

DP-DTHWE CONSTRUCTION ASSEMBLY INSTRUCTIONS



Manufacturer: BAKS – Kazimierz Sielski

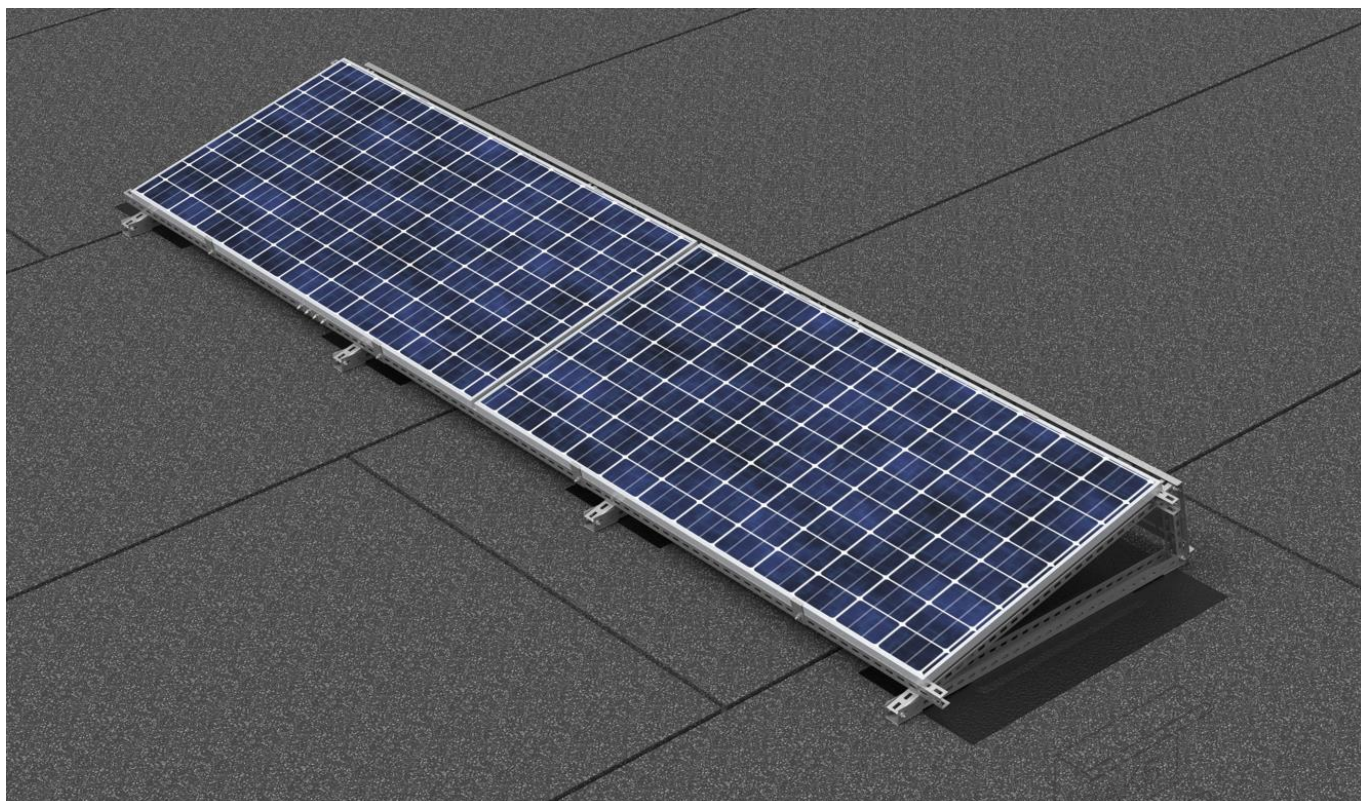
ul. Jagodne 5

05-480 Karczew

Poland

Steel structure for flat roof in a pasted version.

Mounting of PV panels in a horizontal arrangement (horizontally).



1. Necessary tools for assembling the structure

- Allen spanner (ampoule spanner) size 6
- Cordless screwdriver with speed and torque control
- Hexagon socket wrench, hexagon size 6 for screwdriver head
- Combination spanners in sizes 13, 15, 17 mm
- Ratchet spanner with sockets in sizes 13, 15, 17 mm
- Extension piece 100-120mm for socket spanners
- Rubber mallet
- Torque spanner, range 10-45 Nm

2. General information:

- Structures can be used in wind and snow zones in accordance with the following standard: **EN 1991-1-3** and **EN 1991-1-4**.
- **Before assembling the structure, please read the installation instructions for the photovoltaic panels.**
- Tighten **SAM8x...E** screws and **NKZM8E** nuts to a torque of 12-14 Nm
- When tightening the **SGKFM8x20** and **SGKFM10x20PV** screw, hold the head of the screw in such a position that the underlay is blocked on the walls of the hole in which the screw is installed, and then, using a screwdriver, tighten the screw slowly until it is blocked in the hole. At the final stage, tighten the screw with the screwdriver successively with a torque of: M8 - 22 Nm; M10 - 42 Nm.
- Tighten **SMM10x...F** screws to a torque of 30 Nm

