



ASSEMBLY INSTRUCTIONS FOR THE CONSTRUCTION DP-DTHWS (mounting along the short side of the module)

Manufacturer:

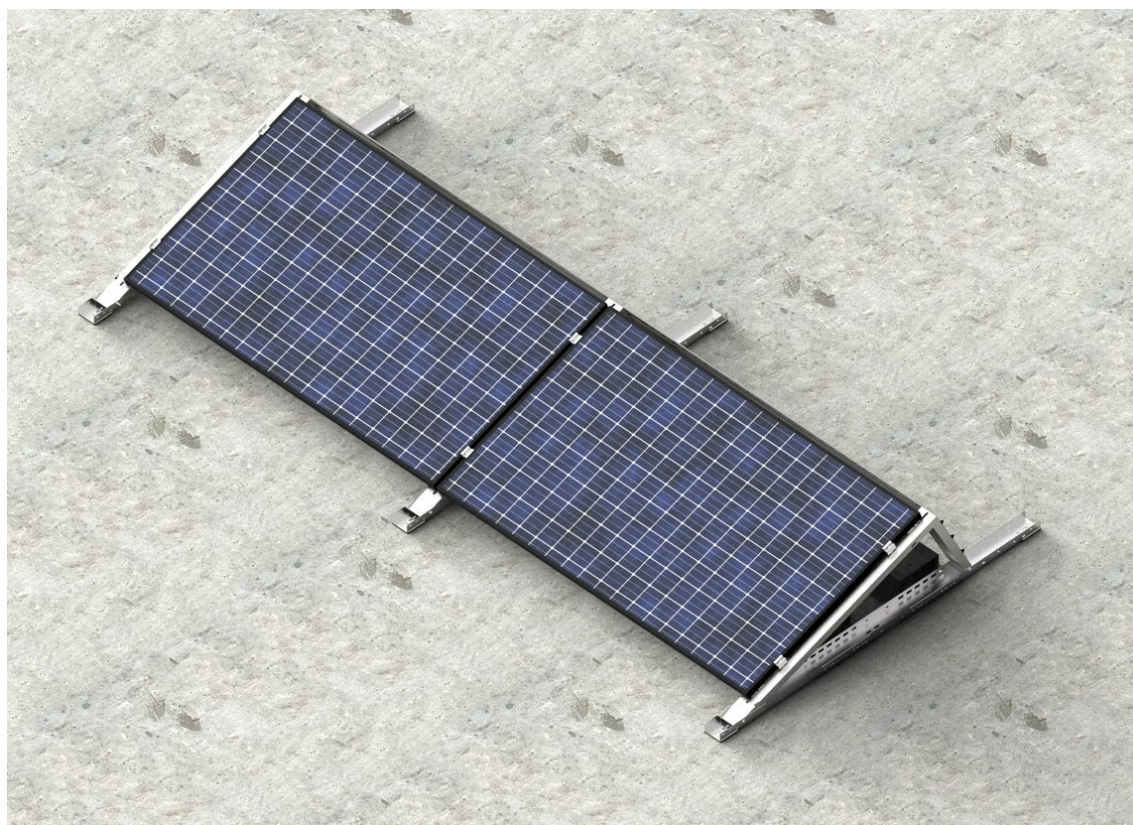
BAKS

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05-480 Karczew

Poland

Steel structure for flat roofs in glued design.
Mounting of PV modules in horizontal orientation (landscape format)
along the short side of the module.



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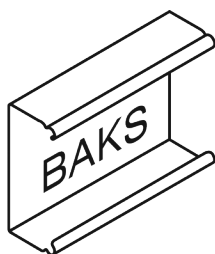
NIP: 5320102041

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Phone 22 710 81 00

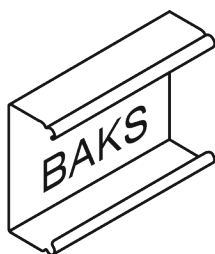


1. Tools required for the assembly of the structure

- Allen wrench, size 6
- Cordless screwdriver with speed and torque control
- Hexagon socket bit, size 6, for the screwdriver head
- Combination wrench, size 13 mm
- Ratchet with sockets, size 13 mm
- Extension 100–120 mm for socket wrenches
- Rubber mallet
- Torque wrench, range 10-30 Nm

2. General information

- The structure can be used in wind and snow load zones in accordance with **PN-EN 1991-1-3 and PN-EN 1991-1-4** standards.
- **Before starting assembly, the installation instructions of the PV module manufacturer must be observed.**
- The BUFEK.../PUFK clamps must be tightened with a torque of 12–14 Nm (check the module manufacturer's specifications).
- Contact details of technical support BAKS – available Monday to Friday from 7:00 a.m. to 3:00 p.m.:
marek.cedrowski@baks.com.pl phone +48 22 710 81 96,+48 667 944 952
- Deputy Head of the Photovoltaics Department
radoslaw.kramek@baks.com.pl tel: +48 22 710 81 96 – Technical Advisor
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3. Overview of the components of the DP-DTHWS design

No	Description	Product Symbol	Use in construction
1	Lower profile	PDTSMC	Load-bearing profile
2	Upper profile	PGTSMC	Module edition
3	Side clamp KCLICK	BUFEK...	Side module clamp
4	Middle clamp KCLICK	PUFK	Middle module clamp
5	Profile base with vibration damping rubber	PC100J	Prevents pressure loading of the profile ends on the roof waterproofing
6	Screw set	SKKM8x12E	Connection of the lower with the upper profile
7	Wind deflector	OWN20/... MC	Wind deflector
9	Steel Mounting Plate	SPM2	Glued mounting plate
10	Self Drilling Screw	SMDP4.8x25E	Installation of the wind deflectors

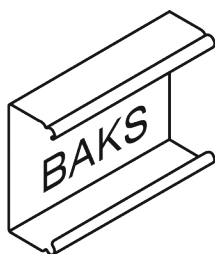
Table 1. Overview of construction elements

4. Assembly of the construction type DP-DTHWS (mounting along the short side of the module)

The dimensions A and B (dimension B = module length + 20 mm) depend on the size of the modules to be assembled.

