



IVENDO Solar
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14-200 Iława

Manual for system installation on a flat roof

KDP-BIFACIAL-WZ

These instructions contain information on how to assemble a superstructure for for 4 horizontally arranged modules.

Materials:

- Stainless steel A2
- Aluminum 6060 T66
- Structural steel with Magnelis coating S320 ZM430

It is essential that you familiarize yourself thoroughly with the instructions and use them in accordance with the intended purpose.

Information about the security

Before starting the assembly work, you should familiarize yourself with the following safety instructions, which will reduce the risk of an accident.



Attention! The setup and connection should be performed by qualified personnel with the appropriate authorizations. The general safety rules must also be observed.



Attention! During the work, it is necessary to observe the applicable national and European standards, especially the electrical installations. It is also necessary to follow the instructions of the other components, e.g. the inverter.



Attention! Danger of falling from heights. The rules for working at heights and the necessary safety equipment such as harnesses and safety ropes must be observed.



Attention! Danger of falling objects. Special care must be taken. Before starting work, the assembly area must be appropriately secured to avoid hazards.



Attention! Warning of electric current. Be particularly careful when performing electrical work, especially when connecting modules and when setting up and connecting the inverter to the modules.

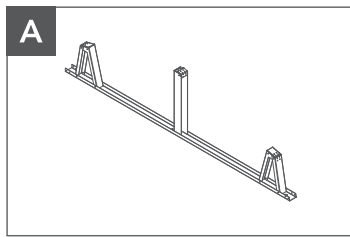


Attention! Warning about highly flammable materials. Photovoltaic modules, inverters and other electrical equipment should not be used near easily flammable materials.



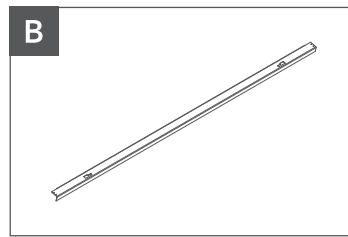
Attention! The assembly work must not be carried out by persons under the influence of alcohol or other intoxicating substances.