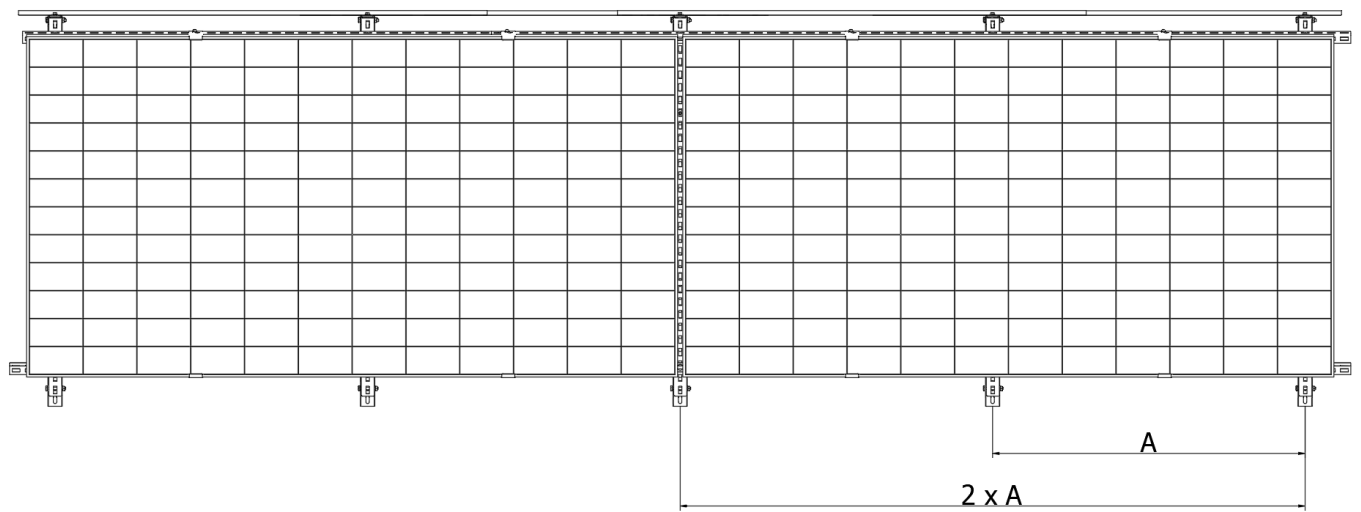
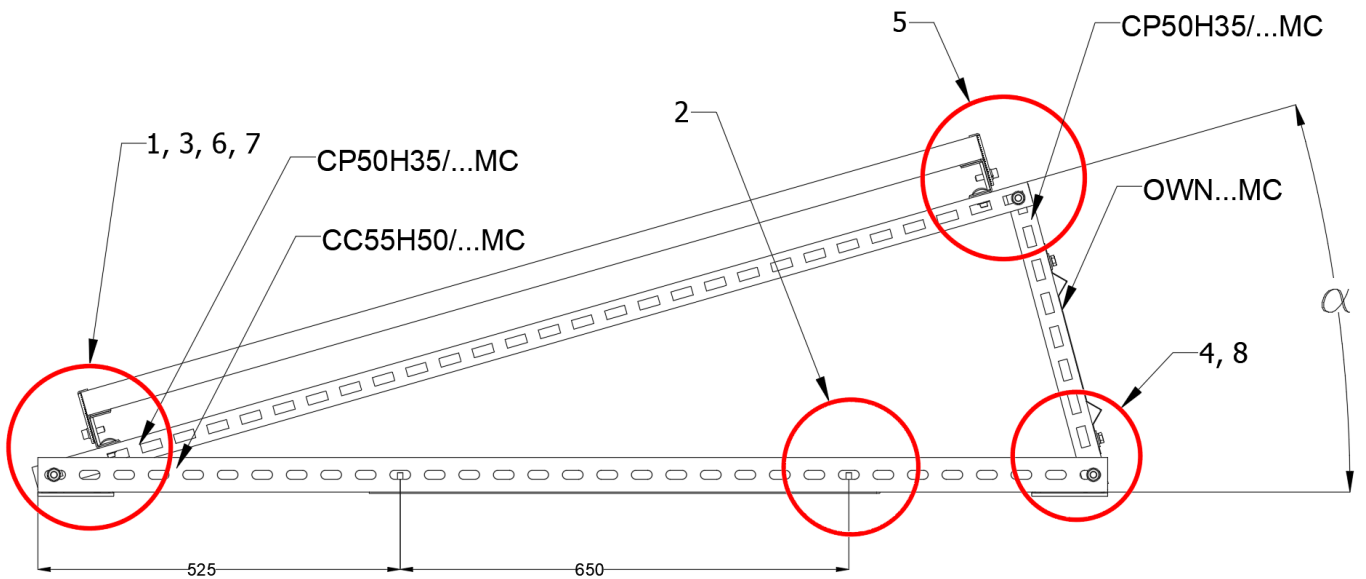


