



Manufactured in  
Aluminium and  
Stainless Steel

Declaration of  
services and  
marked with CE

For small  
installations

Application for  
auto-configuring  
structures

Permanent stock,  
fast delivery times

## MID-RANGE PROJECT PLANNING FOR PHOTOVOLTAIC MODULE STRUCTURES

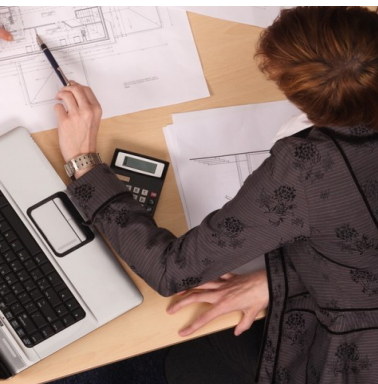


## MID-RANGE COMPONENTS

### CHARACTERISTICS

The growing demands for small photovoltaic installations make it inefficient to calculate the structure of each project manually. To speed up this process we have developed an application that automatically calculates the components necessary to create a structure.

This application works with a collection of selected components from our catalogue that we call Mid-range and which have the advantage that they have standardised dimensions and are ready for immediate delivery.



## CONFIGURATION SOFTWARE

### PLANNING TOOL

With the application for configuring structures, an installer can plan any of the assembly systems that can be made with the Mid-range components by entering:

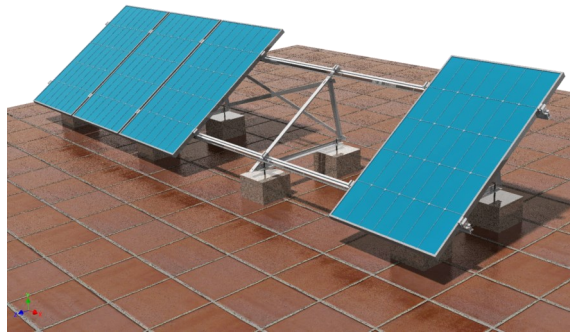
- Data of the location, such as height, geographical area, environment, etc.
- Dimensions of the photovoltaic modules.
- Layout of the modules, data such as inclination and distribution.
- Mounting system.

With this information, the application will calculate the type and amount of components necessary for the mounting system and justification of the calculations.

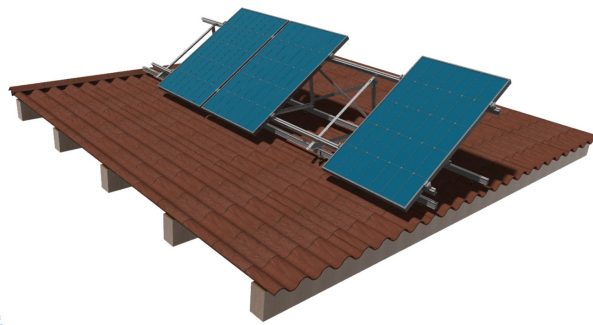
# MOUNTING SYSTEMS

MOUNTING SYSTEMS WITH MID-RANGE COMPONENTS

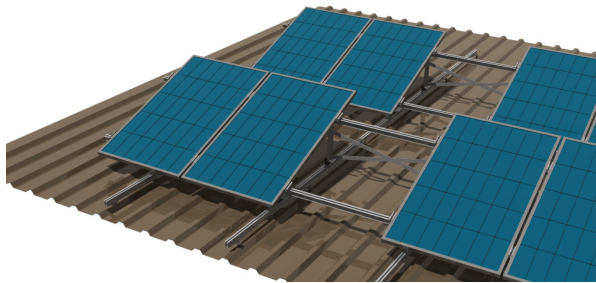
AF·FLAT



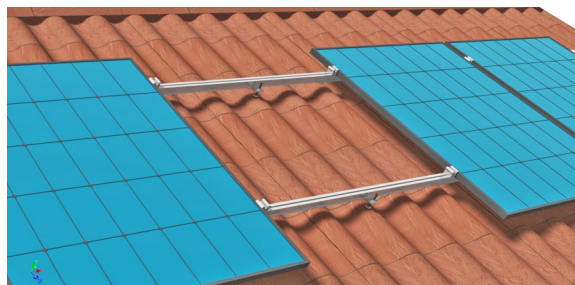
AF·ROW



AF·GRID

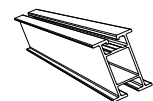


OR·ROW





## ALL THE MID-RANGE COMPONENTS



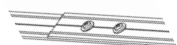
### Aluminium profiles PS

in different sections to adapt to any requirement.



### Direct aluminium profiles

to fit in coplanar systems.