Elements list



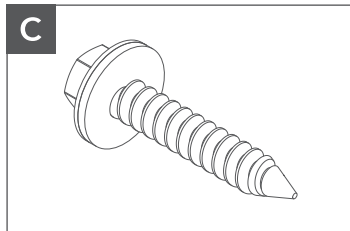
Triangle Mounting

5 Piece
Material: Steel with Magnelis coating



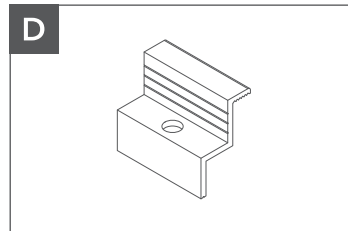
Bracket bifacial module

8 Piece
Material: Steel with Magnelis coating



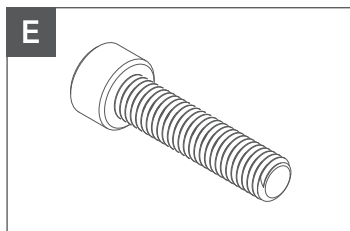
Self-tapping Screw

32 Piece
Material: Stainless steel



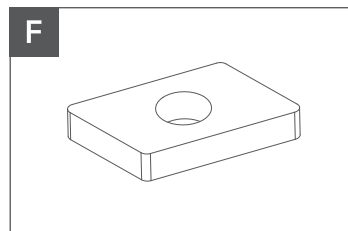
Klem final

16 Piece
Material: Aluminium



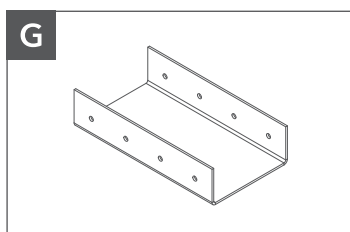
Allen screws M8

16 Piece
Material: Stainless steel



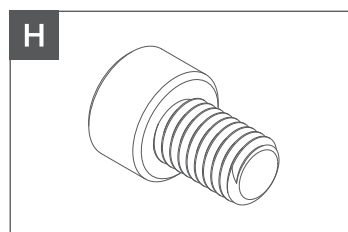
Mother tea

16 Piece
Material: Stainless steel



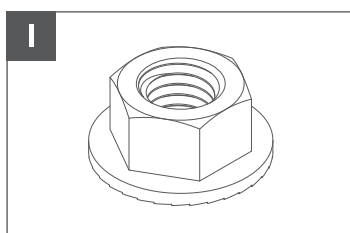
Connector Fastening triangle

5 Piece
Material: Steel with Magnelis coating



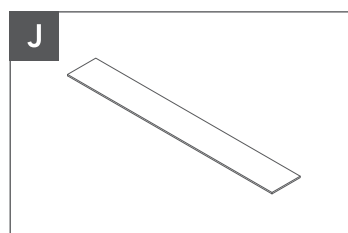
Allen screws M8x12

20 Piece
Material: Stainless steel



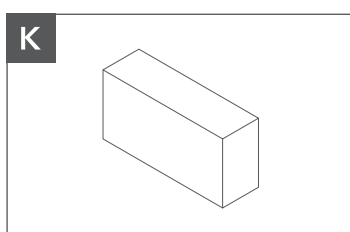
Flange nut M8

20 Piece
Material: Stainless steel

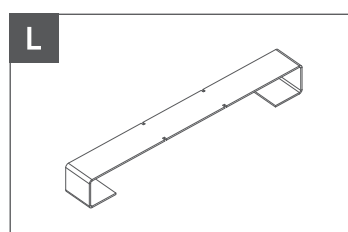


Rubber SBR

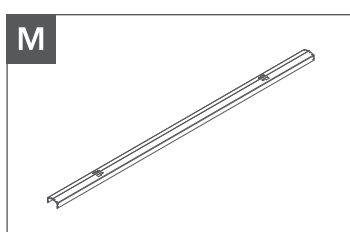
5 Piece



Block concrete or Brick



Base for the Block concrete



Angle bar bifacial module

4 Piece
Material: Stainless steel

Assembly instruction



Necessary tools:

- Allen wrench (size 5)
- Ring wrenches (size 13, 15 and 17 mm)
- Cordless screwdriver with Torque adjustment
- Cross-recess bits / attachments for the Cordless screwdriver (PZ)



Staffing for assembly:

- At least 2 persons



Tightening torques:

- Tighten middle and end clamps with a tightening torque of 8.5 Nm
- Tighten M8 bolts and nuts with a tightening torque of 18 Nm.
- Tighten M10 bolts and nuts with a tightening torque of 36 Nm



Assembly time:

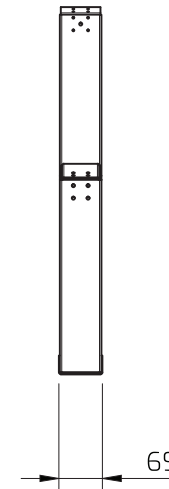
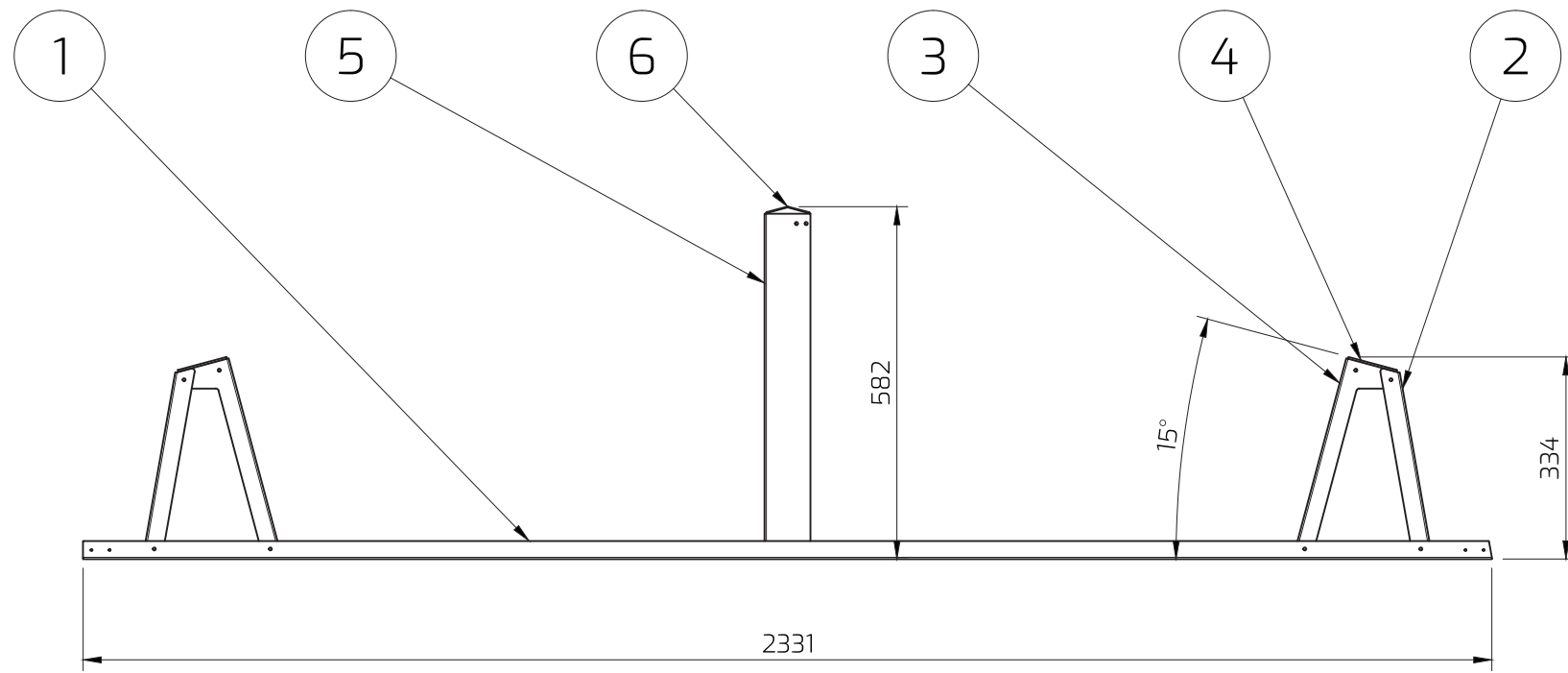
- About 2 hours