3. Summary of components of the DP-DTHWE construction

No.	Product	Name of product	Designation in construction
1	Channel	CC55H50/...MC	Main profile
2	Channel	CP50H35/...MC	Structure assembly profile
3	Channel	CC50H35/...MC	Panel support profile
4	Channel connector	LCCW50H35MC	Connecting channels CC50H35/...MC
5	Hexagonal head screw	SMM10x70F	Screw connecting the supporting channels of the structure
6	Washer	PP10F	Washer
7	Side holder	BUFMC	Panel mounting holder
8	Screw	SAM8x25E	Mounting screw for holders and wind shields
9	Rhomboid nut	NRKM8PV	Nut
10	Wind shield	OWN...MC	Wind shield
11	Hexagonal head screw	SMM8x16F	Connecting wind shields
12	Spring washer	PS8E	Spring washer
13	Enlarged washer	PW8E	Enlarged washer
14	Mushroom head screw	SGKFM10x20	Screw + flange nut
15	Steel mounting plate	SPM2	Pasted plate
16	Channel base with vibration insulating rubber	PC100C	Prevents pressing of the steel profiles endings against the roof sheathing



4. Assembly of DP-DTHWE structure



Combination of wind "W" and snow "S" * zones	Maximum distance of subsequent "A" frames
1W-1S; 1W-2S; 1W-3S	2,0 m
1W-4S	1,8 m
2W-2S; 2W-3S	1,4 m
3W-1S	1,6 m
3W-3S	1,3 m
3W-5S	1,1 m
Other combinations of zones	Selected individually after consultation

Table 1 Installation distance of subsequent frames of the photovoltaic structure depending on the combination of wind and snow zones

*1 wind zone below 300m asl; 3 wind zone below 500m asl;

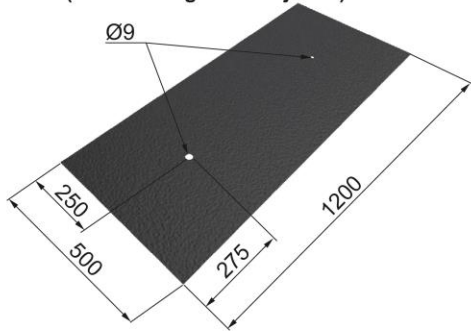
1 and 3 snow zone below 300m asl; 5 snow zone below 500m asl.



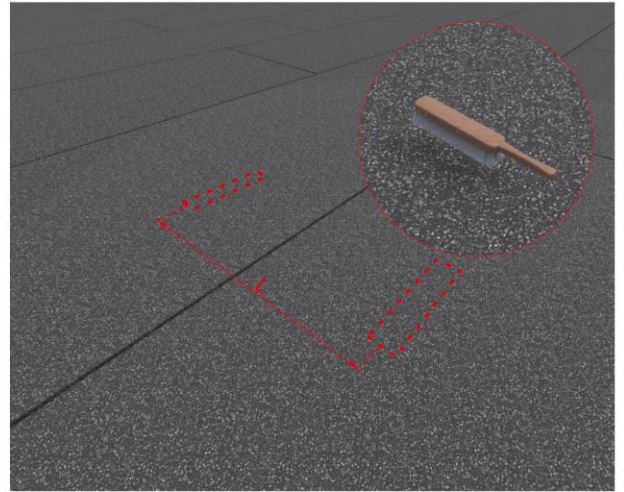
Assembly instructions for SPM2 Steel Fixing Plate to roofing felt
Note:

Requirements of the roofing felt to be used:

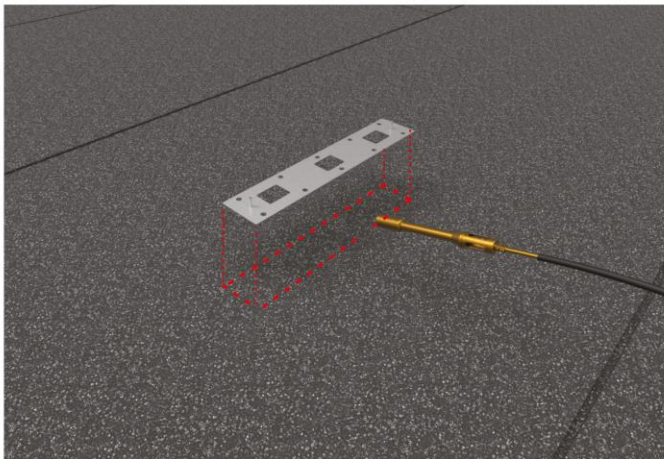
- 1) EN 12310-1 (tear strength) – min. 145N
- 2) EN 12311-1 (tensile strength) – min. 290N/50 mm
- 3) EN 12316-1 (peel strength of the joints) – min. 120N/50 mm
- 4) EN 12317-1 (shear strength of the joints) – min. 490N/50 mm



