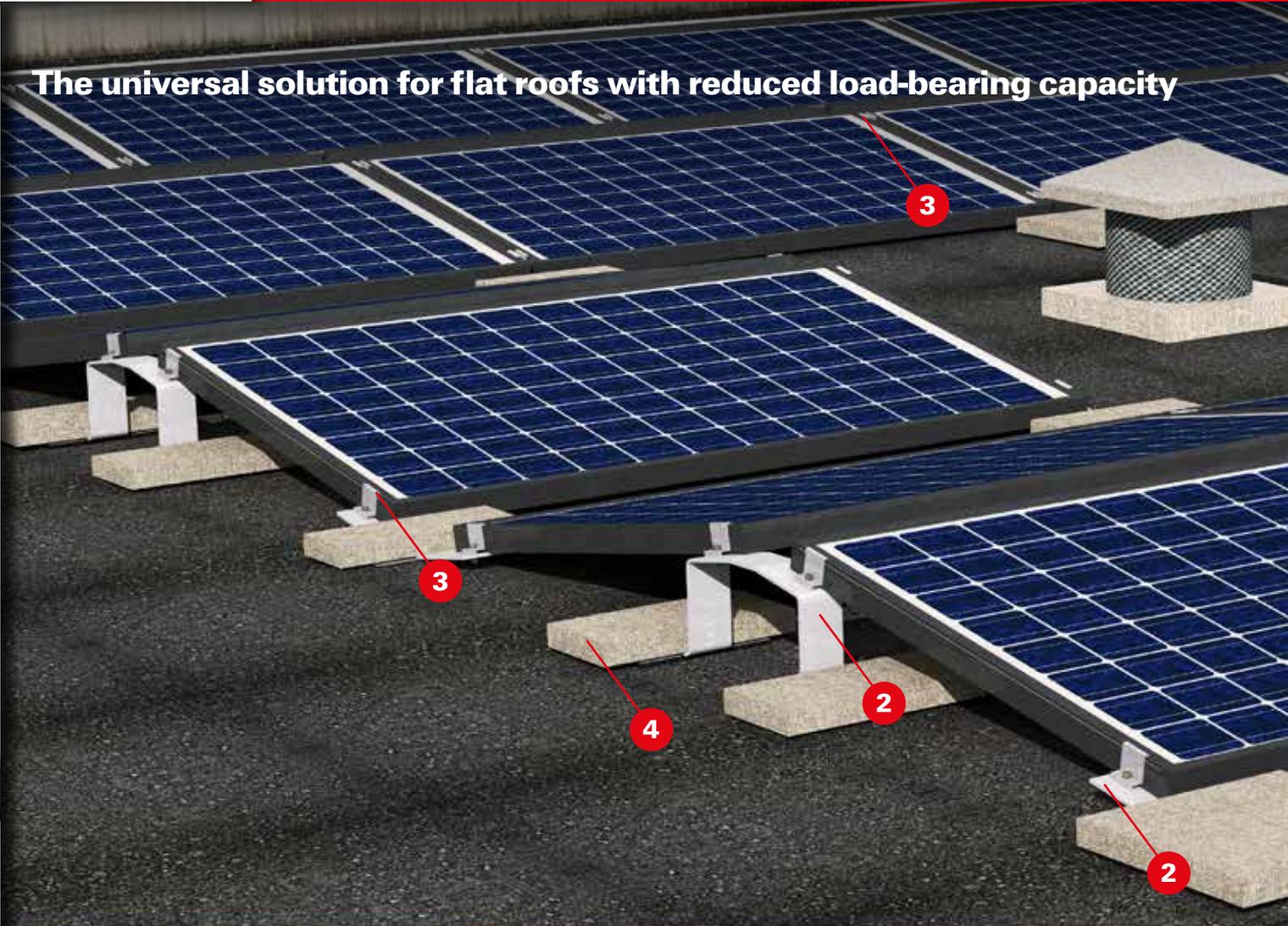


STEP 6

- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.



The universal solution for flat roofs with reduced load-bearing capacity



1 BRACKETS SW-S		Ch. 5	Page	3 CLAMPS		Ch. 6	Page
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Assembly instructions

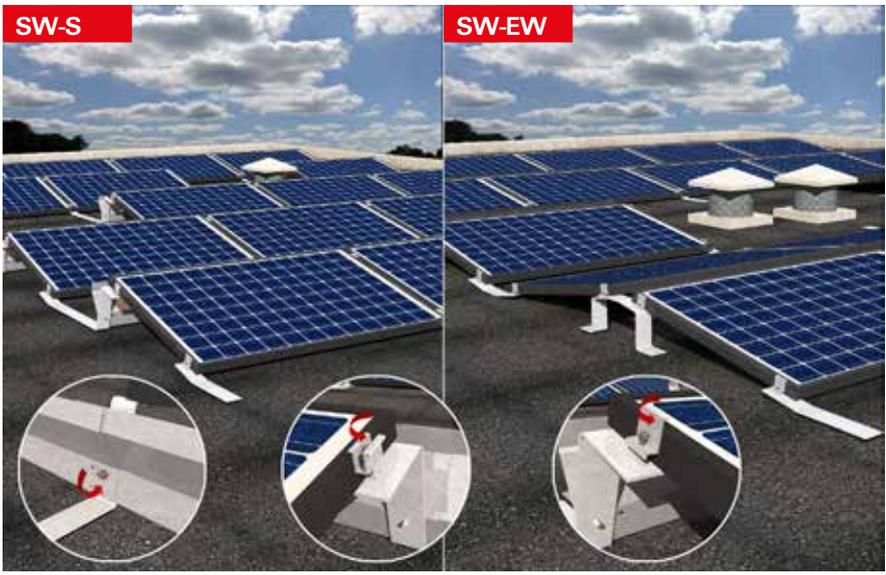
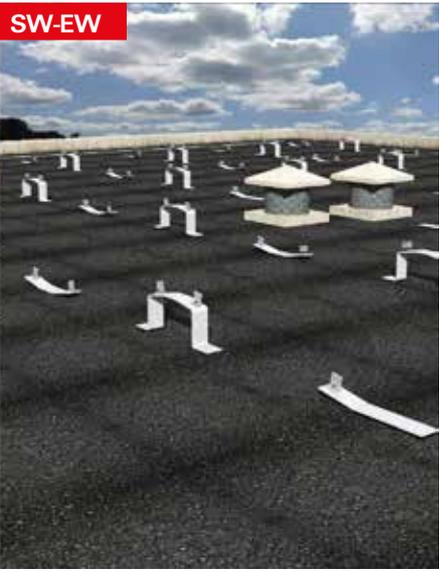


STEP 1

- Identify on the roof the position of SW-S or SW-EW structures according to the project layout and the size of the modules.
- ⚠ The distance between the structures to be placed on the ground is equal to the long side of the modules + 19 mm (thickness of the clamp). We recommend to start with the positioning of the brackets from one corner.

STEP 2

- Pre-position SW-MF end clamps (with SW M8x25 screws) and SW-MC (with SW M8x.. screw) on the brackets.
- ⚠ SW-S and SW-EW brackets are provided with welded M8 nut, in order to make the installation faster.



STEP 3

- Position the first PV module and tighten the end clamps with a torque of 10 Nm.
- Go ahead with the installation of the following modules by adjusting the position of SW-S or SW EW brackets if necessary.
- SW-S: fix the wind protection carters on the back by means of SW M8x25 screw and SW washer.

1b

STEP 4

- Position the SW PAD protection pads where ballast stones will be placed. Their function is to protect the roof bituminous layer.

SW-S



SW-EW



SW-S



SW-EW



STEP 5

- Position the SW BALLAST stones on the SW PAD protection pads according to the quantity mentioned in the project for each bracket.
- ⚠ You can stack up more SW BALLAST stones until you reach the necessary weight.
- ⚠ If snow load is $\geq 2,40$ kN is necessary to reinforce the system in order to reduce PV module bending. The reinforcement brackets are shown in Chapter 5.

NOTE

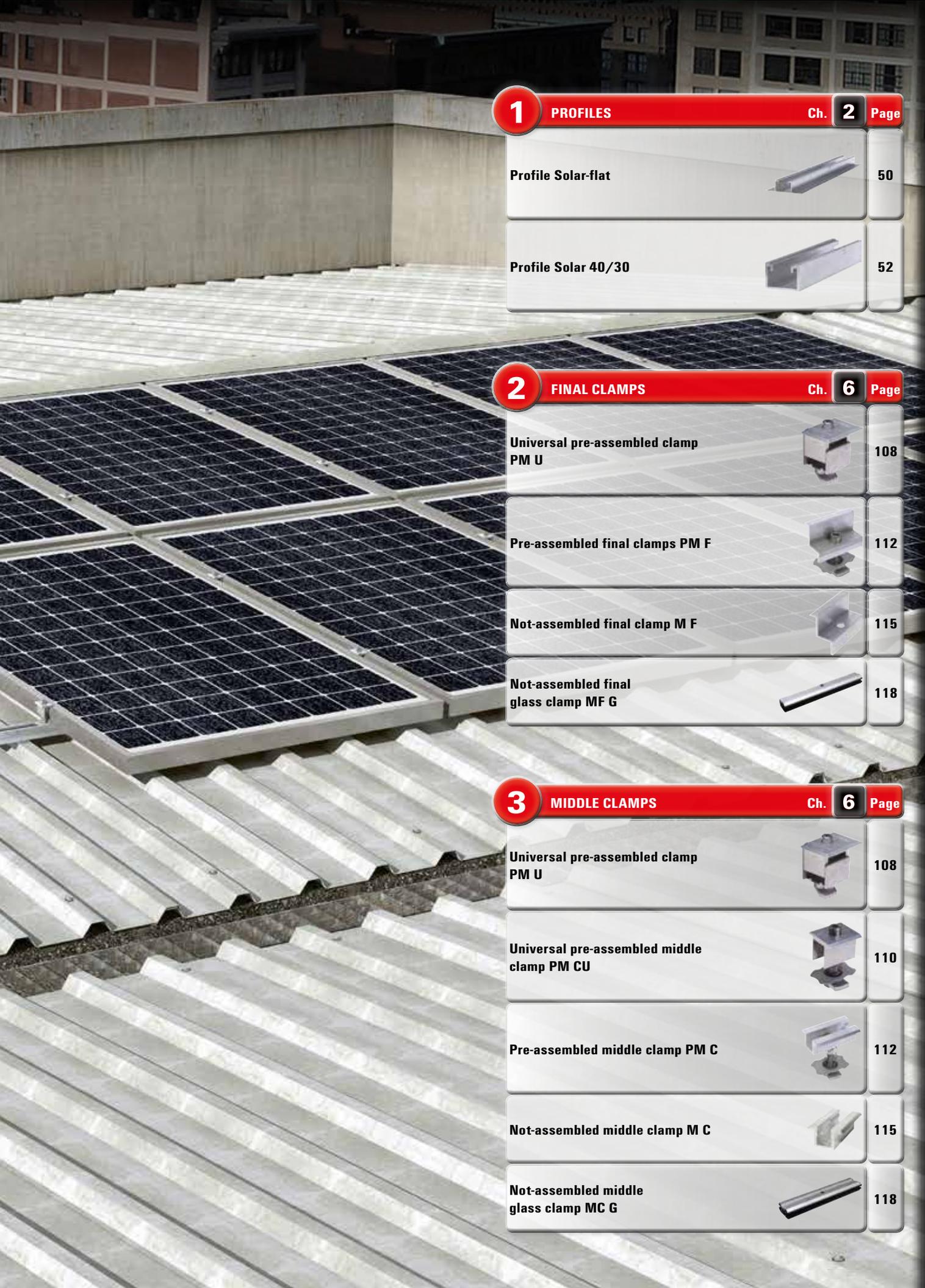
- ⚠ To increase the ballast SW BALLAST benefit is possible to use the small ballast tray SW BT or the big one SW BT PLUS (only for high wind load). Place the protection pads SW PAD under the ballast trays for a better load distribution.
- ⚠ Fix the ballast tray SW BT to the brackets using flathead screw SW M 8x25 + washer SW WASHER + SW cylindrical nut M 8.
- ⚠ Fix the ballast tray SW BT PLUS to the brackets using flathead screw SW M 8x25 + washer SW WASHER + SW cylindrical nut M 8.

The cheapest solution for industrial roofs with corrugated sheet

Solar-fix Systems

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Pre-assembled final clamps PM F		112
Not-assembled final clamp M F		115
Not-assembled final glass clamp MF G		118

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Universal pre-assembled clamp PM U		108
Universal pre-assembled middle clamp PM CU		110
Pre-assembled middle clamp PM C		112
Not-assembled middle clamp M C		115
Not-assembled middle glass clamp MC G		118

Assembly instructions



STEP 1

- Select profiles position based on roof structure, wind and snow load calculations and panel layout required.
- Before positioning the profiles, put a piece of butylene tape GC INT in correspondence of the contact surface ribbed sheets/profile.
- ⚠ Install the system with ambient temperature between 10° and 30°C (reduced stress due to profile expansions).
- ⚠ Avoid riveting profiles to uncoated zinc plated roofs to reduce the risk of galvanic corrosion.

STEP 2

- Install the first profiles with rivets RS AL 5,2x20 drilling directly profile and metal sheet. The recommended hole diameter is 5,3-5,6 mm. The total tightened thickness must be between 0,5 and 5 mm.
- Pull the rivets installed by hand or electric riveter.
- ⚠ For SolarFlat P400 profiles, supplied in profile pieces, we recommend:
 - fix always the profile pieces with 4 rivets, two by two, placed on the ribs closest to the ends of the piece;
 - place profile pieces so that clamps are in the middle of two couples of rivets, in a central position.



STEP 3

- ⚠ For Solar-flat profiles (4,20 - 5,25 m) we recommend:
 - Keep a distance not lower than 10 mm between profiles (to avoid stress in profiles and rivets due to the contact between the ends caused by thermal expansion);
 - Installation can take place with alternating rivets or double rivets. Provide always a couple of rivets on the ends of profiles.



STEP 4

- Put the final and middle clamps on the profile pieces or, for continuous profiles, with a step equal to the width of the panel, being careful to stop panels row each profile.



STEP 5

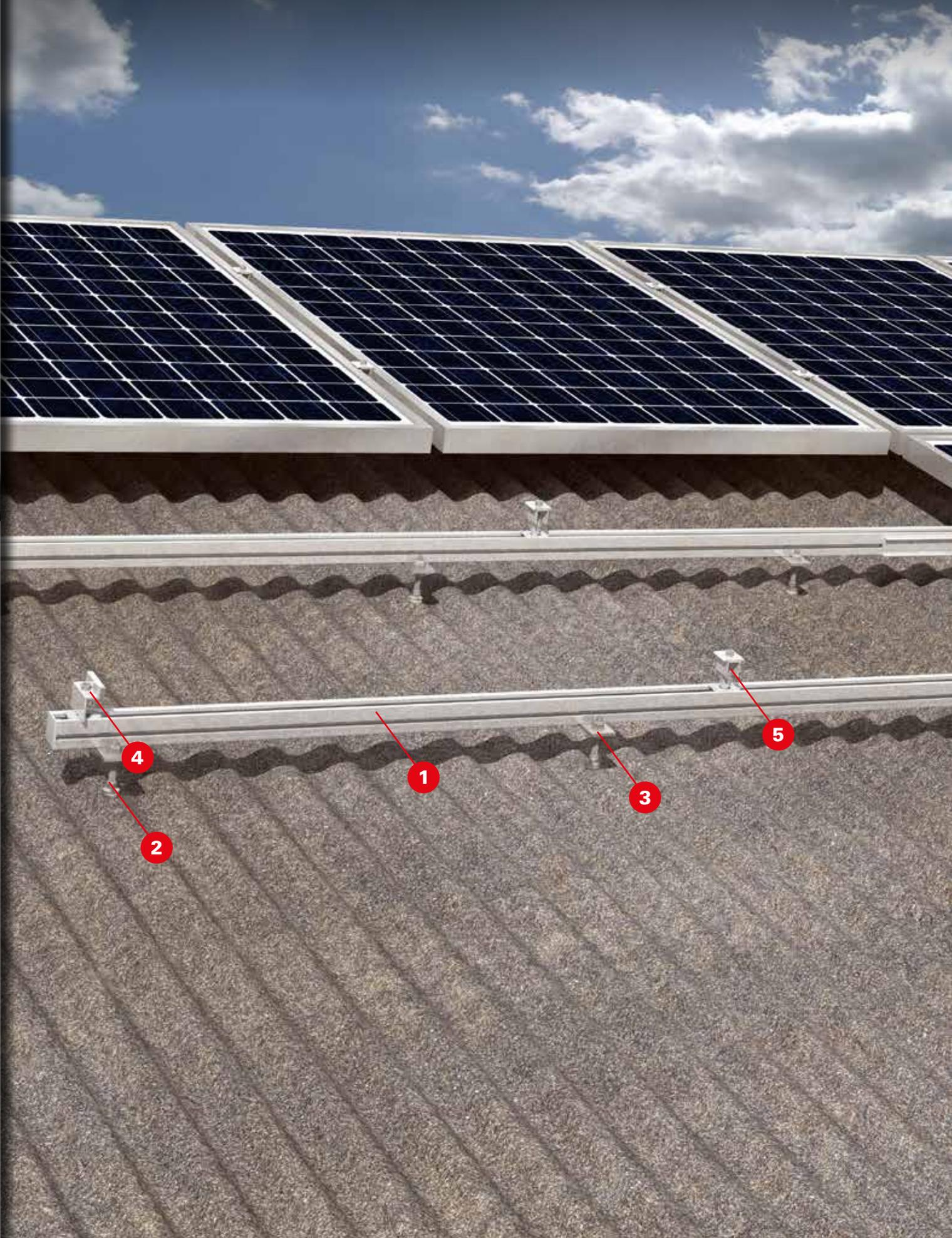
- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.
- ⚠ For Solar-Flat P400, supplied in pieces, we recommend to:
 - Modules can be fixed in continuous way, placing them on more profile pieces, without any particular prescriptions on the maximum length of the rows.
- ⚠ For Solar-flat profiles (4,20 - 5,25 m) we recommend to:
 - Install modules so that they don't stand horizontally on more than one profile (to avoid stress on modules due to movement of the ends caused by thermal expansions).

STEP 6

- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.



The fastest solution for corrugated roofs



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Profile Solar-fish			46	Pre-assembled final clamps PM F			112
				Not-assembled final clamp M F			115
				Not-assembled final glass clamp MF G			118
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Stud screw STSR			126	Universal pre-assembled clamp PM U			108
Stud screw STSI			128	Universal pre-assembled middle clamp PM CU			110
3 JOINT BRACKETS		Ch. 8	Page	Pre-assembled middle clamp PM C			112
Angular bracket MW SU			132	Not-assembled middle clamp M C			115
Angular bracket MW SA			134	Not-assembled middle glass clamp MC G			118
Joint plate SSP			136				
Joint plate SSP SPEED			136				

Assembly instructions



STEP 1

- Select STSI/STSR stud positions based on roof structure, wind and snow load calculations and required panel layout.
 - For application with STSI screws is necessary a pre-drill in steel structure of 6,8 mm with a steel thickness of 2-4 mm.
 - For application with STSR screws in wood beam probably is not necessary a pre-drill.
 - Screwing until complete penetration of the threaded part and apply the SSP plates or brackets MW always directed toward the top of the roof.
- ⚠ Not following the instruction above may reduce the load capacity of the system.

STEP 2

- Assemble profiles fischer Solar connecting them to the brackets with Hex head screws and MU nuts already included in the package.
 - Do not tighten the screws until completion of the row of profiles.
- ⚠ The maximum allowable cantilever of the profile from the support is equal to 1/3 of the supports spacing.



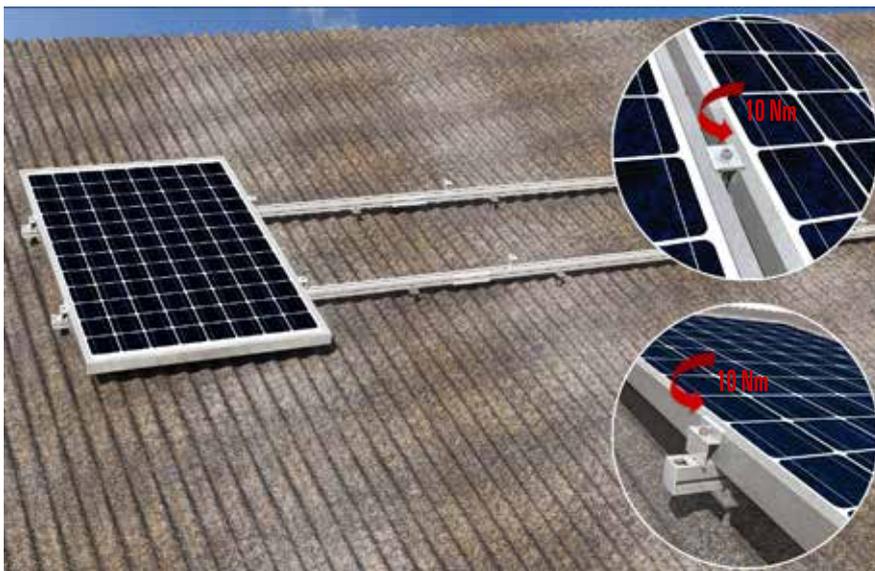
STEP 3

- If necessary, connect more profiles with a pair of joints CPN AL. Insert the joints into the sides of the profile. The small protrusion indicates a full assembly. The next profile can then be pushed in place.
 - After placing all profiles, tighten the connecting screws to the triangular frame with a torque of 10 Nm.
- ⚠ To avoid problems related to thermal expansion we recommend a maximum length of 15 m per row.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.
- ⚠ Do not join profiles in the projecting section.



STEP 4

- Put the final and middle clamps on the profiles with a gap equal to the width of the panel.
- To avoid the panels sliding during installation, use the FV-PS supports in the top profile.



STEP 5

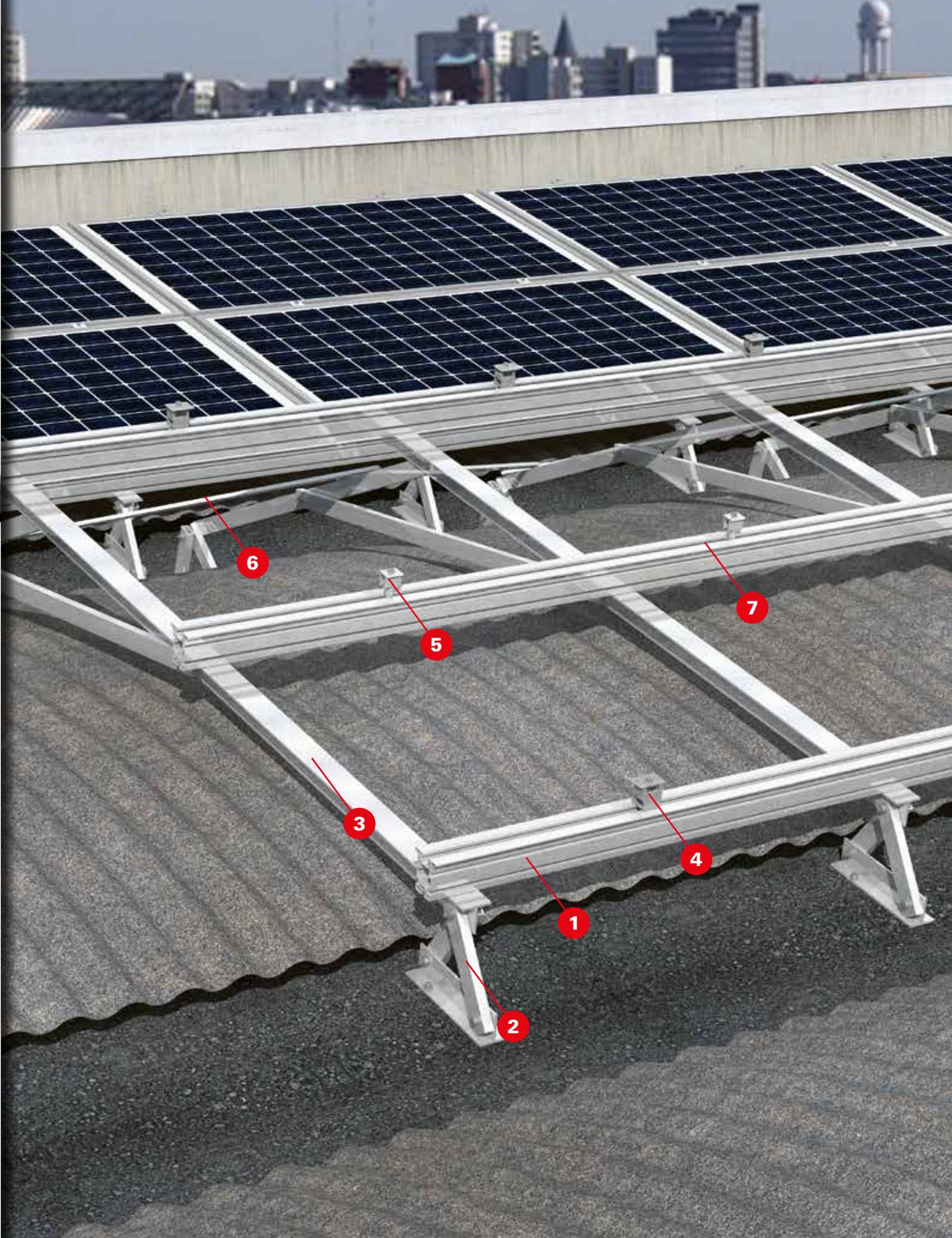
- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.

STEP 6

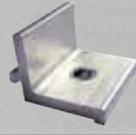
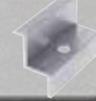
- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.



The customized solution for each kind of roof



1b

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Profile Solar-mid			48	Universal pre-assembled middle clamp PM CU			110
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				Not-assembled middle clamp M C			115
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2 PROFILES		Ch. 2	Page	6 PROFILES		Ch. 2	Page
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Pre-assembled final clamps PM F			112	Pre-assembled cross connector PXC AL			134
Not-assembled final clamp M F			115				
Not-assembled final glass clamp MF G			118				

Assembly instructions



STEP 1

- Select triangular frames position based on roof structure, wind and snow load calculations and panel layout required.
- Cut and drill the TP AL and REP AL profiles.
- Fix the base profile to the support and compose the structure.
- Tighten the screws with a torque of 10 Nm.

STEP 2

- Assemble TP AL and REP AL profiles linking them to the triangular frame with Hex head SKS screws and MU F nuts.
- Do not tighten the screws until completion of the structure.
- Cut bracings for triangular frames and fix them using self drilling screws to vertical strut of the triangular frame.
- Starting the assembly of the profiles.
- ⚠ The maximum allowable cantilever of the profile from the support is equal to 1/3 of the supports spacing.



STEP 3

- If necessary, connect more profiles with a pair of joints CPN AL. Insert the joints into the sides of the profile. The small protrusion indicates a full assembly. The next profile can then be pushed in place.
- After placing all profiles, tighten the connecting screws to the triangular frame with a torque of 10 Nm.
- ⚠ To avoid problems related to thermal expansion we recommend a maximum length of 15 m per row.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.
- ⚠ Do not join profiles in the projecting section.

STEP 4

- Put the final and middle clamps on the profiles with a gap equal to the width of the panel.
- To avoid the panels sliding during installation, use the FV-PS supports in the top profile.



STEP 5

- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.

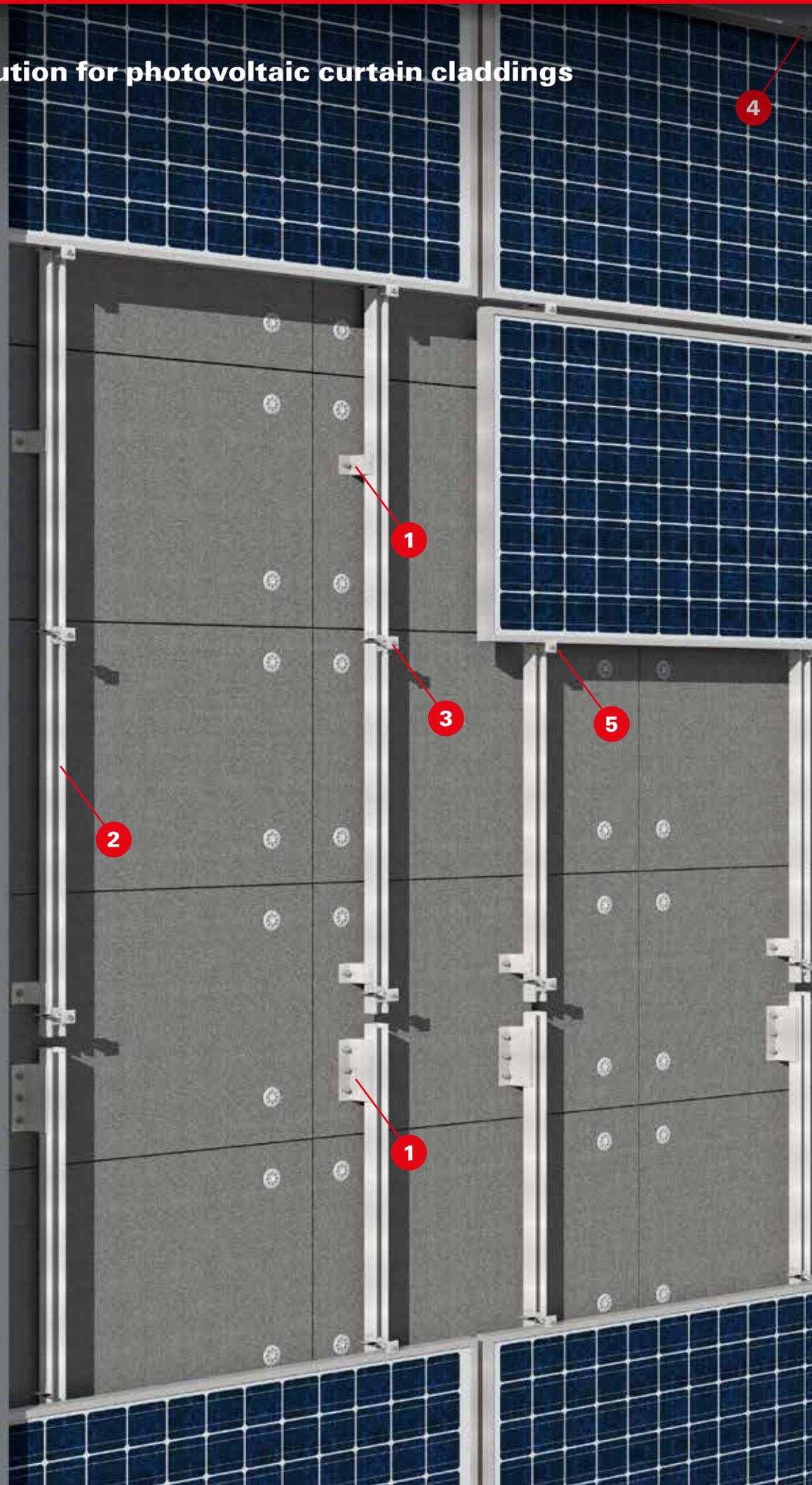
STEP 6

- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.