Control and maintenance

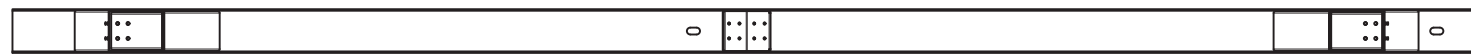
During the installation work, it must be ensured that the photovoltaic system is used according to its intended purpose. All changes in the use of construction elements, including connection with elements that do not come from IVENDO Solar, the modification of the construction by welding, shortening, lengthening, drilling, etc., and increasing the load on the systems will result in the loss of warranty claims and may have a direct impact on the life of the systems and their safe use.

The technical inspection and maintenance of the mounting system should be carried out at least once every six months, special attention should be paid to:

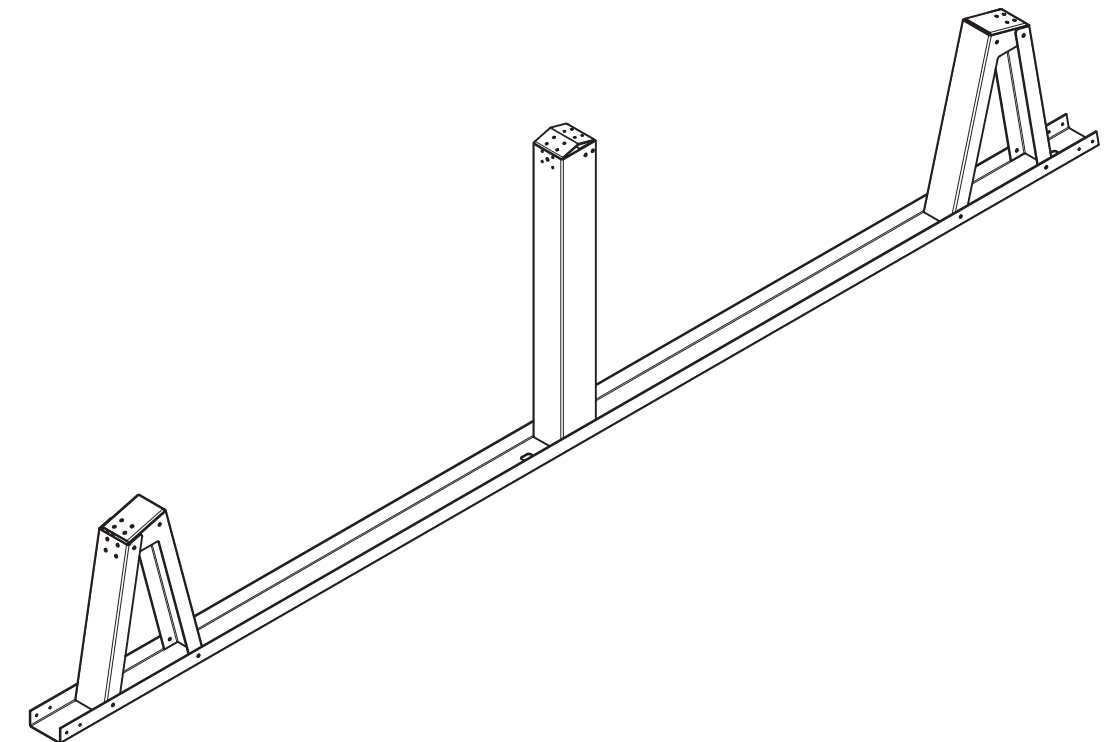
- Bolted connections,
- The condition and connections of the electrical cables are checked,
- the visual condition of the PV modules (contamination, mechanical damage) is checked.



Mounting tripod TR-2-15-WZ
Product code: TR-2-15-WZ



Tolerance of the length +/- 2 mm



| Parts List | | |
|------------|-----|--------------------------|
| Item | Qty | Part Number |
| 1 | 1 | Tripod Base MN ECO WZ |
| 2 | 2 | Tripod base B1 MN ECO |
| 3 | 2 | Tripod base B3 MN ECO |
| 4 | 2 | Tripod Foot B2 MN ECO |
| 5 | 1 | Tripod Foot A1 MN ECO |
| 6 | 1 | Tripod Foot A3 MN ECO WZ |

| | Date | Last name | Signature | | |
|-------------|---|--------------|-------------------|----------|--------|
| Signed by | 27.09.2021 | P.Ziótkowski | <i>Ziótkowski</i> | | |
| Released by | 27.09.2021 | M.Wodarczyk | <i>Wodarczyk</i> | | |
| | | | | Comments | |
| Scale | Drawing name | | | | Format |
| 1:12 | Mounting triangle TR-2 15 degrees bifacial horizontal | | | | A3 |



Assembly of the set

- 1 Before starting the assembly, it is necessary to determine the plan for the arrangement of modules (Fig. 1) and mounting triangles (Fig. 2). The way of fixing the mounting structure to the roof surface depends on its type and is selected individually.