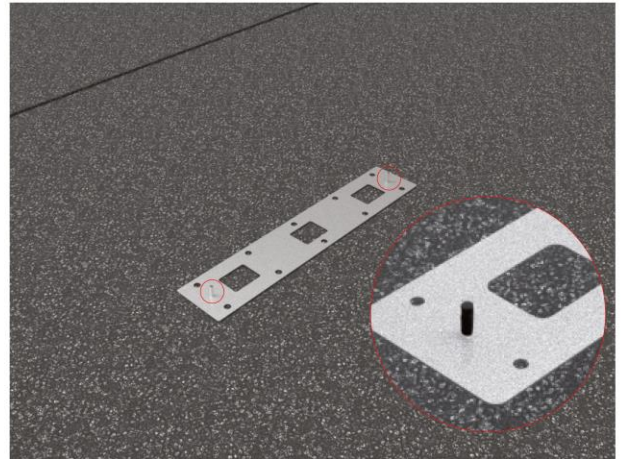
1. Before starting to install the SPM2 plates, cut out a fragment of roofing felt with minimum dimensions of 500 x 1200 mm, then cut out holes with a diameter of Ø9 mm in the locations of screws



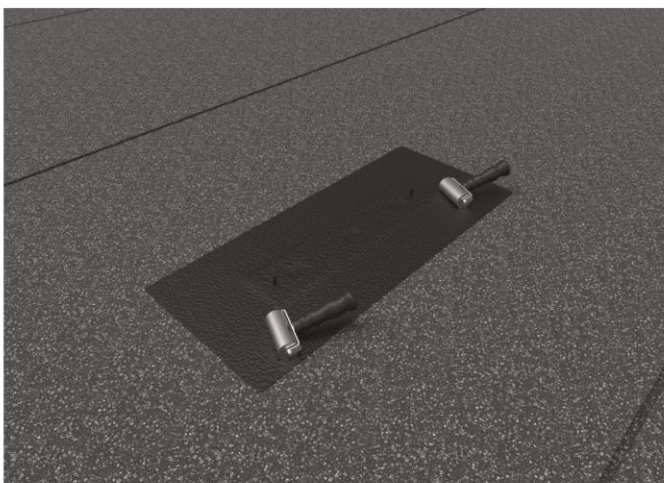
2. Measure the distance between the SPM2 plates, mark the points and then use a wire brush to clean the 500 x 1200 mm area of the roofing felt on the roof



3. On the designated area heat the surface in the size of a plate or slightly larger

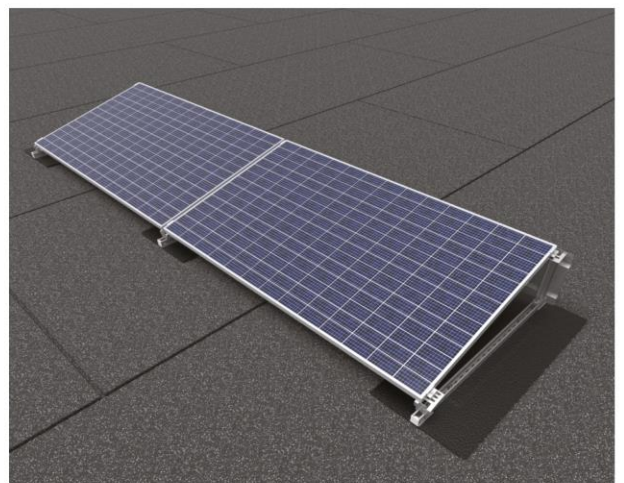


4. SPM2 plate should be placed on heated areas, pressed against prepared surface, protruding threads should be secured with NOP50 protection cap



5. Warm up the prepared roofing felt, cover the plate with it and then press it with a roofing roller in the locations of the holes

6. Warm up the side of the roofing felt and the surface and at the same time press the roofing felt with a roofing roller, repeat the operation for each side until the plate is fully fixed to the roof surface