The determination is carried out by actually applying the module to the PDTSMC and PGTSMC profiles that have already been mounted.

The maximum module dimensions allowed for proper installation on the DP-DTHWS structure along the short side of the module are: 2100 mm long × 1150 mm wide (check with the module manufacturer).



By selecting the appropriate mounting hole in the PDTSMC foot, the angle of inclination of the structure is adjusted according to Fig. 1.

For installation of wind deflectors OWN20/...NMC, use self-drilling screws SMPD4.8x25E.

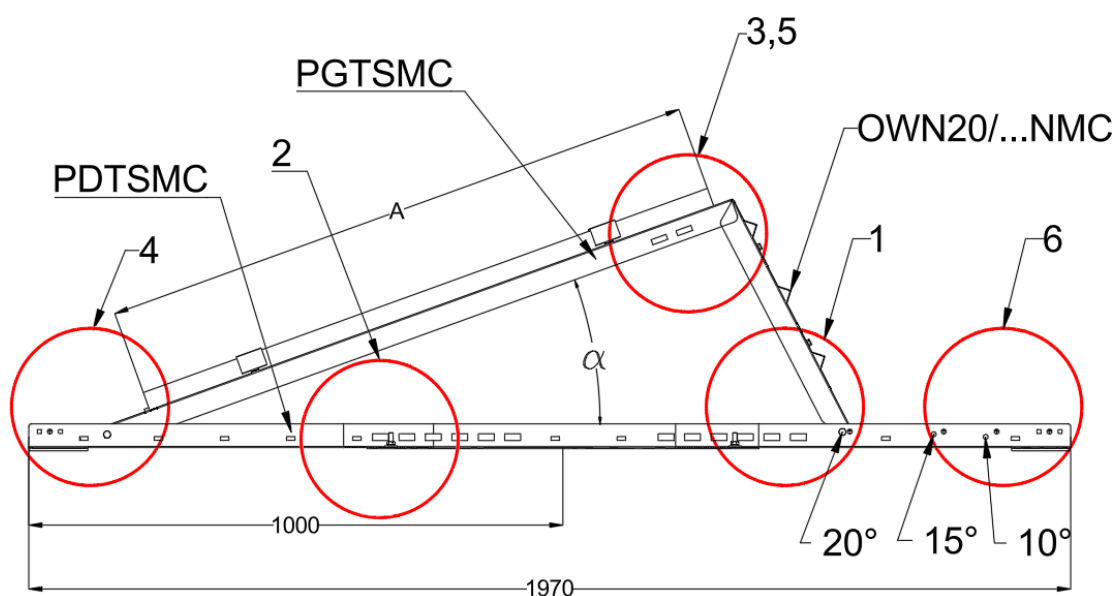


Fig. 1.

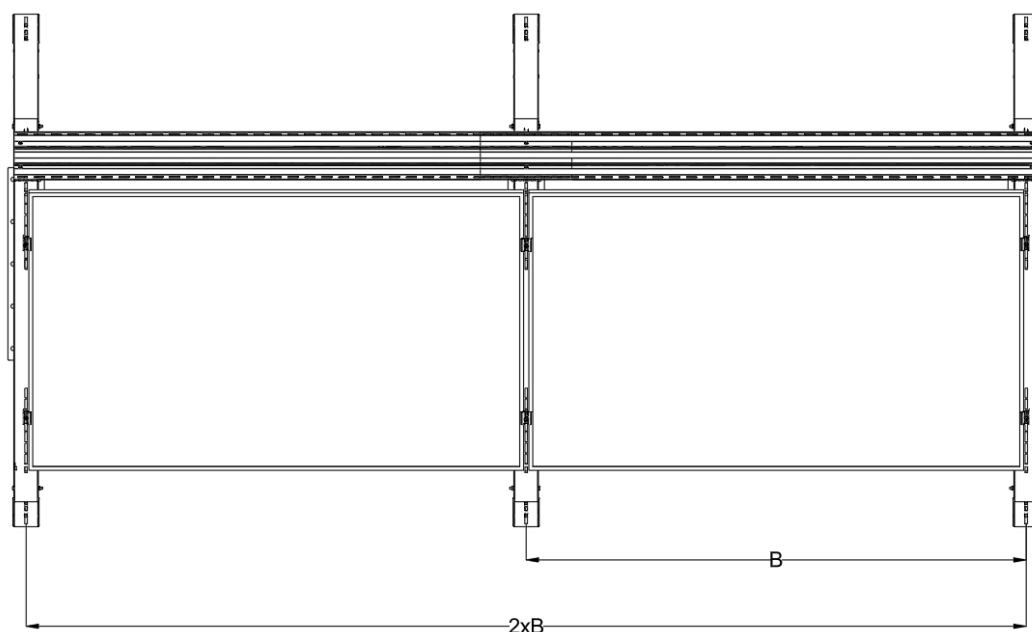
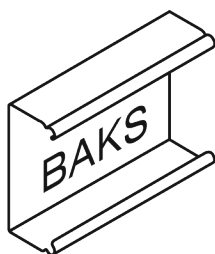
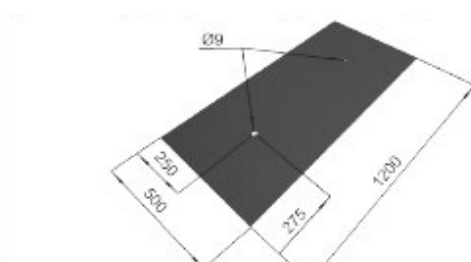