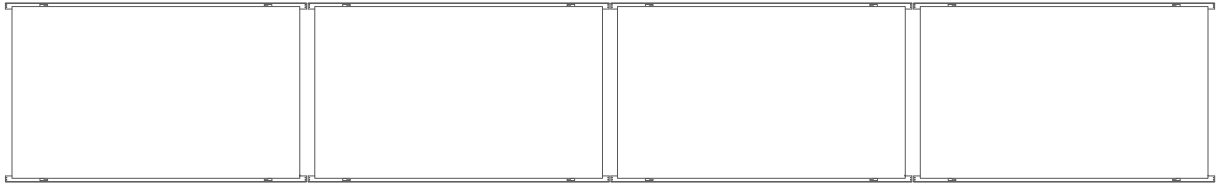
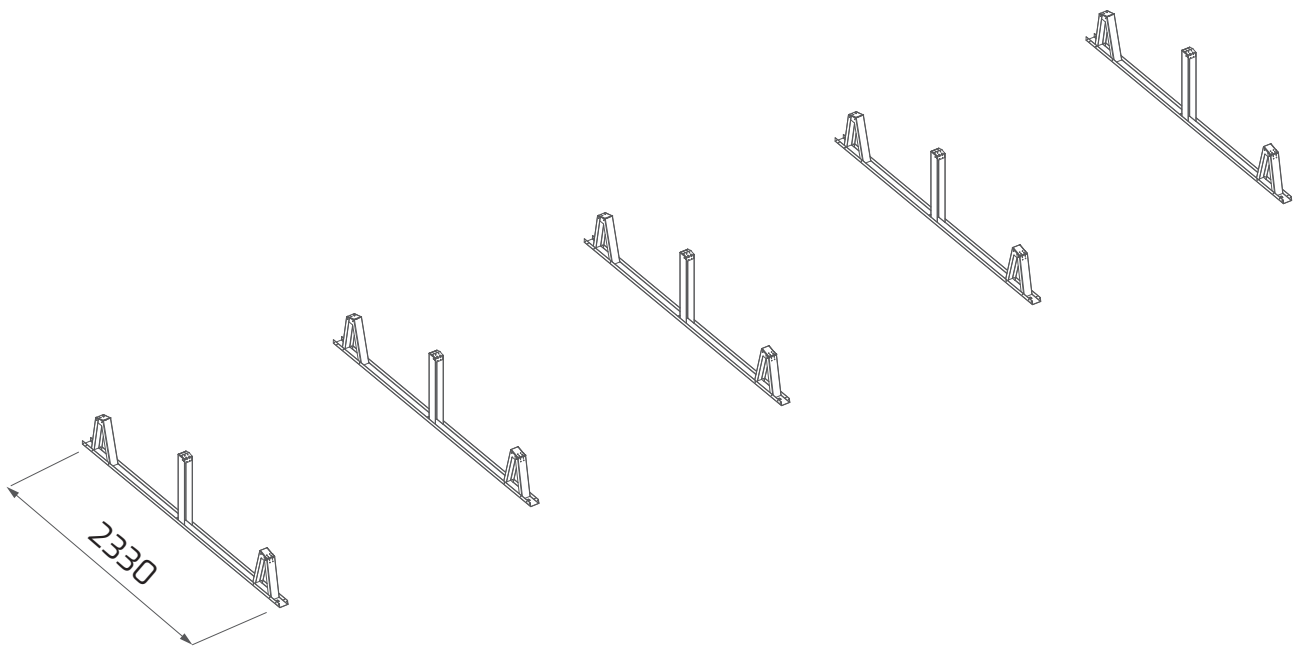


Fig. 1. arrangement plan of the modules



- 2 An SBR rubber should be placed on the lower base of the mounting triangle. Then the angle bracket should be connected to the mounting triangle and fastened with wrenches (Fig. 3).