7. Correctly installed structure using SPM2 plate and DP-DNHWE mounting system

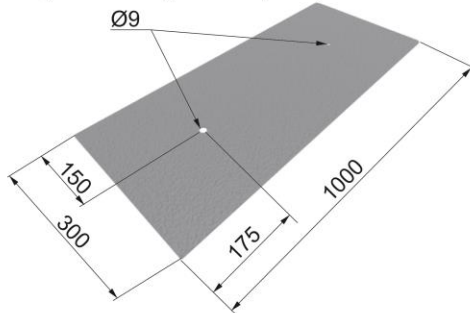


Assembly instructions for SPM2 Steel Fixing Plate to membrane

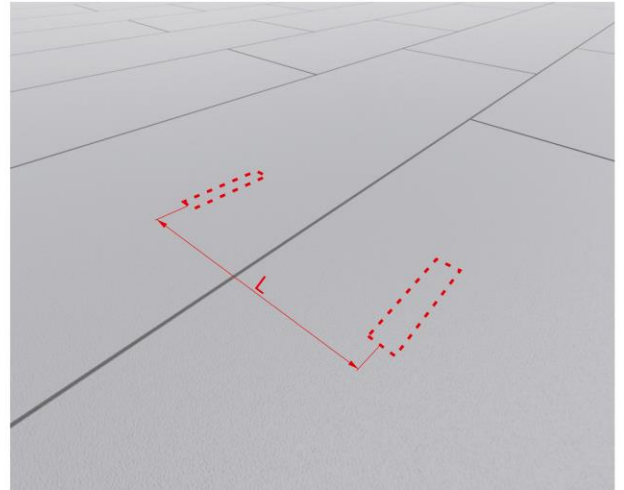
Note:

**Requirements of the membrane to be used: PVC, ECB, EPO
min 1.2 mm thick:**

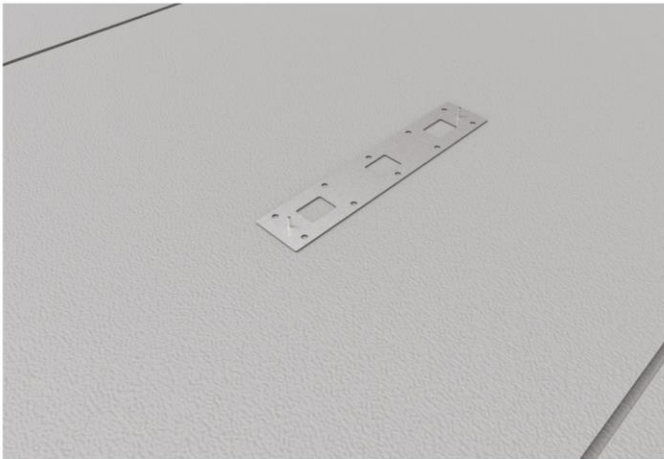
- 1) EN 12310-2 (tear strength) – min. 105N
- 2) EN 12311-2 (tensile strength) – min. 505N/50 mm
- 3) EN 12316-2 (peel strength of the joints) – min. 145N/50 mm
- 4) EN 12317-2 (shear strength of the joints) – min. 445N/50 mm



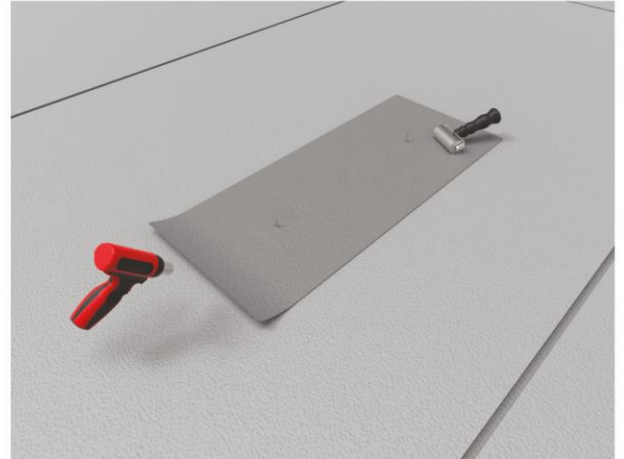
1. Before starting to install the SPM2 plates, cut out a fragment of membrane with minimum dimensions of 300 x 1000 mm, then cut out holes with a diameter of Ø9 mm in the locations of screws, finally round the corners of the membrane.



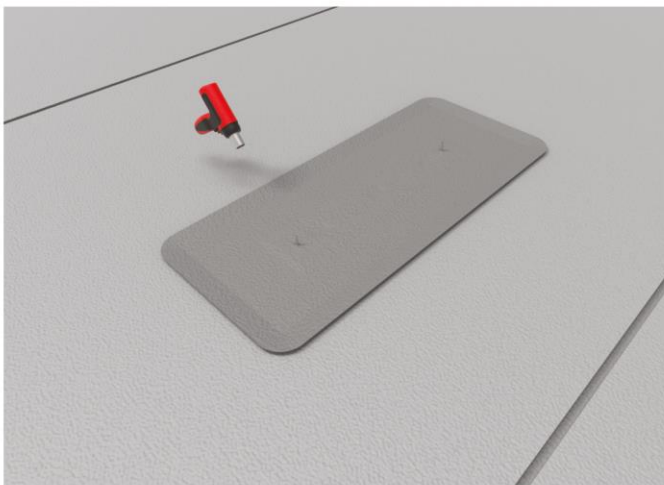
2. Measure the distance between the SPM2 plates, then mark the points.