Fig. 2.

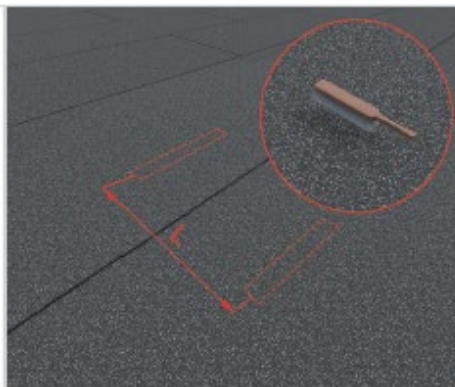


Installation instructions for the SPM2 fastening plate on bitumen membrane
Attention!

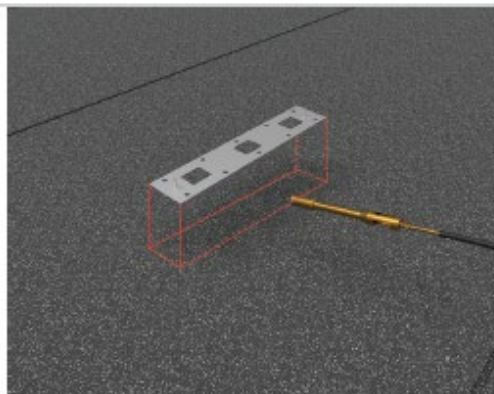
Requirements for the bitumen membrane to be used: 1. EN 12310-1 (tear propagation strength) – min. 145 N2. EN 12311-1 (tensile strength) – min. 290 N / 50 mm3. EN 12316-1 (Peel strength of the seam) – min. 120 N / 50 mm4. EN 12317-1 (shear strength of the seam) – min. 490 N / 50 mm



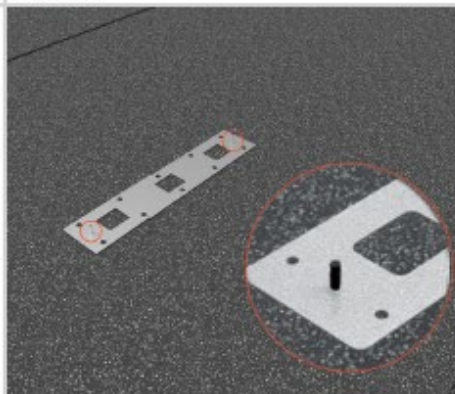
1. Before starting the installation of the SPM2 panel, we cut a bitumen membrane with minimum dimensions of 500 × 1200 mm. Then we cut out openings with Ø 9 mm at the screw positions and finally round the corners of the strip.



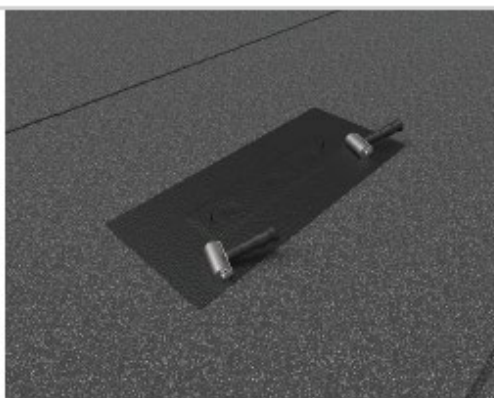
2. We measure the distances between the SPM2 panels, mark their position and then clean the roof surface (500 × 1200 mm bitumen membrane) with a wire brush.



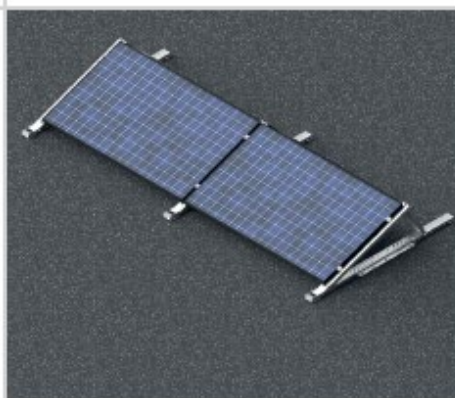
3. At the marked point, we heat the surface in the size of the plate or slightly larger.



4. The SPM2 plates are placed on the heated areas and pressed against the prepared surface. Protruding threads are secured with the NOP50 protective cap.



5. The prepared bitumen membrane is heated and placed over the slab, then pressed down with a roofer's roller in the area of the openings6. The sides of the bitumen membrane are also heated and pressed down at the same time with the roofer's roller.