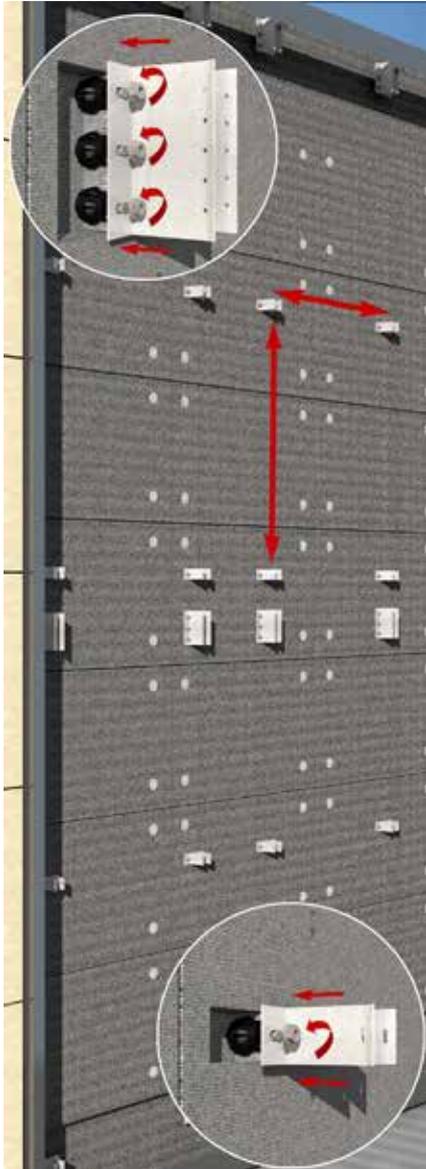
The on-wall solution for photovoltaic curtain claddings

1b



1 WALL BRACKETS		Ch. 9	Page	4 FINAL CLAMPS		Ch. 6	Page
Fix point holder FPH			142	Pre-assembled final clamps PM F			112
Sliding point holder SPH			144	Not-assembled final clamp M F			115
				Not-assembled final glass clamps MF G			118
2 PROFILES		Ch. 2	Page				
Vertical profile VP 50			64	5 MIDDLE CLAMPS			
Vertical profile VP 100			65	Universal pre-assembled middle clamp PM CU			110
				Pre-assembled middle clamp PM C			112
3 BRACKETS		Ch. 8	Page	Not-assembled middle clamp M C			115
Photovoltaic module bracket BR FV			138	Not-assembled middle glass clamps MF G			118

Assembly instructions

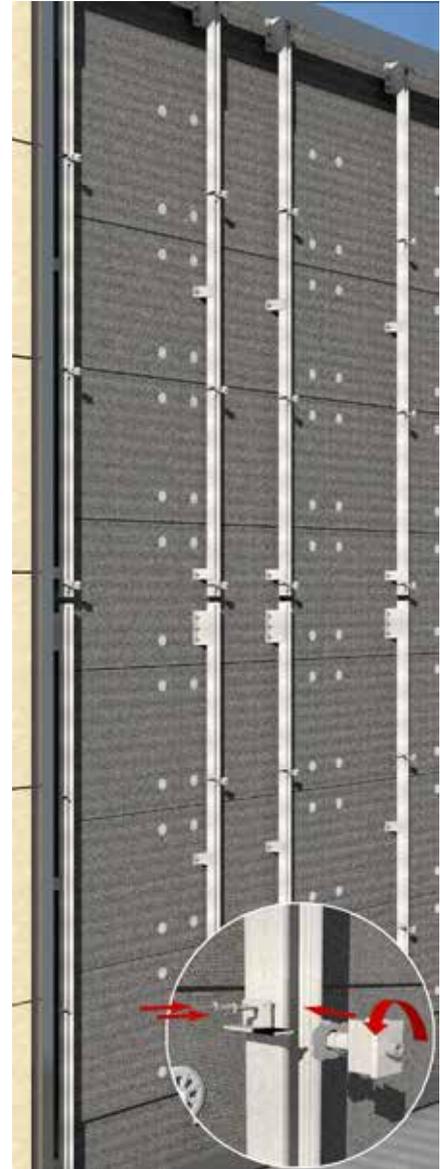
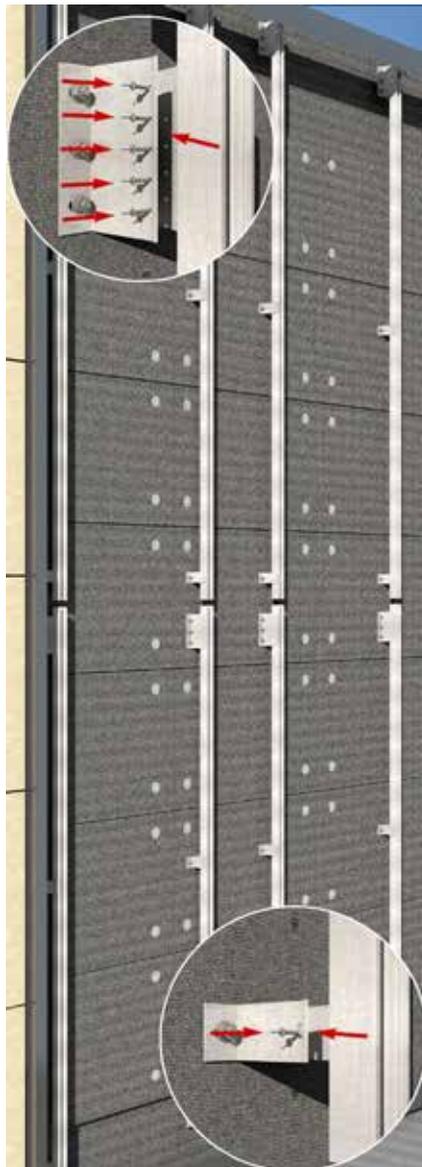


STEP 1

- Identify the structural points of the facade, suitable to anchor the wallholder FPH, as indicated in the executive project.
- Check out the facade vertical plumb and choose the most suitable size of wallholder.
- First fix the fix point holder FPH and use the vertical profile VP in order to align the sliding point holder SPH.
- Space vertically the wallholder FPH and SPH according to the distance of the project.
- To fix the wallholders on a insulating panel you can use the anchor Thermax with thermal barrier.
- Repeat these steps for the whole facade.

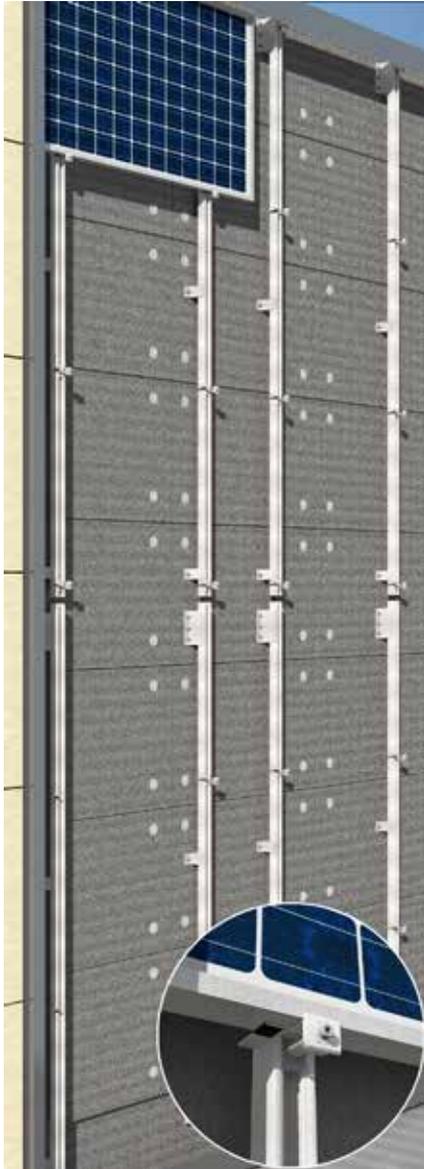
STEP 2

- Insert the vertical profile VP into the wallholder.
- Adjust the vertical plumb by scrolling the profile inside the wallholder.
- Fix the vertical profile to the wallholder using the fischer 4,8 x 10 A2 rivet.
- Depending on loads, use a suitable number of rivets for bracket FPH and 2 rivets for the bracket SPH.
- Leave a gap between the end of a profile and the beginning of a subsequent (at least 5 mm), allowing any thermal expansion.



STEP 3

- Put the final and middle clamps on the profiles with a step equal to the width of the panel.
- To avoid panels sliding during installation you can use the fischer BR FV brackets you can use the lateral side of the profile VP with fischer 3,2 x 14 A2 rivets.



STEP 4

- Place the BR FV bracket at the base of each panel. Put a piece of butylene tape GC INT above the bracket to prevent direct contact between the bracket and the panel.

STEP 5

- Place the first photovoltaic panel and tighten the final clamps to fasten the panel with a torque of 10 Nm.



STEP 6

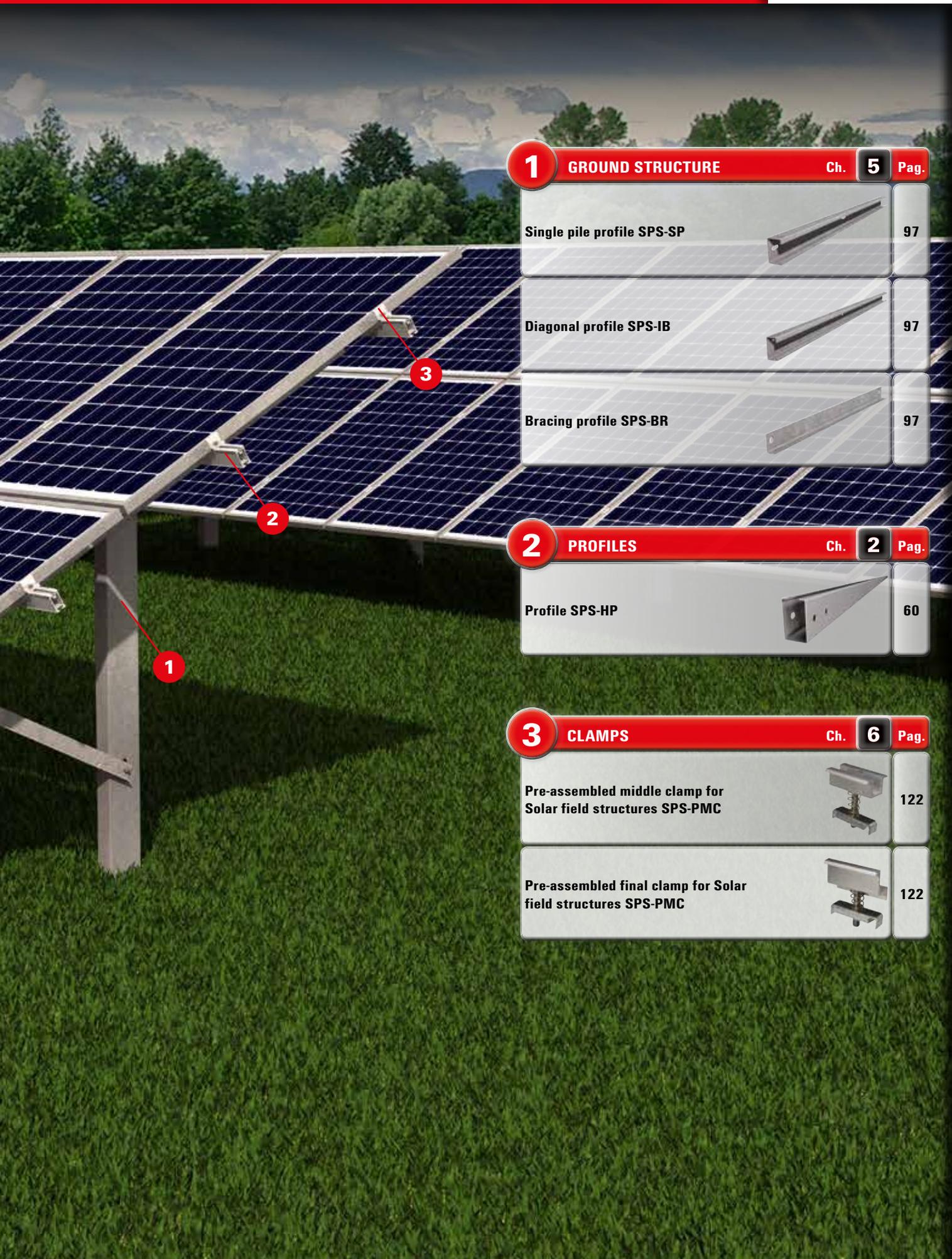
- Place side by side the subsequent PV panels to completion of the row and fasten progressively with final and middle clamps.

The universal solution for photovoltaic fields on the ground

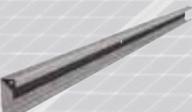
Solar-fix systems

1b





1 GROUND STRUCTURE Ch. **5** Pag.

Single pile profile SPS-SP		97
Diagonal profile SPS-IB		97
Bracing profile SPS-BR		97

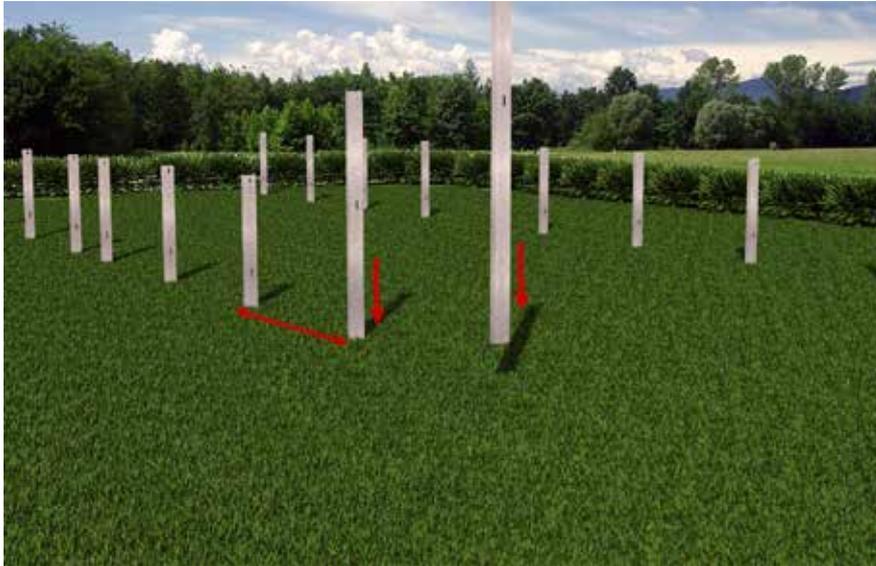
2 PROFILES Ch. **2** Pag.

Profile SPS-HP		60
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3 CLAMPS Ch. **6** Pag.

Pre-assembled middle clamp for Solar field structures SPS-PMC		122
Pre-assembled final clamp for Solar field structures SPS-PMC		122

Assembly instructions

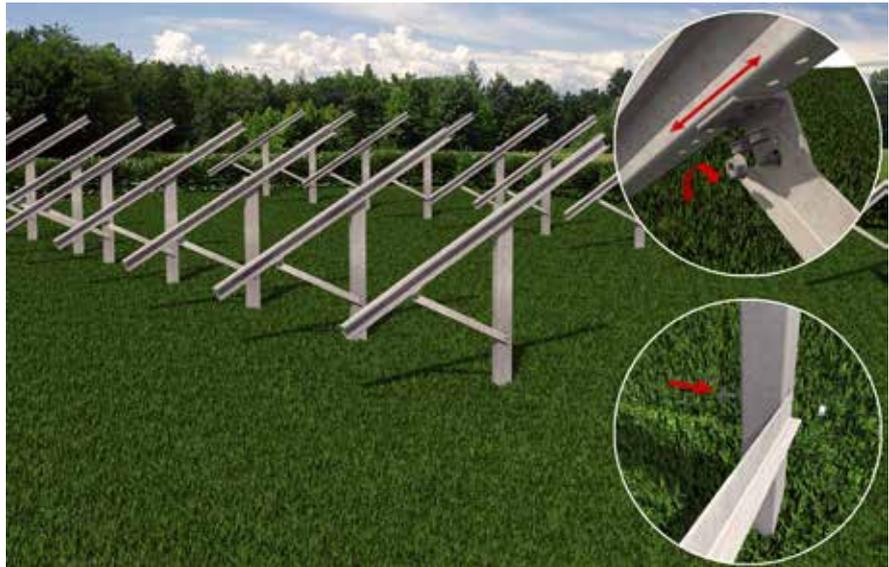


STEP 1

- Identify on the field the position of the structures according to the project layout.
- Ram the poles into the ground with proper depth and inclination.

STEP 2

- Fix the diagonal profile and the bracing by means of their proper screws.
- Adjust the inclination of the triangle by means of the holes along the diagonal profile .
- Tighten the screws with a torque of 10 Nm.



STEP 3

- Position Solar-field profiles using only the holes already pre-drilled on the frames. They should be placed in order to fix the module at one forth, one fifth of its height.
 - Install fischer Solar profiles connecting them to the frames by means of TE screws and MU nuts available in the box.
 - Don't tighten the screws until the whole row of profiles is completed.
- ⚠ The maximum allowed protrusion of the profile is equal to 1/3 of the support distance..



STEP 4

- Connect more profiles where necessary by means of joint connector. Insert the element into the central cavity of Solar profile. The boss on the joint shows when the element is properly inserted. Complete the connection inserting the second profile.
- After all profiles are in place, tighten the screws connecting the profiles to the triangles with a torque of 10 Nm.
- ⚠ To avoid problems related to expansion of aluminium, we recommend a maximum length per row of 15 m.
- ⚠ If the connection is on side spans, SF-JOINT must be fixed with self-drilling screws.
- ⚠ Don't use joints in the protruding lengths.



STEP 5

- Position the end and middle clamps on the profiles, at a distance equal to the width of the module.
- Lay the first PV module and tighten the end clamps to grant the tightness with a torque of 10 Nm.

STEP 6

- Place the following modules side by side until the row is complete and fix them with middle and end clamps.





2 Profiles

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▪ Profile Solar-fish.....	46
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▪ Profile Solar 40/30.....	52
▪ Profile TP AL.....	54
▪ Profile REP AL.....	56
▪ Bracing profile BP AL.....	58
▪ Profile SPS-HP.....	60
▪ Profiles SPTS-HP and SPTS-VP.....	62
▪ Vertical profile VP 50.....	64
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The lightweight aluminium profile useful for semi-integrated installations with reduced spacing between hooks



Pitched roof



Detail: Profile Solar-light

VERSIONS

- aluminium alloy AW 6063 T6 according to EN 755-2:2013

ADVANTAGES

- Economic: the lightweight aluminium profile is useful for pitched roof PV installations.
- Easy and fast: quick installation in the lower and lateral channel through screw SKS M 8 or T-head screw RHS 8 x 20 and in the upper channel through channel nut FCN AL and joint bracket MW (for cross joint).
- No scrap: the optimized length reduces waste e facilitates handling on site.
- Maximum allowable spacing 1000 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Useful for:

Pitched roof System with:

- Hook GT 130 and GT 150 (5 mm)
- Hook GTR
- Hook GTT
- Hook GTP
- Hook GTPR

Corrugated roof System with:

- Stud screw STSR
- Stud screw STSI

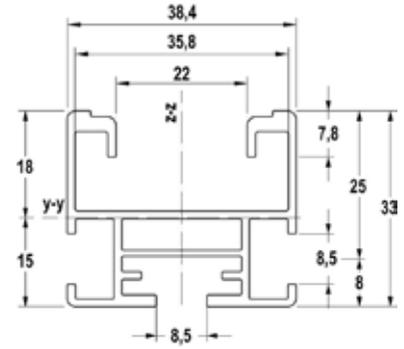
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Fasten the profile on the hooks using lower channel (with screw SKS M 8 or T-head screw RHS) or the lateral channels (with joint bracket MW and screw SKS M 8 or T-head screw RHS).
- Use a couple of joints CPN AL on the lateral channels to link profiles Solar-light. The connection is completely closed when the joints central emboss is in contact with the profiles.
- ⚠ The maximum recommended length of a PV panels row is 15 m to prevent too large thermal expansion.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.

TECHNICAL DATA



Profile **Solar-light**



Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Moment of inertia z-axis	Section modulus y-axis	Section modulus z-axis	Sales unit [pcs]	GTIN (EAN code)
		W [kg/m]	l [mm]	S [mm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]		
Solar-Light 3,15 mt	518954	0,724	3150	268	3,07	4,76	1,70	2,48	1	8001132027585

ACCESSORIES



Joint **CPN AL**



Self drilling screw **3,5 x 9,5 mm A2**



Self drilling screw **4,8 x 32 mm A2 HEX head**

Item	Art.-No.	Weight	Length	Sales unit [pcs]	GTIN (EAN code)
		W [g]	l [mm]		
CPN AL	514890	80	183	12	8001132024362
Self-drilling screw 3,5x9,5 mm A2	571209	-	9,5	100	8001132712092
Self-drilling screw 4,8x32 mm A2 HEX head	071285	-	32	100	8001132712856

ACCESSORIES



Adjustable support bracket **FV PS**

Item	Art.-No.	Weight	Sales unit [pcs]	GTIN (EAN code)
		W [g]		
FV PS	071877	100	4	8001132718773

The universal aluminium profile for photovoltaic installations on both pitched roofs and flat surfaces



Pitched roof



Flat surface

VERSIONS

- aluminium alloy AW 6063 T6 according to EN 755-2:2013

APPROVALS



ADVANTAGES

- Universal: the aluminium profile Solar-fish is suitable for both pitched roof and flat surface PV installations.
- Easy and fast: quick installation in the lower and lateral channel through screw SKS M 8 or T-head screw RHS 8 x 20 and in the upper channel through channel nut FCN AL and joint bracket MW (for cross joint).
- No scrap: the optimized length reduces waste and facilitates handling on site.
- Maximum allowable spacing 1800 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

Pitched roof System with:

- Hook GT U
- Hook GT UB
- Hook GT L
- Hook GT LB
- Hook GT 130 and GT 150 (5 and 8 mm), TÜV and MCS certified
- Hook GC, TÜV and MCS certified
- Hook GTR, TÜV and MCS certified
- Hook GTT, TÜV and MCS certified
- Hook GTP, TÜV and MCS certified
- Hook GTPR

Flat surface System with:

- Triangular frame STFS 10° - 13°
- Triangular frame STFN 10° - 15°
- Triangular frame STFN 25° - 30° - 35°
- Triangular frame STFN 2000 35° - 40° - 45°
- Trapezoidal frame STFE 25°

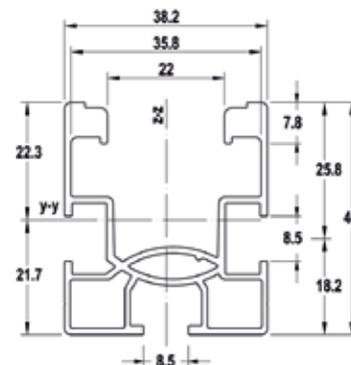
Corrugated roof System with:

- Stud screw STSR
- Stud screw STSI

FUNCTIONING

- Select the profile length and/or combination which fit better the PV array.
- Hooks/triangular frames/stud screws spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Fasten the profile on the hooks/triangular frames using lower channel (with screw SKS M 8 or T-head screw RHS) or lateral channels (with joint bracket MW and screw SKS M 8 or T-head screw RHS); on stud screws through joint plate SSP and screw SKS M 8.
- Use a couple of joints CPN AL on the lateral channels to link profiles Solar-light. The connection is completely closed when the joints central emboss is in contact with the profiles.
- ⚠ The maximum recommended length of a PV panels row is 15 m to prevent too large thermal expansion.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.

TECHNICAL DATA



Profile **Solar-fish**

Profile **Solar-fish BL**

Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Moment of inertia z-axis	Section modulus y-axis	Section modulus z-axis	Sales unit	GTIN (EAN code)
		W [kg/m]	l [mm]	S [mm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]	[pcs]	
Solar-fish 3,15 mt	514850	0,922	3150	342	7,27	6,45	3,26	3,37	1	8001132024218
Solar-fish 3,35 mt	518645	0,922	3350	342	7,27	6,45	3,26	3,37	1	8001132027417
Solar-fish 4,20 mt	514851	0,922	4200	342	7,27	6,45	3,26	3,37	1	8001132024225
Solar-fish 3,15 mt BL	534424	0,922	3150	342	7,27	6,45	3,26	3,37	1	8001132050569

ACCESSORIES



Joint **CPN AL**

Self drilling screw **3,5 x 9,5 mm A2**

Self drilling screw **4,8 x 32 mm A2 HEX head**

Item	Art.-No.	Weight	Length	Sales unit	GTIN (EAN code)
		W [g]	l [mm]	[pcs]	
CPN AL	514890	80	183	12	8001132024362
Self-drilling screw 3,5x9,5 mm A2	571209	-	9,5	100	8001132712092
Self-drilling screw 4,8x32 mm A2 HEX head	071285	-	32	100	8001132712856

ACCESSORIES



Cover cap for Solar-fish profile **AK SP**

Black Cover cap for Solar-fish profile **AK SP BL**

Item	Art.-No.	Weight	Sales unit	GTIN (EAN code)
		W [g]	[pcs]	
AK SP	071183	7	50	8001132711835
AK SP BL	520909	7	50	8001132030226

ACCESSORIES



Adjustable support bracket **FV PS**

Item	Art.-No.	Weight	Sales unit	GTIN (EAN code)
		W [g]	[pcs]	
FV PS	071877	100	4	8001132718773

The heavy-duty aluminium profile suitable for photovoltaic installations with large spacing support



Industrial roof



Flat surface

VERSIONS

- aluminium alloy AW 6063 T6 according to EN 755-2:2013

ADVANTAGES

- Heavy duty: the profile Solar-mid has an high load-bearing capacity and it is used to reduce the supporting structures.
- Flexible: The shape of profile Solar-mid allows the fixing of two PV modules (landscape disposition) on one middle profile.
- Easy and fast: quick installation in the lower and lateral channel through screw SKS M 8 or T-head screw RHS 8 x 20 and in the upper channel through channel nut FCN AL and joint bracket MW (for cross joint).
- No scrap: the optimised length reduces waste and facilitates handling on site.
- Maximum allowable spacing 2500 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

Special application System with:

- Special structures built using profiles TP AL, REP AL and BP AL

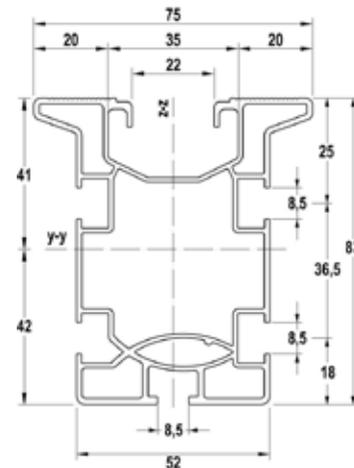
FUNCTIONING

- Triangular frames/structures spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Fasten the profile on the angular frames/structures using lower channel (with screw SKS M 8 or T-head screw RHS) or lateral channels (with joint bracket MW and screw SKS M 8 or T-head screw RHS).
- Use a couple of joints CPN AL on the lateral channels to link the profiles Solar-mid. The connection is completely closed when the joints central emboss is in contact with the profiles.
- ⚠ The maximum recommended length of a PV panels row is 15 m to prevent too large thermal expansion.
- ⚠ If the connection is on the side spans, the joints CPN AL have to be fixed with self drilling screws.

TECHNICAL DATA



Profile **Solar-mid**



Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Moment of inertia z-axis	Section modulus y-axis	Section modulus z-axis	Sales unit [pcs]	GTIN (EAN code)
		W [kg/m]	l [mm]	S [mm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]		
Solar-mid 5,25 mt	518953	1,95	5250	722	62,89	29,98	14,94	11,53	1	8001132027592

ACCESSORIES



Joint **CPN AL**



Self drilling screw **3,5 x 9,5 mm A2**



Self drilling screw **4,8 x 32 mm A2 HEX head**

Item	Art.-No.	Weight	Length	Sales unit [pcs]	GTIN (EAN code)
		W [g]	l [mm]		
CPN AL	514890	80	183	12	8001132024362
Self-drilling screw 3,5x9,5 mm A2	571209	-	9,5	100	8001132712092
Self-drilling screw 4,8x32 mm A2 HEX head	071285	-	32	100	8001132712856

ACCESSORIES



Adjustable support bracket **FV PS**

Item	Art.-No.	Weight	Sales unit [pcs]	GTIN (EAN code)
		W [g]		
FV PS	071877	100	4	8001132718773

The aluminium profile for photovoltaic installations on industrial roof for perpendicular fixing to corrugated sheet ribs



Industrial roof in corrugated sheet



Installation on industrial roof with Solar-flat P 400

VERSIONS

- aluminium alloy AW 6060 T6 according EN 755-2:2013

ADVANTAGES

- Fast: quick installation on industrial roofs through the rivets RS AL.
- Easy: quick PV module installation with pre-assembled clamps and easy cross connections through the upper channel using channel nut FCN AL, joint bracket MW, and hex head screw SKS M 8.