3. Place the SPM2 plate on the designated place

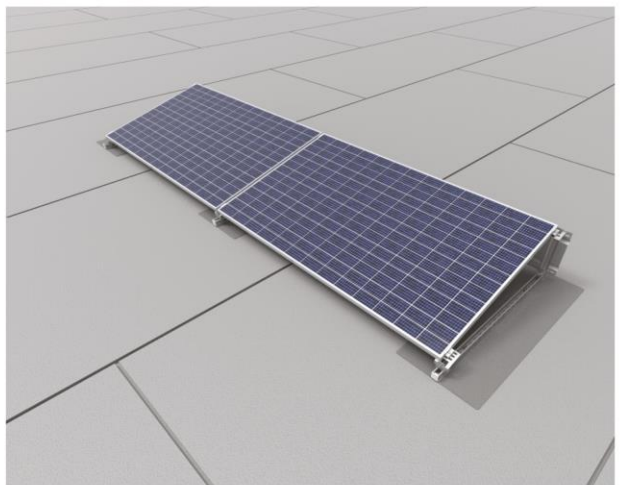


4. Cover the SPM2 plate with the prepared membrane and start the installation with a manual welding machine. Initially weld an hole of 60 x 80 mm, after proper heating press the membrane with a roofing roller. Repeat for the remaining holes.



5. Once the holes are welded, weld all sides around the SPM2 plate.

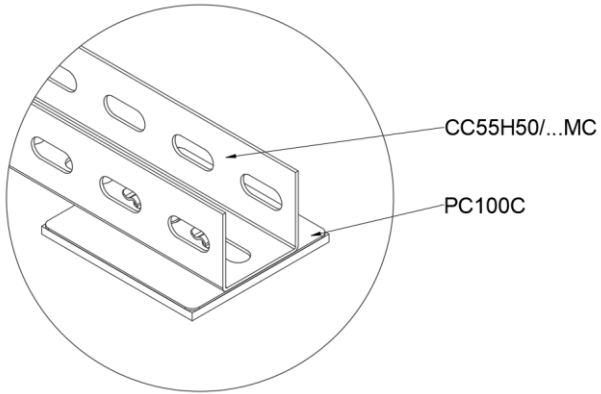
6. The SPM2 plate glued to the membrane is a basis for a structure for PV Installations.



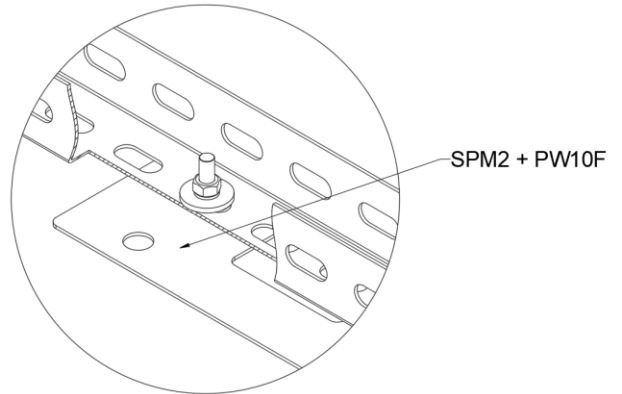
7. Correctly installed structure using SPM2 plate and DP-DNHWE mounting system