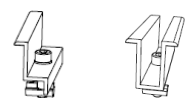
### Struts

to brace supports in sloping assembly systems



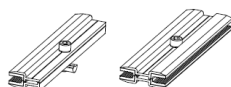
### A-Frames

to slope the modules in flat surfaces, roofs and on the ground.



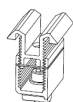
### Module clamps

end and middle clamps for PV with a frame.



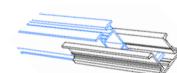
### Clamps for frameless modules

end and middle clamps certified for frameless PV



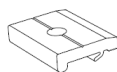
### Universal clamp

clamp for any type of photovoltaic module with frame, works as an intermediate and end clamp.



### Profile linear joint assembly

to linearly join PS aluminium profiles.



### Cross joint assembly

to join PS aluminium profiles perpendicularly.



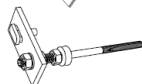
### Hook roofs

to secure the base profiles to a tiled roof. There are different versions for different types of tiles.



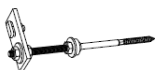
### Trapezoidal sheet metal roof attachment assembly

to secure base profiles to a sheet metal roof.



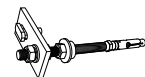
### Attachment assembly for steel beams

to secure base profiles to steel beams.



### Woodscrew attachment assembly

to secure base profiles to wood or to use with chemical anchors.



### Metal anchor attachment assembly

to secure profiles to concrete beams.



### KalZip roof attachment assembly

to secure profiles to KalZip type roofs.



### Tab attachment assembly

to secure profiles to roofs with tab type projections.



### Self-tapping screws A2 (stainless steel)

to secure Direct profiles to straps and steel or aluminium roofs.

# PROFILES AND JOINTS TO SUPPORT MODULES



**PS250 Profile**

- Cut to standard dimensions: 2,000 mm or 3,100mm.
- Dimensions: 57 x 40mm with rails for connection accessories.
- For medium loads.



**PS100 Profile**

- Cut to standard dimensions: 2,000mm or 3,100mm.
- Dimensions: 38 x 40 mm with rails for connection accessories.
- For light loads.



**PS10 Direct Profile**

- Cut to standard dimensions: 2,000mm or 3,100mm.
- Designed to be secured to roofs as load-bearing profiles in coplanar installations.
- Dimensions: 66 x 20 mm with rails and tabs for self-taping fasteners.



**Linear joint assembly**

- To join PS type profiles linearly.
- Can be used as an expansion joint.
- Includes stainless steel A2-70 fasteners.



**Crossed joint assembly**

- To join PS series profiles perpendicularly.
- Supplied with stainless steel A2-70 fasteners.
- Pre-adjustment system to facilitate assembly.



Al  
6082  
Inox  
A2  
T  
SLOT

Art. No.	Description
1.02.0005-2000	Aluminium profile series PS250 6082T6 2000mm.
1.02.0005-3100	Aluminium profile series PS250 6082T6 3100mm.
1.02.0004-2000	Aluminium profile series PS10 6082T6 2000mm.
1.02.0004-3100	Aluminium profile series PS10 6082T6 3100mm.
1.02.0031-2000	Aluminium profile series PS100 6082T6 2000mm.
1.02.0031-3100	Aluminium profile series PS100 6082T6 3100mm.
1.09.0002-200	Linear joint assembly for profiles PS
1.09.0005-40	Crossed joint assembly for profiles PS





## A-FRAMES TO TILT MODULES

The A-frames have been designed so modules can be placed in vertical or horizontal position; this is possible because the lintel of the support is drilled in the areas where modules can be secured.

The client can adjust the angle by cutting the rear leg, which is marked with the most common angles. If the installation needs a large number of A-frames, they can be supplied pre-cut from the factory.

**Multi-purpose A-frame**  
Allows easy adjustment of the angle by cutting along the marks engraved on the rear leg.





**1181mm A-frame**

- For heavy loads.
- Lower part of the module 300mm away from the ground.
- Includes profiles and fasteners
- Can be installed without the need for base profiles, directly to the ballasts or the ground.



**ECO 181mm A-frame**

- To fit over base profiles.
- Few components, quick to fit.
- Includes profiles and fasteners.



**ECO 1181mm closed A-frame**

- To install without the need for base profiles, onto ballasts or directly to the ground.
- Few components, quick to fit.
- Includes profiles and fasteners.



**Strut assembly 2000mm**

- To brace groups of A-frames.
- Alignment guides to facilitate assembly.
- Includes self-tapping fasteners to secure to the A-frames.