APPLICATIONS

Suitable for:

Industrial roof System, PV modules in portrait configuration

- Installation on profile Solar-flat 4,20 m or 5,25 m for isolated layouts (layout length is equal to profile length)
- Installation with profile pieces Solar-flat P 400 for wide layouts

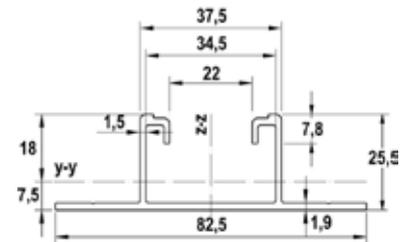
FUNCTIONING

- Choose more suitable installation between whole profile Solar-flat and profile pieces Solar-flat P 400.
- Rivets RS AL spacing has to be evaluated depending on corrugated sheet ribs spacing and snow and wind loads for installation area, according National Regulations.
- Put pieces of butylene tape CG INT (minimum piece's length 80 mm) on the contact area between profile Solar-flat/Solar-flat P 400 and the ribs of corrugated sheet, to avoid galvanic corrosion.
- Put the profile Solar-flat/Solar-flat P 400 on the corrugated sheet and drill together profile and corrugated sheet with a \varnothing 5,3 mm drill bit.
- Fasten profile Solar-flat/Solar-flat P 400 on the corrugated sheet with rivets RS AL.

TECHNICAL DATA



Profile **Solar-flat**



Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Moment of inertia z-axis	Section modulus y-axis	Section modulus z-axis	Sales unit [pcs]	GTIN (EAN code)
		W [kg/m]	l [mm]	S [mm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]		
Solar-flat 4.20 mt	519044	0,724	4200	268	2,19	11,90	1,22	2,88	1	4048962158786
Solar-flat 5,25 mt	518203	0,724	5250	268	2,19	11,90	1,22	2,88	1	8001132027103
Solar-flat P 400	512195	0,724	400	268	2,19	11,90	1,22	2,88	50	8001132021972

ACCESSORIES



Rivet with EPDM gasket **RS AL**

Item	Art.-No.	Hole diameter	Rivet diameter	Max. fixture thickness	Recommended tensile load on aluminium sheet	Recommended tensile load on steel sheet	Sales unit [pcs]	GTIN (EAN code)
		d ₀ [mm]	d ₁ [mm]	t _{fix} [mm]	N _{recc,aluminium} [kN]	N _{recc,steel} [kN]		
RS AL 5,2×20 mm	509483	5,3	5,2	0,5 ÷ 5	0,14	0,20	200	8001132020111

ACCESSORIES



Butylene tape **CG INT**

Item	Art.-No.	Length	Width	Thickness	Sales unit [pcs]	GTIN (EAN code)
		L [m]	B [mm]	s [m]		
CG INT	505615	10	80	1	1	8001132013410

The aluminium profile for photovoltaic installations on industrial roof for parallel fixing to corrugated sheet ribs



Industrial roof with corrugated sheet



Detail: PV installation with Solar 40/30

VERSIONS

- aluminium alloy AW 6060 T6 according EN 755-2:2013

ADVANTAGES

- Fast: quick installation on industrial roofs through the rivets RS AL.
- Easy: quick PV module installation with pre-assembled clamps and easy cross connections through the upper channel using channel nut FCN AL, joint bracket MW, and hex head screw SKS M 8.

APPLICATIONS

Suitable for:

Industrial roof System, PV modules in landscape configuration

- Installation on profile Solar 40/30 6 m for isolated layouts (layout length is equal to profile length)
- Installation with profile pieces Solar 40/30 200 mm for wide layouts.

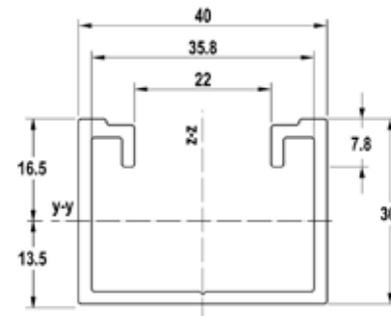
FUNCTIONING

- Choose more suitable installation between whole profile Solar 40/30 6 m and profile pieces Solar 40/30 - 200 mm.
- Rivets RS AL spacing has to be evaluated depending on corrugated sheet ribs spacing and snow and wind loads for installation area, according National Regulations.
- Put pieces of butylene tape CG INT (minimum piece's length 80 mm) on the contact area between profile Solar 40/30 - 6 m/200 mm and the ribs of corrugated sheet, to avoid galvanic corrosion.
- Put the profile Solar 40/30 - 6 m/200 mm on the corrugated sheet and drill together profile and corrugated sheet with a Ø 5,3 mm drill bit.
- Fasten profile Solar 40/30 - 6 m/200 mm on the corrugated sheet with rivets RS AL.

TECHNICAL DATA



Profile **Solar 40/30**



Item	Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
Solar 40/30 - 6 mt	521728	0,67	6000	249	3,03	6,30	1,84	3,15	1	8001132030790
Solar 40/30 - 200 mm	522513	0,67	200	249	3,03	6,30	1,84	3,15	50	8001132031568

ACCESSORIES



Rivet with EPDM gasket **RS AL**

Item	Art.-No.	Hole diameter d ₀ [mm]	Rivet diameter d ₁ [mm]	Max. fixture thickness t _{fix} [mm]	Recommended tensile load on aluminium sheet N _{recc,aluminium} [kN]	Recommended tensile load on steel sheet N _{recc,steel} [kN]	Sales unit [pcs]	GTIN (EAN code)
RS AL 5,2×20 mm	509483	5,3	5,2	0,5 ÷ 5	0,14	0,20	200	8001132020111

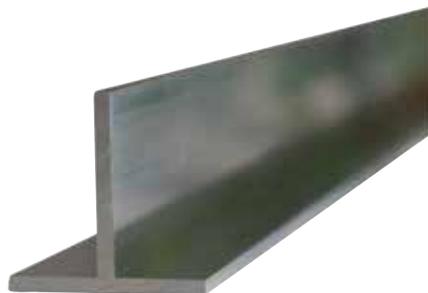
ACCESSORIES



Butylene tape **CG INT**

Item	Art.-No.	Length L [m]	Width B [mm]	Thickness s [m]	Sales unit [pcs]	GTIN (EAN code)
CG INT	505615	10	80	1	1	8001132013410

The 'T' shaped aluminium profile for customized installations on special structures



Special application on industrial roof



Detail: rear view of customized structure

VERSIONS

- aluminium alloy AW 6060 T5 according EN 755-2:2013

ADVANTAGES

- Customized: The profile TP AL allows you to build load bearing structures (when used with profile REP AL) for multi-rows of modules with particular tilt.
- Easy: profile TP AL is easy to work (cut and drill) and can be used with all profiles Solar.
- High performance: The profile TP AL is used when the number of load bearing frames needs to be reduced.

APPLICATIONS

Suitable for:

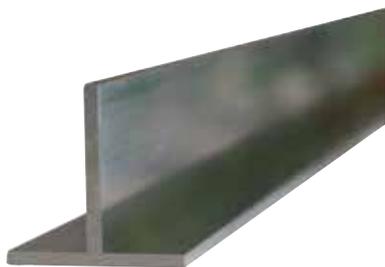
Special application System with:

- Profile REP AL
- Bracing profile BP AL

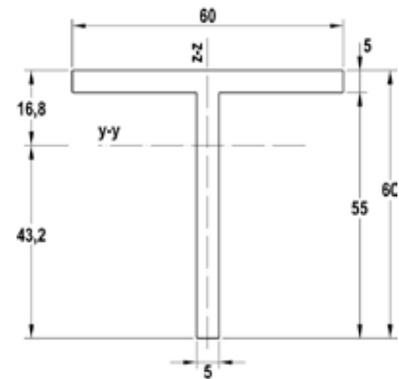
FUNCTIONINGS

- Load-bearing structures geometry and spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Cut to size and drill the profile TP AL according to the assumed load-bearing structure shape.
- Assembly the load-bearing structure through hex head screws SKS M 10 and flanged hex nuts MU F M 10.
- Fasten the load-bearing structure with the proper anchors depending on the building material of the substrate.
- Join profiles Solar with the assembled structure through hex head screw SKS M 8 and flanged hex nuts MU F M 8.

TECHNICAL DATA



Profile TP AL



Item	Aluminium alloy Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
TP AL 60x60x5 mm - 6 mt	571185	1,55	6000	575	19,90	9,05	11,85	3,02	3	8001132711859

ACCESSORIES



Hex head screw **SKS A2**

Item	Art.-No.	Thread M	Length l [mm]	Width across nut ○ SW	Sales unit [pcs]	GTIN (EAN code)
SKS M 8 x 20 mm A2	505614	M 8	20	13	100	4006209651797
SKS M 8 x 50 mm A2	571208	M 8	50	13	100	8001132712085
SKS M 10 x 30 mm A2	557086	M 10	30	17	100	8001132570869
SKS M 10 x 50 mm A2	071181	M 10	50	17	100	8001132711811
SKS M 10 x 70 mm A2	071182	M 10	70	17	100	8001132711828

ACCESSORIES



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Width across nut ○ SW	Sales unit [pcs]	GTIN (EAN code)
MU F M 8 A2	571210	M 8	13	100	8001132712108
MU F M 10 A2	071952	M 10	17	100	8001132719527

The rectangular section aluminium profile for photovoltaic installations using customized structures



Special application on industrial roof



Detail: rear view of customized structure

VERSIONS

- aluminium alloy AW 6060 T5 according EN 755-2:2013

ADVANTAGES

- Customized: The profile REP AL allows you to build load bearing structures (when used with profile REP AL) for multi-rows of modules with particular tilt.
- Easy: profile REP AL is easy to work (cut and drill) and can be used with profile TP AL and all other Solar profiles.
- High performance: profile REP AL is used when the number of load bearing frames needs to be reduced.

APPLICATIONS

Suitable for:

Special application System with:

- Profile TP AL
- Bracing profile BP AL

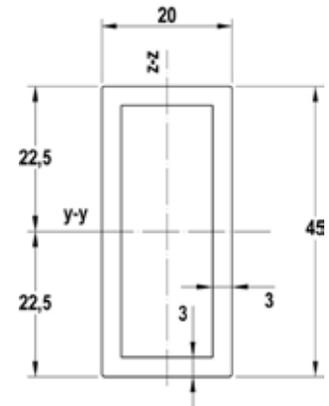
FUNCTIONINGS

- Load-bearing structures geometry and spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Cut to size and drill the profile TP AL according to the assumed load-bearing structure shape.
- Assembly the load-bearing structure through hex head screws SKS M 10 and flanged hex nuts MU F M 10.
- Fasten the load-bearing structure with the proper anchors depending on the building material of the substrate.
- Join profiles Solar with the assembled structure through hex head screw SKS M 8 and flanged hex nuts MU F M 8.

TECHNICAL DATA



Profile REP AL



Item	Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Modulus section y-axis W _y [cm ³]	Modulus section z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
REP AL 45x20x3 mm - 6 mt	071186	0,95	6000	354	8,26	2,10	3,67	2,10	3	8001132711866

ACCESSORIES



Hex head screw **SKS A2**

Item	Art.-No.	Thread M	Length l [mm]	Width across nut ○SW	Sales unit [pcs]	GTIN (EAN code)
SKS M 8 x 20 mm A2	505614	M 8	20	13	100	4006209651797
SKS M 8 x 50 mm A2	571208	M 8	50	13	100	8001132712085
SKS M 10 x 30 mm A2	557086	M 10	30	17	100	8001132570869
SKS M 10 x 50 mm A2	071181	M 10	50	17	100	8001132711811
SKS M 10 x 70 mm A2	071182	M 10	70	17	100	8001132711828

ACCESSORIES



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Width across nut ○SW	Sales unit [pcs]	GTIN (EAN code)
MU F M 8 A2	571210	M 8	13	100	8001132712108
MU F M 10 A2	071952	M 10	17	100	8001132719527

The bracing aluminium profile for photovoltaic structures



Rear bracing



Detail: bracing profiles BP AL

VERSIONS

- aluminium alloy AW 6060 T5 according EN 755-2:2013

ADVANTAGES

- Fast: quick installation through self-drilling screws.

APPLICATIONS

Suitable for bracing of:

- Flat surface System
- Special application System

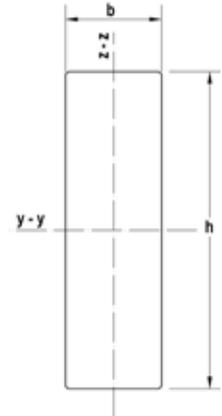
FUNCTIONING

- Put the bracing profiles BP AL rear to the load-bearing structure diagonally on each span, or crossed diagonally on each 2 spans.
- Fix bracing profiles BP AL with self-drilling screws 3,5 x 32 mm or 4,8 x 32 mm hex head.

TECHNICAL DATA



Bracing profile **BP AL**



Item	Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
BP AL 13×6 mm - 4 mt	071184	0,21	4000	78	0,1	0,02	0,16	0,07	3	8001132711842

ACCESSORIES



Self-drilling screw **3,5 x 9,5 mm A2**



Self-drilling screw **4,8 x 32 mm A2 HEX head**

Item	Art.-No.	Length l [mm]	Sales unit [pcs]	GTIN (EAN code)
Self-drilling screw 3,5x9,5 mm A2	571209	9,5	100	8001132712092
Self-drilling screw 4,8x32 mm A2 HEX head	071285	32	100	8001132712856

The heavy-duty aluminium profile suitable for photovoltaic installations with large spacing support



Solar field ground installation



Solar field installation on concrete ballasts

VERSIONS

- steel S235JR according EN 10025-2: 2004, hot dip galvanized ($\geq 80 \mu\text{m}$) according EN ISO 1461:2009
- bolts and nuts in stainless steel A2-70 according EN ISO 3506 1/2:2010

ADVANTAGES

- Heavy duty: the profile SPS-HP has an high load-bearing capacity and it is used to reduce the supporting structures.
- No scrap: the optimised length reduces waste and facilitates handling on site.
- Maximum allowable spacing 2800 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

System SPS with:

- Single pole load-bearing structure SPS
- Clamps SPS-PMC and SPS-PMF

System DFS with:

- Double foot load-bearing structure DFS
- Clamps SPS-PMC and SPS-PMF

Allowable configurations

- 2 modules - portrait disposition

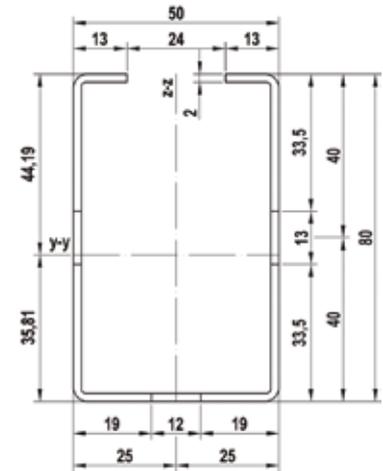
FUNCTIONING

- SPS and DFS load-bearing structures spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Fasten the SPS-HP profile on load-bearing structures (SPS and DFS) using bolts and nuts M 10 (bolt's length $\geq 30 \text{ mm}$) through the slotted holes.
- Use the SPS Joint to join profiles SPS-HP. The connection has to be locked with bolts and nuts M 12 (bolt's length $\geq 70 \text{ mm}$).
- ⚠ The maximum recommended length of a PV panels row is 20 m to prevent too large thermal expansion.

TECHNICAL DATA



Profile **SPS-HP**



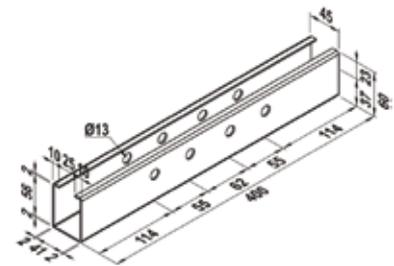
Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Moment of inertia z-axis	Section modulus y-axis	Section modulus z-axis	Sales unit [pcs]	GTIN (EAN code)
		W [kg]	L [mm]	S [mm ²]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]		
Profile SPS-HP 5,20 mt	534356 1)	18,1	5200	447,4	35,63	20,94	8,06	8,38	1	8001132049402

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Connection joint **SPS JOINT**



Item	Art.-No.	Length	Weight	Sales unit [pcs]	GTIN (EAN code)
		L [mm]	W [kg]		
SPS JOINT	534357	400	1,1	1	8001132049419

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Hex head screw **SKS A2**



Nut **MU A2**



Washer **U A2**

Item	Art.-No.	Thread	Length	Width across nut	Washer (external diameter x thickness)	Sales unit [pcs]	GTIN (EAN code)
		M	L [mm]	○SW	[mm]		
SKS M 10 x 30 mm A2	557086	M 10	30	17	-	100	8001132570869
SKS M 12 x 70 mm A2	534434	M 12	70	19	-	50	8001132050613
MU M 10 A2	530543	M 10	-	17	-	100	4048962000962
MU M 12 A2	514270	M 12	-	19	-	100	8001132142707
U M 10 A2	535533	-	-	-	20 x 2,0	100	8001132053669
U M 12 A2	557209	-	-	-	24 x 2,5	100	8001132572092

The heavy-duty aluminium profile suitable for photovoltaic installations with large spacing support



Solar field plant



Structure detail

VERSION

- steel S235JR according EN 10025-2:2004, hot dip galvanized ($\geq 80 \mu\text{m}$) according EN ISO 1461:2009
- bolts and nuts in stainless steel A2-70 according EN ISO 3506 1/2:2010

ADVANTAGES

- High performance: the double layer solution, made by horizontal profiles SPTS-HP and with vertical profile SPTS-VP, has an high strength and it is used to educe the supporting structures.
- No scrap: the optimised length reduces waste and facilitates handling on site.
- Maximum allowable SPTS load-bearing structure spacing 2130 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

SPTS system with:

- Single pole tree load-bearing structure SPTS
- SPS-PMC and SPS-PMF clamps

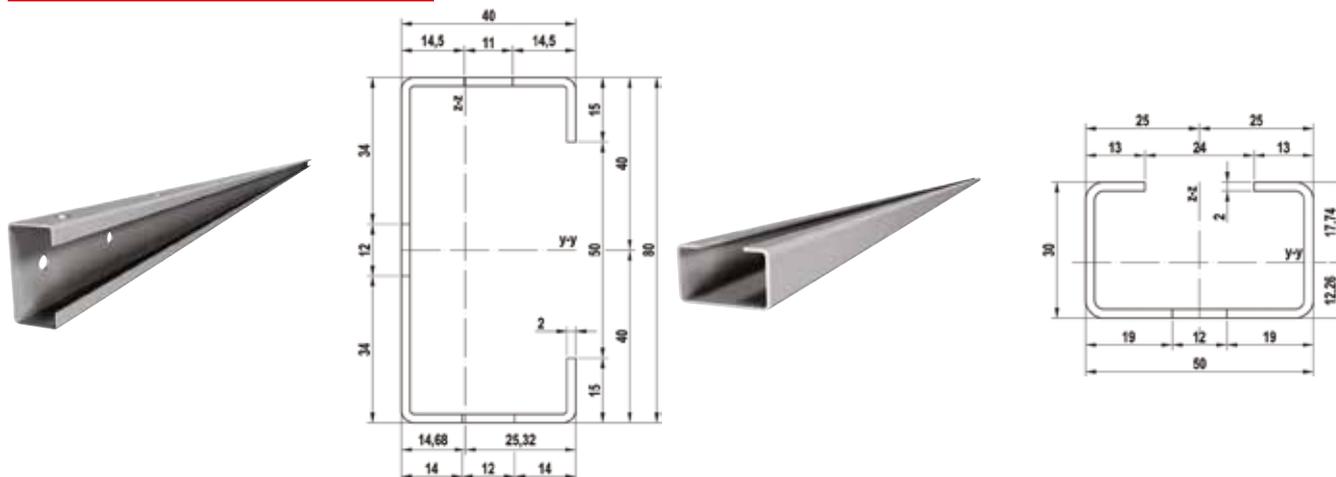
Allowable configurations

- 4 modules - landscape disposition

FUNCTIONING

- SPTS load-bearing structures spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Fasten the SPTS-HP profile on load-bearing structures SPTS using the slotted holes on the profile M10 bolts (bolt length $\geq 30 \text{ mm}$).
- Use the SPTS JOINT to link the SPTS-HP profiles. The connection has to be fixed to the profile using M10 bolts (bolt length $\geq 30 \text{ mm}$).
- Fix the vertical profile SPTS-VP to the horizontal one SPTS-HP with M10 bolts (bolt length $\geq 30 \text{ mm}$)
- ⚠ The maximum recommended length of a PV panels row is 20 m to prevent too large thermal expansion.

TECHNICAL DATA



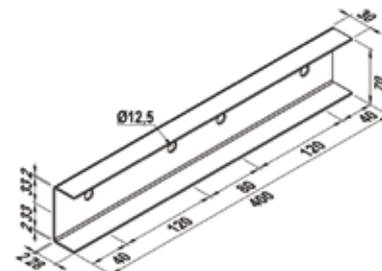
Item	Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
Profile SPTS-HP 5,25 mt	535545 1)	15,1	5250	353,7	35,27	8,09	8,81	3,19	1	8001132053836
Profile SPTS-VP 4,20 mt	535557 1)	8,5	4200	245,7	3,17	9,31	1,79	3,72	1	8001132054437

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Connection joint **SPTS JOINT**



Item	Art.-No.	Length L [mm]	Weight W [kg]	Sales unit [pcs]	GTIN (EAN code)
SPTS JOINT	535546 1)	400	0,80	1	8001132053843

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Hex head screw **SKS A2**



Nut **MU A2**



Washer **U A2**

Item	Art.-No.	Thread M	Length l [mm]	Width across nut ○SW	Washer (external diameter x thick- ness) [mm]	Sales unit [pcs]	GTIN (EAN code)
SKS M 10 x 30 mm A2	557086	M 10	30	17	-	100	8001132570869
SKS M 12 x 70 mm A2	534434	M 12	70	19	-	50	8001132050613
MU M 10 A2	530543	M 10	-	17	-	100	4048962000962
MU M 12 A2	514270	M 12	-	19	-	100	8001132142707
U M 10 A2	535533	-	-	-	20 x 2,0	100	8001132053669
U M 12 A2	557209	-	-	-	24 x 2,5	100	8001132572092

The efficient aluminium vertical mullion 50 x 50 mm for photovoltaic curtain façades



Substructure mullions and transoms



Detail: vertical profile VP 50 connection

VERSIONS

- aluminium alloy AW 6060 T66 according EN 755-2:2013

ADVANTAGES

- Handy: the vertical profile VP 50 is easy to work (cut and drill) on site.
- Double face: the vertical profile VP 50 can be used on both front and rear faces.
- Adjustable fixing: using the vertical profile VP 50 front face (with channel), the channel nut FCN and screw SKS M 8 is possible to carry out an adjustable fixing.
- Heavy-duty fixing: using the vertical profile VP 50 on the rear face (blind side) and with rivets it is possible for high load-bearing capacity fixing.

APPLICATIONS

Suitable for:

Powerskin system with:

- Fixing point holder FPH
- Sliding point holder SPH

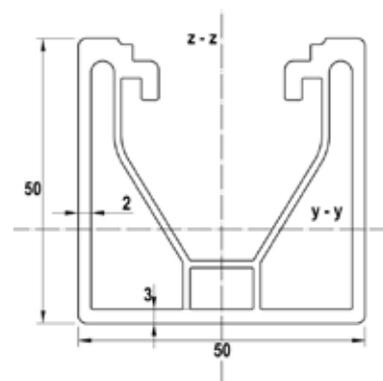
FUNCTIONING

- Use the wall brackets FPH and SPH for fixing the vertical profile VP 50, depending on the cavity required.
- Place the vertical profile VP 50 between the wall brackets FPH and SPH cantilevers.
- Use wall brackets FPH and SPH as a drill template and drill the vertical profile VP 50 (FPH - 5+5 drills holes, SPH - 1+1 drill holes) with a Ø5 mm drill bit.
- Fasten the vertical profile VP 50 to the wall brackets FPH and SPH with rivets 4,8 x 10 A2.
- Put the insulation panels behind the vertical profile VP 50.

TECHNICAL DATA



Vertical profile VP 50 AL



Item	Art.-No.	Weight W [kg/m]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
VP 50 AL	511164	1,58	6600	584,73	17,92	20,24	6,86	8,09	1	4048962107074

The heavy-duty aluminium vertical mullion 50 x 100 mm for photovoltaic curtain façades without middle fixing



Substructure mullions and transoms



Detail: VP 100 and FPH connection

VERSIONS

- aluminium alloy AW 6060 T66 according EN 755-2:2013

ADVANTAGES

- Handy: the vertical profile VP 100 is easy to work (cut and drill) on site.
- Double face: the vertical profile VP 100 can be used on both front and rear faces.
- Adjustable fixing: using the vertical profile VP 100 front face (with channel), the channel nut FCN and screw SKS M 8 is possible to carry out an adjustable fixing.
- Heavy-duty fixing: using the vertical profile VP 100 on the rear face (blind side) and with rivets it is possible for high load-bearing capacity fixing.

APPLICATIONS

Suitable for:

Powerskin system with:

- Fixing point holder FPH
- Sliding point holder SPH

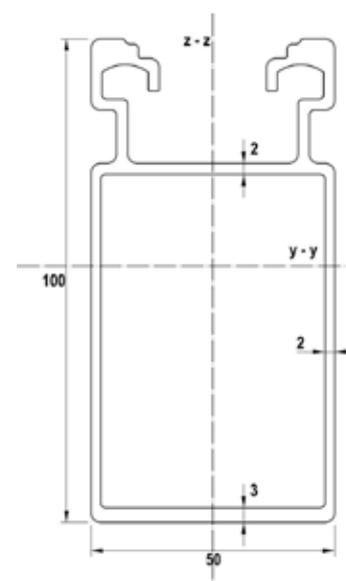
FUNCTIONING

- Using the wall brackets FPH and SPH for fixing the vertical profile VP 100, depending the cavity required.
- Place the vertical profile VP 100 between the wall brackets FPH and SPH cantilevers.
- Use wall brackets FPH and SPH as a drill template and drill the vertical profile VP 100 (FPH - 5+5 drills holes, SPH - 1+1 drill holes) with a Ø5 mm drill bit.
- Fasten the vertical profile VP 100 to the wall brackets FPH and SPH with rivets 4,8 x 10 A2.
- Put the insulation panels behind the vertical profile VP 100.

TECHNICAL DATA



Vertical profile **VP 100 AL**



Item	Art-No.	Weight W [kg]	Profile length l [mm]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Moment of inertia z-axis I _z [cm ⁴]	Section modulus y-axis W _y [cm ³]	Section modulus z-axis W _z [cm ³]	Sales unit [pcs]	GTIN (EAN code)
VP 100 AL	510900	2,14	6600	793,33	99,41	31,24	18,75	12,50	1	4048962103953



3 Hooks

- Universal tile hook GTU 68
- Universal tile hook with basement GTUB 69
- Universal tile hook GTL 70
- Universal tile hook with basement GTLB 71
- Fixed tile hook GT 72
- Adjustable tile hook GTR 73
- Adjustable tile hook GTT 74
- Fixed flat tile hook GTP 75
- Adjustable flat tile hook GTPR 76
- Adjustable hook for arabic tile GC 77
- Clamp for folded metal roofs DLA / DLAK 78



The double vertical adjustable hook for all roofs covering in tiles



Pitched roof with tiles



Detail: fixing of profile Solar on hook GTU

VERSIONS

- 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

ADVANTAGES

- Complete: the pre-assembled hook is supplied with XC bracket, bolts and nuts for profile connection.
- Fast: quick installation of Solar profiles through the tightening of only one screw.
- Safe fixing: the adjustable connections are equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tiles thanks to double vertical adjustment.
- Adaptive: the holes $\varnothing 10,5$ mm allow hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Useful for:**
Pitched roof System with:
- Profile Solar-fish

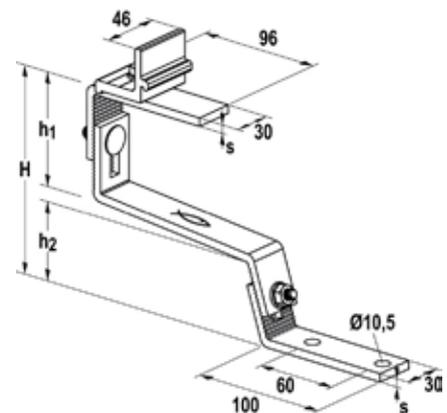
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook with the proper anchor depending on building material of the substrate.
- Tighten up the screws of adjustable brackets before installing the profiles.

TECHNICAL DATA



Universal adjustable tile hook GTU



Item	Art.-No.	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recommend. compression load F _c [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTU A2	522669	0,70	6	115-150	61-82	43-57	1,20	13	10	10	8001132031667

The double adjustable hook for roofs covering in tiles and base plate with horizontal adjustment



Pitched roof with tiles



Detail: fixing of profile Solar on hook GTUB

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

ADVANTAGES

- Complete: the pre-assembled hook is supplied with XC bracket, base plate, bolts and nuts for profile connection.
- Fast: quick installation of Solar profiles through the tightening of only one screw.
- Safe fixing: the adjustable connections are equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tiles thanks to double vertical adjustment. Moreover horizontal adjustment is possible through the sliding guides on the base plate.
- Adaptive: the holes $\varnothing 10,5$ mm of enlarged base plate allow the hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Useful for:**
Pitched roof System with:
- Profile Solar-fish

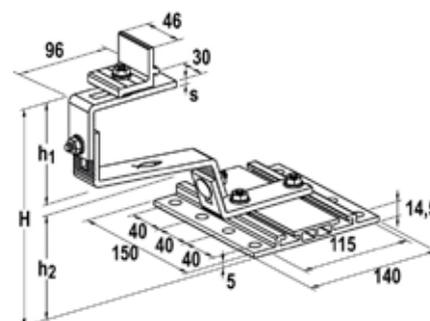
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook's plate base with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable brackets before installing the profiles.