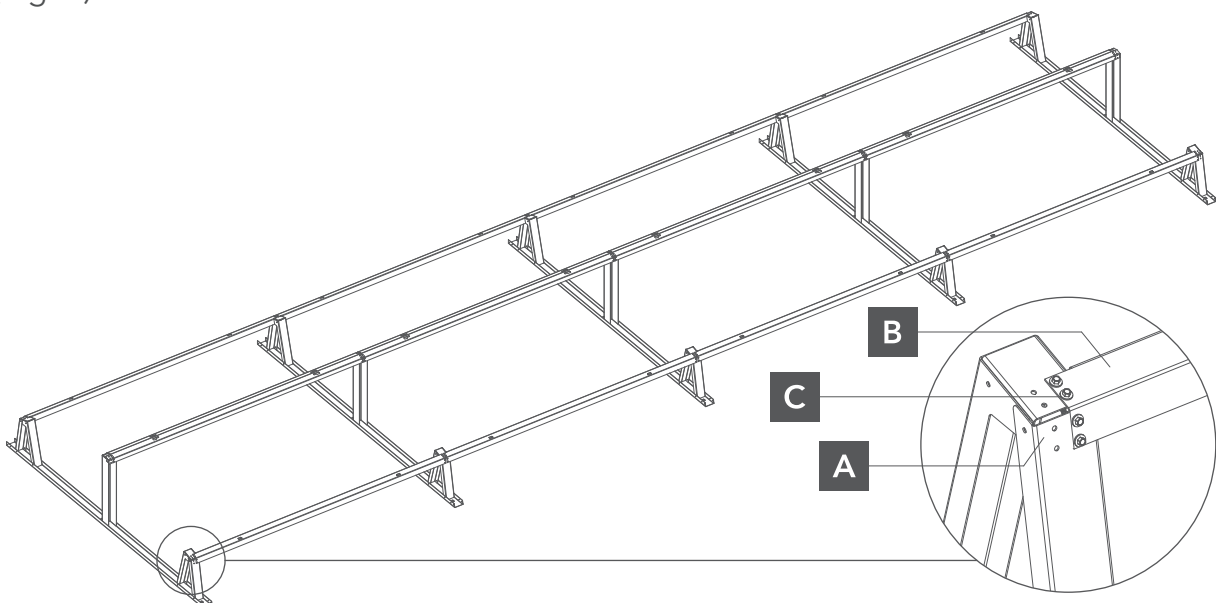


Fig. 3. attachment of the bracket to the mounting triangle.

- 3** We put the first on the squares, extreme photovoltaic module And While we hold it, we mount the end clamps. The clamps are screwed with MS Allen screws and a T-slot. The action should be repeated until down to install all the modules in a row (lynx. 4).

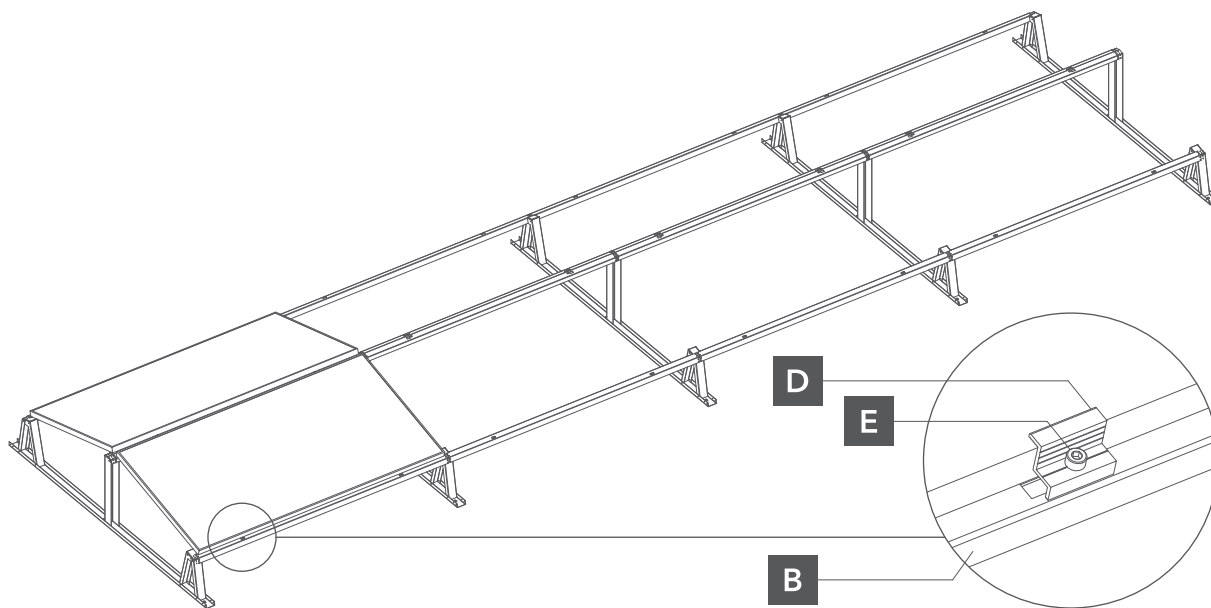


Fig. 4. fixing mod!6w down angle bar

- 4** If b dq there are two or more rows of photovoltaic modules then the mounting triangles should be connected by means of connectors (Fig. 5).

