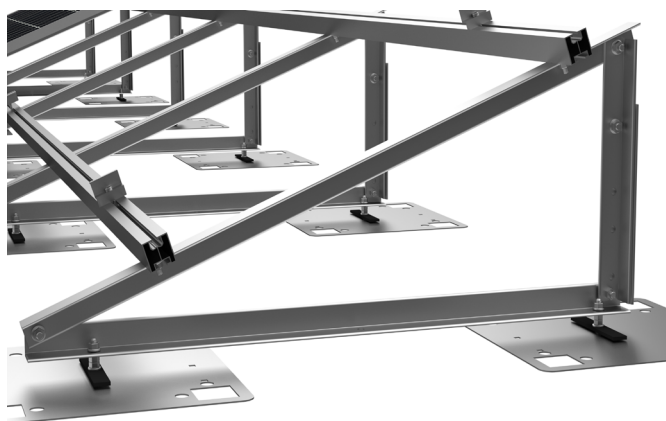


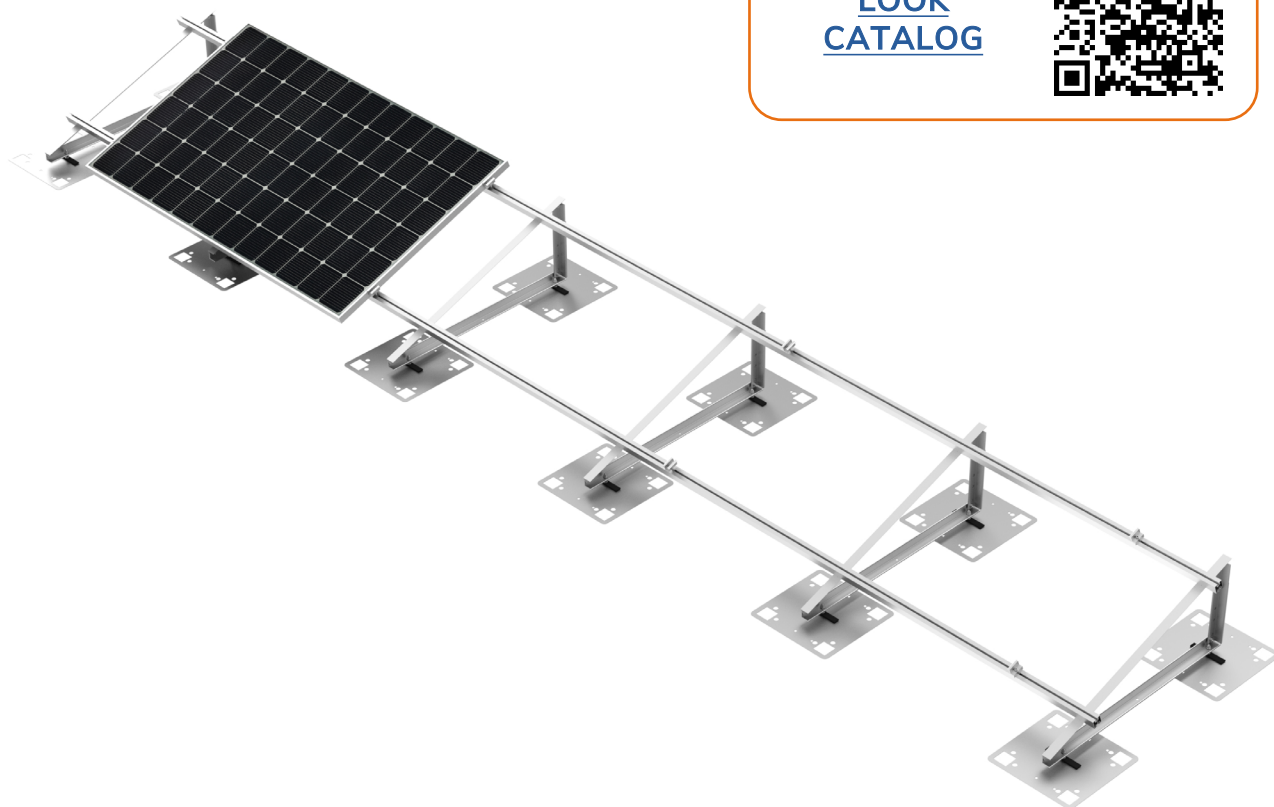
## CHARACTERISTIC

Keno sp. z o. o. is pleased to present you a non-invasive solution for flat roofs using boards fixed to roofing felt or membrane. The construction is dedicated to cases where it is not possible to interfere with the roof sheathing.