TECHNICAL DATA



Universal adjustable tile hook with base plate **GTUB**



Item	Art.-No.	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recommend. compression load F _c [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTUB A2	522670	0,85	6	123÷158	61÷82	51÷65	1,20	13	10	4	8001132031674

The adjustable hook for flat tiles roofs



Pitched roof with tiles



Detail: fixing of profile Solar on hook GTL

VERSIONS

- 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

ADVANTAGES

- Complete: the pre-assembled hook is supplied with XC bracket, bolts and nuts for profile connection.
- Fast: quick installation of Solar profiles through the tightening of only one screw.
- Safe fixing: the adjustable connection is equipped anti-slip knurlings.
- Flexible: the hook fits all kind of tiles thanks to vertical adjustment.
- Adaptive: the holes $\varnothing 10,5$ mm allow hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Useful for:**
Pitched roof System with:
- Profile Solar-fish

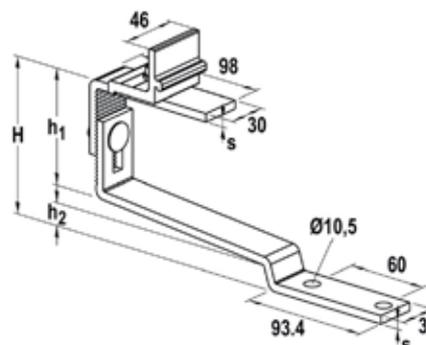
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable brackets before installing the profiles.

TECHNICAL DATA

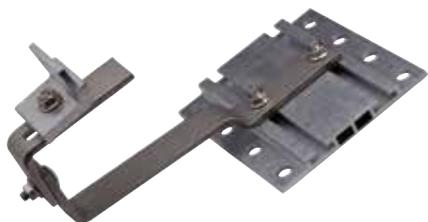


Universal tile hook GTL



Item	Art.-No.	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recommend. compression load F _c [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTL A2	531129	0,60	6	90 - 111	61 - 82	16,5	1,20	13	10	10	8001132040881

The adjustable hook for flat tiles roofs with base plate and horizontal adjustment



Pitched roof with tiles



Detail: fixing of profile Solar on hook GTLB

VERSIONS

- 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

ADVANTAGES

- Complete: the pre-assembled hook is supplied with XC bracket, base plate, bolts and nuts for profile connection.
- Fast: quick installation of Solar profiles through the tightening of only one screw.
- Safe fixing: the adjustable connection is equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tiles thanks to vertical adjustment. Moreover horizontal adjustment is possible through the sliding guides on the base plate
- Adaptive: the holes \varnothing 10,5 mm of enlarged base plate allow hook's fastening on the load-bearing structure of substrate.

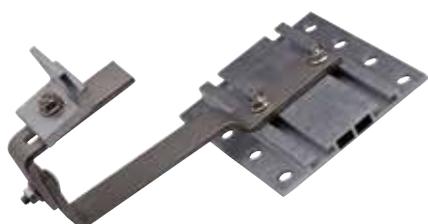
APPLICATIONS

- Useful for:**
Pitched roof system with:
- Profile Solar-fish

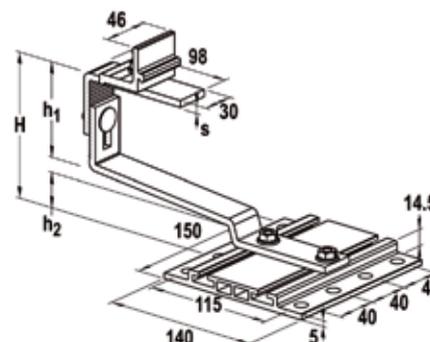
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook's plate base with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable brackets before installing the profiles.

TECHNICAL DATA



Universal adjustable tile hook with base plate **GTLB**



Item	Art.-No.	Weight	Thick-ness	Total height	Above tile height	Under tile height	Recommend. compression load	Width across nut	Instal-lation torque	Sales unit	GTIN (EAN code)
		W [kg]	s [mm]	H [mm]	h ₁ [mm]	h ₂ [mm]	F _⊥ [kN]	○ SW	T _{inst} [Nm]	[pcs]	
GTLB A2	531032	0,75	6	105÷126	62÷83	31	1,20	13	10	4	8001132040751

The fixed hook for roof coverings in tiles



Pitched roof with tiles



Detail: fixing of profile Solar on hook GT

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolt and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

APPROVALS



ADVANTAGES

- Complete: the hook is supplied with bolts and nuts for profile connection.
- Adaptive: the holes $\varnothing 9$ mm of enlarged base plate allow hook's fastening on the load-bearing structure of substrate.
- Full range: hooks GT are available in 2 thicknesses (5 and 8 mm) and in 2 heights (130 and 150 mm) for all spacings of load-bearing structure and for all kind of tiles.

APPLICATIONS

- Useful for:**
Pitched roof System, roof covering in tiles, with:
- Profile Solar-light (hooks GT - 5 mm)
 - Profile Solar-fish (hooks GT - 8 mm)

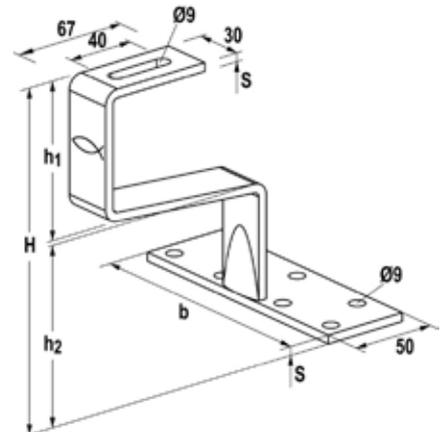
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook's plate base with the proper anchor depending on building material of substrate.

TECHNICAL DATA



Tile hook **GT A2**



Item	Art.-No.	Weight	Thick-ness	Total height	Above tile height	Under tile height	Recommend. compression load F_c [kN]	Width across nut \varnothing SW	Instal-lation torque T_{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
		W [kg]	s [mm]	H [mm]	h_1 [mm]	h_2 [mm]					
GT 130 A2 - 5 mm	071198 ¹⁾	0,57	5	130	75	43	0,80	13	10	10	8001132711989
GT 130 A2 - 8 mm	071422 ¹⁾	0,73	8	130	75	43	1,80	13	10	10	8001132714225
GT 150 A2 - 5 mm	571136 ¹⁾	0,60	5	150	75	68	0,80	13	10	10	8001132711361
GT 150 A2 - 8 mm	071423 ¹⁾	0,78	8	150	75	68	1,80	13	10	10	8001132714232

¹⁾ Package content: 10 hooks GT A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MUB M 8 A2.

The universal adjustable hook for roof coverings in tiles



Pitched roof with tiles



Detail: Hook GTR

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

APPROVALS



ADVANTAGES

- Complete: the pre-assembled hook is supplied with base plate, bolts and nuts for profile connection.
- Safe fixing: the adjustable connections are equipped with anti-slip knurlings.
- Flexible: the hook is suitable for each kind of tile thanks to double vertical adjustment. Moreover horizontal adjustment is possible through 3 hook's positions on the base plate.
- Adaptive: the holes Ø9 mm of enlarged base plate allow hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Suitable for:**
Pitched roof System, roof covering in tiles, with:
- Profile Solar-light

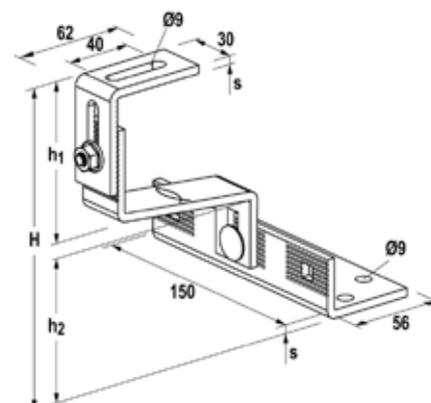
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook's plate base with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable brackets before installing the profiles.

TECHNICAL DATA



Adjustable tile hook GTR A2



Item	Art. n°	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recommended compressive load F _c [kN]	Width across nut Ø SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTR A2	071526 ¹⁾	0,83	5	110÷143	60÷80	40÷54	0,80	13	10	10	8001132715260

¹⁾ Package content: 10 hooks GTR A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MUB M 8 A2.

The economic adjustable hook for roof coverings in tiles



Pitched roof with tiles



Detail: Hook GTT

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

APPROVALS



ADVANTAGES

- Complete: the pre-assembled hook is supplied with bolts and nuts for profile connection.
- Safe fixing: the adjustable connection is equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tiles thanks to vertical adjustment.
- Adaptive: the holes Ø9 mm of enlarged base plate allow hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Suitable for:**
Pitched roof system, roof coverings in tiles, with:
- Profile Solar-light

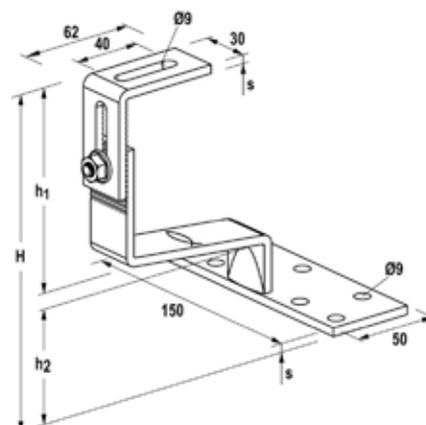
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook's plate base with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable bracket before installing the profiles.

TECHNICAL DATA



Adjustable tile hook **GTT A2**



Item	Art.-No.	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recommend. compression load F _c [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTT A2	512232 1)	0,60	5	115 ÷ 145	72 ÷ 102	33	0,80	13	10	10	8001132022122

1) Package content: 10 hooks GTT A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MU M 8 A2.

The economic fixed hook for roofs with covering in flat tiles



Pitched roof with flat tiles



Detail: Hook GTP

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

APPROVALS



ADVANTAGES

- Complete: the hook is supplied with bolts and nuts for profile connection.
- Adaptive: the in line holes $\varnothing 9$ mm allow hook's fastening on load-bearing wooden beams.

APPLICATIONS

- Suitable for:**
Pitched roof system, roof coverings in flat tiles, with:
- Profile Solar-light

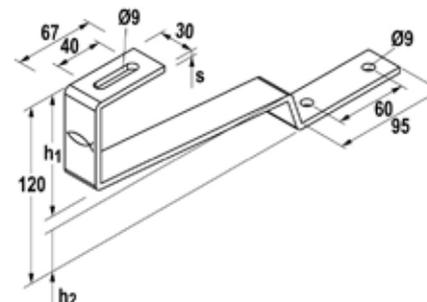
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook with the proper anchor depending on building material of substrate.

TECHNICAL DATA



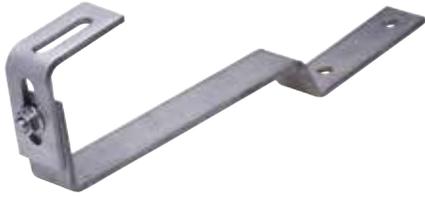
Fixed flat tile hook **GTP A2**



Item	Art. n°	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recomm. compression load F _⊥ [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTP A2	071199 ¹⁾	0,50	5	120	73	30	0,80	13	10	10	8001132711996

¹⁾ Package content: 10 hooks GTP A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MU M 8 A2.

The adjustable hook for roofs with covering in flat tiles



Pitched roof with flat tiles



Detail: Hook GTPR

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

ADVANTAGES

- Complete: the pre-assembled hook is supplied with bolts and nuts for profile connection.
- Safe fixing: the adjustable connection is equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tile thanks to vertical adjustment.
- Adaptive: the in line holes $\varnothing 9$ mm allow hook's fastening on load-bearing wooden beams.

APPLICATIONS

- Suitable for:**
Pitched roof system, roof coverings in flat tiles, with:
- Profile Solar-light

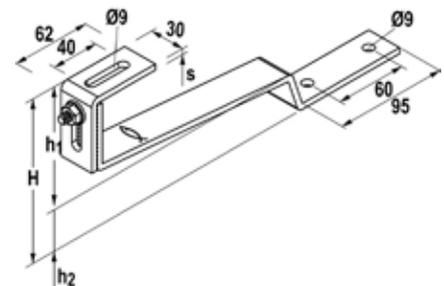
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move tile and fasten hook with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable bracket before installing the profiles.

TECHNICAL DATA



Fixed flat tile hook GTPR A2



Item	Art.-No.	Weight W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recomm. compression load F _⊥ [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GTPR A2	519667 ¹⁾	0,60	5	110 ÷ 138	64 ÷ 92	30	0,80	13	10	10	8001132028513

¹⁾ Package content: 10 hooks GTPR A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MU M 8 A2.

The adjustable hook for roofs covering in arabic tiles



Pitched roof with arabic tiles



Detail: Hook GC

VERSIONS

- hook in stainless steel X5CrNi 18-10 according EN 10088-2:2005
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2010

APPROVALS



ADVANTAGES

- Complete: the pre-assembled hook is supplied with bolts and nuts for profile connection.
- Safe fixing: the adjustable connection is equipped with anti-slip knurlings.
- Flexible: the hook fits all kind of tile thanks to vertical adjustment.
- Adaptive: the holes \varnothing 9 mm of enlarged base plate allow hook's fastening on the load-bearing structure of substrate.

APPLICATIONS

- Suitable for:**
Pitched roof system, roof coverings in Arabic tiles, with:
- Profile Solar-light

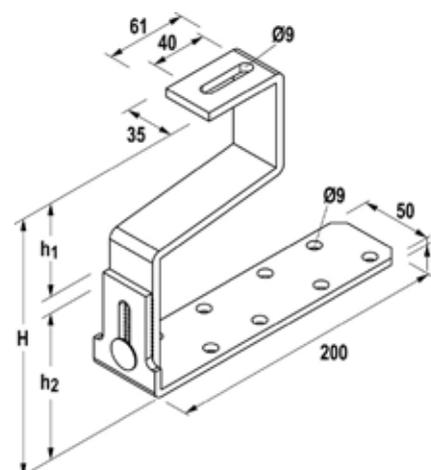
FUNCTIONING

- Hooks spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust hooks position depending on load-bearing structure and on layout PV installation.
- Move arabic tile and fasten hook's plate base with the proper anchor depending on building material of substrate.
- Tighten up the screws of adjustable bracket before installing the profiles.

TECHNICAL DATA



Adjustable hook for Arabic tile **GC A2**



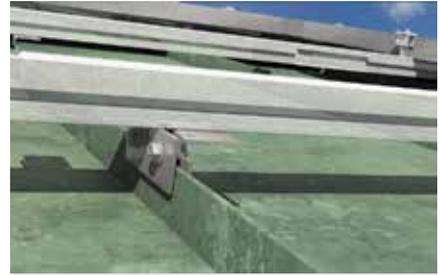
Item	Art.-No.	Peso W [kg]	Thick- ness s [mm]	Total height H [mm]	Above tile height h ₁ [mm]	Under tile height h ₂ [mm]	Recomm. compression load F _⊥ [kN]	Width across nut ○ SW	Instal- lation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
GC A2	571137 ¹⁾	1,00	5	176÷205	73	92÷121	0,80	13	10	10	8001132711378

¹⁾ Package content: 10 hooks GC A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MU M 8 A2.

The universal clamp for photovoltaic installation on folded metal roofs



Folded metal roofs



Detail: Clamp DLA



VERSIONS

- clamp 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

ADVANTAGES

- Complete: the pre-assembled clamp is supplied with bolts and nuts for profile connection.
- Fast: the pre-assembled cup head square neck bolts with large head allow a quick installation.

APPLICATIONS

- Suitable for:**
Standard and rounded **folded metal roofs** with:
- Profile Solar-light
 - Profile Solar-fish

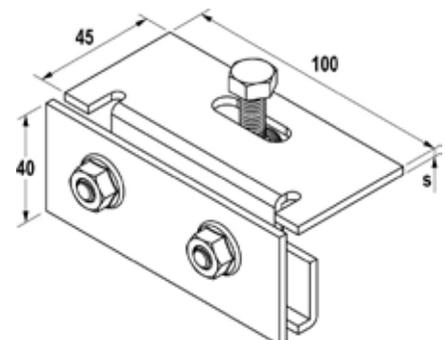
FUNCTIONING

- Clamps spacing has to be evaluated depending on snow and wind loads for installation area, according National Regulations.
- Adjust clamps position depending on load-bearing structure and on layout PV installation.
- Place the clamps and tighten the screws with the correct installation torque.
- ⚠ Put pieces of butylene tape CG INT (minimum piece's length 80 mm) on the contact area between folded metal roof and clamps DLA e DLAK, to avoid galvanic corrosion.

TECHNICAL DATA



Clamp for folded metal roof **DLA A2**



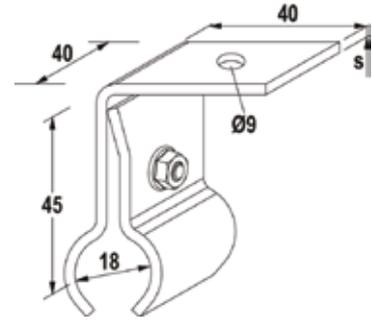
Item	Art.-No.	Weight W [kg]	Thickness s [mm]	Recommended compression load F _⊥ [kN]	Width across nut ○ SW	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
DLA A2	71556 ¹⁾	0.33	3	1,20	13	10	10	8001132715567

¹⁾ Package content: 10 clamps DLA A2, 10 hex head screws SKS M 8 x 20 A2, 10 washers U M 8 x 20 A2, 10 hexagonal nuts MU M 8 A2.

TECHNICAL DATA



Clamp for rounded folded metal roof **DLAK A2**

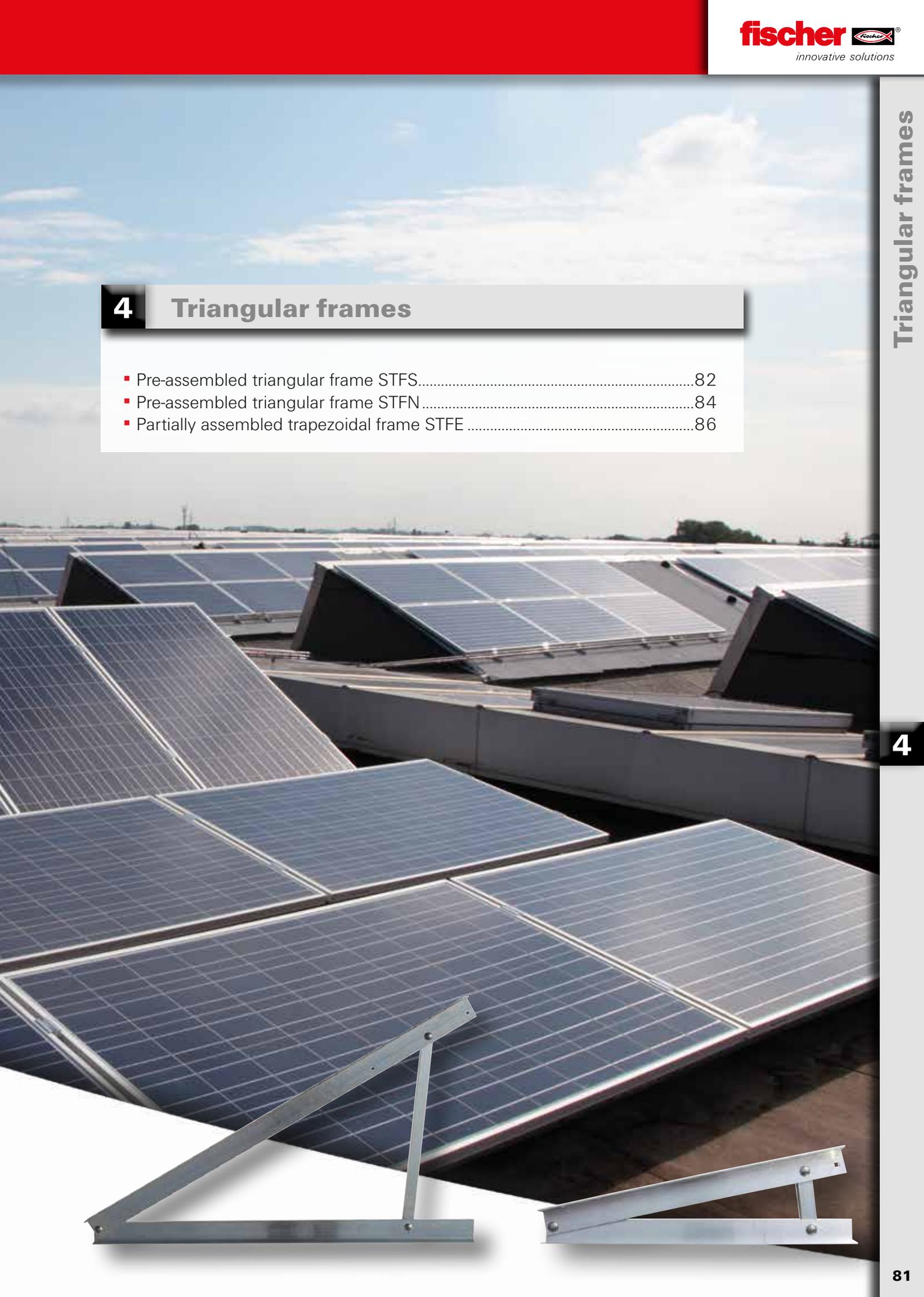


Item	Art.-No.	Weight W [kg]	Thickness s [mm]	Recommended tensile load F _T [kN]	Width across nut ○ SW	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
DLAK A2	536782	0,25	2,50	0,50	13	25	50	8001132056684



4 Triangular frames

- Pre-assembled triangular frame STFS.....82
- Pre-assembled triangular frame STFN.....84
- Partially assembled trapezoidal frame STFE86



The triangular frame for landscape photovoltaic installation on flat surfaces without outer walls



Flat surface without outer wall



Detail: Triangular frame STFS 10° - 13°

VERSIONS

- triangular frames in aluminium alloy AW 6063/6060 T66 according EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2009

ADVANTAGES

- Complete: the triangular frame STFS is pre-assembled and bolts and nuts for connection with profiles Solar are included in the package.
- Flexible: 2 different degrees (10° e 13°) are possible moving the strut through 2 positions.
- Stealth: the installation (landscape configuration) is only 30 cm height.

APPLICATIONS

- Suitable for:**
Flat surface System with:
- Profile Solar-fish
- Allowable configurations:**
- 1 module - landscape disposition

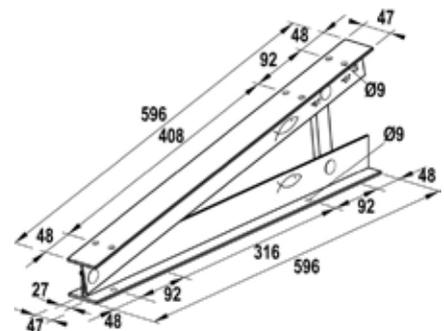
FUNCTIONING

- Define the triangular frames spacing depending on snow and wind loads for installation site, according National Regulations.
- Adjust the triangular frames position depending on load-bearing structure and on layout PV installation.
- Fasten the triangular frame base with the proper anchor depending on building material of substrate.
- Connect the triangular frame with profile Solar using bolts and nuts included in the package.

TECHNICAL DATA



Pre-assembled triangular frame STFS 10° - 13°



Item	Art.-No.	Weight W [kg]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Section modulus y-axis W _y [cm ³]	Hole diameter Ø [mm]	Width across nut Ø SW	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
STFS 10° - 13°	512625 ¹⁾	1,00	304	7,23	1,97	9	13	10	5	8001132022450

¹⁾ Package content: 5 triangular frames STFS 10° - 13°, 20 hammer head screws RHS M 8 x 20 A2, 20 flanged hex nut MUF M 8 A2.

ACCESSORIES



Ballast bracket **STFS BALLAST**

Item	Art.-No.	Weight	Length	Sale Unit	GTIN (EAN code)
		W [g]	l [mm]	[pcs]	
STFS BALLAST	524505 1)	550	690	5	8001132037188

1) Use 2 brackets per triangular frame. Place the ballasts in the flat area of the brackets.

The pre-assembled triangular frame for landscape and portrait photovoltaic installation on flat surfaces



Flat surface with outer wall



Detail: Triangular frame STF N 10° - 15°

VERSIONS

- triangular frames in aluminium alloy W6063/6060 T66 according EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2009

ADVANTAGES

- Complete: the triangular frame STF N is pre-assembled and bolts and nuts for connection with profiles Solar are included in the package.
- Flexible: 3 version available and 8 different degrees (STF N 10° - 5°, STF N 25° - 30° - 35° and STF N 2000 35° - 40° - 45°) are possible moving the strut through 2 or 3 positions respectively.
- All-round: all triangular frames STF N allows both landscape and portrait configuration.

APPLICATIONS

Suitable for:

Flat surface System with:

- Profile Solar-fish
- Allowable configurations:
 - 1 module - landscape disposition
 - 1 module - portrait disposition

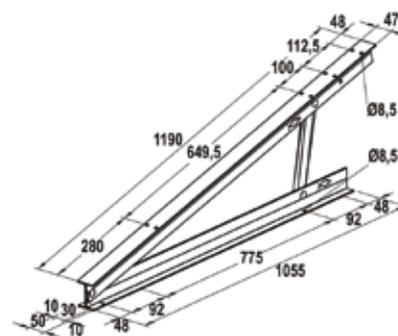
FUNCTIONING

- Define the triangular frames spacing depending on snow and wind loads for installation site, according National Regulations.
- Adjust the triangular frames position depending on load-bearing structure and on layout PV installation.
- Fasten the triangular frame base with the proper anchor depending on building material of substrate.
- Connect the triangular frame with profile Solar using bolts and nuts included in the package.

TECHNICAL DATA



Pre-assembled triangular frame STF N 10° - 15°



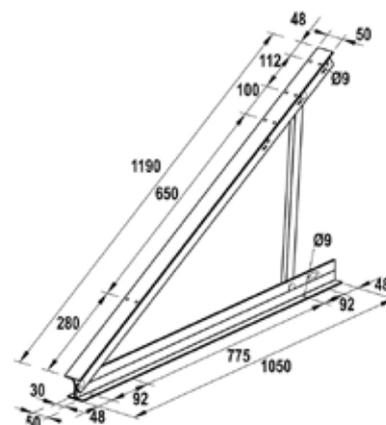
Item	Art. n°	Weight W [kg]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Section modulus y-axis W _y [cm ³]	Hole diameter Ø [mm]	Width across nut ○ SW	Installation torque T _{inst} [Nm]	Sales Unit [pcs]	GTIN (EAN code)
STF N 10° - 15°	524335 ¹⁾	2,05	378	16,45	4,25	9	13	10	5	8001132718889

¹⁾ Package content: 5 triangular frames STF N 10° - 15°, 20 hammer head screws RHS M 8 x 20 A2, 20 flanged hex nuts MUF M 8 A2.

TECHNICAL DATA



Pre-assembled triangular frame
STFN 25° - 30° - 35°



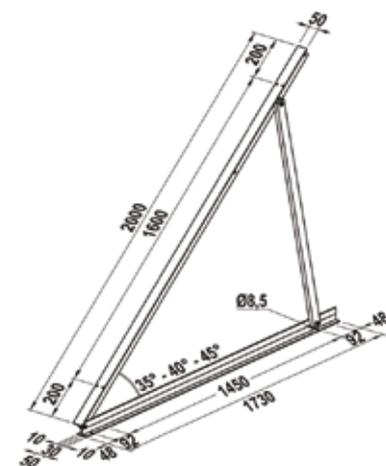
Item	Art.-No.	Weight W [kg]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Section modulus y-axis W _y [cm ³]	Hole diameter Ø [mm]	Width across nut Ø SW	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
STFN 25° - 30° - 35°	511874 1)	2,53	378	16,45	4,25	9	13	10	5	8001132021583

1) Package content: 5 triangular frames STFN 25° - 30° - 35°, 20 hammer head screws SKS M 8 x 25 A2, 20 flanged hex nuts MUF M 8 A2.

TECHNICAL DATA



Pre-assembled triangular frame
STFN 2000 35° - 40° - 45°



Item	Art.-No.	Weight W [kg]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Section modulus y-axis W _y [cm ³]	Hole diameter Ø [mm]	Width across nut Ø SW	Installation torque T _{inst} [Nm]	Sales unit [pz]	GTIN (EAN code)
STFN 2000 35° - 40° - 45°	531873 1)	5,70	378	16,45	4,25	9	13	10	1	8001132044377

1) Package content: 1 triangular frame STFN 2000 35° - 40° - 45°, 4 hammer head screws RHS M 8 x 20 A2, 4 flanged hex nuts MUF M 8 A2. Suitable for big photo-voltaic or thermal modules.

ACCESSORIES



Ballast bracket **STFS BALLAST**

Item	Art.-No.	Weight W [g]	Length l [mm]	Sale Unit [pcs]	GTIN (EAN code)
STFN BALLAST	524504 1)	550	690	5	8001132024362

1) Use 2 brackets per triangular frame. Place the ballasts in the flat area of the brackets.

Partially assembled trapezoidal structure for landscape or portrait photovoltaic modules installation



Flat surface



Detail: Trapezoidal frame STFE with ballast

VERSIONS

- triangular frames in aluminium alloy AW 6060 T6 according EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according EN ISO 3506-1/2:2009

FUNCTIONING

- Define the trapezoidal frames spacing depending on snow and wind loads for installation site, according National Regulations.
- Adjust the trapezoidal frames position depending on load-bearing structure and on layout PV installation.
- Fasten the trapezoidal frame base with the proper anchor depending on building material of substrate.
- Connect the trapezoidal frame with profile Solar using RHS 8 x 20 hammer head bolts and MU F M 8 nuts.

ADVANTAGES

- Complete: the trapezoidal frame STFE is partially pre-assembled to speed up the installation.
- Simple: the trapezoidal frame STFE allows portrait configuration.

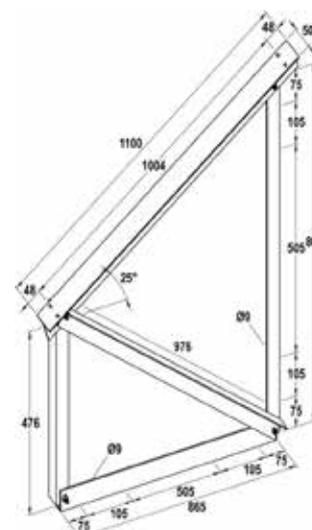
APPLICATIONS

- Suitable for:**
Pitched roof System with:
- Profile Solar-fish
- Allowable configurations:**
- 1 module - portrait disposition

TECHNICAL DATA



Trapezoidal frame **STFE 25°**



Item	Art. n°	Weight	Profile cross section	Moment of inertia y-axis	Section modulus y-axis	Hole diameter	Width across nut	Installation torque	Sales Unit	GTIN (EAN code)
		W [kg]	S [mm ²]	I _y [cm ⁴]	W _y [cm ³]	∅ [mm]	○ SW	T _{inst} [Nm]	[pcs]	
STFE 25°	530262 1)	2,84	290	7,15	5,25	9	13	10	4	8001132038475

1) Package content: 4 trapezoidal frames STFE 25°. Nuts and bolts for connection with profile Solar-fish not included in the package.