PV warranty

Observed

Al 6082

Inox A2

ASYM

Art. No.	Description
1.07.0013-10	A-Frame ECO 1181mm 10º
1.07.0013-15	A-Frame ECO 1181mm 15º
1.07.0013-20	A-Frame ECO 1181mm 10º, 15º, 20º
1.07.0013-25	A-Frame ECO 1181mm 25º
1.07.0013-30	A-Frame ECO 1181mm 30º
1.07.0013-35	A-Frame ECO 1181mm 25º, 30º, 35º
1.07.0014-10	Closed A-Frame ECO 1181mm 10º
107.0014-15	Closed A-Frame ECO 1181mm 15º
1.07.0014-20	Closed A-Frame ECO 1181mm 10º, 15º, 20º
1.07.0014-25	Closed A-Frame ECO 1181mm 25º
1.07.0014-30	Closed A-Frame ECO 1181mm 30º
1.07.0014-35	Closed A-Frame ECO 1181mm 25º, 30º, 35º
1.07.0012-20	A-Frame 1181mm 20º
1.07.0012-25	A-Frame 1181mm 25º
1.07.0012-30	A-Frame 1181mm 20º, 25º, 30º
1.07.0012-35	A-Frame 1181mm 35º
1.07.0012-40	A-Frame 1181mm 40º
1.07.0012-45	A-Frame 1181mm 35º, 40º, 45º
1.03.0000-2000	Strut assembly 2000mm





## CLAMPS

FOR MODULES WITH A FRAME AND FINE LAYER FRAMELESS MODULES



### End clamp

- For 30-50mm module frames.
- Includes M8 Allen bolts and T-SLOT nuts.
- Fitted to the ends of each row of modules.



### Intermediate clamp

- For 30-50mm module frames.
- Includes M8 Allen bolts and T-SLOT nuts.
- To fit between two modules.



### Multi-fit clamp assembly

- For 33-50mm module frames.
- Can be used as an intermediate or end clamps.
- Includes bolts and T-SLOT nuts.



### End clamp for frameless PV

- Homologated for 6.8mm modules .
- To fit on the ends of each row of modules .
- Includes Allen bolts and T-SLOT nuts.
- Includes an EPDM gasket fitted.



### Middle clamp for frameless PV

- Homologated for 6.8mm modules .
- To fit between two modules.
- Includes Allen bolts and T-SLOT nuts.



PV warranty  
Observed

- Al 6082
- Inox A2
- T SLOT
- EPDM

Art. No.	Description
1.08.0015-30100	Middle clamp 100mm frame 30mm
1.08.0015-33100	Middle clamp 100mm frame 33mm
1.08.0015-35100	Middle clamp 100mm frame 34-35mm
1.08.0015-38100	Middle clamp 100mm frame 38mm
1.08.0015-40100	Middle clamp 100mm frame 39-40mm
1.08.0015-43100	Middle clamp 100mm frame 43mm
1.08.0015-45100	Middle clamp 100mm frame 44-45mm
1.08.0015-46100	Middle clamp 100mm frame 46mm
1.08.0015-48100	Middle clamp 100mm frame 48mm
1.08.0015-50100	Middle clamp 100mm frame 49-50mm
1.08.0014-30100	End clamp 100mm frame 30mm
1.08.0014-33100	End clamp 100mm frame 33mm
1.08.0014-35100	End clamp 100mm frame 34-35mm
1.08.0014-38100	End clamp 100mm frame 38mm
1.08.0014-40100	End clamp 100mm frame 39-40mm
1.08.0014-43100	End clamp 100mm frame 43mm
1.08.0014-45100	End clamp 100mm frame 44-45mm
1.08.0014-46100	End clamp 100mm frame 46mm
1.08.0014-48100	End clamp 100mm frame 48mm
1.08.0014-50100	End clamp 100mm frame 49-50mm
1.08.0007-50	Universal clamp 50mm frame 31-50mm T-SLOT
1.08.0009-100	End clamp 100mm for frameless PV
1.08.0010-100	Middle clamp 100mm for frameless PV



# FASTENING TO A ROOF

A TYPE OF FASTENER FOR EVERY TYPE OF ROOF.



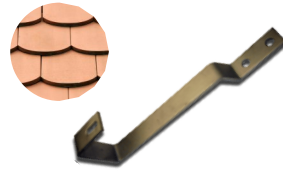
## Hook for mixed roof tiles

- To fit to most curved roof tiles.
- Allows 100 mm horizontal and 30mm vertical adjustment.
- Made of stainless steel.
- Includes nuts for attaching to the profiles.