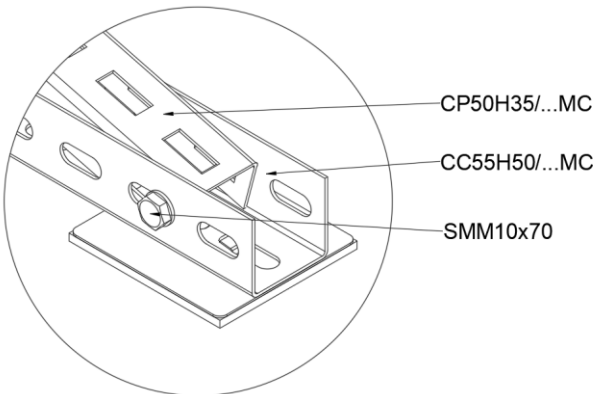
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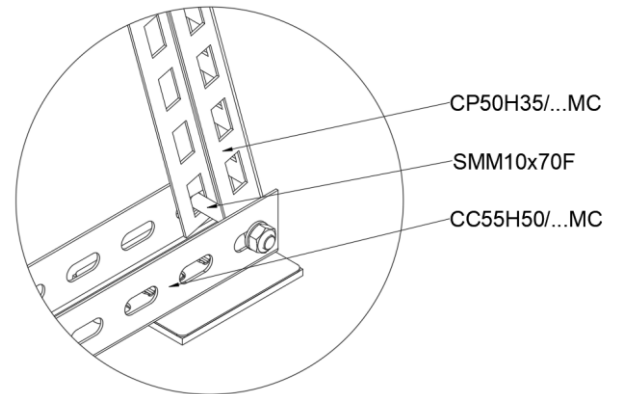
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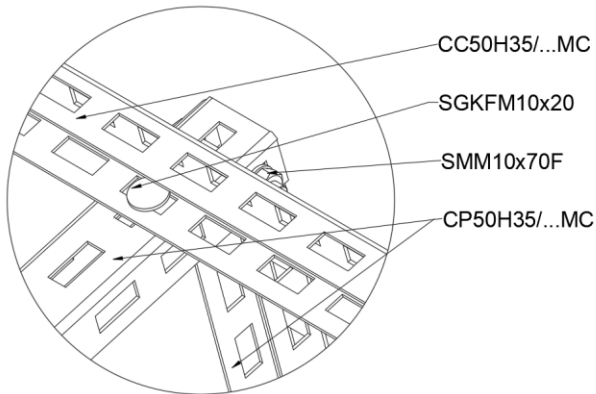
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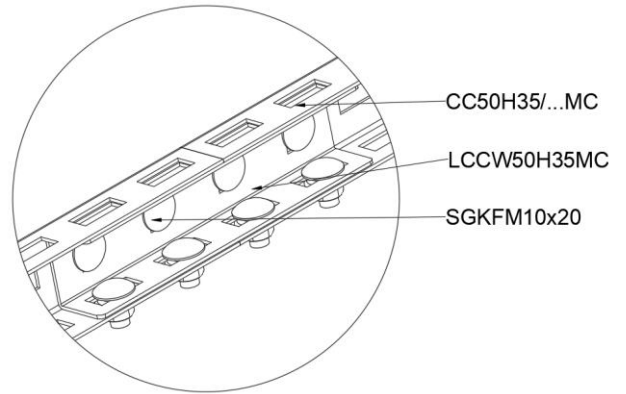
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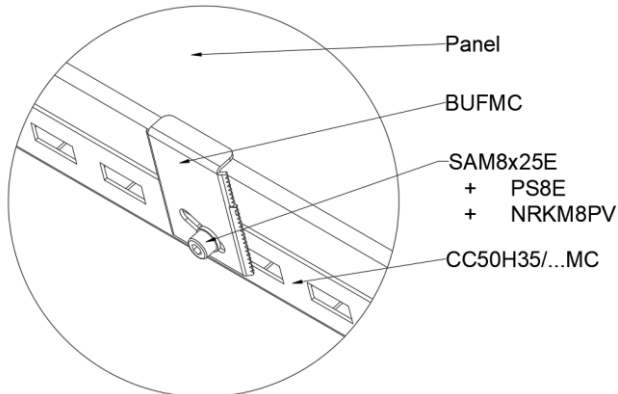
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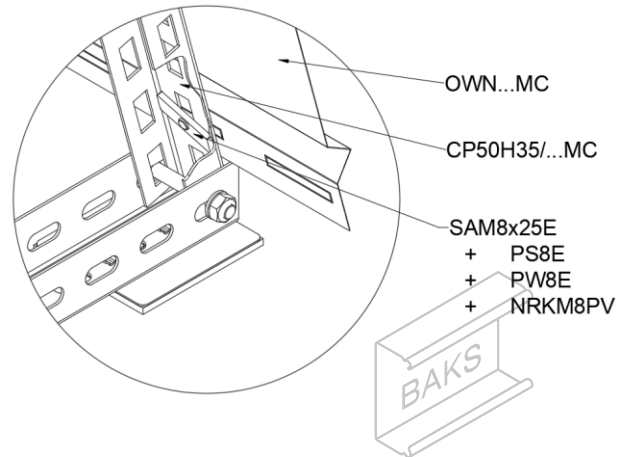
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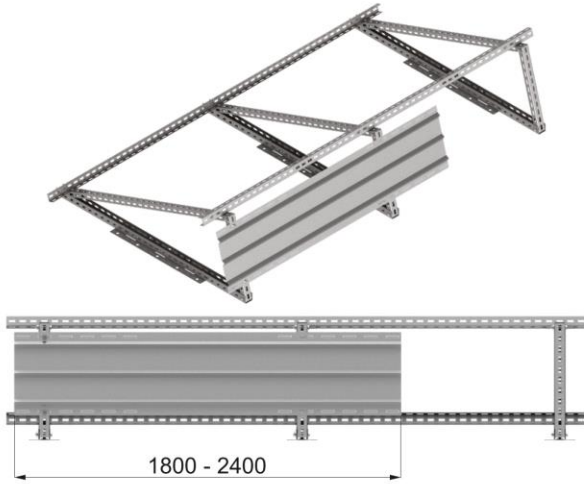
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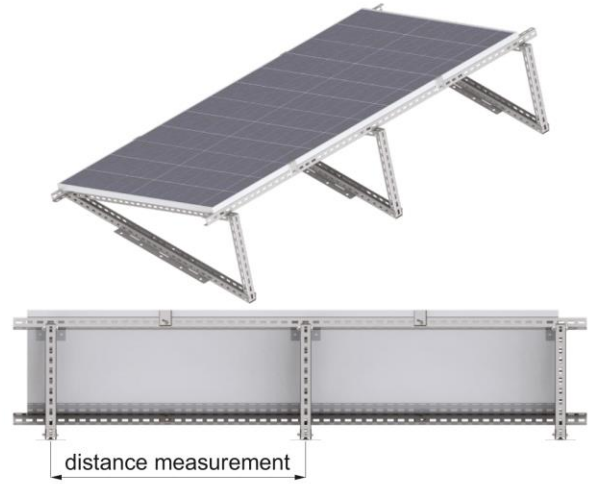
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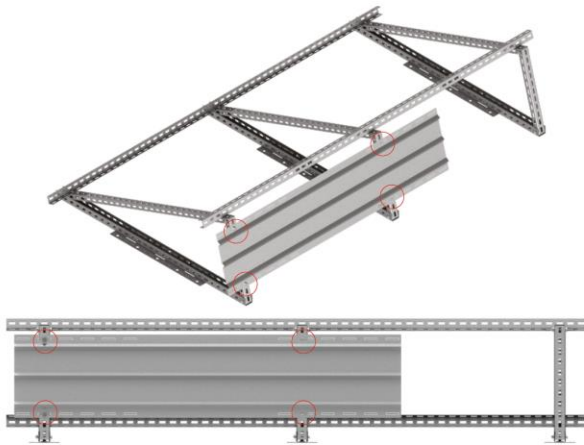
Installation instructions for wind shields in constructions DP - DTH...N