ACCESSORIES



Hex head bolt **SKS A2**

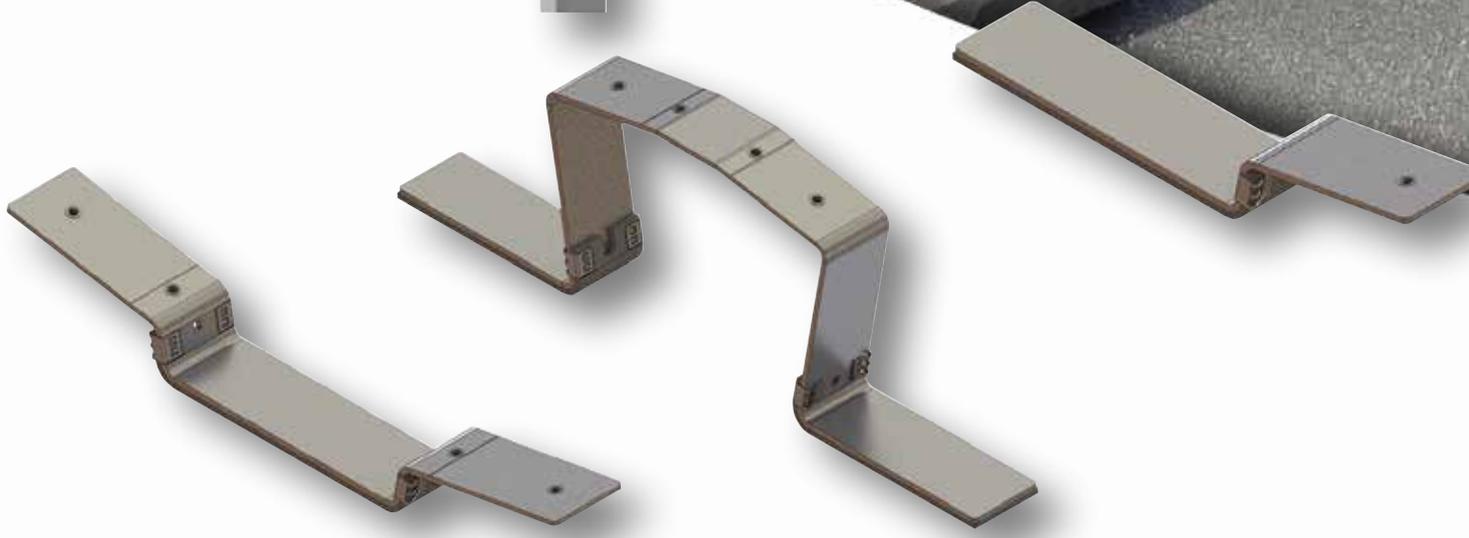


Hammer head bolt **RHS A2**



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Screw length l [mm]	hexagon nut ○SW	Sales unit [pcs]	GTIN (EAN code)
SKS M 8 x 20 mm A2	505614	M 8	20	13	100	4006209651797
RHS M 8 x 20 mm A2	071207	M 8	20	13	50	8001132712078
MU F M 8 A2	571210	M 8	-	13	100	8001132712108



5 Special Solutions

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The most lightweight 10°-15 ° aerodynamic system for flat roof without drilling for South landscape photovoltaic installation



Solar-Wind System South SW-S



Solar-Wind System South SW-S

VERSIONS

- brackets in aluminium AW 6060 T66/T5 according to EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- No drilling: Solar-Wind South System does not need to drill the roof. The system is blocked using small concrete ballasts.
- Quick: the installation time is about 10 minutes per kWp.
- Light: the reduced photovoltaic panel tilt (10° and 15°) and the rearward sheet metal cover reduce the effect of wind load and therefore reduce the number of required concrete ballasts.
- Complete range: the system is available for a wide range of photovoltaic panels (width 950÷1020 mm x height 1630÷1675 mm).
- Easy: the system is modular, thus allowing a photovoltaic panels layout extremely flexible.
- Safe: the special central clamp allows to the photovoltaic installation to be grounded.
- Designable: the required number of ballasts is calculable depending on wind load for installation site, according National Regulations.

APPLICATIONS

Suitable for:

Solar-Wind System (flat roof without drilling)

Allowable configurations:

- 1 module - landscape disposition

FUNCTIONING

- Adjust the PV installation layout depending on roof edge distances and roof obstacles.
- Calculate the correct number of ballast SW BALLAST for each element (brackets or ballast trays) depending on snow and wind loads for installation site, according National Regulations.
- Place the front brackets SW BF and the brackets SW-S B.. (middle and end) on the roof, as shown in the project.
- Put the photovoltaic modules on the brackets and fasten them using clamps SW-MC and SW-MF.
- Fix the metal sheet covers SW-S CARTER on middle brackets SW-S BM and on end brackets SW-S BE to reduce the effect of wind action.
- Place the concrete ballasts SW BALLAST as shown in the project. Protect the roof setting the protective pad SW PAD under the ballasts.
- For snow load higher than 2,40 kN/m² use front reinforcement brackets SW-S BF SNOW and back reinforcement brackets SW-S BB SNOW.

TECHNICAL DATA



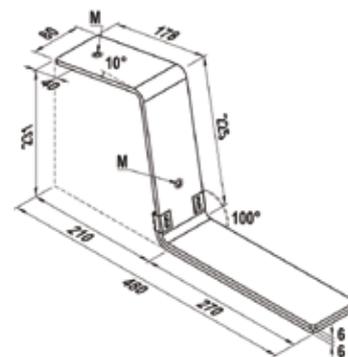
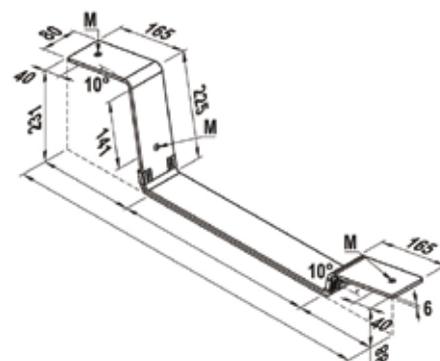
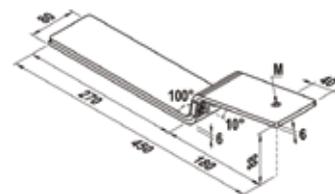
Front bracket Solar-Wind 10°
SW BF 10°



Middle bracket Solar-Wind South 10°
SW-S BM 10°



End bracket Solar-Wind South 10°
SW-S BE 10°



Item	Art.-No.	Weight	Thickness	Thread	Fits	Sales unit	GTIN (EAN code)
		W [kg]	s [mm]	M		[pcs]	
SW BF 10°	524183	0,82	6	M 8	Solar-Wind South 10°	1	8001132036112
SW-S BM 10°	533657	1,70	6	M 8	Solar-Wind South 10°	1	8001132046845
SW-S BE 10°	533658	1,05	6	M 8	Solar -Wind South 10°	1	8001132046852

ACCESSORIES SW-S 10°



Front reinforcement bracket
SW-S BF 10° SNOW



Back reinforcement bracket
SW-S BB 10° SNOW



Back carter **SW-S CARTER 10°**

Item	Art.-No.	Weight	Width	Length	Height	Sales unit	GTIN (EAN code)
		W [kg]	b [mm]	l [mm]	h [mm]		
SW-S BF 10° SNOW	536410 1)	0,50	80	259	69	1	8001132055762
SW-S BB 10° SNOW	536411 1)	0,73	80	99	230	1	8001132055779
SW-S CARTER 10°	533659 2)	1,74	-	1775	-	1	8001132046869

1) Use for snow load $\geq 2,40$ kN/m². Place the bracket on the middle of PV panel frame and fix it with final clamp SW-MF and screw SW M 8 x 25.

2) Fix on middle brackets SW-S BM and on end brackets SW-S BE with screws SW M 8 x 25.

TECHNICAL DATA



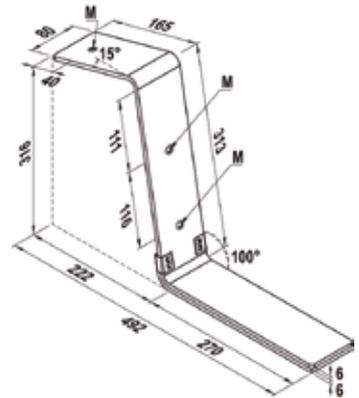
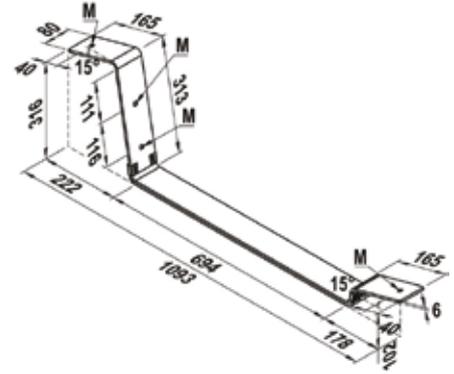
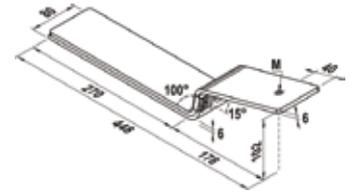
Front bracket Solar-Wind South 15°
SW-S BF 15°



Middle bracket Solar-Wind South 15°
SW-S BM 15°



End bracket Solar-Wind South 15°
SW-S BE 15°



Item	Art.-No.	Weight		Thickness	Thread	Fits	Sales unit	GTIN (EAN code)
		W [kg]	s [mm]	M	[pcs]			
SW-S BF 15°	524177	0,82	6	M 8	Solar-Wind South 15°	1	8001132035900	
SW-S BM 15°	524178	2,27	6	M 8	Solar-Wind South 15°	1	8001132035924	
SW-S BE 15°	524179	1,16	6	M 8	Solar-Wind South 15°	1	8001132035948	

ACCESSORIES SW-S 15°



Front reinforcement bracket
SW-S BF 15° SNOW



Back reinforcement bracket
SW-S BB 15° SNOW



Back carter **SW-S CARTER 15°**

Item	Art.-No.	Weight	Width	Length	Height	Sales unit	GTIN (EAN code)
		W [kg]	b [mm]	l [mm]	h [mm]		
SW-S BF 15° SNOW	524181 1)	0,45	80	256	73	1	8001132035962
SW-S BB 15° SNOW	524182 1)	0,90	80	99	316	1	8001132036044
SW-S CARTER 15°	534132 2)	2,47	-	1775	-	1	8001132048771

1) Use for snow load $\geq 2,40 \text{ kN/m}^2$. Place the bracket on the middle of PV panel frame and fix it with final clamp SW-MF and screw SW M 8 x 25.

2) Fix on middle brackets SW-S BM and on end brackets SW-S BE with screws SW M 8 x 25.

ACCESSORIES



Concrete ballast **SW BALLAST**



Protection pad **SW PAD**

Item	Art.-No.	Weight	Width	Length	Height	Sales unit	GTIN (EAN code)
		W [kg]	b [mm]	l [mm]	h [mm]		
SW BALLAST	524188	9	200	400	50	1	8001132036174
SW PAD	524202	-	50	150	11	1	8001132036372

ACCESSORIES



Ballast tray **SW BT**



Ballast tray **SW BT PLUS**

Item	Art.-No.	Weight	Width	Length	Sales unit	GTIN (EAN code)
		W [kg]	b [mm]	l [mm]		
SW BT	536404	1,49	237	835	1	8001132055748
SW BT PLUS	536409	3,00	237	1775	1	8001132055755

ACCESSORIES



Cylindrical head screw **SW M 8 x ..**



Flathead screw **SW M 8 x ..**



Washer **SW WASHER**



Cylindrical nut **M 8**



Cap nut **M 8**

Item	Art.-No.	Thread	Length	Installation torque	Width across the nut (hexagon socket)	Washer (external diameter x thickness)	Sales unit	GTIN (EAN code)
		M	l [mm]	T _{inst} [Nm]	○SW			
SW M 8 x 25 mm A2	524201	M 8	25	10	6		100	8001132036365
SW M 8 x 30 mm A2	536416	M 8	30	10	6		100	8001132055823
SW M 8 x 35 mm A2	536417	M 8	35	10	6		100	8001132055830
SW M 8 x 40 mm A2	524200	M 8	40	10	6		100	8001132036334
SW M 8 x 45 mm A2	536418	M 8	45	10	6		100	8001132055847
SW M 8 x 16 mm A2 flathead	536414	M 8	16	10	6		100	8001132055809
SW M 8 x 20 mm A2 flathead	536415	M 8	20	10	6		100	8001132055816
SW WASHER	524205	-	-	-	-	16 x 1,6	100	8001132036488
SW Cylindrical nut M 8 A2	536413	M 8	-	-	-		100	8001132055793
SW Cap nut M 8 A2	536412	M 8	-	-	-		100	8001132055786

ACCESSORIES



Clip locks Carter **SW Clip**



Cable tie **SW CABLE TIE**

Item	Art.-No.	Sales unit	GTIN (EAN code)
SW CLIP	524203	100	8001132036389
SW CABLE TIE	524204	100	8001132036426

The lightest 10° aerodynamic system for maximum installed power on flat roof without drilling for East - West installation



Solar-Wind System East-West



Solar-Wind System East-West

VERSIONS

- brackets in aluminium AW 6060 T66/T5 according to EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- No drilling: Solar-Wind East-West System does not need to drill the roof. The system is blocked using small concrete ballasts.
- Quick: the installation time is about 10 minutes per kWp.
- Light: the reduced panel tilt (10°) and the geometrical arrangement reduce the effect of wind load and therefore reduce the number of required concrete ballasts.
- Complete range: the system is available for a wide range of panels (width 950÷1020 mm x height 1630÷1675 mm).
- Easy: the system is modular, thus allowing a photovoltaic panels layout extremely flexible.
- Safe: the special central clamp allows to the photovoltaic installation to be grounded.
- Designable: the required number of ballasts is calculable depending on wind load for installation site, according National Regulations.

APPLICATIONS

Suitable for:
Solar-Wind System (flat roof without drilling)

Allowable configurations:

- 1 module - landscape disposition

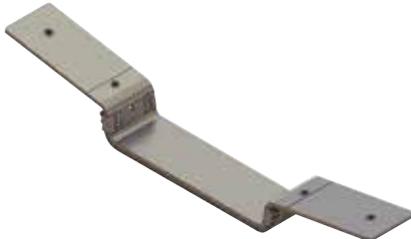
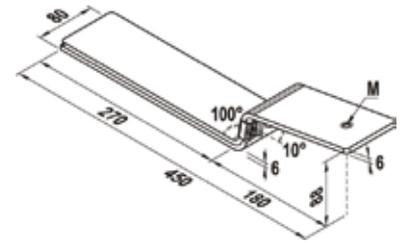
FUNCTIONING

- Adjust the PV installation layout depending on roof edge distances and roof obstacles.
- Calculate the correct number of ballast SW BALLAST for each element (brackets or ballast trays) depending on snow and wind loads for installation site, according National Regulations.
- Place the front brackets SW BF and the middle brackets SW-S B.. on the roof, as shown in the project.
- Put the photovoltaic modules on the brackets and fasten them using clamps SW-MC and SW-MF.
- Place the concrete ballasts SW BALLAST as shown in the project. Protect the roof setting the protective pad SW PAD under the ballasts.
- For snow load higher than 2,40 kN/m² use front bracket SW BF 10° and middle brackets (high and low) SW-EW BM.. 10°.

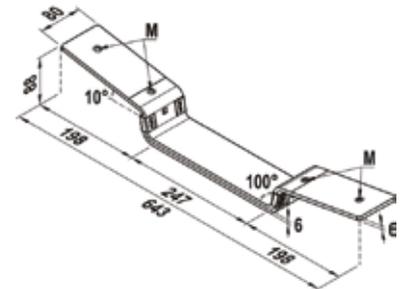
TECHNICAL DATA



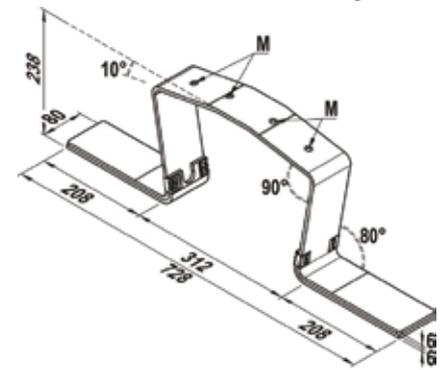
Front bracket Solar-Wind 10°
SW BF 10°



Low middle bracket Solar-Wind
East - West 10° **SW-EW BML 10°**



High middle bracket Solar-Wind
East - West 10° **SW-EW BMH 10°**



Item	Art.-No.	Weight	Thickness	Thread	Fits	Sales unit	GTIN (EAN code)
		W [kg]	s [mm]	M		[pz]	
SW BF 10°	524183	0,82	6	M 8	Solar Wind East - West	1	8001132036112
SW-EW BML 10°	524184 ¹⁾	0,82	6	M 8	Solar Wind East - West	1	8001132036129
SW-EW BMH 10°	524185 ¹⁾	1,10	6	M 8	Solar Wind East - West	1	8001132036136
SW-S BF 10° SNOW	536410 ²⁾	0,50	6	M 8	Solar Wind East - West	1	8001132055762

1) Use also for snow load $\geq 2,40 \text{ kN/m}^2$. Place the bracket on the middle of PV panel frame and fix it with final clamp SW-MF and screw SW M 8 x 25.

2) Use for snow load $\geq 2,40 \text{ kN/m}^2$. Place the bracket on the middle of PV panel frame and fix it with final clamp SW-MF and screw SW M 8 x 25.

TECHNICAL DATA



Concrete ballast **SW BALLAST**



Protection pad **SW PAD**

Item	Art.-No.	Weight	Width	Length	height	Sales unit	GTIN (EAN code)
		g [kg]	b [mm]	l [mm]	h [mm]	[pcs]	
SW BALLAST	524188	9	200	400	50	1	8001132036174
SW PAD	524202	-	50	150	11	1	8001132036372

ACCESSORIES



Ballast tray **SW BT**

Item	Art.-No.	Weight W [kg]	Width b [mm]	Length l [mm]	Sales unit [pz]	GTIN (EAN code)
SW BT	536404	1,49	237	835	1	8001132055748

ACCESSORIES



Cylindrical head screw **SW M 8 x ..** Flathead screw **SW M 8 x ..** Washer **SW WASHER** Cylindrical nut **M 8** Cap nut **M 8**

Item	Art.-No.	Thread M	Length l [mm]	Installation torque T _{inst} [Nm]	Width across the nut (hexa- gon socket) ○ SW	Washer (exter- nal diameter x thickness)	Sales unit [pcs]	GTIN (EAN code)
SW M 8 x 25 mm A2	524201	M 8	25	10	6		100	8001132036365
SW M 8 x 30 mm A2	536416	M 8	30	10	6		100	8001132055823
SW M 8 x 35 mm A2	536417	M 8	35	10	6		100	8001132055830
SW M 8 x 40 mm A2	524200	M 8	40	10	6		100	8001132036334
SW M 8 x 45 mm A2	536418	M 8	45	10	6		100	8001132055847
SW M 8 x 16 mm A2 flathead	536414	M 8	16	10	6		100	8001132055809
SW M 8 x 20 mm A2 flathead	536415	M 8	20	10	6		100	8001132055816
SW WASHER	524205	-	-	-	-	16 x 1,6	100	8001132036488
SW Cylindrical nut M 8 A2	536413	M 8	-	-	-	-	100	8001132055793
SW Cap nut M 8 A2	536412	M 8	-	-	-	-	100	8001132055786

ACCESSORIES



Clip locks Carter **SW Clip**

Cable tie **SW CABLE TIE**

Item	Art.-No.	Sales unit [pcs]	GTIN (EAN code)
SW CLIP	524203	100	8001132036389
SW CABLE TIE	524204	100	8001132036426

The hdg solution for free-fields system with 2 modules in portrait disposition



Side view of SPS system



Frontal view of SPS system

VERSIONS

- S235JR steel according to EN 10025-2:2004, hdg ($\geq 80 \mu\text{m}$) according to EN ISO 1461:2009
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- Universal: the single pole system allows to realize photovoltaic layout 2 x 10 panels with portrait disposition and 3 defined slope (20°, 25° and 30°).
- Easy and fast: pre-drilled piles, profiles and brackets to make easier and faster all the installation steps.
- Maximum allowable spacing 2800 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

Solar-Field single pole system with:

- SPS-HP profile
- SPS-PM clamps

Allowable configurations:

- 2 modules - portrait disposition

FUNCTIONING

- Define SPS structure spacing depending on snow and wind load for the effective installation area, according National Regulations.
- Drive the single pole SPS-SP to the required depth according to geotechnical soil test report.
- Fasten the SPS-IB inclined profile on the upper side of the single pole SPS-SP using M 16 screws.
- Fix the SPS-CONN bracket on the lower side of the inclined profile SPS-IB using 2 M 10 bolts.
- Join the side bracing SPS-BR to the vertical pole SPS-SP and the SPS CONN bracket with 1 + 1 M 16 bolts.
- ⚠ Minimum thread length of M 16 screw is 35 mm, M 10 bolt is 30 mm.

ACCESSORIES



Hex head screw **SKS A2**



Nut **MU A2**



Washer **U A2**

Item	Art.-No.	Thread M	Length l [mm]	Hexagon socket ○SW	Washer (external diameter x thickness) [mm]	Sales unit [pcs]	GTIN (EAN code)
SKS M 10 x 30 mm A2	557086	M 10	30	17	-	100	8001132570869
SKS M 16 x 35 mm A2	531377	M 16	35	24	-	25	8001132043141
MU M 10 A2	530543	M 10	-	17	-	100	4048962000962
MU M 16 A2	557321	M 16	-	24	-	50	8001132573211
U M 10 A2	535533	-	-	-	20 x 2,0	100	8001132053669
U M 16 A2	071516	-	-	-	30 x 3,0	50	8001132715161

The hdg solution for free-fields system with 4 modules in landscape disposition



Frontal view of SPTS system



Back view of SPTS system

VERSIONS

- S235JR steel according to EN 10025-2:2004, hdg ($\geq 80 \mu\text{m}$) according to EN ISO 1461:2009
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- Free field system: the single pole tree system SPTS allows to realize photovoltaic layout of 40 panels tables (4 x 10 modules in landscape disposition).
- Flexible: SPTS system allows to realize 4 different defined inclination ($15^\circ - 20^\circ - 25^\circ - 30^\circ$).
- Easy and fast: pre-drilled piles, profiles and brackets to make easier and faster all the installation steps.
- Maximum allowable spacing 2130 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

Solar-Field single pole tree system with:

- SPTS-HP and SPTS-VP profile
- SPS-PM clamps

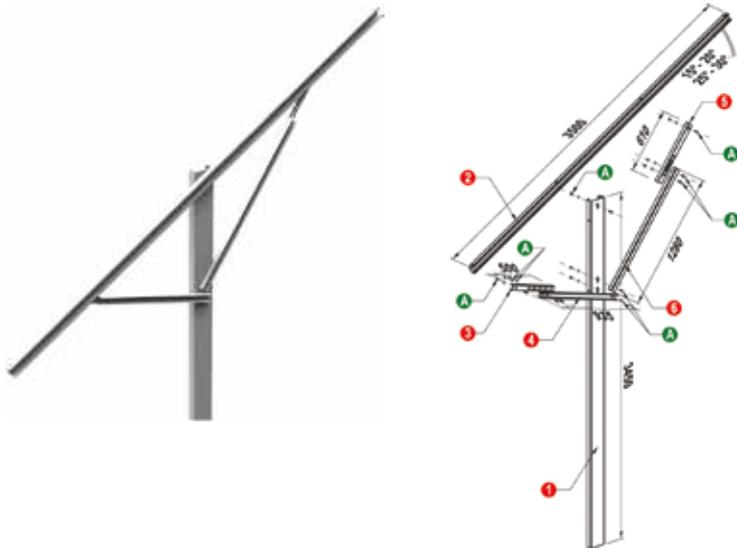
Allowable configurations:

- 4 modules - landscape disposition

FUNCTIONING

- Define SPTS structure spacing depending on snow and wind load for the effective installation area, according National Regulations.
- Drive the single pole SPTS-SP to the required depth according to geotechnical soil test report.
- Fasten the SPTS-IB inclined profile on the upper side of the single pole SPTS-SP using M 16 screws.
- Fix the frontal upper bracing SPTS-FTB to the frontal bottom bracing SPTS-FBB and the rear upper bracing SPTS-RTB to the rear bottom bracing with 2 + 2 M 16 bolts.
- Joint the frontal and rear bracing to the single pole SPTS-SP and to the inclined beam SPTS-IB with 2 + 2 M 16 bolts.
- Reinforce the main structures with the back bracing SPTS-BB with 1 + 1 M 10 bolts.
- ⚠ Minimum thread length of M 16 screw is 35 mm, M 10 bolt is 30 mm.

TECHNICAL DATA



Legend:

- 1. Single pole **SPTS-SP**
- 2. Inclined profile **SPTS-IB**
- 3. Frontal side upper bracing **SPTS-FTB**
- 4. Frontal side bottom bracing **SPTS-FBB**
- 5. Rear side upper bracing **SPTS-RTB**
- 6. Rear side bottom bracing **SPTS-RBB**

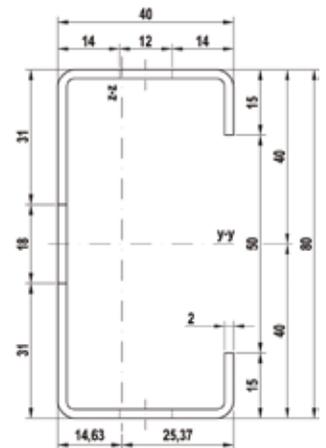
A. SKS M 16 + U M 16 + MU M 16



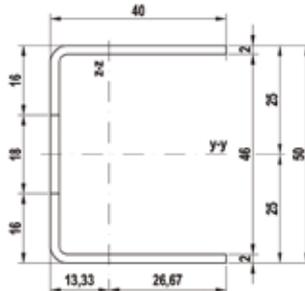
Single pole **SPTS-SP**



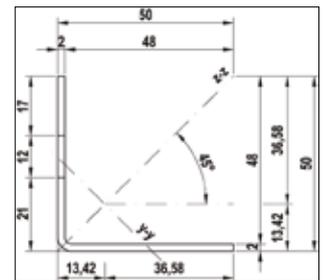
Inclined profile **SPTS-IB**



Frontal side bracing **SPTS-F..B**
and rear side bracing **SPTS-R..B**



Back bracing **SPTS-BB**



Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia	Section modulus	Sales unit		GTIN (EAN code)
		W [kg/m]	l [m]	S [mm ²]	I _y [cm ⁴]	W _y [cm ³]			
SPTS-SP 3,45 mt	535550 1)	25,90	3,45	941,1	363,12	45,39	1		8001132053867
SPTS-IB 3,50 mt	535551 1)	10,13	3,50	357,1	35,27	8,82	1		8001132053973
SPTS-FTB 0,50 mt	535552 1)	1,00	0,50	248,6	10,64	4,25	1		8001132053980
SPTS-FBB 0,94 mt	535553 1)	1,90	0,94	248,6	10,64	4,25	1		8001132053997
SPTS-RTB 0,61 mt	535554 1)	1,20	1,28	248,6	10,64	4,25	1		8001132054000
SPTS-RBB 1,28 mt	535555 1)	1,28	2,60	248,6	10,64	4,25	1		8001132054413
SPTS-BB 2,35 mt	535556 1)	3,72	2,35	193,4	8,35	-	1		8001132054420

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Hex head screw **SKS A2**



Nut **MU A2**



Washer **U A2**

Item	Art.-No.	Thread M	Length l [mm]	Hexagon socket ○SW	Washer (external diameter x thickness) [mm]	Sales unit [pcs]	GTIN (EAN code)
SKS M 10 x 30 mm A2	557086	M 10	30	17	-	100	8001132570869
SKS M 16 x 35 mm A2	531377	M 16	35	24	-	25	8001132043141
MU M 10 A2	530543	M 10	-	17	-	100	4048962000962
MU M 16 A2	557321	M 16	-	24	-	50	8001132573211
U M 10 A2	535533	-	-	-	20 x 2,0	100	8001132053669
U M 16 A2	071516	-	-	-	30 x 3,0	50	8001132715161

The hdg solution for free-fields system with 2 modules in portrait disposition on concrete bases



Double system DFS



Double system DFS

VERSIONS

- S235JR steel according to EN 10025-2:2004, hdg ($\geq 80 \mu\text{m}$) according to EN ISO 1461:2009
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

VANTAGES

- Universal: the double foot system allows to realize photovoltaic installation on concrete bases with 2 x 10 panels with portrait disposition and 3 defined slope (20°, 25° and 30°).
- Easy and fast: pre-drilled piles, profiles and brackets to make easier and faster all the installation steps.
- Maximum allowable spacing 2800 mm, depending on snow and wind loads calculated according current National Regulations.