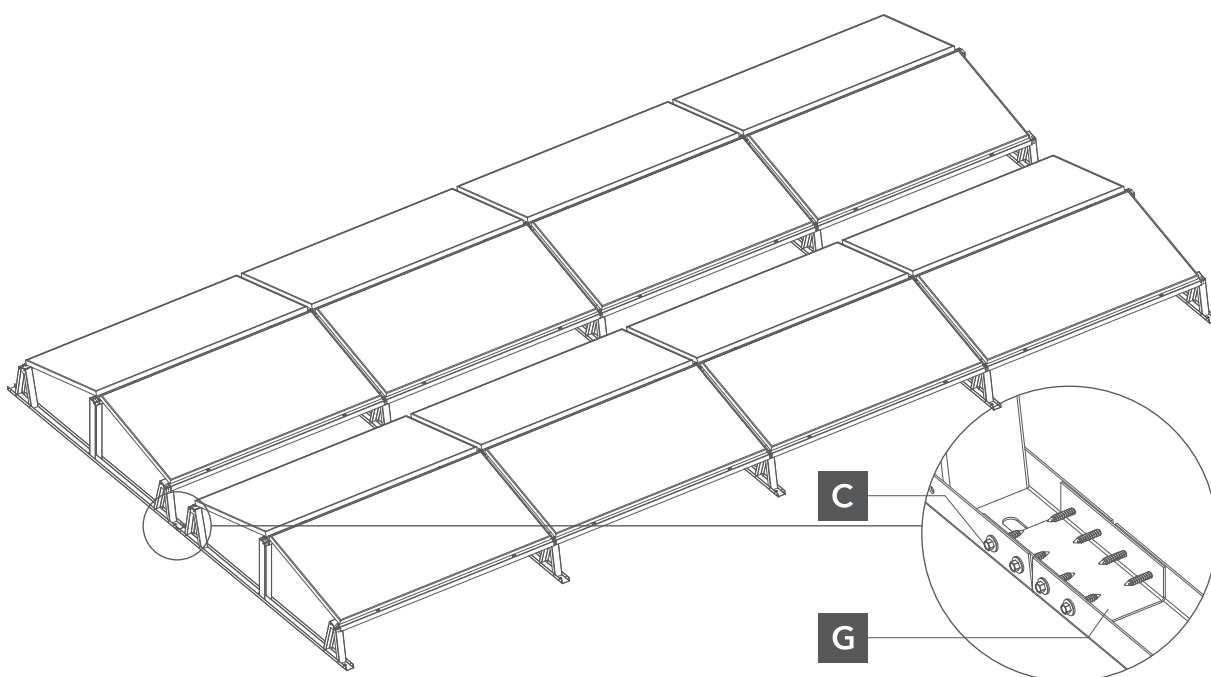


Fig.5. connection trójkqt6w assembly behind helpq !qnik

Arrangement Ballast In I Zone Wind

- 5** The entire structure should be loaded with blocks. The blocks should be laid on the basis of a triangle assembly. When birthday occurrence one row photovoltaic modules it has for one panel 11 kg ballast (Fig. 6).

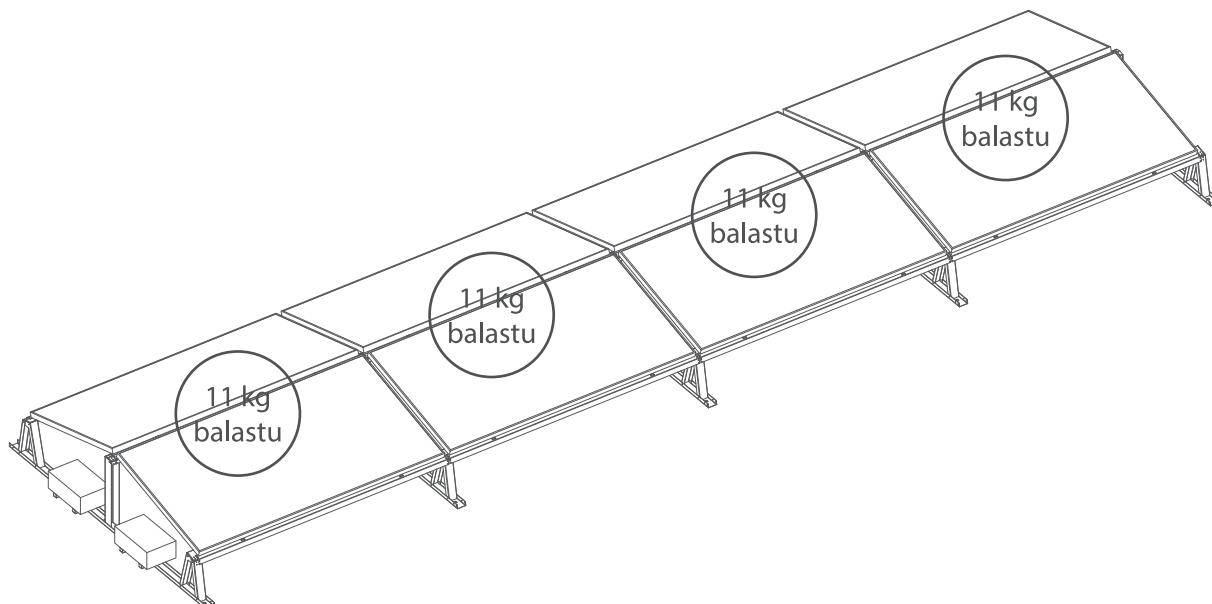


Fig. 6. arrangement ballast To one row of panels photovoltaic

Arrangement Ballast In II Zone Wind

- 6** If there will be a row panels photovoltaic it for one panel is 29 kilos of ballast (Fig. 7).