7. Professionally assembled construction using SPM2 panel and DP-DTHWS mounting system.

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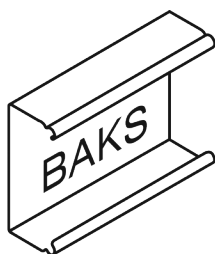
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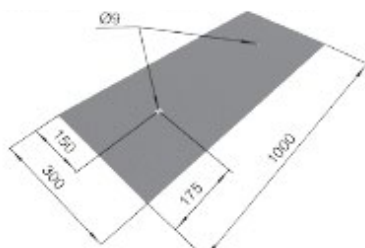
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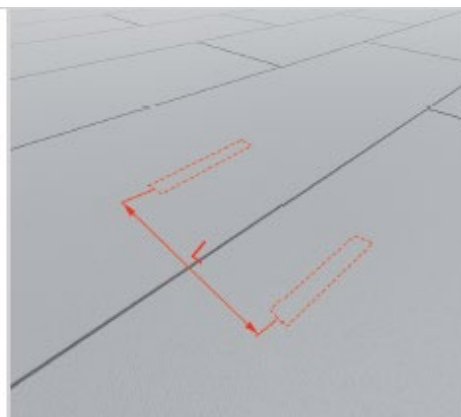


Installation instructions for the SPM2 mounting plate on the roof membrane
Attention!

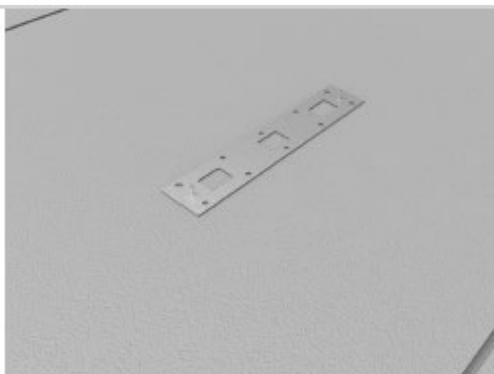
Requirements for the PVC, ECB or EPO membrane used (minimum thickness 1.2 mm):1. EN 12310-2 (tear resistance) – min. 105 N2. EN 12311-2 (tensile strength) – min. 505 N / 50 mm3. EN 12316-2 (Peel strength of the seam) – min. 145 N / 50 mm4. EN 12317-2 (shear strength of the seam) – min. 445 N / 50 mm



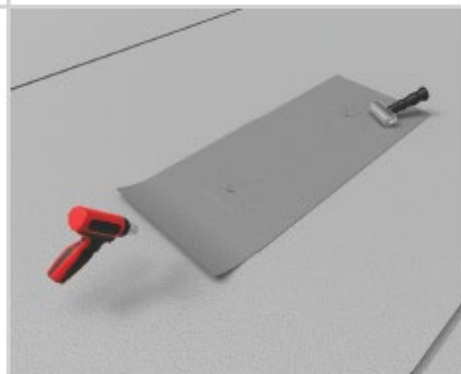
1. Before starting the installation of the SPM2 panel, we cut a membrane with minimum dimensions of 300 × 1000 mm. Then we cut out openings with Ø 9 mm at the screw positions and finally round off the corners of the membrane.



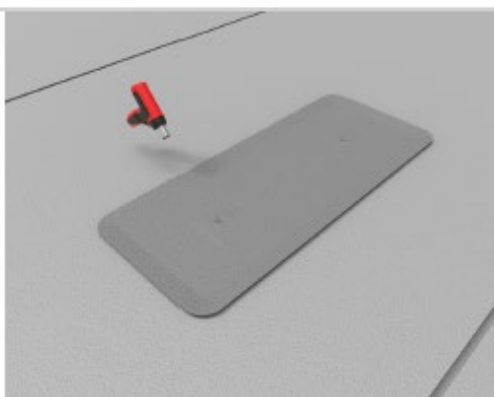
2. We measure the distances between the SPM2 plates and then mark their position.



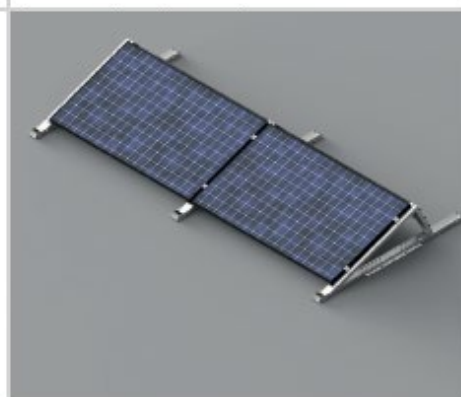
3. The SPM2 plate is positioned in the designated place.



4. The SPM2 panel is covered with the prepared membrane and assembly is started with a manual welding machine. First, the opening is welded 60 × 80 mm. After sufficient heating, the membrane is pressed on with a roofer's roller. The process must be



5. After welding the openings, all edges are to be welded all around.6. The SPM2 panel welded to the membrane forms the basis for the substructure of the photovoltaic system



7. Professionally assembled construction using SPM2 panel and DP-DTHWS mounting system. Professionally assembled construction using the SPM2 plate and the DP-DTHWS mounting system.