APPLICATIONS

Suitable for:

Solar-Field double foot system with:

- SPS-HP profile
- SPS-PM clamps

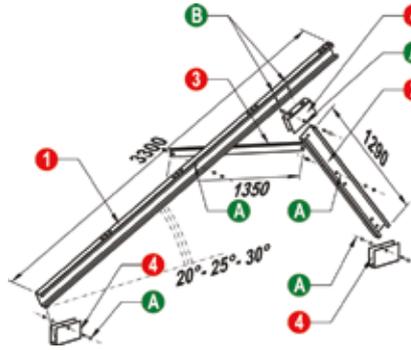
Allowable configurations:

- 2 modules - portrait disposition

FUNCTIONING

- Define DFS structure spacing depending on snow and wind load for the effective installation area, according National Regulations.
- Fix two base plates DFS-CONN on concrete. The correct position should be checked according to the panel inclination.
- Fasten the frontal base plate DFS-CONN to the inclined profile DFS-IB with one M 16 bolt.
- Fasten the rear bottom base plate DFS-CONN to the back pole DF-BP with one M 16 bolt.
- Fasten the third DFS-CONN to the inclined DF-BP with 2 M 12 bolts and to the back pole DF-BP with one M 16 bolt.
- Brace the main structures with the side bracing DFS-BB with 1 + 1 M 12 bolts.
- ⚠ Minimum thread length of M 12 and M 16 screw is 35 mm, M 10 bolt is 30.

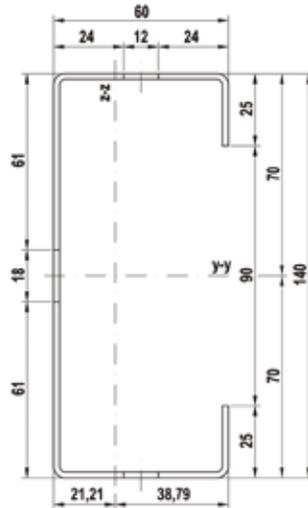
TECHNICAL DATA



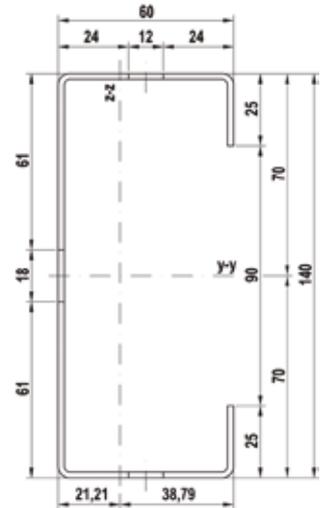
Legend:

- 1. Inclined profile **DFS-IB**
- 2. Back profile **DFS-BP**
- 3. Side bracing **DFS-SB**
- 4. Connection bracket **DFS-CONN**

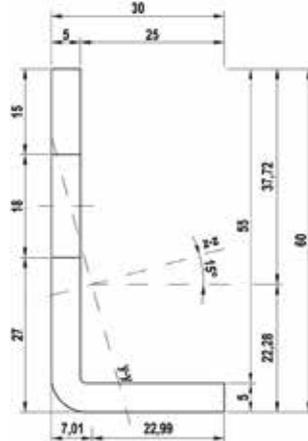
- A. SKS M 16 + U M 16 + MU M 16
- B. SKS M 12 + U M 12 + MU M 12



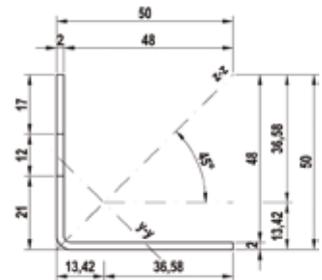
Back profile **DFS-BP**



Inclined profile **DFS-IB**



Side bracing **DFS-SB**

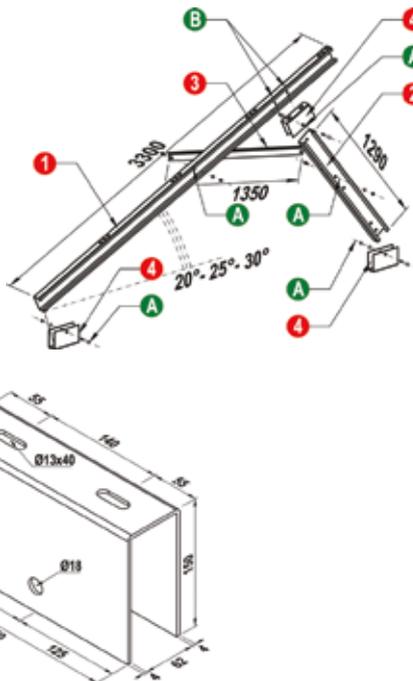


Back bracing **DFS-BB**

Item	Art.-No.	Weight	Profile length	Profile cross section	Moment of inertia y-axis	Section modulus y-axis	Sales unit	GTIN (EAN code)
		W [kg/m]	l [m]	S [mm ²]	I _y [cm ⁴]	W _y [cm ³]		
DFS-BP 1,30 mt	534416 ¹⁾	12,0	1,29	597,1	182,65	26,09	1	8001132050521
DFS-IB 3,30 mt	534414 ¹⁾	12,0	3,30	597,1	182,65	26,09	1	8001132050491
DFS-SB 1,35 mt	534415 ¹⁾	4,0	1,20	417,5	16,39	-	1	8800113205055
DFS-BB 3,04 mt	534436 ¹⁾	6,8	3,04	193,4	1,88	-	1	8001132050743

¹⁾ Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

TECHNICAL DATA



Legend:

1. Inclined profile **DFS-IB**
2. Back profile **DFS-BP**
3. Side bracing **DFS-SB**
4. Connection bracket **DFS-CONN**

- A. SKS M 16 + U M 16 + MU M 16
B. SKS M 12 + U M 12 + MU M 12

Connection bracing **DFS-CONN**

Item	Art.-No.	Weight W [kg/m]	Profile length l [m]	Profile cross section S [mm ²]	Moment of inertia y-axis I _y [cm ⁴]	Section modulus y-axis W _y [cm ³]	Sales unit [pcs]	GTIN (EAN code)
DFS-CONN	534413 1)	2,8	-	-	-	-	1	8001132050484

1) Available on demand for project plan ≥ 200 kWp. Delivery time must be checked with fischer salesman.

ACCESSORIES



Hex head screw **SKS A2**



Nut **MU A2**



Washer **U A2**

Item	Art.-No.	Thread M	Length l [mm]	Hexagon socket ○SW	Washer (external diameter x thickness) [mm]	Sales unit [pcs]	GTIN (EAN code)
SKS M 12 x 25 mm A2	534435	M 12	25	19	-	100	8001132050675
SKS M 16 x 35 mm A2	531377	M 16	35	24	-	25	8001132043141
SKS M 16 x 90 mm A2	534433	M 16	90	24	-	25	8001132050590
MU M 12 A2	514270	M 12	-	19	-	100	8001132142707
MU M 16 A2	557321	M 16	-	24	-	50	8001132573211
U M 12 A2	557209	-	-	-	24 x 2,5	100	8001132572092
U M 16 A2	071516	-	-	-	30 x 3,0	50	8001132715161



6 Clamps

- Universal pre-assembled clamp PM U..... 108
- Universal pre-assembled middle clamp PM CU..... 110
- Pre-assembled clamp PM..... 112
- Not assembled clamp M..... 115
- Not assembled glass clamp M G..... 118
- Not assembled clamp SW-M..... 120
- Pre-assembled clamp SPS-PM..... 122



The universal adjustable clamp for all photovoltaic modules with thickness in range 30÷52 mm



Detail: use as middle clamp



Detail: use as final clamp

VERSIONS

- clamp in aluminium alloy EN AB 46100 according to EN 755-2:2013
- hexagon socket cylindrical head screw TCEI in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- Full range: the universal pre-assembled clamp PM U can fasten all PV modules with thickness in range 30÷52 mm.
- All-round: the universal pre-assembled clamp PM U can be used both as a middle and final clamp.
- Fast: through the smart channel nut the universal pre-assembled clamp PM U can be hooked and quickly blocked in any point of the profile.
- Easy: through its spring the universal pre-assembled clamp PM U stays up during the fastening operation.
- Complete: the universal pre-assembled clamp PM U does not need any further accessory (e.g. screws, washers, nuts).

APPLICATIONS

Suitable for:

- Pitched roof System
- Flat surface System
- Industrial roof System
- Corrugated roof System
- Special application System
- Powerskin System

To fasten PV modules on the profiles:

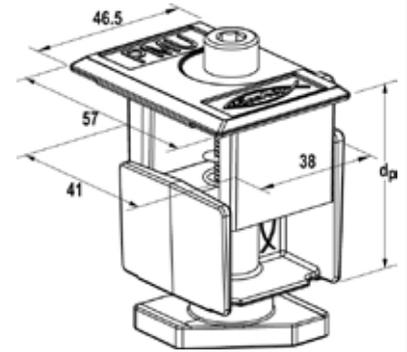
- Solar-light
- Solar-fish
- Solar-mid
- Solar-flat
- Solar 40/30

Anti-theft bronze ball can be used

FUNCTIONING

- Put the smart channel nut of the universal pre-assembled clamp PM U into the profile upper channel.
- Rotate the universal pre-assembled clamp PM U clockwise to use it as final clamp, counterclockwise to use it as middle clamp.
- Fasten the PV module tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze ball DAE into the screw hexagon socket.

TECHNICAL DATA



Universal pre-assembled clamp **PM U**

Universal pre-assembled clamp **PM U BL**

Item	Art.-No.	Weight W [g]	PV Module thickness d_p [mm]	Thread M	Screw length l [mm]	Installation torque T_{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
PM U	519784	120	30 ÷ 52	M 8	40	10	10	8001132028766
PM U BL	534352	120	30 ÷ 52	M 8	40	10	10	8001132049181

ACCESSORIES



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter \emptyset [mm]	Sales unit [pcs]	GTIN (EAN code)
DAE	071587	6	100	8001132715871

The universal adjustable middle clamp for all photovoltaic modules with thickness in range 30÷52 mm



Detail: installation on P40/30 profile



Detail: installation on Solar-fish profile

VERSIONS

- clamp in aluminium alloy AW 6060 T66 according to EN 755-2:2013
- hexagon socket cylindrical head screw TCEI in stainless steel A2-70 according to EN ISO 3506-1/2:2009
- channel nut FCN AL in aluminium alloy AW 6060 T66 according to EN 755-2:2013 and nylon PA6 grey

ADVANTAGES

- Full range: the universal pre-assembled middle clamp PM CU can fasten all PV modules with thickness in range 30÷52 mm.
- Fast: through the channel nut FCN AL the universal pre-assembled middle clamp PM CU can be hooked and quick blocked in any point of the profile.
- Easy: through its spring the universal pre-assembled middle clamp PM CU stays up during the fastening operation and through its plastic element it does not slide on the profile.
- Complete: the universal pre-assembled middle clamp PM CU does not need any further accessory (e.g. screws, washers, nuts)

APPLICATIONS

Suitable for:

- Pitched roof System
- Flat surface System
- Industrial roof System
- Corrugated roof System
- Special application System
- Powerskin System

To fasten PV modules on the profiles:

- Solar-light
- Solar-fish
- Solar-mid
- Solar-flat
- Solar 40/30

Anti-theft bronze ball can be used

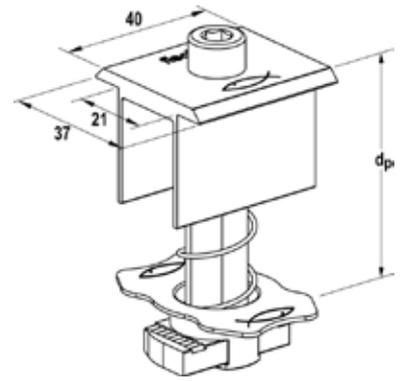
FUNCTIONING

- Put the channel nut of the universal pre-assembled middle clamp PM CU into the profile upper channel.
- Rotate the universal pre-assembled middle clamp PM CU clockwise for 90°.
- Fasten the PV module tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze DAE ball into the screw hexagon socket.

TECHNICAL DATA



Universal pre-assembled middle clamp **PM CU**



Item	Art.-No.	Weight W [g]	PV Module thickness d_p [mm]	Thread M	Screw length l [mm]	Installation torque T_{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
PM CU	519105	115	30 ÷ 50	M 8	35	10	10	8001132028254

ACCESSORIES



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter \emptyset [mm]	Sales unit [pcs]	GTIN (EAN code)
DAE	071587	6	100	8001132715871

The pre-assembled middle and final clamps for photovoltaic modules with aluminium frame



PV modules with aluminium frame



Detail: fastening of PV module

VERSIONS

- clamps PM C and PM F in aluminium alloy AW 6060 T66 according to EN 755-2:2013
- hexagon socket cylindrical head screw TCEI in stainless steel A2-70 according to EN ISO 3506-1/2:2009
- channel nut FCN AL in aluminium alloy AW 6060 T66 according to EN 755-2:2013 and nylon PA6 grey

APPROVALS



ADVANTAGES

- Full range: the pre-assembled clamps PM C and PM F can fasten all PV modules with thickness in range 26,5÷50 mm.
- Fast: through the channel nut FCN AL the pre-assembled clamps PM C and PM F can be hooked and quick blocked in any point of the profile.
- Easy: through their spring the pre-assembled clamps PM C and PM F stay up during the fastening operation and through their plastic element it do not slide on the profile.
- Complete: the pre-assembled clamps PM C and PM F do not need any further accessory (e.g. screws, washers, nuts)

APPLICATIONS

Suitable for:

- Pitched roof system
- Flat surface system
- Industrial roof system
- Corrugated roof system
- Special application system
- Powerskin system

To fasten PV modules on the profiles:

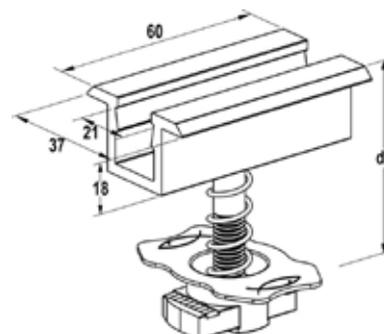
- Solar-fish
- Solar-mid
- Solar-flat
- Solar 40/30

Anti-theft bronze ball can be used

FUNCTIONING

- Put the channel nut of the pre-assembled clamps PM C and PM F into the profile upper channel.
- Rotate the universal pre-assembled clamps PM C and PM F clockwise for 90°.
- Fasten the PV module tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze DAE ball into the screw hexagon socket.

TECHNICAL DATA



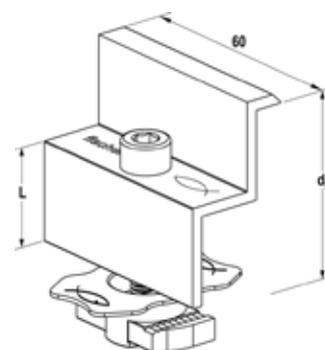
Pre-assembled middle clamp **PM C**

Pre-assembled middle black clamp **PM C BL**

Item	Art.-No.	Weight	PV module thickness	Thread	Screw length	Installation torque	Hexagon socket	Sales unit	GTIN (EAN code)
		W [g]	d _p [mm]	M	l [mm]	T _{inst} [Nm]	○ SW	[pcs]	
PM C 30-34	511093 ¹⁾	75	30 ÷ 34	M 8	35	10	6	10	8001132021200
PM C 30-34 BL	523669 ¹⁾	75	30 ÷ 34	M 8	35	10	6	10	8001132032640
PM C 33-39	571214 ¹⁾	75	33 ÷ 39	M 8	40	10	6	10	8001132712146
PM C 33-39 BL	520112 ¹⁾	75	33 ÷ 39	M 8	40	10	6	10	8001132029022
PM C 38-44	571215 ¹⁾	75	38 ÷ 44	M 8	45	10	6	10	8001132712153
PM C 38-44 BL	513855 ¹⁾	75	38 ÷ 44	M 8	45	10	6	10	5012184004304
PM C 43-49	571216 ¹⁾	75	43 ÷ 49	M 8	50	10	6	10	8001132712160
PM C 43-49 BL	515724 ¹⁾	75	43 ÷ 49	M 8	50	10	6	10	4048962133646
PM C 48-54	571217 ¹⁾	75	48 ÷ 54	M 8	55	10	6	10	8001132712177
PM C 48-54 BL	515725 ¹⁾	75	48 ÷ 54	M 8	55	10	6	10	4048962133653

¹⁾ Do not use with profile Solar-light

TECHNICAL DATA



Pre-assembled final clamp **PM F**

Pre-assembled final clamp black **PM F BL**

Item	Art.-No.	Weight	PV module thickness	Thread	Screw length	Installation torque	Hexagon socket	Sales unit	GTIN (EAN code)
		W [g]	d _p [mm]	M	l [mm]	T _{inst} [Nm]	○ SW	[pcs]	
PM F 26,5	533173 ¹⁾	75	26,5	M 8	30	10	6	10	8001132035184
PM F 31	511092 ¹⁾	75	31	M 8	35	10	6	10	8001132021194
PM F 33	534121 ¹⁾	75	33	M 8	30	10	6	10	8001132048702
PM F 33 BL	534120 ¹⁾	75	33	M 8	30	10	6	10	8001132048696
PM F 34	571218 ¹⁾	75	34	M 8	30	10	6	10	8001132712184
PM F 35	571219 ¹⁾	75	35	M 8	35	10	6	10	8001132712191
PM F 35 BL	520113 ¹⁾	75	35	M 8	35	10	6	10	8001132029039
PM F 36	571220 ¹⁾	75	36	M 8	36	10	6	10	8001132712207
PM F 38	571221 ¹⁾	75	38	M 8	35	10	6	10	8001132712214
PM F 38 BL	519109 ¹⁾	75	38	M 8	35	10	6	10	4048962159165
PM F 40	571222 ¹⁾	75	40	M 8	40	10	6	10	8001132712221
PM F 40 BL	513854 ¹⁾	75	40	M 8	40	10	6	10	5012184004298
PM F 42	571223 ¹⁾	75	42	M 8	40	10	6	10	8001132712238
PM F 45	071725 ¹⁾	75	45	M 8	45	10	6	10	8001132717257
PM F 46	071224 ¹⁾	75	46	M 8	45	10	6	10	8001132712245
PM F 46 BL	515722 ¹⁾	75	46	M 8	45	10	6	10	4048962133622
PM F 50	071225 ¹⁾	75	50	M 8	50	10	6	10	8001132712252
PM F 50 BL	515723 ¹⁾	75	50	M 8	50	10	6	10	4048962133639

¹⁾ Do not use with profile Solar-light

TECHNICAL DATA



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter	Sales unit	GTIN (EAN code)
		∅ [mm]	[pcs]	
DAE	071587	6	100	8001132715871

The not assembled aluminium clamps



Flat surface PV installation



Industrial roof PV installation

VERSIONS

- Clamps M C and M F in aluminium alloy AW6060 T66 according to UNI EN 755-2:2013

APPROVALS



ADVANTAGES

- Full range: the not assembled clamps M C and M F can fasten all PV modules with thickness in range 31+50 mm.

APPLICATIONS

Suitable for:

- Pitched roof system
- Flat surface system
- Industrial roof system
- Corrugated roof system
- Special application system
- Powerskin system

To fasten PV modules on the profiles:

- Solar-light
- Solar-fish
- Solar-mid
- Solar-flat
- Solar 40/30

Anti-theft bronze ball can be used

FUNCTIONING

- Use the PV module thickness to choose the right hexagon socket cylindrical head screw TCEI.
- Assembly clamps M C and M F with the channel nut FCN AL using the hexagon socket cylindrical head screw TCEI.
- Put the channel nut of the assembled clamps into the profile upper channel and rotate it clockwise for 90°.
- Fasten the PV module tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze DAE ball into the screw hexagon socket.

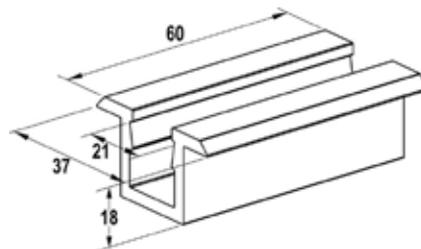
TECHNICAL DATA



Not assembled middle clamp **M C**



Not assembled middle black clamp **M C BL**



Item	Art.-No.	Peso W [gr]	PV module thickness d _p [mm]	Thread M	Screw length l [mm]	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
M C 28-56	571134	36	28 ÷ 34	M 8	35	10	10	8001132711347
			33 ÷ 39		40			
			38 ÷ 44		45			
			43 ÷ 49		50			
			50 ÷ 56		55			
M C 28-56 BL	071775	36	28 ÷ 34	M 8 x	35	10	10	8001132712146
			33 ÷ 39		40			
			38 ÷ 44		45			
			43 ÷ 49		50			
			50 ÷ 56		55			

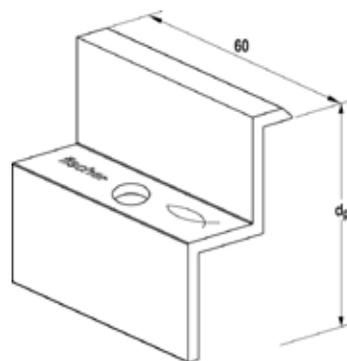
TECHNICAL DATA



Not assembled final clamp **M F**



Not assembled final black clamp **M F BL**



Item	Art.-No.	Weight W [gr]	PV module thickness d _p [mm]	Thread M	Screw length l [mm]	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
M F 34	571122	38	34	M 8	30	10	10	8001132711224
M F 35	071123	38	35	M 8	35	10	10	8001132711231
M F 36	571124	38	36	M 8	36	10	10	8001132711248
M F 38	571125	38	38	M 8	35	10	10	8001132711255
M F 40	571126	38	40	M 8	40	10	10	8001132711262
M F 42	071127	38	42	M 8	40	10	10	8001132711279
M F 44	071128	38	44	M 8	40	10	10	8001132711286
M F 45	071129	38	45	M 8	45	10	10	8001132711293
M F 46	571130	38	46	M 8	45	10	10	8001132711309
M F 50	571132	38	50	M 8	50	10	10	8001132711323
M F 35 BL	071746	38	35	M 8	35	10	10	8001132717462
M F 46 BL	518186	38	46	M 8	45	10	10	8001132027097

ACCESSORIES



Hexagon socket cylindrical head screw **TCEI A2**

Channel nut **FCN AL**

Item	Art.-No.	Thread	Screw length	Hexagon socket	Sales unit	GTIN (EAN code)
		M	l [mm]	○HW	[pcs]	
TCEI M 8 x 20 mm A2	071984	M 8	20	6	50	8001132719848
TCEI M 8 x 30 mm A2	571138	M 8	30	6	50	8001132711385
TCEI M 8 x 35 mm A2	071277	M 8	35	6	50	8001132712771
TCEI M 8 x 40 mm A2	571139	M 8	40	6	50	8001132711392
TCEI M 8 x 45 mm A2	071278	M 8	45	6	50	8001132712788
TCEI M 8 x 50 mm A2	571140	M 8	50	6	50	8001132711408
TCEI M 8 x 55 mm A2	071286	M 8	55	6	50	8001132712863
TCEI M 8 x 65 mm A2	071985	M 8	65	6	50	8001132719855
TCEI M 8 x 70 mm A2	071986	M 8	70	6	50	8001132719862
FCN AL M 8	571165	M 8	-	-	50	8001132711651

ACCESSORIES



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter	Sales unit	GTIN (EAN code)
		∅ [mm]	[pcs]	
DAE	071587	6	100	8001132715871

The not assembled middle and final clamps for glass and frameless panels



Detail: middle clamp MC G



Detail: final clamp MF G

VERSIONS

- clamps M CG e M FG in aluminium alloy AW 6060 T66 according to EN 755-2:2013

ADVANTAGES

- Full range: the not assembled glass clamps M G can fasten all glass panels and PV frameless modules with thickness in range 5,5 ÷ 8,5 mm.

APPLICATIONS

Suitable for:

- Pitched roof system
- Flat surface system
- Industrial roof system
- Corrugated roof system
- Special application system
- PowerSkin system

To fasten PV modules on the profiles:

- Solar-light
- Solar-fish
- Solar-mid
- Solar-flat
- Solar 40/30

Anti-theft bronze ball DAE can be used

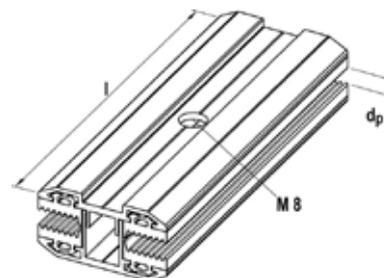
FUNCTIONING

- Choose the middle clamp MC G and the final clamp MF G depending on the brand of the manufacturer of PV modules.
- Assembly the clamp MC G and MF G with the channel nut FCN AL using the hexagon socket cylindrical head screw TCEI.
- Put the channel nut of the assembled clamps into the profile upper channel and rotate it clockwise for 90°.
- Fasten the PV module tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze DAE ball into the screw hexagon socket.

TECHNICAL DATA



Not assembled middle clamp for glass and frameless panels **MC G**

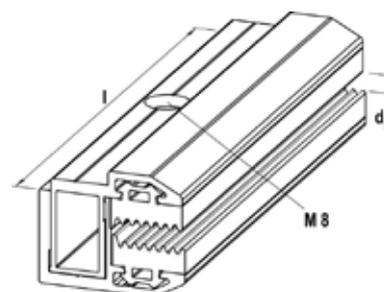


Item	Art.-No.	Weight	PV modules thickness	Clamp length	To use with screw	Installation torque	Sales unit	GTIN (EAN code)
		W [gr]	d_p [mm]	l [mm]				
MC G 80 6,8-8,0	536707	50	6,8 ÷ 8,0	80	TCEI M 8 x 35 mm A2	10	20	8001132056240
MC G 100 6,8-8,0	536708	50	6,8 ÷ 8,0	100	TCEI M 8 x 35 mm A2	10	20	8001132056257
MC G 120 6,8-8,0	536709	50	6,8 ÷ 8,0	120	TCEI M 8 x 35 mm A2	10	20	8001132056264
MC G 200 6,8-8,0	536710	50	6,8 ÷ 8,0	200	TCEI M 8 x 35 mm A2	10	20	8001132056301
MC G 80 5,0-6,2	536711	50	5,0 ÷ 6,2	80	TCEI M 8 x 35 mm A2	10	20	8001132056349
MC G 100 5,0-6,2	536712	50	5,0 ÷ 6,2	100	TCEI M 8 x 35 mm A2	10	20	8001132056356
MC G 120 5,0-6,2	536713	50	5,0 ÷ 6,2	120	TCEI M 8 x 35 mm A2	10	20	8001132056363
MC G 200 SHARP	536714	50	6,8 ÷ 8,0	200	TCEI M 8 x 35 mm A2	10	20	8001132056370

TECHNICAL DATA



Not assembled final clamp for glass and frameless panels **MF G**



Item	Art.-No.	Weight	PV modules thickness	Clamp length	To use with screw	Installation torque	Sales unit	GTIN (EAN code)
		W [gr]	d_p [mm]	l [mm]				
MF G 80 6,8-8,0	536715	50	6,8 ÷ 8,0	80	TCEI M 8 x 35 mm A2	10	20	8001132056387
MF G 100 6,8-8,0	536716	50	6,8 ÷ 8,0	100	TCEI M 8 x 35 mm A2	10	20	8001132056400
MF G 120 6,8-8,0	536717	50	6,8 ÷ 8,0	120	TCEI M 8 x 35 mm A2	10	20	8001132056417
MF G 200 6,8-8,0	536718	50	6,8 ÷ 8,0	200	TCEI M 8 x 35 mm A2	10	20	8001132056424
MF G 80 5,0-6,2	536719	50	5,0 ÷ 6,2	80	TCEI M 8 x 35 mm A2	10	20	8001132056431
MF G 100 5,0-6,2	536720	50	5,0 ÷ 6,2	100	TCEI M 8 x 35 mm A2	10	20	8001132056448
MF G 120 5,0-6,2	536721	50	5,0 ÷ 6,2	120	TCEI M 8 x 35 mm A2	10	20	8001132056479
MF G 200 SHARP	536722	50	6,8 ÷ 8,0	200	TCEI M 8 x 35 mm A2	10	20	8001132056486

ACCESSORIES



Hexagon socket cylindrical head screw **TCEI A2**



Channel nut **FCN AL**



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter	Thread	Screw length	Hexagon socket	Sales unit	GTIN (EAN code)
		\varnothing [mm]	M	l [mm]	○ SW		
TCEI M 8 x 35 mm A2	071277	-	M 8	35	6	50	8001132712771
FCN AL M 8	571165	-	M 8	-	-	50	8001132711651
DAE	071587	8	-	-	-	100	8001132715871

The not assembled aluminium clamp for the no profiles and drilling system Solar-Wind



Installation with Solar-Wind system SW-S



Installation with Solar-Wind system SW-EW

VERSIONS

- clamps SW -M C and SW- M F in aluminium alloy AW 6060 T66 according to EN 755-2:2013

ADVANTAGES

- Full range: the not assembled clamps SW-MC and SW-M F can fasten all PV modules with thickness in range 35 ÷ 50 mm.

APPLICATIONS

Suitable for:

Solar-Wind System

To fasten PV modules on bracket:

- Front brackets SW BF 10° and SW-S BF 15°
- Middle brackets SW-S BM 10° and SW-S BM 15°
- End brackets SW-S BE 10° and SW-S BE 15°
- Low middle bracket SW-EW BML 10°
- High middle bracket SW-EW BMH 10°

Anti-theft bronze ball DAE can be used

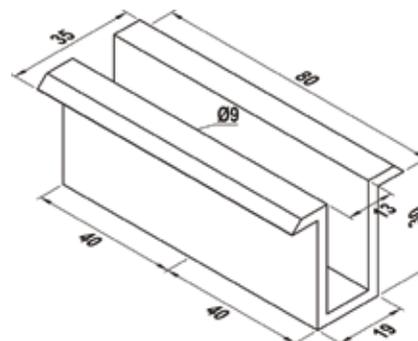
FUNCTIONING

- Use the PV modules thickness to choose the right clamp.
- Assembly the SW-MC and SW-M F clamps using the hexagon socket cylindrical head screw SW M 8 x..
- Fasten the PV module tightening the hexagon socket cylindrical head screw SW M 8 x.., applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze DAE ball into the screw hexagon socket.