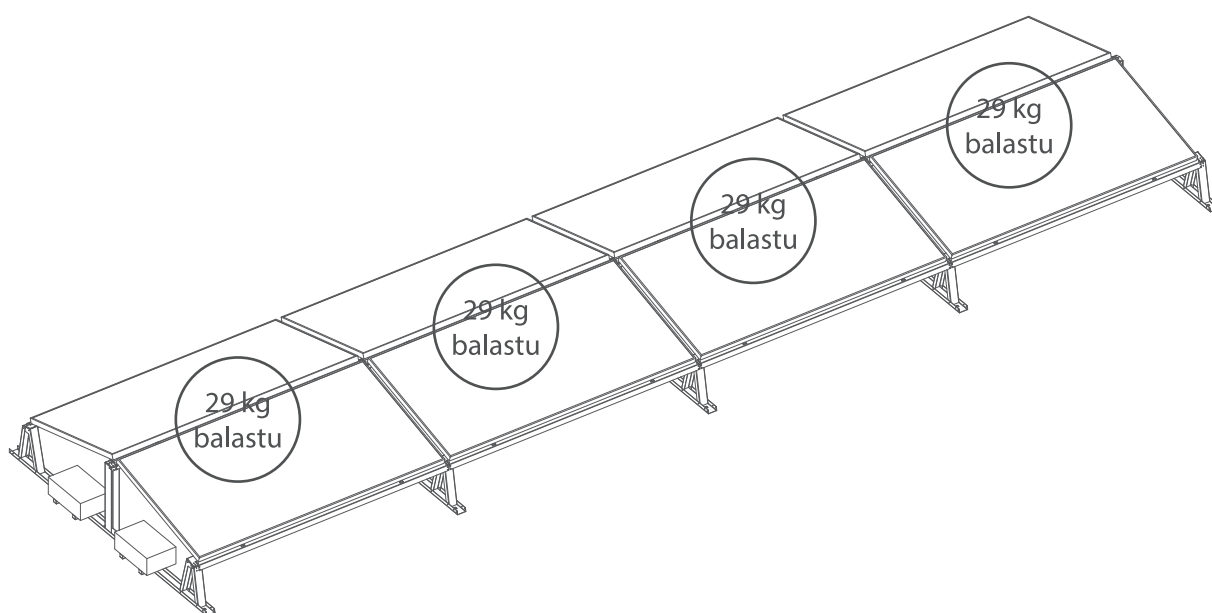


Fig. 7. arrangement ballast To one row panels photovoltaic

- 7** To stabilize the concrete block, it is recommended to use a base under the concrete block (Fig. 10).