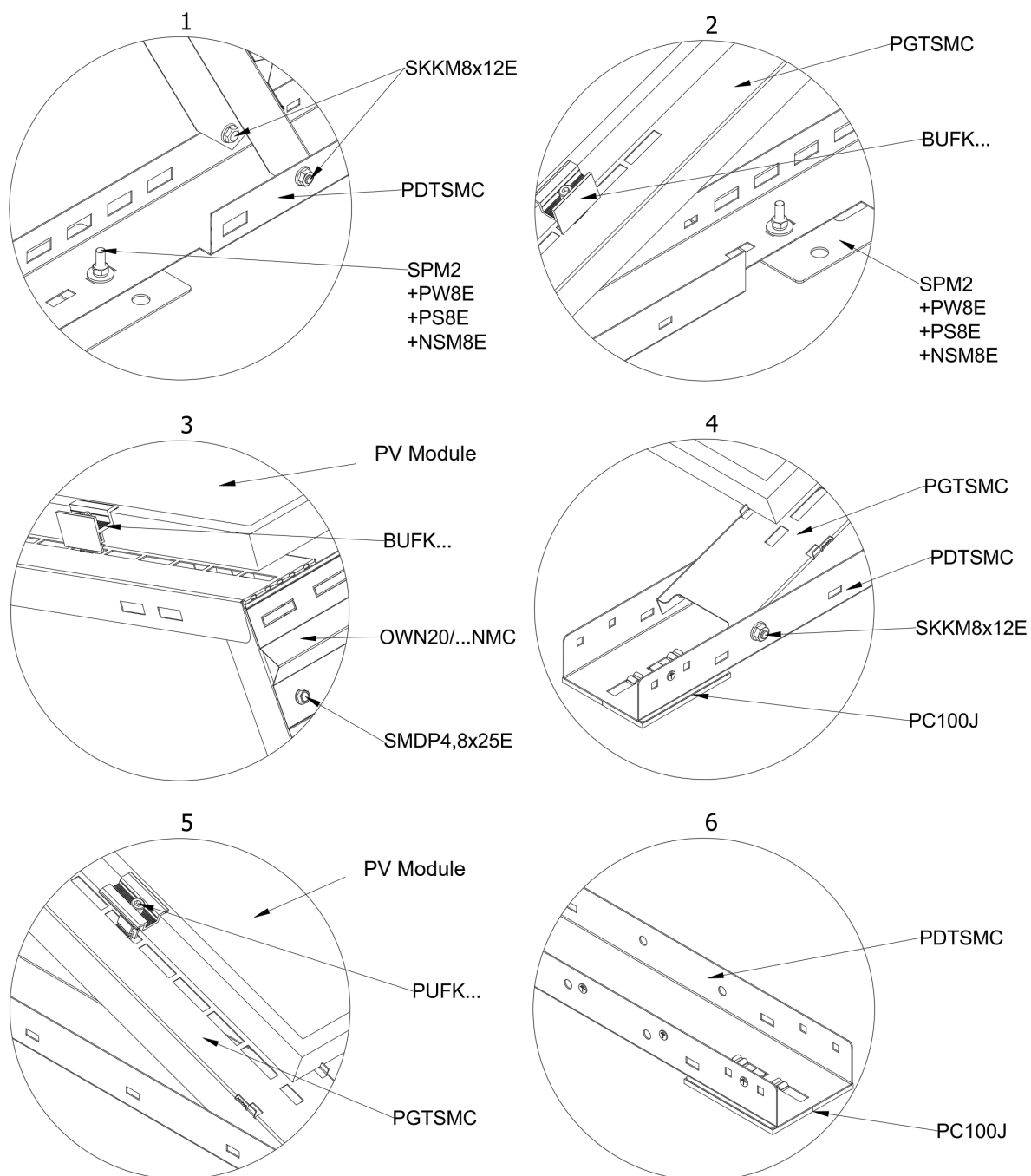
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ASSEMBLY INSTRUCTIONS OF THE CONSTRUCTION DP-DTHWS (mounting along the long side of the module)

Manufacturer:

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Steel structure for flat roofs in welded design.

Mounting of the PV modules in a horizontal orientation (along the long side of the module).



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5. Tools required for the assembly of the structure

- Allen wrench, size 6
- Cordless screwdriver with speed and torque control
- Hexagon socket bit, size 6, for the screwdriver head
- Combination wrench, size 13 mm
- Ratchet with sockets, size 13 mm
- Extension 100–120 mm for socket wrenches
- Rubber mallet
- Torque wrench, range 10-30 Nm

6. General information

- The construction can be used in wind and snow load zones in accordance with **PN-EN 1991-1-3 and PN-EN 1991-1-4**.
- **Before starting assembly, the installation instructions of the PV module manufacturer must be observed.**
- The BUFEK clamps... are to be tightened with a torque of 12–14 Nm (check the module manufacturer's specifications).
- Contact details of technical support BAKS – available Monday to Friday from 7:00 a.m. to 3:00 p.m.:
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radoslaw.kramek@baks.com.pl tel: +48 22 710 81 96 – Technical Advisor
adam.wojciak@baks.com.pl tel: +48 22 710 81 23 – Technical Advisor



7. Overview of the components of the DP-DTHWS design

No	Description	Product Symbol	Use in construction
1	Lower profile	PDTSMC	Load-bearing profile
2	Upper profile	PGTSMC	Module edition
3	Side clamp KCLICK	BUFEK...	Side module clamp
4	Profile base with vibration damping rubber	PC100J	Prevents pressure loading of the profile ends on the roof waterproofing
5	Screw set	SKKM8x12E	Connection of the lower with the upper profile
6	Wind deflector	OWN20/... MC	Wind deflector
8	Steel Mounting Plate	SPM2	Glued mounting plate
9	Self Drilling Screw	SMDP4.8x25E	Installation of the wind deflectors

Table 1. Overview of construction elements

8. Assembly of the structure type DP-DTHWS (mounting along the long side of the module)

The dimensions A, B, C and D (dimension C = distance of the module clamp according to the assembly instructions of the module manufacturer) depend on the Modulen. Ma ß D is a variable dimension, depending on the module length.