TECHNICAL DATA



Not assembled middle clamp SW-MC

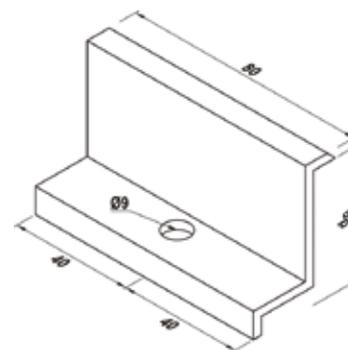


Item	Art. n°	Weight W [gr]	PV modules thickness d _p [mm]	To use with screw	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
SW-MC	524190	36	31 ÷ 50	SW - M 8 x 40 / 45 mm A2	10	10	8001132036181

TECHNICAL DATA



Not assembled final clamp **SW-M F**



Item	Art. n°	Weight W [gr]	PV modules thickness d _p [mm]	To use with screw	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
SW-M F 31	534560	38	31	SW - M 8 x 25 mm A2	10	20	8001132051597
SW-M F 33	534479	38	33	SW - M 8 x 25 mm A2	10	20	8001132051252
SW-M F 35	524191	38	35	SW - M 8 x 25 mm A2	10	20	8001132036198
SW-M F 36	524192	38	36	SW - M 8 x 25 mm A2	10	20	8001132036228
SW-M F 38	524193	38	38	SW - M 8 x 25 mm A2	10	20	8001132036235
SW-M F 40	524194	38	40	SW - M 8 x 25 mm A2	10	20	8001132036242
SW-M F 42	524195	38	42	SW - M 8 x 25 mm A2	10	20	8001132036259
SW-M F 43	524196	38	43	SW - M 8 x 25 mm A2	10	20	8001132036266
SW-M F 45	524197	38	45	SW - M 8 x 25 mm A2	10	20	8001132036273
SW-M F 46	524198	38	46	SW - M 8 x 25 mm A2	10	20	8001132036280
SW-M F 50	524199	38	50	SW - M 8 x 25 mm A2	10	20	8001132036297

ACCESSORIES



Hexagon socket cylindrical head screw **SW M 8 x ..**

Item	Art.-No.	Art.-No.	Thread	Screw length	Hexagon socket	Sales unit	GTIN (EAN code)
		∅ [mm]	M	l [mm]	○ SW	[pcs]	
SW M 8 x 45 mm A2	536418	M 8	45	10	6	100	8001132055847
SW M 8 x 40 mm A2	524200	M 8	40	10	6	100	8001132036334
SW M 8 x 35 mm A2	536417	M 8	35	10	6	100	8001132055830
SW M 8 x 30 mm A2	536416	M 8	30	10	6	100	8001132055823
SW M 8 x 25 mm A2	524201	M 8	25	10	6	100	8001132036365

ACCESSORIES



Anti-theft bronze ball **DAE**

Item	Art.-No.	Art.-No.	Sales unit	GTIN (EAN code)
		∅ [mm]	[pcs]	
DAE	071587	6	100	8001132715871

The pre-assembled middle and final clamps for free-fields system SPS, SPTS and DFS



Free field



Detail: PV modules fastening

VERSIONS

- Clamps SPS-PMC and SPS-PMF in aluminium alloy AW6060 T66 according to UNI EN 755-2:2013
- Hexagon socket cylindrical head screw in stainless steel A2-70 according to EN ISO 3506-1:2009
- Channel nut in S235JR steel according to EN 10025-2:2004, coating protection according to ISO 4520:1981/EN ISO 2081:2008

ADVANTAGES

- Full range: the pre-assembled clamps SPS-PM can fasten all PV modules with thickness in range 31 ± 50 mm.
- Fast: through the smart channel nut the pre-assembled clamps SPS-PM can be hooked and quick blocked in any point of the profile.
- Easy: through their spring the pre-assembled clamps SF-PM stay up during the fastening operation.
- Complete: the pre-assembled clamps SPS-PM do not need any further accessory (e.g. screws, washers, nuts).

APPLICATIONS

Suitable for:

SPS System and **DFS System** with:

- Profile SPS-HP

SPTS System with:

- Profile SPTS-VP

Anti-theft bronze ball DAE can be used

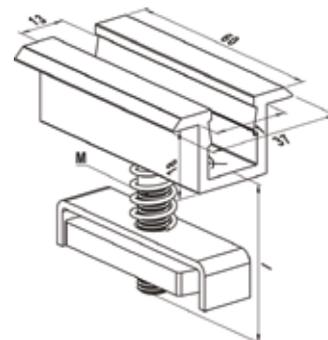
FUNCTIONING

- Put the channel nut of the pre-assembled clamps SPS-PM into the profile upper channel.
- Rotate the pre-assembled clamps SPS-PM clockwise by 90 degrees.
- Fasten the PV module tightening the hexagon socket cylindrical head screw, applying the right installation torque (10 Nm).
- (Optional) To protect the installation put the anti-theft bronze ball DAE into the screw hexagon socket.

TECHNICAL DATA



Pre-assembled middle clamp **SPS-PMC**



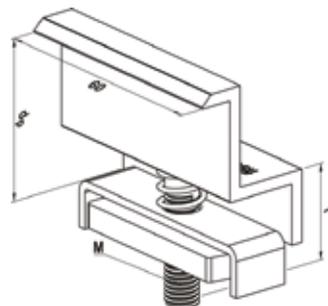
Item	Art.-No.	Weight	PV modules thickness	Thread	Screw length	Installation torque	Hexagon socket	Sales unit	GTIN (EAN code)
		W [gr]	dp [mm]	M	l [mm]	T _{inst} [Nm]	○ SW	[pcs]	
SPS-PMC 28-34	534358 ¹⁾	78	28 ÷ 34	M 8	35	10	6	18	8001132049495
SPS-PMC 33-44	534359 ¹⁾	78	33 ÷ 44	M 8	40	10	6	18	8001132049501
SPS-PMC 42-54	534360 ¹⁾	78	42 ÷ 54	M 8	50	10	6	18	8001132049518

¹⁾ Use only with profile SPS-HP and SPTS-VP. Available on demand only for big installation (≥ 200 kWp). Delivery time must be checked with fischer salesman.

TECHNICAL DATA



Pre-assembled final clamp **SPS-PMF**



Item	Art.-No.	Weight	PV modules thickness	Thread	Screw length	Installation torque	Hexagon socket	Sales unit	GTIN (EAN code)
		W [gr]	dp [mm]	M	l [mm]	T _{inst} [Nm]	○ SW	[pcs]	
SPS-PMF 31	534361 ¹⁾	78	31	M 8	40	10	6	8	8001132049594
SPS-PMF 33	534362 ¹⁾	78	33	M 8	40	10	6	8	8001132049617
SPS-PMF 34	534363 ¹⁾	78	34	M 8	40	10	6	8	8001132049648
SPS-PMF 35	534364 ¹⁾	78	35	M 8	40	10	6	8	8001132049662
SPS-PMF 36	534365 ¹⁾	78	36	M 8	40	10	6	8	8001132049686
SPS-PMF 38	534366 ¹⁾	78	38	M 8	40	10	6	8	8001132049693
SPS-PMF 40	534367 ¹⁾	78	40	M 8	40	10	6	8	8001132049785
SPS-PMF 42	534368 ¹⁾	78	42	M 8	40	10	6	8	8001132049822
SPS-PMF 44	534369 ¹⁾	78	44	M 8	40	10	6	8	8001132049839
SPS-PMF 45	534370 ¹⁾	78	45	M 8	50	10	6	8	8001132049969
SPS-PMF 46	534371 ¹⁾	78	46	M 8	50	10	6	8	8001132050040
SPS-PMF 50	534372 ¹⁾	78	50	M 8	50	10	6	8	8001132050064

¹⁾ Use only with profile SPS-HP and SPTS-VP. Available on demand only for big installation (≥ 200 kWp). Delivery time must be checked with fischer salesman.

ACCESSORIES



Anti-theft bronze ball **DAE**

Item	Art.-No.	Diameter	Sales unit	GTIN (EAN code)
		∅ [mm]	[pcs]	
DAE	071587	6	100	8001132715871



7 Stud screws

- Stud screw STSR 126
- Stud screw STSI 128

The stud screw for photovoltaic installations on corrugated roof with concrete or wooden load-bearing structure support



Special application on pitched roof



Detail: stud screw STSR with bracket MW SA

VERSIONS

- stud and nuts in stainless steel A2-70 according to EN ISO 3506-1/2;2009

BUILDING MATERIALS

- Concrete beams and slabs
- Concrete hollow slabs
- Wooden beams

FUNCTIONING

- Select stud screws STSR length depending on load-bearing support structure thickness.
- Define stud screws STSR spacing depending on snow and wind load for effective installation area and roof degree.
- Select stud screws STSR position depending on load-bearing support structure and on layout PV installation.
- Drill the load-bearing support structure depending on stud screw STSR diameter.
- Fasten stud screws STSR to the load bearing support structure leading the EPDM washer in contact with the roof.
- Tighten the flanged hex nut MU F on the EPDM washer for water proofing.
- Secure the joint bracket SSP or MW adjusting the distance from the roof through the other 2 flanged hex nuts.

ADVANTAGES

- Complete: the stud screw STSR is provided pre-assembled with EPDM washer, 1 flanged hex nut for fastening and other 2 flanged hex nuts for the connection with joint brackets MW or SSP.
- Fast: quick installation, the roof covering has not to be removed.
- Waterproof: the roof is kepted waterproof through EPDM washer.

APPLICATIONS

Suitable for:

Corrugated roof System with:

- Profile Solar-light
- Profile Solar-fish

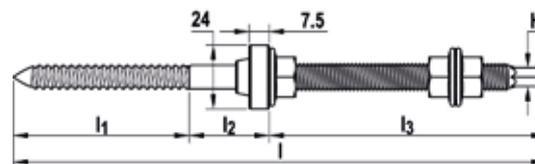
Stud screw STSR fastening:

- With injection system FIS V in concrete beams and slabs
- With injection system FIS V and injection anchor sleeve FIS HK on hollow concrete slab
- Directly on wooden beams after pre-drilling

TECHNICAL DATA



Stud screw with EPDM washer STSR



Item	Art.-No.	Weight	Total length	Wood thread length	Shank length	Metric thread length	Thread	Nominal wood thread	Hexagon nut	Sales unit	GTIN (EAN code)
		W [kg]	l [mm]	l ₁ [mm]	l ₂ [mm]	l ₃ [mm]	M [mm]	∅ [mm]	H		
STSR M10 x 200 mm	071202	0,13	200	66	30	90	M 10	9	7	25	8001132712023
STSR M 10 x 250 mm	071203	0,16	250	66	80	90	M 10	9	7	25	8001132712030
STSR M 12 x 300 mm	071204	0,28	300	100	35	150	M 12	11	9	25	8001132712047
STSR M 12 x 350 mm	071828	0,32	350	100	35	200	M 12	11	9	50	8001132718285

ACCESSORIES



Washer EPDM

Item	Art.-No.	Washer diameter	Washer thickness	Sales unit	GTIN (EAN code)
		G ₁ [mm]	G ₂ [mm]	[pcs]	
G EPDM M 10	071748	24	7,5	50	8001132717486

ACCESSORIES



Flanged hex nut **MU F**

Item	Art.-No.	Thread	Hexagon nut	Sales unit	GTIN (EAN code)
		M	○ SW	[pcs]	
MU F M 10 A2	071952	M 10	17	100	8001132719527
MU F M 12 A2	071749	M 12	19	100	8001132717493

ACCESSORIES



Vinylester injection mortar **FIS V**

Item	Art.-No.	Content	Sales unit	GTIN (EAN code)
		[ml]	[pcs]	
FIS V 410 S	521431	1 cartridge 410 ml, 2 x static mixer FIS S	16	4048962172874

ACCESSORI



Injection anchor sleeve **FIS HK**



Injection anchor sleeve with net **FIS HN**



Injection push-through anchor sleeve **FIS HK**

Item	Art.-No.	Fits	Sales unit	GTIN (EAN code)
			[pcs]	
FIS H 16 x 85 K	041902	STSR M 10	50	8001132419021
FIS H 16 x 130 K	041905	STSR M 10	20	8001132419052
FIS H 20 x 85 K	041906	STSR M 12	20	8001132419069
FIS H 20 x 130 K	046703	STSR M 12	20	4001132467033
FIS H 20 x 200 K	046704	STSR M 12	20	4006209467046
FIS H 18 x 85 N	050472	STSR M 10	20	4006209504703
FIS H 20 x 85 N	050474	STSR M 12	20	4006209504727
FIS H 18 x 130/200 K	045707	STSR M 10, STSR M 12	10	4006209457078

The stud screw for photovoltaic installations on corrugated roof with steel load-bearing structure support



Special application on corrugated sheet roof



Detail: Stud screw STSI with bracket SSP

VERSIONS

- stud and nuts in stainless steel A2-70 according to EN ISO 3506-1/2;2009

BUILDING MATERIALS

- Steel beams and profiles with plate thickness in the range 2 ÷ 4 mm

ADVANTAGES

- Complete: the stud screw STSI is provided pre-assembled with EPDM washer, 1 nut for fastening and other 2 nuts for the connection with joint brackets MW or SSP.
- Fast: quick installation, the roof covering has not to be removed.
- Waterproof: the roof is kept waterproof through EPDM washer.

APPLICATIONS

Suitable for:

Corrugated roof System with:

- Profile Solar-light
- Profile Solar-fish

Stud screw STSR fastening:

- Directly on steel beams and profiles after pre-drilling

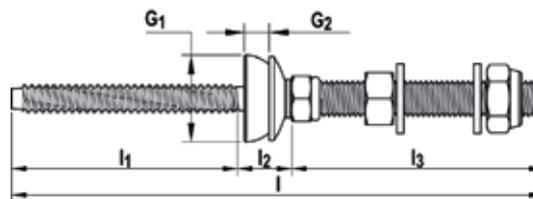
FUNCTIONING

- Define stud screws STSI spacing depending on snow and wind load for effective installation area and roof degree.
- Select stud screws STSI position depending on load-bearing support structure and on layout PV installation.
- Drill the load-bearing support structure depending on stud screw STSI diameter.
- Fasten stud screws STSI to the load bearing support structure leading the EPDM washer in contact with the roof.
- Tighten the nut MU on the EPDM washer for water proofing.
- Secure the joint bracket SSP or MW adjusting the distance from the roof through the other 2 nuts.

TECHNICAL DATA



Stud screw with EPDM washer STSI



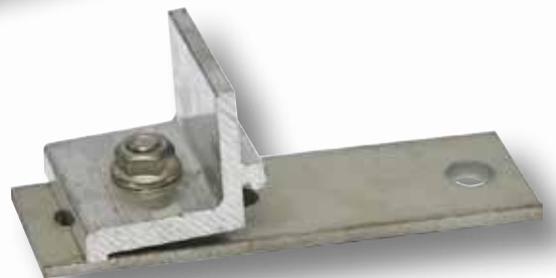
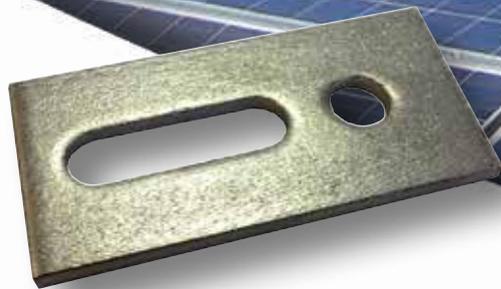
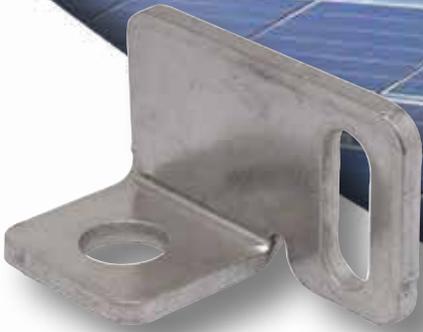
Item	Art.-No.	Weight W [kg]	Total length l [mm]	Steel thread length l ₁ [mm]	Shank length l ₂ [mm]	Metric thread length l ₃ [mm]	Thread M [mm]	Nominal steel thread ∅ [mm]	Sales unit [pcs]	GTIN (EAN code)
STSI M 10 x 181 mm	533376	0,18	181	116,5	8,5	56	M 10	8	10	8001132046456

ACCESSORIES



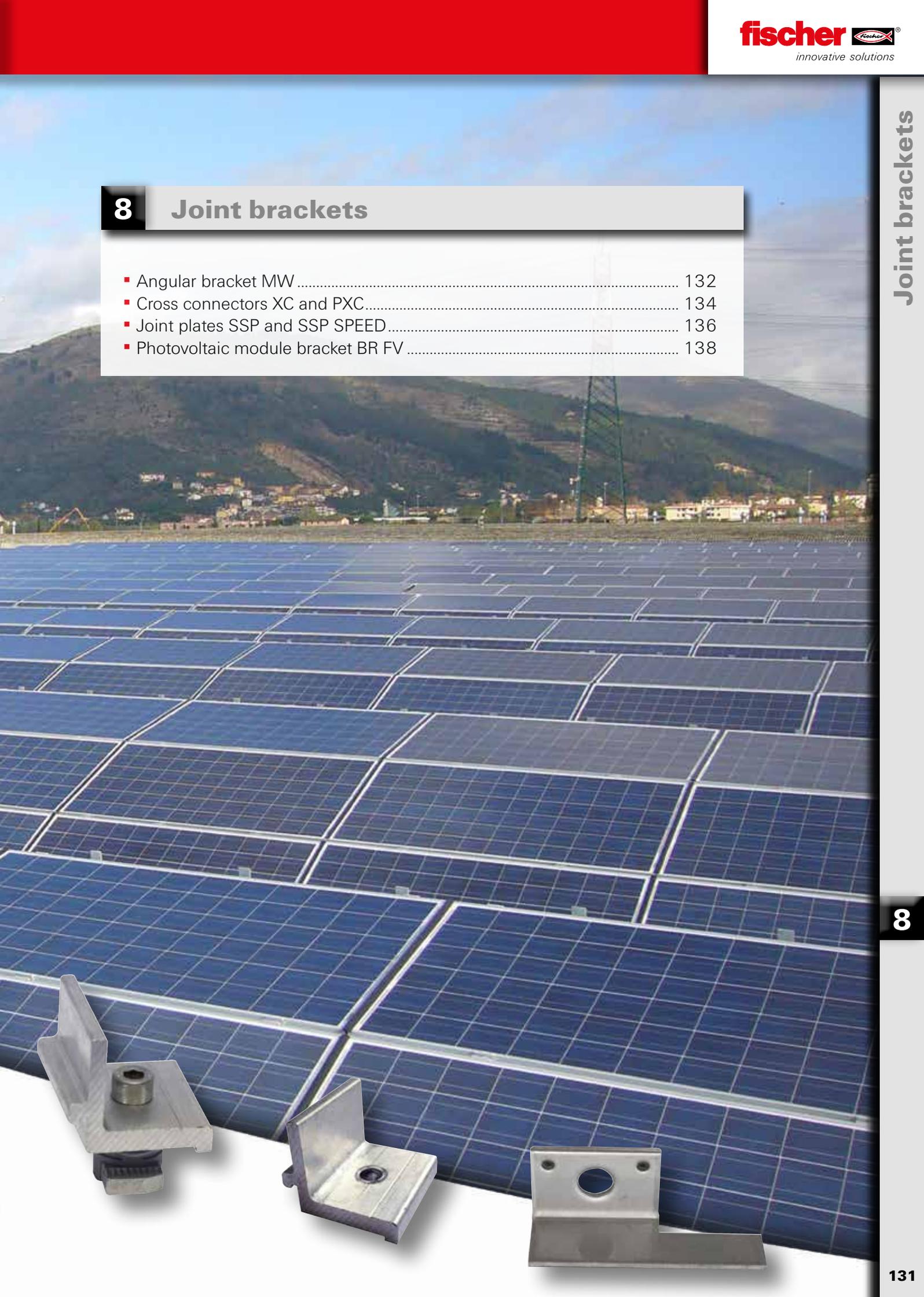
Flanged hex nut **MU F**

Item	Art.-No.	Thread M	Hexagon nut ∅ SW	Sales unit [pcs]	GTIN (EAN code)
MU F M 10 A2	071952	M 10	17	100	8001132719527



8 Joint brackets

- Angular bracket MW 132
- Cross connectors XC and PXC 134
- Joint plates SSP and SSP SPEED 136
- Photovoltaic module bracket BR FV 138



Angular brackets for connection between profile Solar and stud screw and for cross connection between profiles Solar



Pitched roof with waterproof layer



Detail: Joint bracket MW SU

VERSIONS

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

ADVANTAGES

- Fast and adjustable: quick installation through the lower hole and quick adjustment through lateral slotted hole.
- Safe fixing: lateral slotted hole has the anti-slip knurling.

APPLICATIONS

Suitable for:

- Corrugated roof System
- Special application System

For the connection with:

- Profile Solar-light
- Profile Solar-fish
- Profile Solar-mid

Direct fixing of joint bracket to base support in:

- Wood with Power-Fast wood screws
- Concrete with vinylester injection mortar FIS V and threaded rod FIS A
- Hollow concrete slab with vinylester injection mortar FIS V, threaded rod FIS A and injection anchor sleeve FIS HK.
- For cross connection between profiles.

FUNCTIONING

Stud screws STSR or STSI connection:

- Put the joint bracket MW between the stud screw STSR/STSI 2 nuts and tighten.
- Connect profile Solar to the joint bracket MW through the slotted hole using screw SKS M 8 and flanged hex nut MU F M 8.
- Use the stud screw STSR/STSI 2 nuts for adjusting joint bracket MW position.

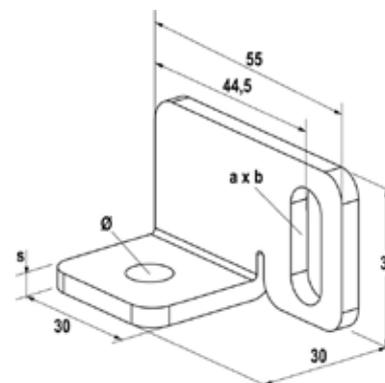
Cross connection:

- Connect the joint bracket MW to the lower profile Solar through channel nut FCN AL M 8 and screw SKS M 8.
- Fasten upper profile Solar to the joint bracket MW through the slotted hole using screws SKS M 8 and flanged hex nuts MU F M 8.

TECHNICAL DATA



Angular bracket MW SU A2

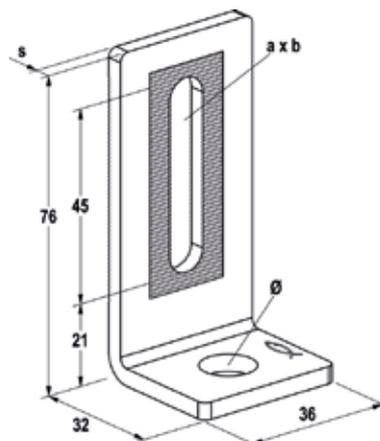


Item	Art.-No.	Weight W [kg]	Thickness s [mm]	Hole diameter Ø [mm]	Dimension a x b [mm]	Fits	Sales unit [pcs]	GTIN (EAN code)
MW SU A2	522676	0,065	4	12,5	9 x 23,5	STSR, STSI	10	8001132031810

TECHNICAL DATA



Angular bracket **MW SA A2**



Item	Art.-No.	Weight W [kg]	Thickness s [mm]	Hole diameter Ø [mm]	Dimension a x b [mm]	Fits	Sales unit [pcs]	GTIN (EAN code)
MW SA A2	518952	0,120	4	12,5	9 x 45	STSR, STSI	10	8001132027608

ACCESSORIES



Hex head screw **SKS A2**



Hammer head screw **RHS A2**



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Screw length l [mm]	hexagon nut Ø SW	Sales unit [pcs]	GTIN (EAN code)
SKS M 8 x 20 mm A2	505614	M 8	20	13	100	4006209651797
SKS M 8 x 50 mm A2	571208	M 8	50	13	100	8001132712085
SKS M 10 x 30 mm A2	557086	M 10	30	17	100	8001132570869
SKS M 10 x 50 mm A2	071181	M 10	50	17	100	8001132711811
SKS M 10 x 70 mm A2	071182	M 10	70	17	100	8001132711828
RHS M 8 x 20 mm A2	071207	M 8	20	13	50	8001132712078
MU F M 8 A2	571210	M 8	-	13	100	8001132712108
MU F M 10 A2	071952	M 10	-	17	100	8001132719527
MU F M 12 A2	071749	M 12	-	19	100	8001132717493

ACCESSORIES



Channel nut **FCN AL**

Item	Art.-No.	Weight W [g]	Thread M	Sales unit [pcs]	GTIN (EAN code)
FCN AL M8	571165	10	M 8	50	8001132711651

The connector with lateral fixing for hook - Solar profile connection or profiles Solar cross connection (90° degrees)



Profiles solar cross connection



Detail: cross connector

VERSIONS

- cross connector XC in aluminium alloy AW6060 T6 according to EN 755-2:2013
- hexagon socket cylindrical head screw TCEI in stainless steel A2-70 according to EN ISO 3506-1:2009
- channel nut FCN AL in aluminium alloy AW6060 T66 according to EN 755-2:2013 and nylon PA6 grey

ADVANTAGES

- Fast: quick Solar profile installation by tightening 1 screw.
- Complete: the pre-assembled cross connector PXC does not need any further accessory (e.g. screws, washers, nuts).
- Safe fixing: the cross connector XC has a large contact surface area that increases the connection load-bearing capacity.

APPLICATIONS

- Suitable for:**
- Special application System
- For the connection of:**
- Profile Solar-fish
 - Profile Solar-mid

FUNCTIONING

Hook - profile Solar connection:

- Connect the cross connector XC to the hook GT/GTR/GTT/GTP/GTPR/GC using hex head screw SKS M 8 and hexagonal nut MU M 8 included in the hook package.
- Approach the profile Solar to the cross connector XC hook.
- Lock the connection tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).

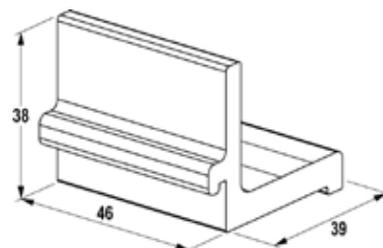
Crossed connection:

- Connect the cross connector XC to the lower Solar profile, upper channel, using the channel nut FCN AL M 8 and screw SKS M 8; rotate it clockwise 90°.
- Approach the upper Solar profile to the cross connector XC/PXC hook.
- Lock the connection tightening the hexagon socket cylindrical head screw TCEI, applying the right installation torque (10 Nm).

TECHNICAL DATA



Cross connector **XC AL**

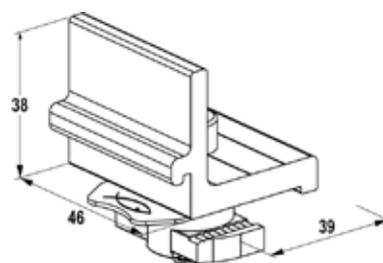


Item	Art.-No.	Weight W [g]	Thread M	Screw length l [mm]	Sales unit [pcs]	GTIN (EAN code)
XC AL	516998	40	M 8	20	10	8001132031834

TECHNICAL DATA



Pre-assembled cross connector **PXC**



Item	Art.-No.	Weight W [g]	Thread M	Screw length l [mm]	Installation torque T _{inst} [Nm]	Sales unit [pcs]	GTIN (EAN code)
PXC	522671	65	M 8	20	10	10	8001132031681

ACCESSORIES



Hexagon socket cylindrical head screw **TCEI A2**



Channel nut **FCN AL**

Item	Art.-No.	Weight W [g]	Thread M	Screw length l [mm]	Width across nut ○SW	Sales unit [pcs]	GTIN (EAN code)
TCEI M 8 x 20 mm A2	071984	-	M 8	20	6	50	8001132719848
FCN AL M 8	571165	10	M 8	-	-	50	8001132711651

Flat plate connection between double-threaded screws STSR or STSI and Solar profiles



Corrugated roof



Detail: flat bracket SSP

VERSIONS

- plates in stainless steel X5CrNi 18-10 (A2) according to EN 10088-2:2014
- joint brackets XC in aluminium alloy AW 6063 T6 according to EN 755-2:2013
- bolts and nuts in stainless steel A2-70 according to EN ISO 3506-1/2:2009

ADVANTAGES

- Adjustable: the slotted hole allows adjustment during installation.
- Complete: the joint plate SSP SPEED is pre-assembled and does not need any further accessory (e.g. screws, washers, nuts).
- Easy: the cross connector XC on the pre-assembled joint plate SSP SPEED helps profile pre-positioning.
- Fast: Solar profile is quickly installed by tightening only 1 screw.
- Safe fixing: the cross connector XC has a large contact surface area that increases the connection load-bearing capacity.

APPLICATIONS

- Suitable for:**
- Corrugated roof System
 - Special application System
- For the connection with:**
- Profile Solar-fish
 - Profile Solar-mid

FUNCTIONING

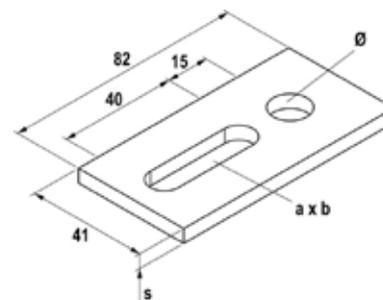
Stud screws STSR or STSI connection:

- Put the joint bracket SSP between the stud screw STSR/STSI 2 nuts and tighten them.
- Connect Solar profile to the joint bracket SSP through the slotted hole using screw SKS M 8 and flanged hex nut MU F M 8.
- Using the stud screw STSR/STSI 2 nuts for adjusting joint bracket SSP position.