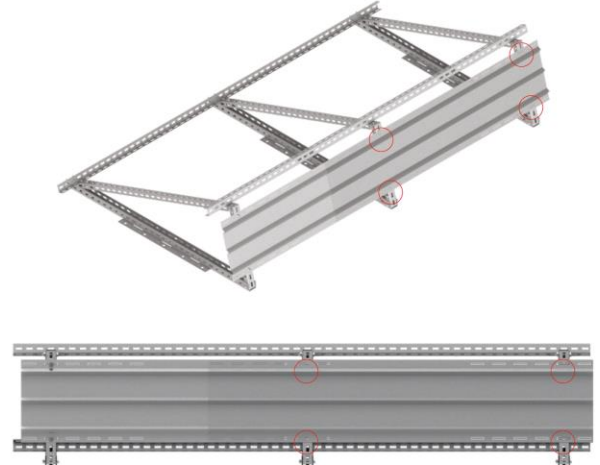
1. The length of the shields is selected on the basis of: distance between axes of triangular structures + 60 mm



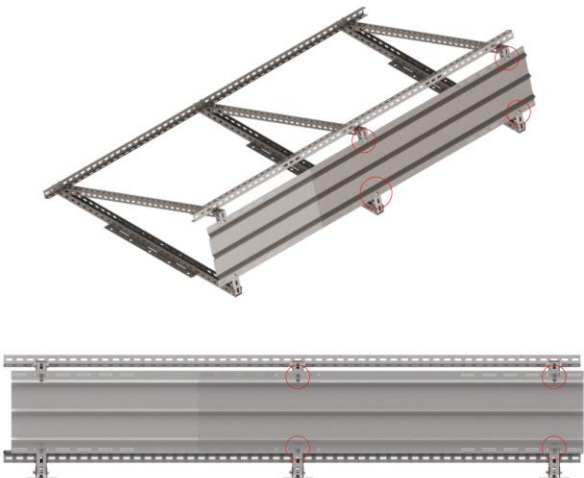
2. Measure the distance between the axes of the triangular structures.



3. Use a flat-bladed screwdriver to break out the holes in the housing aligned with the axes at point 2 and tighten with the M8 screws with diamond nuts.



4. Add the next shield and break out the overlapping holes in the covers with the holes in the channel sections



5. The neighbouring covers are tightened using shared M8 screws with diamond nuts