Dimension A corresponds to the module width (maximum permissible module width: 1150 mm). Dimension B corresponds to the module length.



By selecting the appropriate mounting hole in the PDTSMC foot, the angle of inclination of the structure is adjusted according to Fig. 1.

For installation of wind deflectors OWN20/...NMC, use self-drilling screws SMPD4.8x25E.

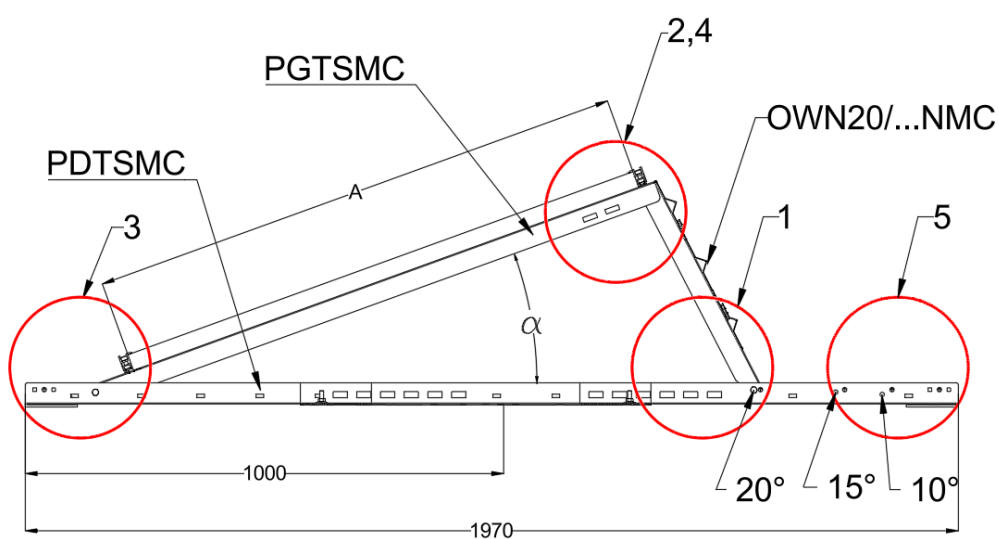


Fig. 2.

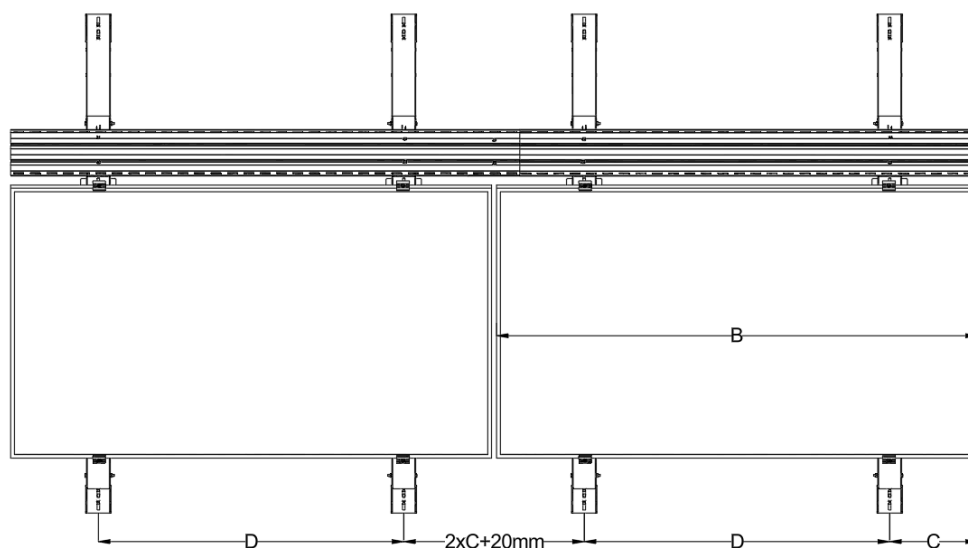


Fig. 2.

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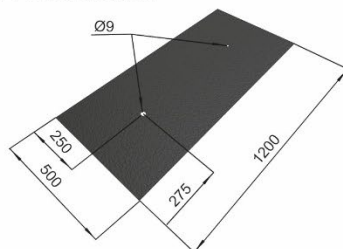
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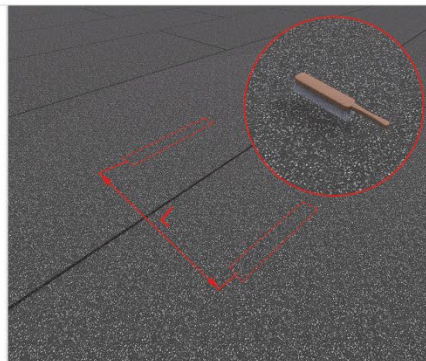
Assembly instructions for SPM2 Steel Fixing Plate to roofing felt
Note:

Requirements of the roofing felt to be used:

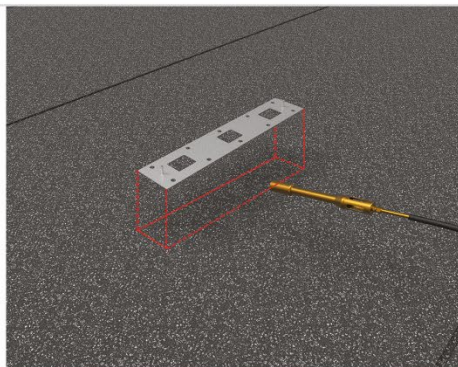
- 1) EN 12310-1 min 145N
- 2) EN 12311-1 min 290N/50 mm
- 3) EN 12316-1 min 120N/50 mm
- 4) EN 12317-1 min 490N/50 mm



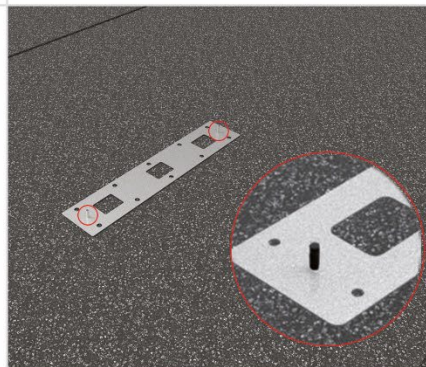
1. Before starting to install the SPM2 plates, cut out a fragment of roofing felt with minimum dimensions of 500 x 1200 mm, then cut out holes with a diameter of Ø9 mm in the locations of screws



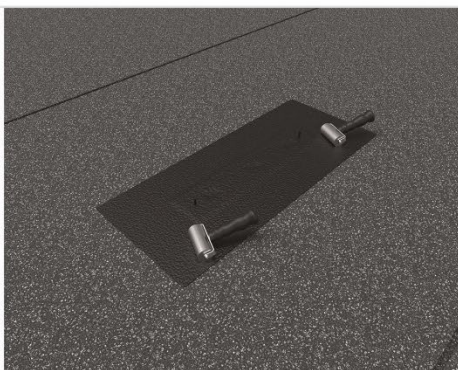
2. Measure the distance between the SPM2 plates, mark the points and then use a wire brush to clean the 500 x 1200 mm area of the roofing felt on the roof



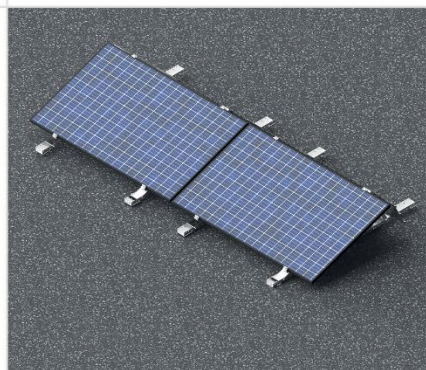
3. On the designated area heat the surface in the size of a plate or slightly larger



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-DTHWS mounting system

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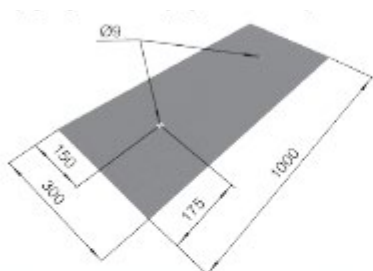
Email: baks@baks.com.pl

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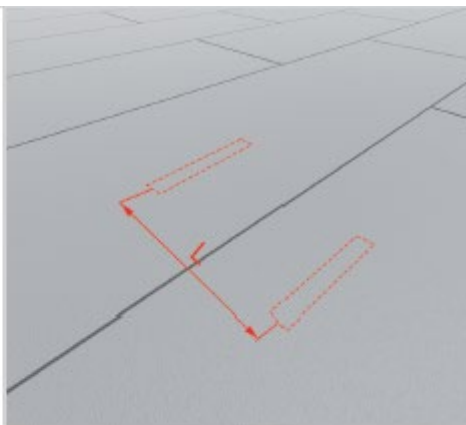


Installation instructions for the SPM2 fastening plate on bitumen membrane
Attention!

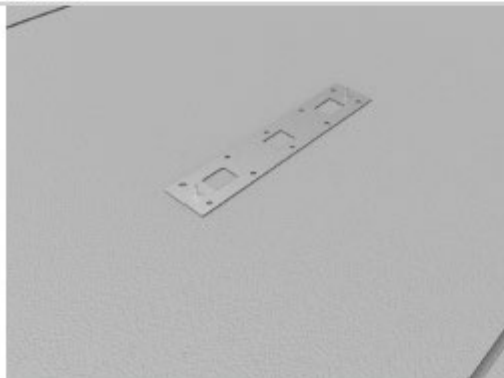
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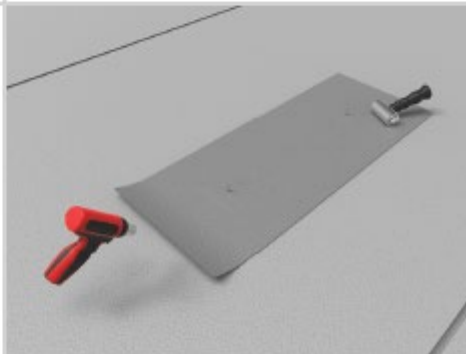
1. Before starting the installation of the SPM2 panel, we cut a bitumen membrane with minimum dimensions of 300 × 1200 mm. Then we cut out openings with Ø 9 mm at the screw positions and finally round off the corners of the bitumen membrane.