- SIMPLE AND QUICK ASSEMBLY
- ASSEMBLY OF MODULES ON LONGER AND SHORTER SIDE OF THE MODULE

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### DESCRIPTION OF THE WELDED STRUCTURE WITH ASSEMBLY TRIANGLES

Keno sp. z o. o. provides a 10-year warranty for the above structure. The structure is assembled by welding the K-53 fixing plates (see Figure 1) to the roof surface covered with roofing felt or membrane.

The design allows the modules to be mounted in a vertical and horizontal arrangement thanks to the use of small and medium mounting triangles (see table 1).

In order to use this structure, it is necessary to verify whether the roofing felt/membrane meets the appropriate strength standards (see table 2).

Installation on the short side of the module (horizontal arrangement of the module)	Mounting triangle small (K-07-15N)	Angle 15°
	Small adjustable mounting triangle (K-07-M-RN)	Angle 20°-35°
Mounting on the long side of the module (vertical module arrangement)	Medium mounting triangle (K-07-S-15N)	Angle 15°
	Medium adjustable mounting triangle (K-07-S-RN)	Angle 20°-35°

Table 1.

### TECHNICAL DRAWING

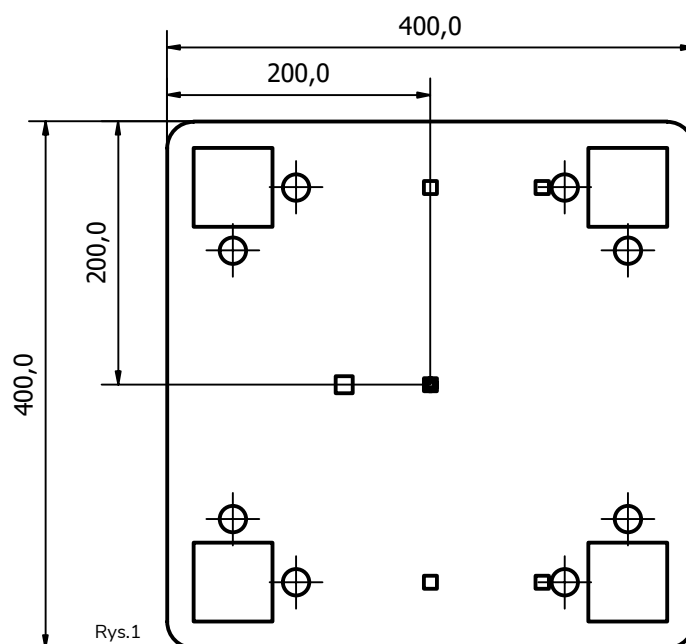


Fig.1 Top view of the board

## WELDED STRUCTURE WITH ASSEMBLY TRIANGLES

Another variant of this solution is a system based on handles and aluminum rails, thanks to which the angle of inclination of the modules can be increased by an additional 11 degrees. (Fig.1)



Fig.1 K-45 structure with K-53 mounting plates

The presented solution is also possible to implement in such a way that the modules adhere parallel to the roof slope thanks to the K-03 mounting adapters and reinforced K-25 mounting profiles (Fig.2).



Fig. 2 K-53 mounting plates with K-25 profiles

### ROOF COVERED WITH PVC MEMBRANE, ECB/FPO MIN. 1.2MM.

The membrane should be tested according to EN13956 and should meet the following requirements:

<b>Tensile strength</b>	<b>Min. 500N/50mm</b>	<b>EN 12311-2</b>
<b>Tear strength</b>	<b>Min 110N</b>	<b>EN 12310-2</b>
<b>Shear strength at joints</b>	<b>Min. 450N/50mm</b>	<b>EN 12317-2</b>
<b>Peel strength at joints</b>	<b>Min. 150N/50mm</b>	<b>EN 12316-2</b>

### ROOF COVERED WITH TAP

The roofing felt must meet the standards in accordance with EN 13707:2004+A2:2009 and meet the following requirements:

<b>Longitudinal and transverse tensile strength</b>	<b>Min. 300N/50mm</b>	<b>EN 12311-1</b>
<b>Tear strength</b>	<b>Min 150N</b>	<b>EN 12310-1</b>
<b>Shear strength at longitudinal and transverse connections</b>	<b>Min. 500N/50mm</b>	<b>EN 12317-1</b>
<b>Peel strength</b>	<b>Min. 125N/50mm</b>	<b>EN 12316-1</b>

Table 2.

In order to comply with the warranty conditions, the installer is obliged to undergo training in the installation of mounting plates and obtain a certificate of training completion from the manufacturer of these plates. Information about the training and the registration form can be found at [www.keno-energy.com](http://www.keno-energy.com) in the TRAINING tab.



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