TECHNICAL DATA



Joint plate **SSP A2**

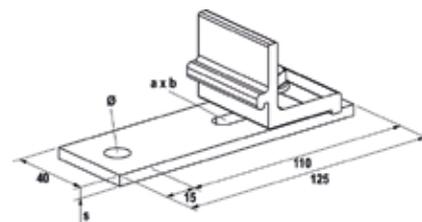


Item	Art.-No.	Weight W [g]	Thickness s [mm]	Hole diameter Ø [mm]	Dimension a x b [mm]	Fits	Sales unit [pcs]	GTIN (EAN code)
SSP 10 A2	071205	55	5	11	11 x 40	STSR M 10, STSI M 10	25	8001132712054
SSP 12 A2	071206	55	5	13	11 x 40	STSR M 12	25	8001132712061

TECHNICAL DATA



Pre-assembled joint plate **SSP SPEED A2**



Item	Art.-No.	Weight W [g]	Thickness s [mm]	Hole diameter ∅ [mm]	Dimension a x b [mm]	Fits	Sales unit [pcs]	GTIN (EAN code)
SSP 10 SPEED	522672	95	5	11	9 x 50	STSR M 10, STSI M 10	10	8001132031698
SSP 12 SPEED	522673	95	5	13	9 x 50	STSR M 12	10	8001132031735

ACCESSORIES



Hex head screw **SKS A2**



Hammer head screw **RHS A2**



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Screw length l [mm]	hexagon nut ∅ SW	Sales unit [pcs]	GTIN (EAN code)
SKS M 8 x 20 mm A2	505614	M 8	20	13	100	4006209651797
SKS M 8 x 50 mm A2	571208	M 8	50	13	100	8001132712085
RHS M 8 x 20 mm A2	071207	M 8	20	13	50	8001132712078
MU F M 8 A2	571210	M 8	-	13	100	8001132712108

ACCESSORIES



Channel nut **FCN AL**

Item	Art.-No.	Weight W [g]	Thread M	Sales unit [pcs]	GTIN (EAN code)
FCN AL M8	571165	10	M8	50	8001132711651

The photovoltaic module support bracket for the maximum safety in photovoltaic curtain façades



Powerskin substructure



Detail: PV module support on bracket BR FV

VERSIONS

- stainless steel X2CrNi19-11 (A2) according to EN10088-2:2014

ADVANTAGES

- Safe: the PV module bracket BR FV guarantees a safe support to the PV module during installation or service.

APPLICATIONS

Suitable for:

Powerskin System with:

- Profile Solar fish
- Vertical profile VP 50 AL
- Vertical profile VP 100 AL

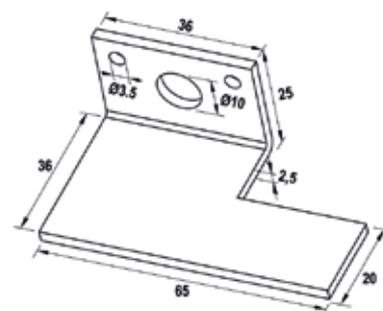
FUNCTIONING

- Place PV module on vertical profile VP 50/VP 100 or on profile Solar-fish.
- Place PV module bracket BR FV under the PV module creating a cantilever support.
- Fasten PV module bracket BR FV to the vertical profile VP 50/VP 100 using Rivet 3,2 x 14 or to the profile Solar-fish using hammer head screw RHS 8 x 20 and flanged hex nut MU F M 8.
- Put a piece of butylene tape CG INT between PV module bracket BR FV and the PV module to avoid the direct contact (above all for frameless PV modules).

TECHNICAL DATA



Photovoltaic module bracket **BR FV A2**



Item	Art.-No.	Fits profile	Sales unit	GTIN (EAN code)
BR FV A2	519169	VP 50 AL , VP 100 AL, Solar-fish	[pcs] 20	8001132028445

ACCESSORIES



Hammer head screw **RHS A2**



Flanged hex nut **MU F A2**

Item	Art.-No.	Thread M	Length l [mm]	Width across nut ○SW	Sales unit [pcs]	GTIN (EAN code)
RHS 8 x 20 A2	071207	M 8	20	-	50	8001132712078
MU F M8 A2	571210	M 8	-	13	100	8001132712108

ACCESSORIES



Rivet 3,2 x 14 A2

Item	Art.-No.	Diameter d [mm]	Length l [mm]	Sales unit [pcs]	GTIN (EAN code)
Rivetto 3,2 x 14 A2	518632	3,2	14	500	4048962105049

ACCESSORIES



Butylene tape **CG INT**

Item	Art.-No.	Width B [mm]	Length L [m]	Thickness s [mm]	Sales unit [pcs]	GTIN (EAN code)
CG INT	505615	80	10	1	1	8001132013410



9 Wall brackets

- Point fixing holder FPH..... 142
- Sliding point holder SPH..... 144

The point fixing holders for every hollow space for photo voltaic curtain façades



Substructure mullions and transoms



Detail: FPH fixing on concrete

VERSIONS

- aluminium alloy AW 6063 T66 according to EN 755-2:2013

BUILDING MATERIALS

- Concrete
- Solid brick masonry
- Perforated brick masonry
- Aerated concrete block (AAC)

VANTAGES

- Full-range: the fixing point holders FPH wide range, with different depths, allows the possible adjustment in vertical direction and the positioning of insulation panels with different thickness behind the PV curtain façade.
- Adjustable: the slotted holes guarantee the fixing point holder FPH horizontal adjustment.
- Handy: the fixing point holder FPH is very light and easy to handle on site.

APPLICATIONS

- Suitable for:**
Powerskin System with:
- Vertical profile VP 50
 - Vertical profile VP 100

FUNCTIONING

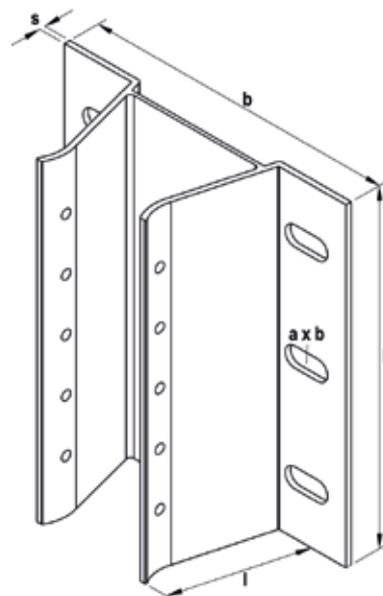
Fasten the fixing point holder FPH using the correct anchor (see fischer General Catalogue):

- Concrete: use stainless steel high performance steel anchors FAZ II A4.
- Solid brick masonry: use stainless steel threaded rods FIS A A4 and vinylester injection mortar FIS V.
- Perforated brick masonry: use stainless steel threaded rods FIS A A4, injection anchor sleeve FIS HK or injection anchor sleeve with net FIS HN and vinylester injection mortar FIS V.
- Aerated concrete blocks: use stainless steel threaded rods FIS A A4, centring sleeve PBZ and vinylester injection mortar FIS V in undercut application (with cone drill PBB).
- If the building material is different it is necessary to assess it experimentally through tests on site.

TECHNICAL DATA



Point fixing holder **FPH AL**



Item	Art.-No.	Weight	Height	Length	Width	Thickness	Slotted hole diameter	Fits profile	Sales unit	GTIN (EAN code)
		W [kg]	h [mm]	l [mm]	b [mm]	s [mm]	a x b [mm]		[pz]	
FPH 30 AL	018442	0,212	180	30	140	2,5	11 x 13	VP 50, VP 100	40	4006209184424
FPH 54 AL	018444	0,333	180	54	160	3,0	11 x 13	VP 50, VP 100	40	4006209184448
FPH 68 AL	048900	0,389	180	68	160	3,0	11 x 13	VP 50, VP 100	30	4006209489000
FPH 93 AL	048901	0,502	180	93	160	3,0	11 x 13	VP 50, VP 100	20	4006209489017
FPH 133 AL	030367	0,719	180	133	160	3,0	11 x 13	VP 50, VP 100	24	4006209303672

ACCESSORIES



Cold bridge stop **CBS**

Item	Art.-No.	External Ø	Hole diameter	Thickness	Sales unit	GTIN (EAN code)
		d [mm]	Ø [mm]	s [kN]	[pcs]	
CBS	092680	50	11,5	5	200	4006209926802

ACCESSORIES



Rivet 4,8 x 10 A2

Item	Art.-No.	Diameter	Length	Recommended shear load	Sales unit	GTIN (EAN code)
		d [mm]	l [mm]	V _{recc} [kN]	[pcs]	
Rivet 4,8 x 10 A2	511048	4,8	10	0,90	500	4048962105049

The sliding point holders for every hollow space for photo voltaic curtain façades



Substructure mullions and transoms



Detail: SPH fixing on concrete

VERSIONS

- aluminium alloy AW 6063 T66 according to EN 755-2:2013

BUILDING MATERIALS

- Concrete
- Solid brick masonry
- Perforated brick masonry
- Aerated concrete block (AAC)

ADVANTAGES

- Full-range: the sliding point holders SPH wide range, with different depths, allows the possible adjustment in vertical direction and the positioning of insulation panels with different thickness behind the PV curtain façade.
- Adjustable: the slotted holes guarantee the sliding point holder SPH horizontal adjustment.
- Handy: the sliding point holder SPH is very light and easy to handle on site.
- No thermal effect: the vertical slotted holes allow free thermal expansion of vertical profiles VP 50/VP 100.
- High-performance: the vertical profiles VP 50/VP 100 load-bearing capacity increases using sliding point holder SPH as an additional support in middle of span.

APPLICATIONS

- Suitable for:**
Powerskin System with:
- Vertical profile VP 50
 - Vertical profile VP 100

FUNCTIONING

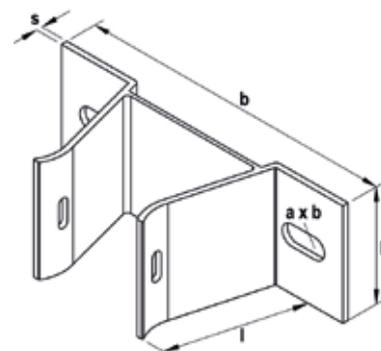
Fasten the sliding point holder SPH using the correct anchor (see fischer General Catalogue):

- Concrete: use stainless steel high performance steel anchors FAZ II A4.
- Solid brick masonry: use stainless steel threaded rods FIS A A4 and vinylester injection mortar FIS V.
- Perforated brick masonry: use stainless steel threaded rods FIS A A4, injection anchor sleeve FIS HK or injection anchor sleeve with net FIS HN and vinylester injection mortar FIS V.
- Aerated concrete blocks: use stainless steel threaded rods FIS A A4, centring sleeve PBZ and vinylester injection mortar FIS V in undercut application (with cone drill PBB).
- If the building material is different it is necessary to assess it experimentally through tests on site.

TECHNICAL DATA



Sliding point holder **SPH**



Item	Art.-No.	Weight	Height	Length	Width	Thickness	Slotted hole dimension a x b [mm]	Fits profile	Sales unit [pcs]	GTIN (EAN code)
		W [kg]	h [mm]	l [mm]	b [mm]	s [mm]				
SPH 30 AL	018443	0,700	58	30	140	2,5	11 x 13	VP 50, VP 100	100	4006209184431
SPH 54 AL	018445	0,107	58	54	160	3,0	11 x 13	VP 50, VP 100	100	4006209184455
SPH 68 AL	048902	0,125	58	68	160	3,0	11 x 13	VP 50, VP 100	90	4006209489024
SPH 93 AL	048903	0,161	58	93	160	3,0	11 x 13	VP 50, VP 100	75	4006209489031
SPH 133 AL	030368	0,208	58	133	160	3,0	11 x 13	VP 50, VP 100	50	4006209303689

ACCESSORIES



Cold bridge stop **CBS**

Item	Art.-No.	External Ø	Hole diameter	Thickness	Sales unit [pcs]	GTIN (EAN code)
		d [mm]	Ø [mm]	s [mm]		
CBS	092680	50	11,5	5	200	4006209926802

ACCESSORIES



Rivet 4,8 x 10 A2

Item	Art.-No.	Diameter	Length	Recommended shear load	Sales unit [pcs]	GTIN (EAN code)
		d [mm]	l [mm]	V _{recc} [kN]		
Rivet 4,8 x 10 A2	511048	4,8	10	0,90	500	4048962105049

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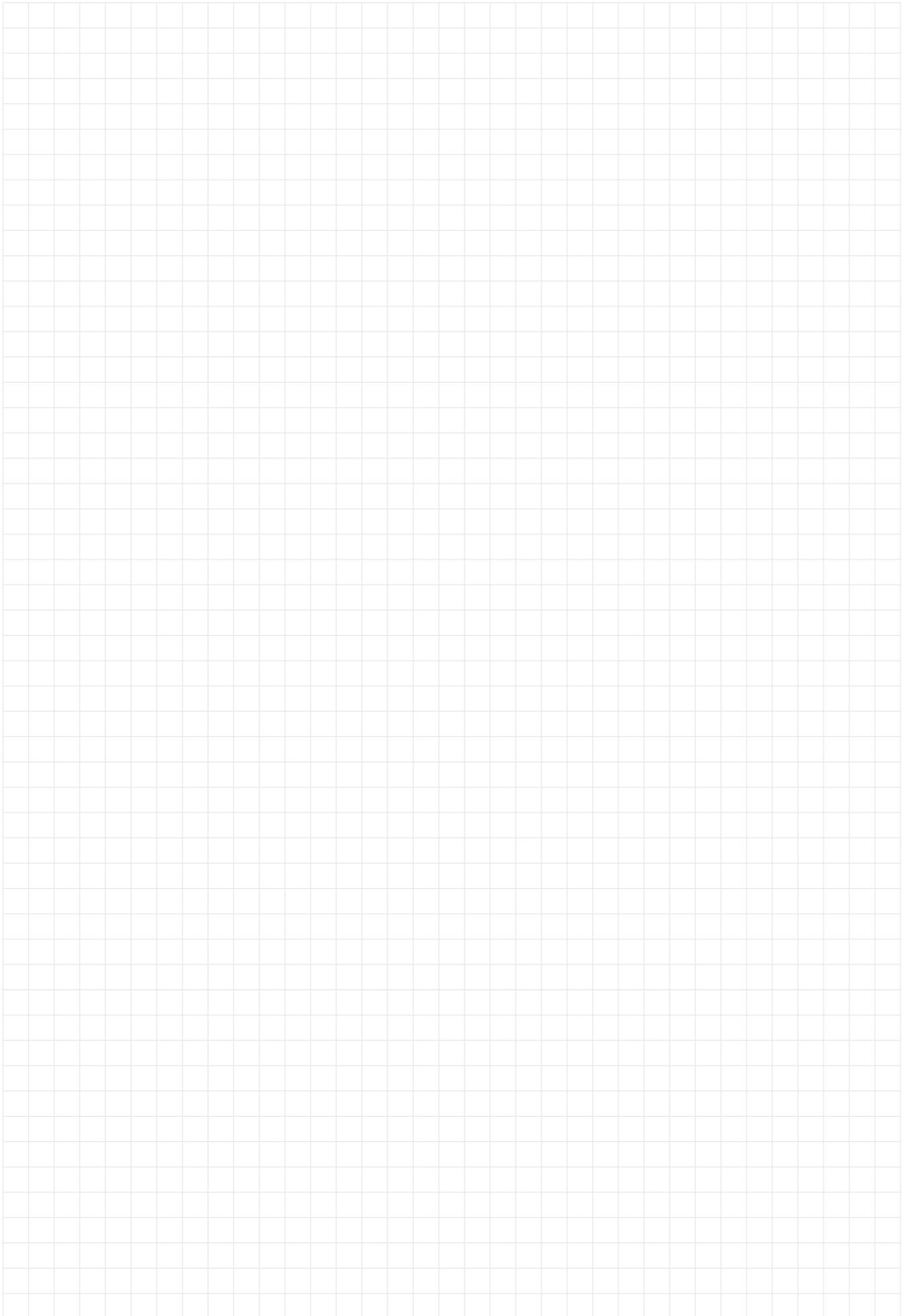
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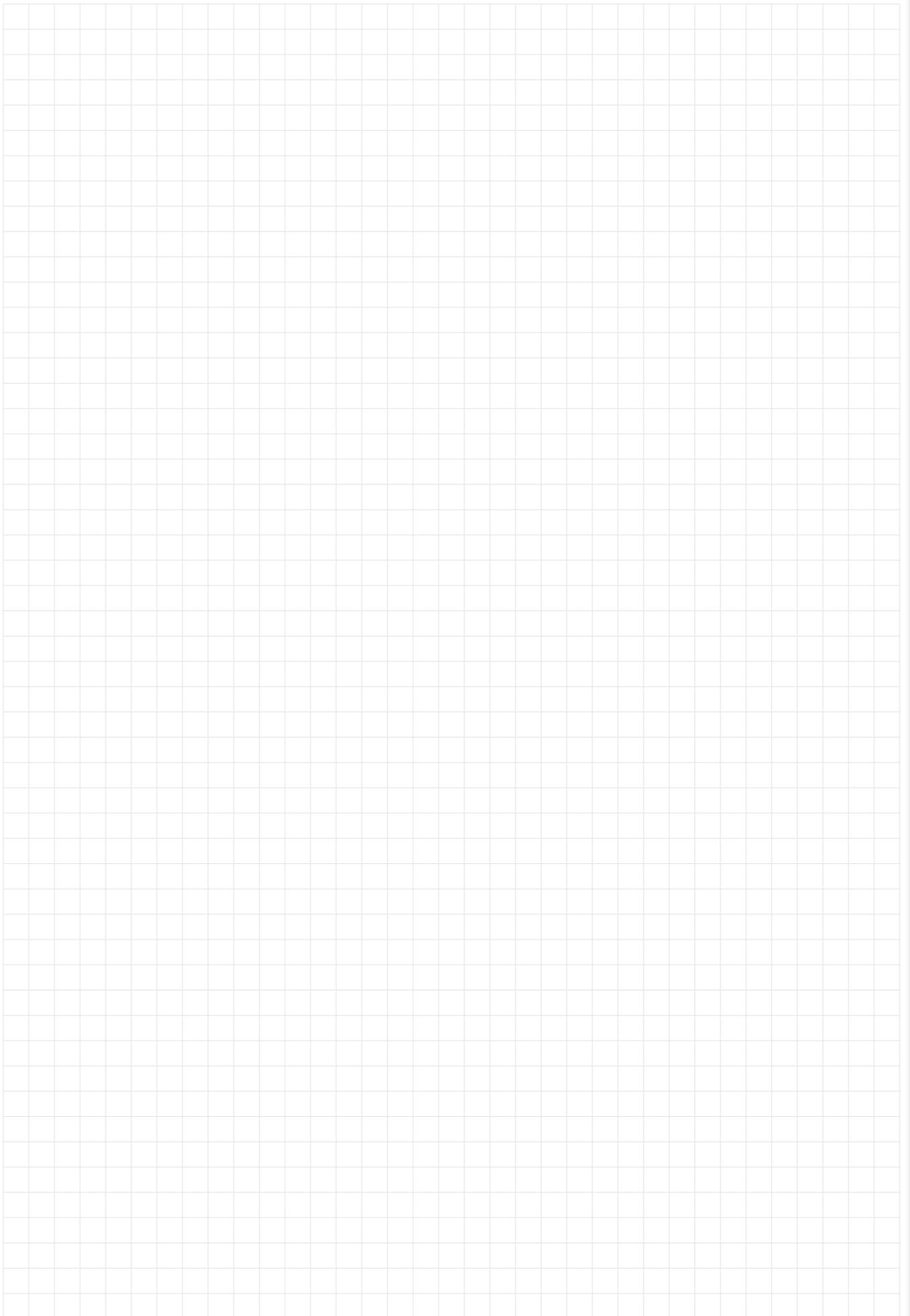
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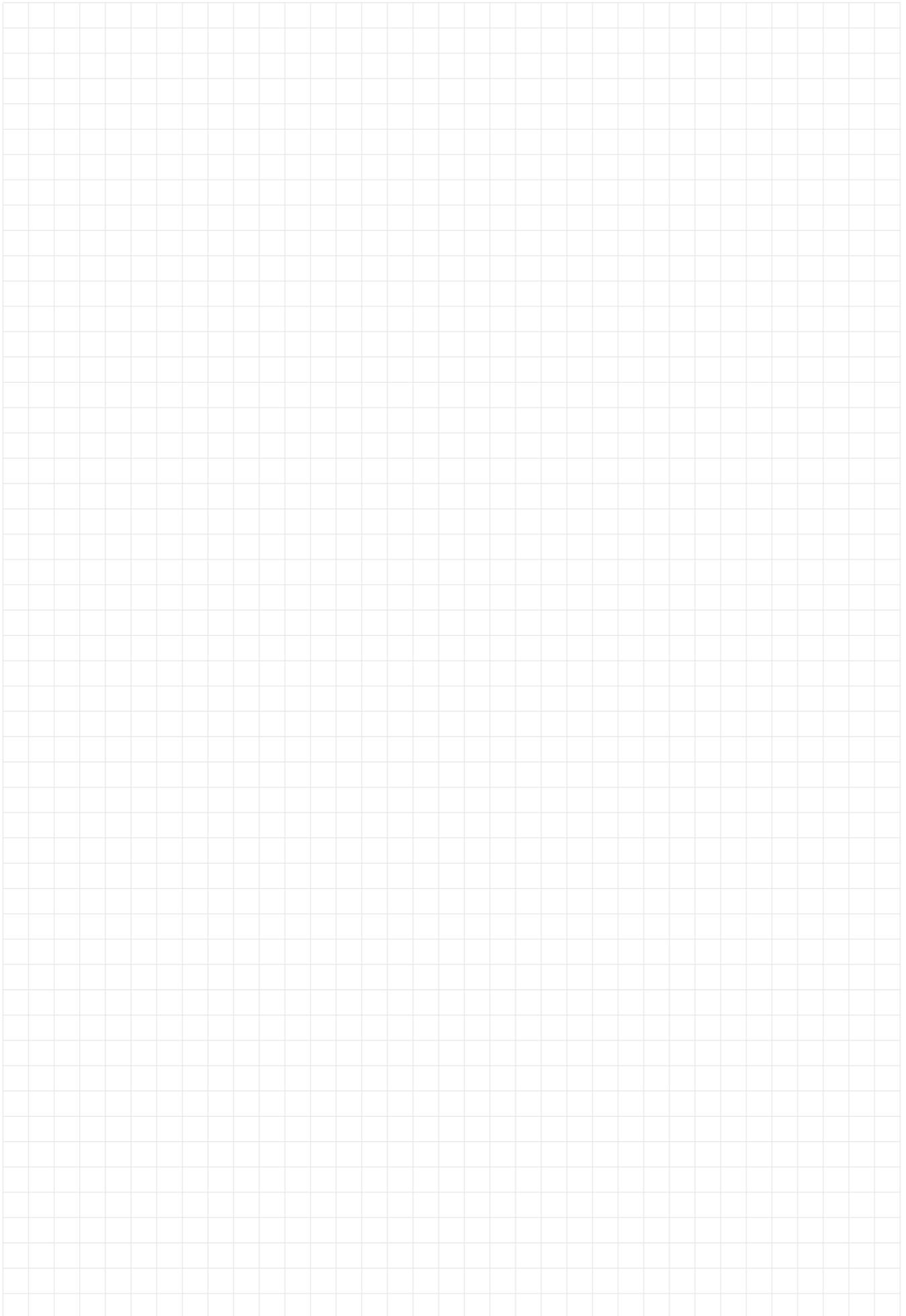
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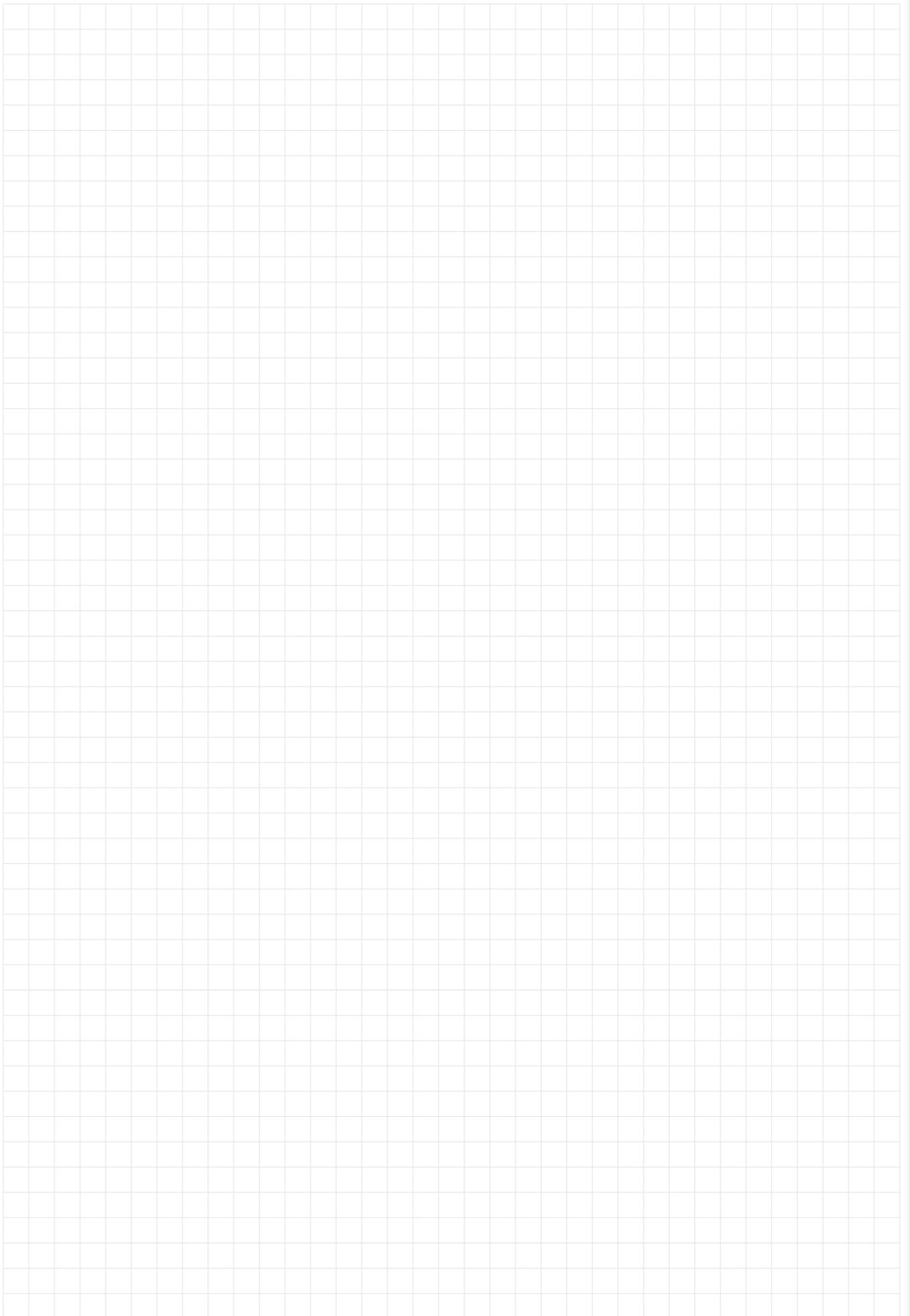
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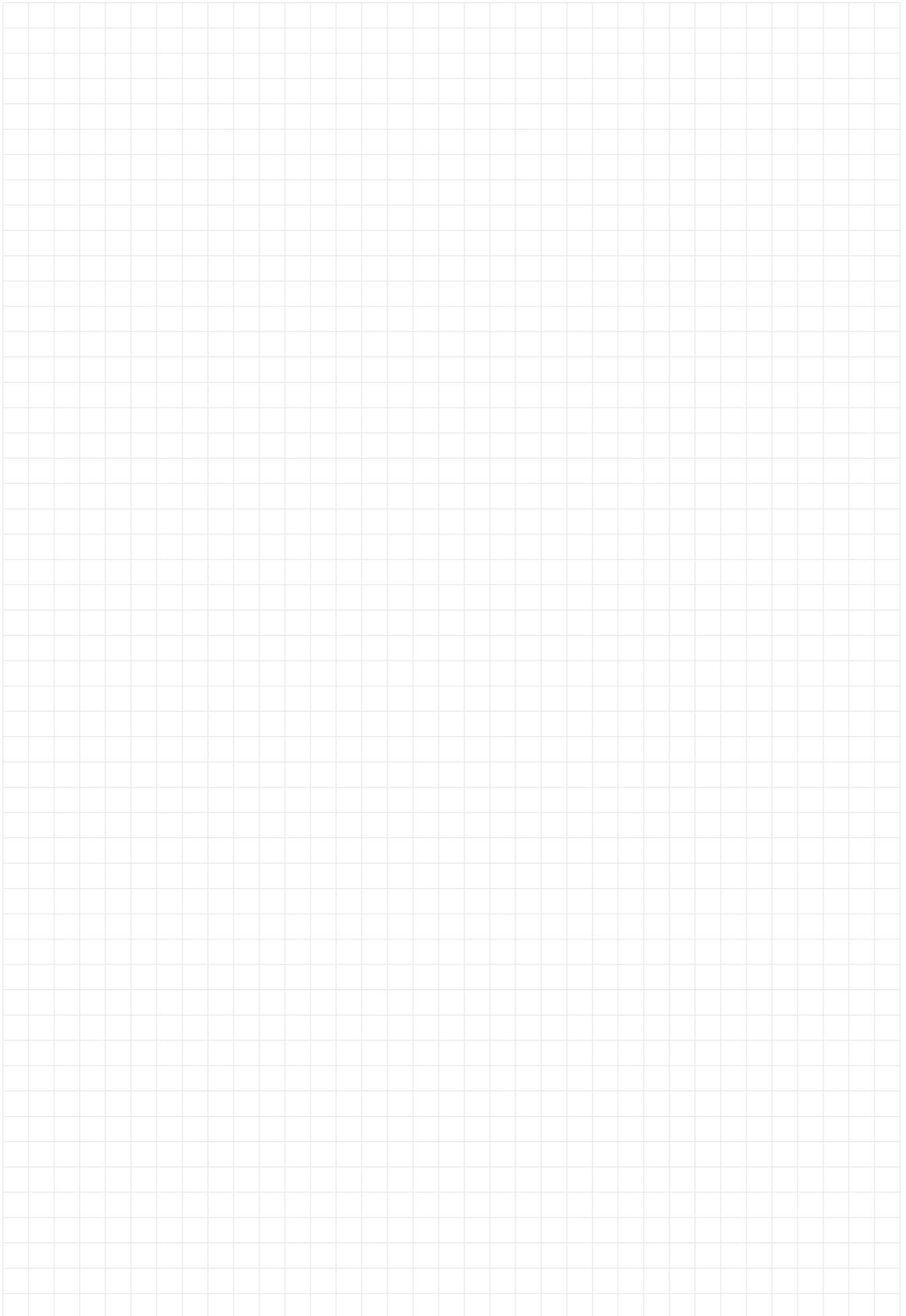
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If no detailed performance specifications are given for certain articles and types, please contact our Technical Service Department for advice.

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05/2016

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