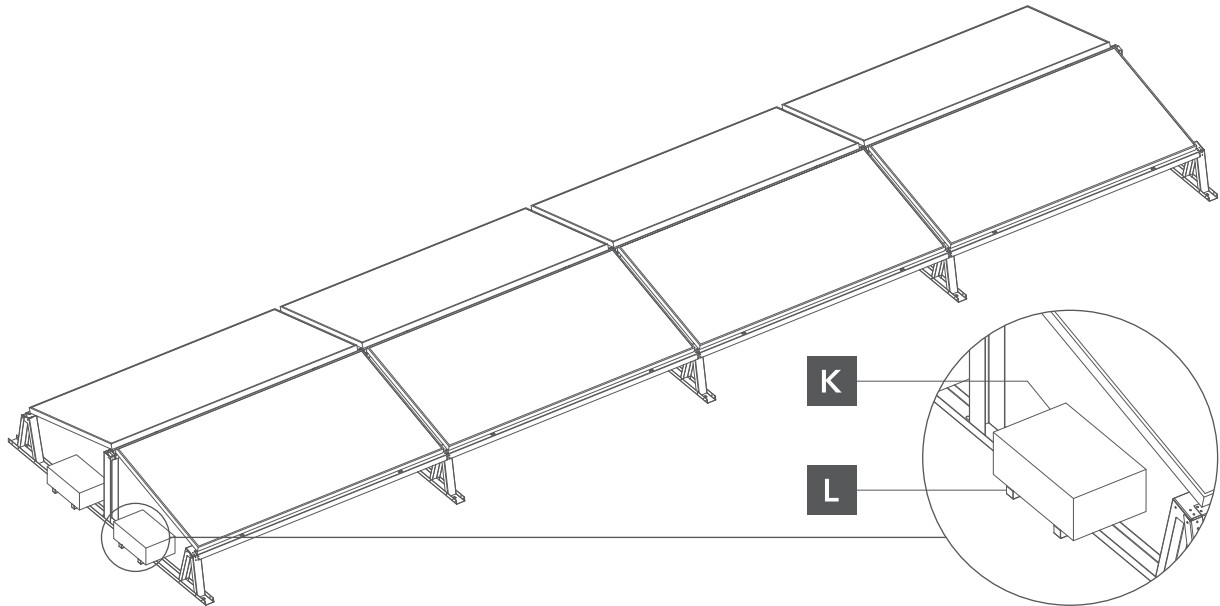
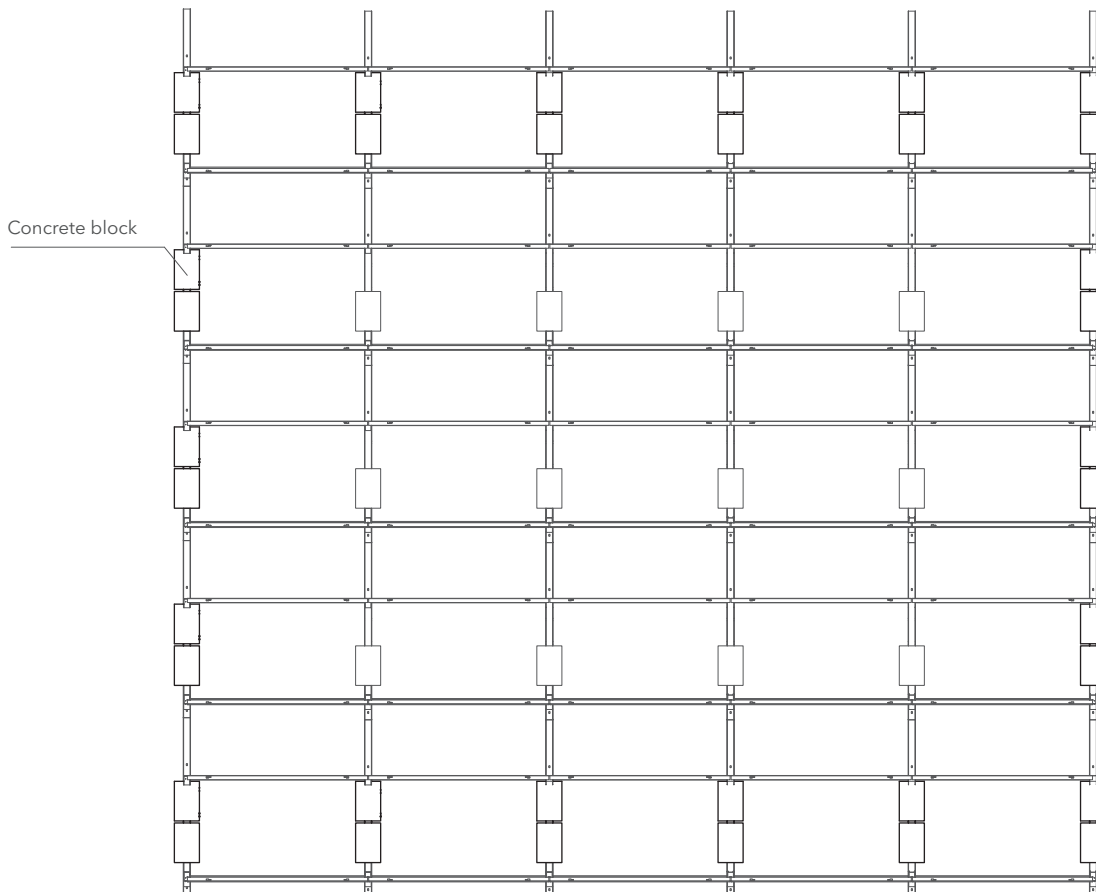


Fig. 8. example of the use of a base under a concrete block.

- 8** We recommend placing after external book page construction larger amount of concrete blocks.



Legal clause

This manual sets out the basic standards for the installation and operation of a support system for photovoltaic modules. The instructions do not represent and do not replace a photovoltaic installation project. The correct selection of the mounting system for photovoltaic modules and the components that belong to it is the responsibility of the persons who directly perform the installation of this system. This work should be performed by professional installers with the appropriate qualifications and experience. It is the installers' responsibility to select the correct mounting system and its integration with the building or the ground depending on the conditions of the location and the needs of the customer. IVENDO SOLAR, as a manufacturer of mounting systems, does not assume any responsibility for the proper execution and installation of the structure. It is necessary that the technical inspection of the installation is carried out at least once a year by persons with the appropriate qualifications. In case of occurrence of weather anomalies (strong gusts of wind over 79 km/h, unusual amounts of snow), a technical inspection of the installation should be carried out immediately after its completion. The construction shall be used in accordance with its purpose and environmental protection requirements. It is expected that the construction will be kept in perfect technical condition and that no significant deterioration of its operational characteristics and technical performance will be allowed. Changes and modifications of mounting systems manufactured by IVENDO SOLAR, including their cutting, welding, shortening, stretching, reducing the elements specified in the instructions, increasing the spacing of the supporting posts, increasing the load on the systems or using systems against their purpose, will result in an immediate loss of warranty rights and may shorten the life of the systems and limit their safe use.