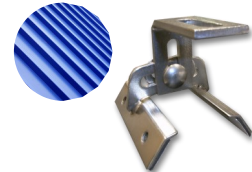
## Hook roof for Arabic tile

- To install on roofs with Mediterranean or Arabic tiles.
- Allows 30mm vertical adjustment.
- Made of stainless steel.
- Includes nuts for attaching to the profiles.



## Hook roof for flat tile

- To install on roofs with flat tiles such as slate.
- Made of stainless steel.
- Includes nuts for attaching to the profiles.



## Hook roof for trapez... sheet

- To install on sheet metal or sandwich type roofs.
- Made of stainless steel.
- Includes self-tapping fasteners and an EPDM gasket. Supplied pre-assembled.
- Includes nuts for attaching to the profiles.



## Fastening for steel beams

- To secure the structure to steel beam 2mm thick or more.
- Includes an 80 x 3mm stainless steel plate, an EPDM gasket and pre-assembled fasteners.
- Includes nuts for attaching to the profiles.



## Hanger bolts

- To secure the structure to wooden bases or to other surfaces using a wall plug (not included).
- Includes an 80 x 3mm stainless steel plate, an EPDM gasket and fasteners.
- Includes nuts for attaching to the profiles.



## Rawlplug fastener for concrete beam

- To secure the structure to hollow beams or to certain solid concrete surfaces.
- Includes an 80 x 3mm stainless steel plate, an EPDM gasket and fasteners.
- Includes nuts for attaching to the sections and stainless steel rawlplug.



## Stainless steel stud

- To secure the structure for solid concrete beams.
- Includes an 80 x 3 mm stainless steel plate, an EPDM gasket and fasteners.
- Includes nuts for attaching to the profiles.

Art. No.	Description
1.06.0018-3	Hook roof for mixed tiles
1.06.0018-4	Hook roof for Arabic tile
1.06.0019-1	Hook roof for flat tile
1.06.0024-2	Hook roof for trapezoidal sheet
1.06.0021-1230083	Hanger bolt M12x300mm + plate 83mm
1.06.0004-805083	Steel beam fastener M10x50-80mm + plate 83mm
1.06.0004-1255083	Steel beam fastener M10x50-125mm + plate 83mm
1.06.0004-1605083	Steel beam fastener M10x50-160mm + plate 83mm
1.06.0013-1012583	Rawlplug fastener for concrete beam M10x125mm & M8x60 + plate 83mm
1.06.0013-1016583	Rawlplug fastener for concrete beam M10x165mm & M8x60 + plate 83mm
1.06.0013-1018583	Rawlplug fastener for concrete beam M10x185mm & M8x60 + plate 83mm
1.06.0026-1018583	SS stud M10x185mm + EPDM + plate 83mm
1.06.0026-1021083	SS stud M10x210mm + EPDM + plate 83mm
1.06.0026-1027083	SS stud M10x270mm + EPDM + plate 83mm



# FASTENERS AND ACCESORIES

COMMON AND COMPATIBLE WITH ALL THE COMPONENTS.

Inox  
A2

Art. No.	Description
1.05.0011-M8	Aluminium washer 20x13x1,5 M8
1.05.0012-M8	Nut DIN6923 M8 A2-70
1.05.0017-M10	Nut M10 DIN934 A2-70
1.05.0014-M818	Screw hex M8x18 DIN933 A2-70
1.05.0014-M822	Screw hex M8x22 DIN933 A2-70
1.05.0014-M825	Screw hex M8x25 DIN933 A2-70
1.05.0016-M820	Hammer bolt 28/15 M8x20 A2
1.05.0019-M8	T-Slot M8
1.05.0020-M8	Washer M8 DIN125 A2-70
1.05.0015-M10	Washer M10 DIN9021 A2-70
1.05.0021-M816	Screw M8x16 DIN 912 A2-70
1.05.0021-M825	Screw M8x25 DIN 912 A2-70
1.05.0021-M830	Screw M8x30 DIN 912 A2-70
1.05.0021-M835	Screw M8x35 DIN 912 A2-70
1.05.0021-M840	Screw M8x40 DIN 912 A2-70
1.05.0021-M845	Screw M8x45 DIN 912 A2-70
1.05.0021-M850	Screw M8x50 DIN 912 A2-70
1.05.0024-M8	Serrated lock washer M8 DIN6798 forma A. A2
1.05.0026-M8	Serrated lock washer M8 "S"
1.05.0018-M10	Spring lock washer M10 DIN127 A2-70
1.06.0009-2516	Self drilling screw 2mm 6x25mm + EPDM inox
1.06.0008-2516	Self drilling screw 6mm 5,5x25mm + EPDM inox
1.12.0003-453	EPDM Profile 45x3
1.09.0008-83	SS Plate 40X6 83MM



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