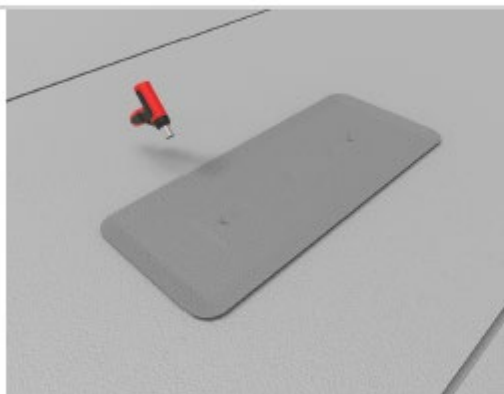
2. We measure the distances between the SPM2 plates and then mark their position.



3. The SPM2 plate is positioned in the designated location.



4. The SPM2 plate is covered with the prepared membrane and assembly is started with a manual welder. First, the opening is welded 60 × 80 mm. After sufficient heating, the membrane is pressed on with a roofer's roller. The process must be repeated for the further openings.



5. After welding the openings, all edges must be welded all around.

6. The SPM2 panel welded to the membrane forms the basis for the substructure of the photovoltaic system.



7. Professionally assembled construction using SPM2 panel and DP-DTHWS mounting system.

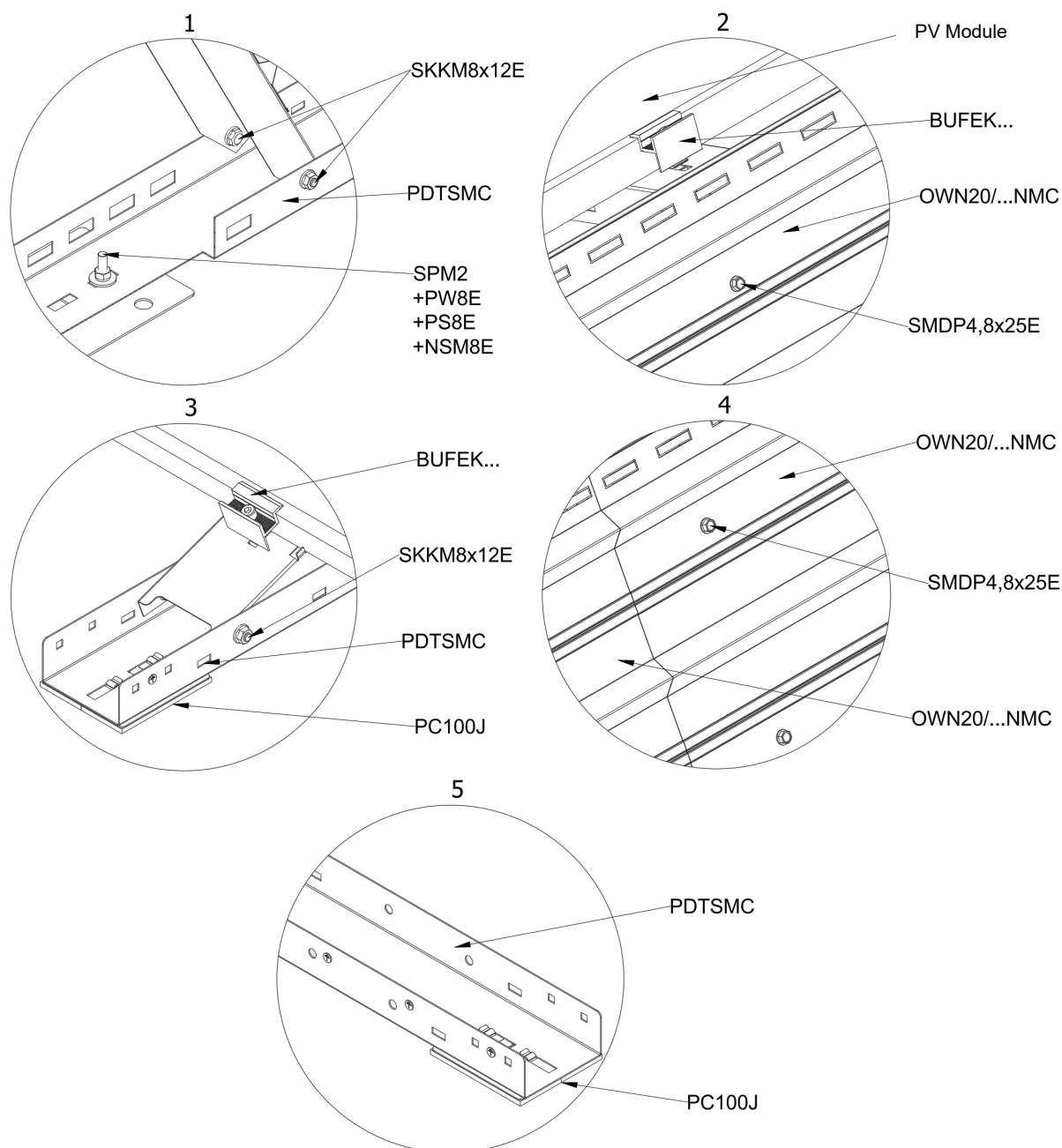
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